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Contents

MARKET EFFICIENCY IN ITS WEAK FORM:
THE PRE-COVID AND COVID INDONESIA ANALYSIS

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Abstract: *This essay aims to analyze the efficiency, in its weak form, in the Exchange Markets IDR/MYR (Indonesia-Malaysia), IDR/PHP (Indonesia-Philippines), IDR/SGD (Indonesia-Singapore), IDR/THB (Indonesia-Thailand), IDR/GBP (Indonesia-UK), IDR/US (Indonesia-USA), IDR/EUR (Indonesia-Euro Zone/Europe). The sample comprises the period from September 3, 2018, to October 20, 2020, and the sample was partitioned into two subperiods: Pre-Covid and Covid. To carry out this analysis, different approaches were undertaken to assess whether: (i) the global pandemic promoted in(efficiency) in the exchange rates of Indonesia vs Malaysia, Philippines, Singapore, Thailand, UK, USA, Eurozone? The results suggest that in the Pre-Covid subperiod we can see that the random walk hypothesis is rejected, IDR/MYR (0.61), IDR/SGD (0.60), IDR/US (0.59), IDR/THB (0.56), IDR/EUR (0.55), IDR/GBP (0.54), except for the IDR/PHP pair (0.45) which evidences anti persistence. Already in the Covid period, we noticed that persistence increased significantly, like followed, IDR/EUR (0.82), IDR/PHP (0.81) IDR/SGD (0.80), IDR/US (0.80), IDR/MYR (0.78), IDR/THB (0.71), IDR/GBP (0.62). These findings show high levels of arbitrage, i.e., investors will be able to obtain abnormal profitability without incurring the additional risk, which could jeopardize the implementation of efficient portfolio diversification strategies due to market imbalance. The authors believe that these findings can help policymakers formulate a comprehensive response to improve the efficiency of the foreign exchange market during a global pandemic event.*

Keywords: *Exchange rates, Efficiency, Arbitration, Portfolio diversification.*

1. INTRODUCTION

The hypothesis of market efficiency is a very relevant concept for international investors who want to have their portfolios diversified, to mitigate the inherent risk of global financial markets. With the global economy increasingly integrated, international investors have aimed to diversify their portfolios into more exotic markets in different ways, with the aim of the synchronism of their assets being low. Testing market synchronizations and deducing the existence of assumptions of portfolio diversification when markets are not integrated may lead to distorted indications. We have seen a strong correlation between past and future data series, which makes it possible for the investor to have anomalous profitability when selecting an appropriate trading strategy. The possibility of investors being able to predict future price changes may lead to imbalances in financial markets, making it difficult to implement efficient portfolio diversi-

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fication strategies (Alexandre, Heliodoro, and Dias, 2019; Dias, da Silva, and Dionysus, 2019; Dias, Heliodoro, and Alexandre, 2019, 2020; Alexandre, Dias, and Heliodoro, 2020; Heliodoro, Dias, and Alexandre, 2020; Dias, Heliodoro, et al. , 2020a, 2020b; Dias, Sparrow, et al., 2020; Sparrow, P., Dias, R., Šuleř, P., Teixeira, N., and Krulický, 2020; Dias and Carvalho, 2020; Dias et al., 2020; Santos and Dias, 2020).

The efficient market hypothesis (HME) explains the random walk hypothesis, suggesting that stock prices are independent of each other, so it is impossible to achieve abnormal profitability without incurring additional risk. The positive effect of a well-functioning and highly efficient financial market in the global economy is largely due to massive modernization initiatives (Jr. and Camba, 2020).

Speculation in financial markets is a way of trying to anticipate asset prices by international investors, but market regulation itself when trying to avoid this process partly reduces the informational efficiency of financial markets, i.e., information that comes to the market is not adjusted immediately in quotes, which sometimes causes some imbalance. Given these events, this essay aims to test the efficiency, in its weak form, in the IDR/MYR (Indonesia-Malaysia), IDR/PHP (Indonesia-Philippines), IDR/SGD (Indonesia-Singapore), IDR/THB (Indonesia-Thailand), IDR/GBP (Indonesia-UK), IDR/US (Indonesia-US), IDR/EUR (Indonesia-Euro/Europe) exchange markets. The sample comprises the period from September 3, 2018, to October 20, 2020. The results of the exponents *Detrended Fluctuation Analysis (DFA)* show that the foreign exchange markets reject the random walk hypothesis in the Pre-Covid and Covid subperiods. These results show that investors using strategies adjusted with appropriate lags will be able to achieve abnormal profitability without incurring the additional risk, which could jeopardize the implementation of an efficient portfolio diversification strategy.

This research adds relevant contributions to the literature. The most relevant contribution is related to the study of the reversal of the average in Indonesia's foreign exchange markets through its international peers during this global pandemic period of 2020. Understanding the different predictability between the exchange rates analyzed means that international investors can protect their assets, as well as rebalance their portfolios in an international context. As far as we know, the authors Njindan Iyke (2019), Chaudhry et al. (2019), Aslam et al. (2020), tested the random walk hypothesis in the foreign exchange markets, but the research questions, the markets analyzed, the sampling period and the methodology were essentially different from that followed in this paper.

In terms of structure, this paper is organized into 5 sections. Section 2 presents a Literature Review regarding articles on the random walk hypothesis in international foreign exchange markets. Section 3 describes the methodology and data. Section 4 contains the results. Section 5 concludes.

2. LITERATURE REVIEW

Different studies have addressed the issue of market efficiency, analyzing the hypothesis of predictability of profitability, through the analysis of patterns of reversal of stock prices average, inspired by the seminal works of Poterba and Summers (1988), Fama and French (1988), which documented the reversal of the average in the profitability of stock markets, on-time horizons of more than one year.

Azad (2009), Chiang, Lee, Su, and Tzou (2010), Belaire-Franch and Opong (2010) examined the predictability of international exchange rates. Azad (2009) empirically tested the hypothesis of efficiency, in its weak form, in 12 Asia-pacific exchange markets, which proves that exchange rates with a daily scale do not reject the Martingale hypothesis, but when the time scales are weekly there is the rejection of the random walk hypothesis. Chiang, Lee, Su, and Tzou (2010) show that the foreign exchange markets of Japan, South Korea and the Philippines are efficient, in its weak form, while the Taiwan foreign exchange market shows signs of (in)efficiency, i.e. the existence of some arbitrage signals that may be exploited by investors. Belaire-Franch and Opong (2010) tested the random walk hypothesis in the three major international currencies Japanese yen, the US dollar and the pound sterling, showing mixed results.

Al-Khazali, Pyun, and Kim (2012), Sheik and Banu (2015), Çıtak, Akel, and Çetin (2016), analyzed the hypothesis of whether foreign exchange markets have high levels of arbitrage. Al-Khazali, Pyun, and Kim (2012) tested the random walk hypothesis between the Australian dollar and seven Asian currencies against three reference currencies between 1993 and 2008, showing hybrid results regarding the adjustment of information in exchange rates at different times of financial crises. Sheik and Banu (2015) examined the Efficient Market Hypothesis (HME) in the Indian foreign exchange market, using the exchange rates of China, Indonesia, and the U.S. in relation to the Indian rupee. The results indicate that the three exchange rates analyzed follow the random walk hypothesis, that is, international investors should have difficulty obtaining abnormal profitability without incurring additional risk. Çıtak, Akel, and Çetin (2016) examine the hypothesis of an efficient market, in its weak form, in turkey's foreign exchange markets, and show that the random walk hypothesis is rejected for the nominal exchange rate TRY/USD from January 2000 to December 2013.

Nan and Kaizoji (2019), Njindan Iyke (2019), Chaudhry et al. (2019) tested the random walk hypothesis in international foreign exchange markets. Nan and Kaizoji (2019) suggested a bit-coin-based USD/EUR exchange rate and investigated the random walk hypothesis in the spot and future markets. Structural change tests, unit root and Johansen indicate that the bitcoin exchange rate follows the random walk hypothesis and is integrated with the FX series. The results suggest that the integration coefficients suggest the nature of long-term "impartiality" and "fair play" in the short-term exchange rate of bitcoin, evidencing market efficiency in its weak and semi-strong form. Njindan Iyke (2019) tested the efficient market hypothesis (HME) in the Indonesian foreign exchange market, and evidences that when structural breakdowns and heteroscedasticity are accommodated, efficient market hypothesis (EMH) is rejected in 50% cases, and that 71% of rates rebalance in a month. Chaudhry et al. (2019) examined the efficiency, in its weak form, of the Pakistan foreign exchange market, represented by Japanese yen (JPY/PKR), Swiss franc (CHF/PKR), British pound (GBP/PKR), US dollar (USD/PKR). The authors show that Pakistan's foreign exchange market is efficient, in its weak form.

Aslan *et al.* (2020), Anggitawati and Ekaputra (2020), tested the hypothesis of market efficiency, in its weak form, in the international foreign exchange markets. Aslan *et al.* (2020) analyzed the efficiency of foreign exchange markets during the initial period of the 2020 global pandemic that disrupted global financial markets. The authors used high frequency data (5-minute interval) for the six major currencies traded on the foreign exchange markets during the period from October 1, 2019 to March 31, 2020. Overall, the results confirm the presence of multifractality in the foreign exchange markets; the greatest effect is observed for the Australian dollar, which shows the highest (lowest) efficiency before (during) the 2020 pandemic, assessed in terms of

low (high) multifractality. The Canadian dollar and the Swiss franc exhibited the highest efficiency during the Covid-19 outbreak. Anggitawati and Ekaputra (2020) show two-way shocks between NFI stock market yields and the IDR/USD exchange market. Additionally, the authors show that the holdings of international investors have more impact on the foreign exchange market than on the stock market.

In summary, this paper aims to contribute to the provision of information to investors and regulators in the international exchange markets, where individual and institutional investors seek to efficiently diversify their portfolios, in a period of uncertainty and lack of confidence arising from the global pandemic (Covid-19).

3. METHODOLOGY

3.1. Data

The data used for the preparation of the work were the prices index (daily) of the exchange markets IDR/MYR (Indonesia-Malaysia), IDR/PHP (Indonesia-Philippines), IDR/SGD (Indonesia-Singapore), IDR/THB (Indonesia-Thailand), IDR/GBP (Indonesia-UK), IDR/US (Indonesia-USA), IDR/EUR (Indonesia-Zone Euro/Europe). The sample comprises the period from September 3, 2018 to October 20, 2020, and the sample was partitioned into two subperiods: Pre-Covid (September 3, 2018 to August 30, 2019); Covid (September 2, 2019 to October 20, 2020, data extracted from the *Thomson Reuters* platform.

3.2. Methodology

The development of the research took place through several stages. The characterization of the sample used was performed through descriptive statistics, the adherence test of Jarque and Bera (1980). To evaluate the time series parking, we used unit root tests in Hadri panel (2000), Levin, Lin, and Chu (2002), which postulate null hypotheses contrary. In order to answer the research question, we will use the *Detrended Fluctuation Analysis (DFA)* methodology. *DFA* is an analysis method that examines temporal dependence on non-stationary data series. This technique by assuming that time series are non-stationary avoids spurious results when the analysis focuses on the relationships of the data series in the long term. *Detrended Fluctuation Analysis* presents the following interpretation: $0 < \alpha < 0{,}5$ anti persistent series; $\alpha = 0{,}5$ series features random walk; $0{,}5 < \alpha < 1$ persistent series. The function of this technique is to examine the relationship between values x_k and $x_{(k+t)}$ in different moments (Ferreira, Dionysus, Guedes, and Zebende, 2018).

Consider a dataset x_k, with $k = 1, \dots , t$ equidistant observations. *DFA*'s first step is the construction of a new series

$$x(t) = \sum_{k=1}^{t} x_k. \tag{1}$$

The second step is to obtain the trend $z_{(t)}$ of each fraction, through the least squares method, obtaining the subtracted series from the trend (*detrended*), i.e.

$$x_s(t) = x(t) - z(t) \tag{2}$$

The original application assumes that the trend present in each of the boxes is a linear trend, i.e. $Z(t) = at + b$ subsequent applications indicate that it is likely to contain other polynomial tendencies (Kantelhardt,Koscielny-Bunde,Rego,Havlin,and Bunde,2001).For each box, the value of the trend equation is obtained by the least squares method and later the root of the mean square deviation between the series $x(t)$ and $Z(t)$ is estimated, the *DFA* function being given by

$$F(s) = \sqrt{\frac{1}{2N} \sum_{t=1}^{2N}[x_s(t)]^2} \tag{3}$$

Estimating the average $F(s)$ for all centralized boxes in s generates the value of fluctuations, $\langle F(s)\rangle$,depending on s. This estimation will be repeated for all distinct values of s, expecting a process of a power-law, i.e.

Estimating the average for all centralized boxes in generates the value of fluctuations,, depending on . This estimation will be repeated for all distinct values of s, expecting a process of a power-law, i.e.

$$\langle F(s)\rangle \sim s\alpha^\alpha \tag{4}$$

4. RESULTS

Figure 1 shows the fluctuations in levels of the exchange markets, IDR/MYR (Indonesia-Malaysia), IDR/PHP (Indonesia-Philippines), IDR/SGD (Indonesia-Singapore), IDR/THB (Indonesia-Thailand), IDR/GBP (Indonesia-UK), IDR/US (Indonesia-US), IDR/EUR (Indonesia-Euro Zone/Europe). The sample comprises the time horizon of the period from September 3, 2018 to October 20, 2020, and it is a period of great complexity, due to understanding the global pandemic (Covid-19). The exchange rates analyzed clearly show the instability experienced in these markets in December 2019, January, February, and March 2020.
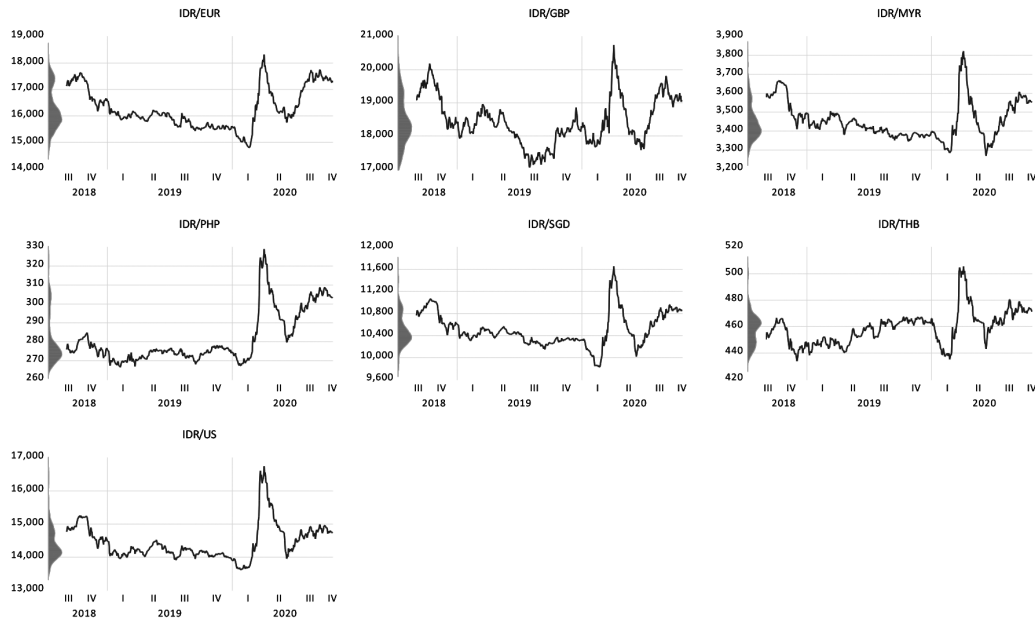
Note: Thomson Reuters: September 3, 2018, 557-point data.

Figure 1. Evolution, in levels, of the 7 exchange rates,
in the period from September 3, 2018 to October 20, 2020.

Source: Own elaboration.

Figure 2 shows the evolutions of the exchange markets under analysis, and we can see that the time series present a relatively high dispersion around the average, as well as a relatively synchronized behavior between the data series. Through graphical analysis, very strong volatility is observed in the first quarter of 2020.
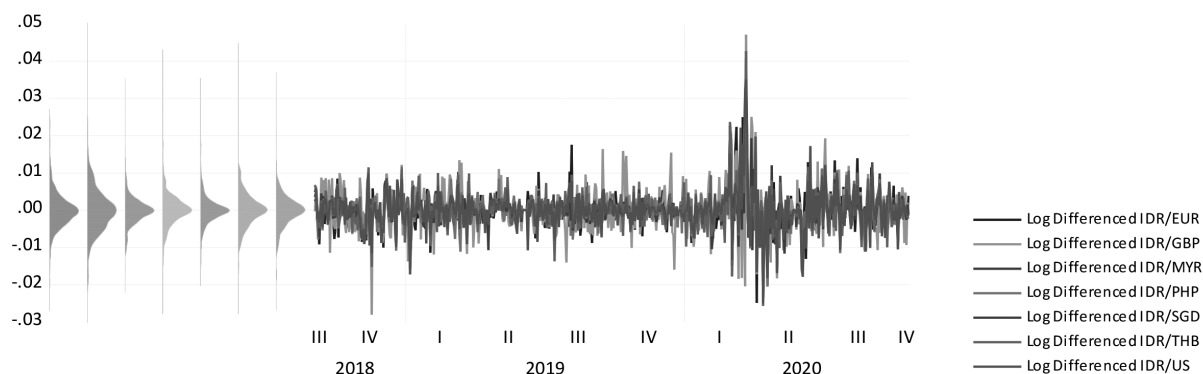
Note: Thomson Reuters: September 3, 2018, 556-point data.

Figure 2. Evolution, return, of the 7 exchange rates,
in the period from September 3, 2018 to October 20, 2020.
Source: Own elaboration.

Figure 3 shows the average yields of the 7 exchange rates, and we can see that exchange pairs IDR/MYR (-1.35E-05), IDR/US (-4.63E-06), IDR/GBP(-2.68E-06) have negative average yields. The exchange rates IDR/PHP (0.000169), IDR/SGD (1.39E-05), IDR/THB (8.21E-05), IDR/EUR (2.10E-05) show positive yields.
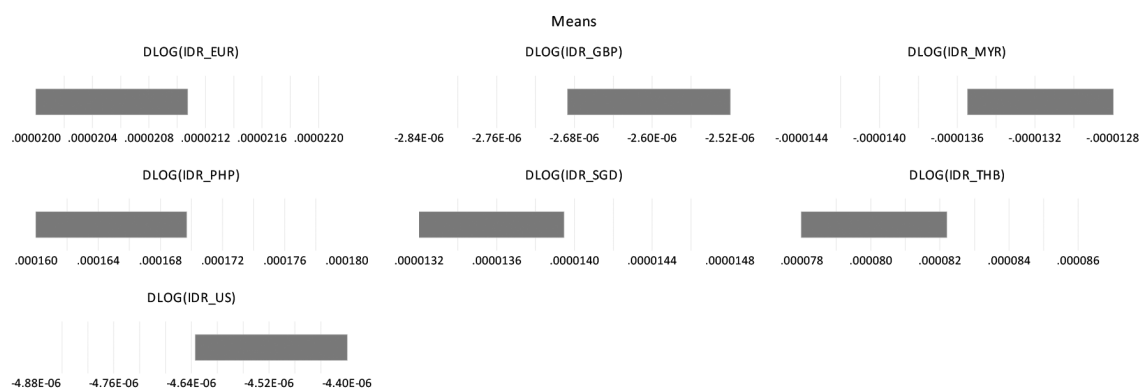
Figure 3. Evolution of the average yields of the 7 exchange rates,
in the period from September 3, 2018 to October 20, 2020.
Source: Own elaboration.

Figure 4 shows the Skewness of the 7 exchange rates, and we can verify that exchange pairs IDR/PHP (1.180533), IDR/MYR (1.034002), IDR/SGD (1.001855), IDR/THB (0.95 3976), IDR/US (0.803038), IDR/GBP (0.709587), IDR/EUR (0.591387) have different Skewness than a normal distribution (Skewness = 0).
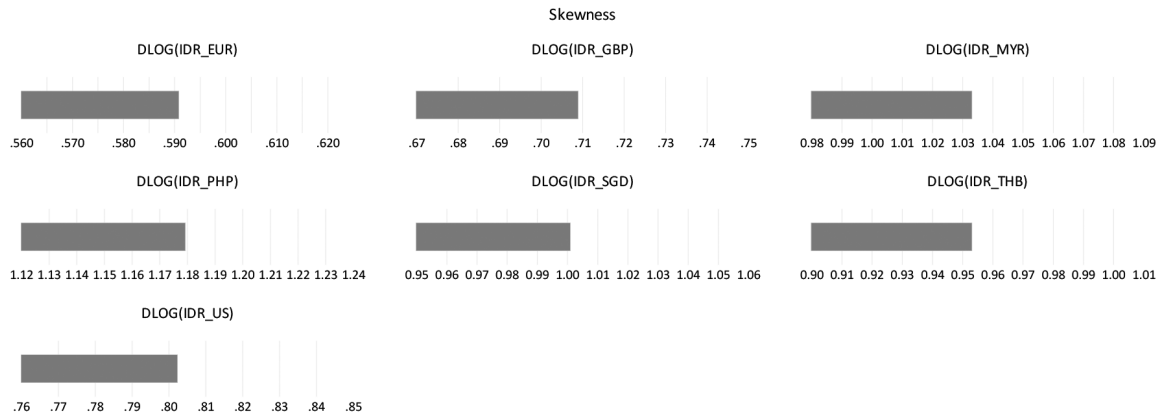
Figure 4. Evolution of the Skewness of the 7 exchange rates,
in the period from September 3, 2018 to October 20, 2020.

Source: Own elaboration.

Figure 5 shows the Kurtosis of the IDR/MYR (Indonesia-Malaysia), IDR/PHP (Indonesia-Philippines), IDR/SGD (Indonesia-Singapore), IDR/THB (Indonesia-Thailand), IDR/GBP (Indonesia-UK), IDR/US (Indonesia-US), IDR/EUR (Indonesia-Euro/Europe) exchange markets. Based on the results, time series do not follow normal distributions, IDR/PHP (15.97799), IDR/THB (13.85505), IDR/SGD (12.76840), IDR/MYR (11.76382), IDR/US (11.58651), IDR/GBP (9.141990), IDR/EUR (7.393601). These results confirm the assumptions that time series do not follow a normal distribution, because asymmetry and Kurtosis are different from reference values (Skewness = 0; Kurtosis = 3).
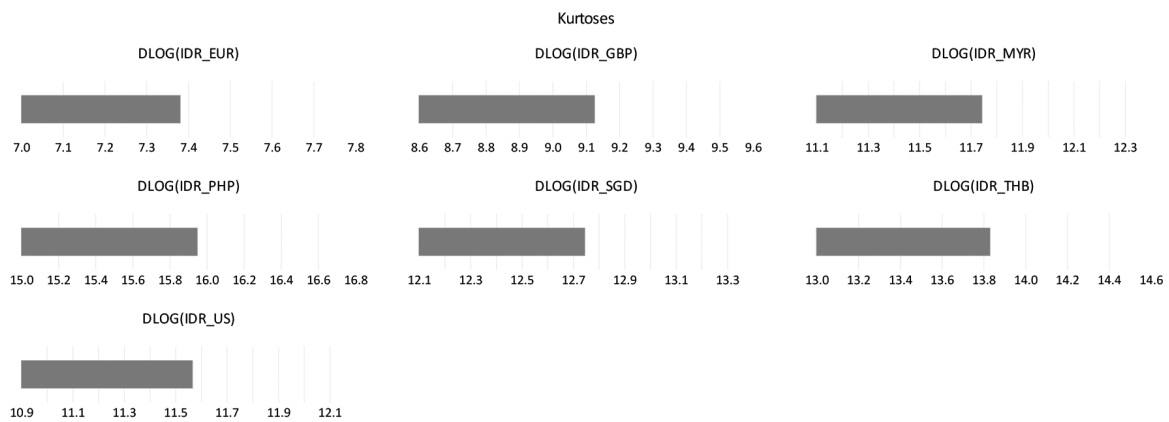
Figure 5. Kurtosis evolution of the 7 exchange rates,
in the period from September 3, 2018 to October 20, 2020.

Source: Own elaboration.

Since we are in the presence of time successions, we should study the stationary nature of the series relating to the 7 exchange markets under analysis. To this end, we used the tests of unitary roots in Hadri panel (2000), Levin, Lin, and Chu (2002), which postulate null hypotheses contrary to the intersections of unitary root tests in panel show the temporality of the time series, in the first differences, that is, we are facing a white noise (average = 0; constant variance) (see tables 1 and 2).

Table 1. Hadri stationary test (2000) applied at 7 exchange rates
from September 3, 2018 to October 20, 2020.

Method			Statistic	Prob.**
Hadri Z-stat			-1.39899	0.9191
Heteroscedastic Consistent Z-stat			-1.57277	0.9421
Intermediate results on D(UNTITLED)				
Series	Lm	Hac	Bandwidth	Note
D(IDR/EUR)	0.0883	4697.410	5.0	259
D(IDR/GBP)	0.0882	9434.111	3.0	259
D(IDR/MYR)	0.0534	152.9859	2.0	259
D(IDR/PHP)	0.0540	0.869032	7.0	259
D(IDR/SGD)	0.0607	1109.453	3.0	259
D(IDR/THB)	0.1051	3.461144	4.0	259
D(IDR/US)	0.0965	3377.255	1.0	259

Note: ** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Source: Own elaboration.

Table 2. Levin, Lin, and Chu stationary test (2002), applied at 7 exchange rates,
from September 3, 2018 to October 20, 2020.

Method			Statistic		Prob.**		
Levin, Lin & Chu t*			-48.0510		0.0000		
Intermediate results on D(UNTITLED)							
	2nd stage	Variance	HAC of		Max	Band-	
Series	Coefficient	Of Reg	Dep.	Lag	Lag	Width	Note
D(IDR/EUR)	-0.98905	4612.6	256.02	0	15	46.0	258
D(IDR/GBP)	-1.02417	9382.0	326.72	0	15	62.0	258
D(IDR/MYR)	-0.92568	131.23	8.3704	0	15	31.0	258
D(IDR/PHP)	-0.88679	0.9569	0.0281	0	15	94.0	258
D(IDR/SGD)	-0.93855	980.30	49.692	0	15	46.0	258
D(IDR/THB)	-0.91514	3.2232	0.1254	0	15	75.0	258
D(IDR/US)	-0.89918	3026.7	130.75	0	15	55.0	258
	Coefficient	T-Stat	SE Reg	mu*	sig*		Note
Pooled	-0.93950	-40.096	1.001	-0.509	0.740		1806

Note: ** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Source: Own elaboration.

Table 3 shows the results of the *Detrended Fluctuation Analysis (DFA)* exposure for the IDR/MYR (Indonesia-Malaysia), IDR/PHP (Indonesia-Philippines), IDR/SGD (Indonesia-Singapore), IDR/THB (Indonesia-Thailand), IDR/GBP (Indonesia-UK), IDR/US (Indonesia-US), IDR/EUR (Indonesia-Euro/Europe) exchange markets. In the Pre-Covid period we can see that the random walk hypothesis is rejected, namely at the IDR/MYR (0.61), IDR/SGD (0.60), IDR/US (0.59), IDR/THB (0.56), IDR/EUR (0.55), IDR/GBP (0.54), except for the IDR/PHP pair (0.45) which evidences anti persistence. Already in the Covid period, we have noticed that persistence increased significantly, as presented, IDR/EUR (0.82), IDR/PHP (0.81) IDR/SGD (0.80), IDR/US (0.80), IDR/MYR (0.78), IDR/THB (0.71), IDR/GBP (0.62). These findings show high levels of arbitrage, i.e., investors will be able to obtain anomic profitability without

incurring the additional risk, which could jeopardize the implementation of efficient portfolio diversification strategies due to market imbalance. These results are corroborated, in part, by the authors Palma and Sartoris (2016), Olufemi et al. (2017) who tested the market efficiency hypothesis (HME) in several foreign exchange markets, showing that markets show some predictability due to the sharp level of arbitrage.

Table 3. DFA exponent for return.
The values of the linear adjustments for αDFA always had $R^2 > 0.99$

Index	EXPOnent DFA (Before-Covid)	EXPONENT DFA (Covid)
IDR.MYR	$0.61 \cong 0.0038$	$0.78 \cong 0.0072$
IDR.PHP	$0.45 \cong 0.0274$	$0.81 \cong 0.0065$
IDR.SGD	$0.60 \cong 0.0029$	$0.80 \cong 0.0148$
IDR.THB	$0.56 \cong 0.0031$	$0.71 \cong 0.0079$
IDR.GBP	$0.54 \cong 0.0012$	$0.62 \cong 0.0114$
IDR.US	$0.59 \cong 0.0031$	$0.80 \cong 0.0044$
IDR.EUR	$0.55 \cong 0.0026$	$0.82 \cong 0.0242$

Note: The hypotheses are: $H_0\alpha = 0.5$ and: $H_1\alpha \neq 0.5$.

Source: Own elaboration.

5. CONCLUSION

The general conclusion to be withheld and sustained in the results obtained, through the tests carried out with econometric and mathematical models suggest that these exchange markets have high levels of integration, which may question the diversification of portfolios efficiently. In corroboration, through the *DFA* model, we found that the exchange markets analyzed, present signs, mostly, of (in) market efficiency, in its weak form. This situation has implications for investors, since some profitability can be expected, creating opportunities for arbitration and abnormal income, contrary to the assumptions *of random walk* and informational efficiency. To conclude, the global pandemic of 2020 affected the memory properties of these foreign exchange markets; the authors suggest that the implementation of strategies for diversifying efficient portfolios in these markets may be questionable. These findings also make room for regulators in these markets to take steps to ensure better information between these markets and international markets.

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THE IMPACT OF TRADE LIBERALIZATION
BETWEEN UKRAINE AND EU ON TRADE AND INVESTMENT

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Abstract: *The benefits and costs of the implementation of the Deep and Comprehensive Free Trade Area (DCFTA) between Ukraine and the EU have been studied. The study aimed to find out to what extent the implementation of DCFTA has helped increase exports and attract foreign direct investment into Ukraine's economy. A comparison method was used to conduct the study. The period of implementation of the DCFTA (2016-2020) was compared with the period before the implementation of the DCFTA (2010-2014). Due to trade liberalization, exports of Ukrainian goods to the EU and imports of goods from the EU to Ukraine have increased. Trade liberalization has not contributed to further attracting foreign direct investment from the EU to Ukraine's economy. The urgent task of the Government of Ukraine is to create a business regulatory environment according to European standards and protect foreign investment.*

Keywords: *Deep and Comprehensive Free Trade Area, Exports of goods, Imports of goods, Foreign direct investment, Ukraine, European Union.*

1. INTRODUCTION

In January 2021, five years have passed since the beginning of the creation of a Deep and Comprehensive Free Trade Area between Ukraine and the EU (DCFTA). According to Article 25 of the Association Agreement between Ukraine and the EU, the DCFTA is established within 10 years (Association Agreement, 2014). Also, according to Article 481 of the Association Agreement between Ukraine and the EU, five years is a sufficient period to review the positive effects and negative consequences of the DCFTA. Five years is also sufficient to review the terms of trade liberalization for goods (Article 29 of the Association Agreement). One of the main goals of the DCFTA is to intensify bilateral trade and attract foreign direct investment. Ukraine's economy today is small and open. Its growth rate largely depends on export activities. After the closure of traditional markets in the CIS countries, the need to open new markets has become particularly urgent.

Ukraine needs to increase exports faster than to increase imports. During 2010-2019, the trade balance was negative for Ukraine. In commodity trade, the negative balance averaged $8 billion per year, and in trade in goods and services - $2 billion. In addition, Ukraine's economy has a high level of import dependence. During 2010-2019, the ratio between imports of goods and services and GDP averaged 0.53.

Attracting foreign direct investment is important for Ukraine's economy. Today their volumes are insignificant. In terms of the number of foreign direct investments per capita, Ukraine ranks one of the last in the region. In 2019, this figure was $1117 for Ukraine (United Nations Conference on Trade and Development, 2020). For comparison, for Moldova it was $1198, for Belarus - $1544, for Romania - $4979. For the countries of Eastern Europe this indicator increased during 2010-2019, but for Ukraine it decreased.

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The study aimed to find out to what extent the formation of Ukraine's DCFTA with the EU has helped increase exports and attract foreign direct investment to Ukraine's economy.

2.   METHODOLOGY AND DATA

A comparison method was used to conduct the study. The period before the beginning of the formation of the DCFTA (2010-2014) was compared with the period of formation of the DCF-TA (2016-2020). During the first period, the factor of liberalization of trade relations between Ukraine and the EU was absent. During the second period, factor of liberalization acted. A set of comparative indicators was used for comparison. In addition to comparative analysis, the method of averages, the method of seasonal smoothing of time series, and factor analysis were used.

The information bases of the study were: 1) statistical data of the State Statistics Service of Ukraine; 2) the United Nations Population Fund; 3) the United Nations Commodity Trade Statistics Database (UN COMTRADE); 4) Association Agreement between the European Union and its Member States, of the one part, and Ukraine, of the other part.

3.   RESULTS

Due to trade liberalization, exports of Ukrainian goods to the EU have increased. If during 2010-2014 exports averaged $16.3 billion per year, during 2016-2020 it increased to $18.1 billion. This happened in the conditions of Ukraine's loss of a part of the territory with great export potential (Donbass region, Crimea).

Exports increased for most large product groups (HS 2-digit code). Exceptions were only goods produced in Donbass region (iron, steel, chemical products, coal and coke). During 2010-2014 Donbass region was the largest exporter of goods among the regions of Ukraine. The share of exports of this region averaged 29% (State Statistics Service of Ukraine, 2020). After the loss of part of Donbass, the share of exports decreased to 11%. Also due to the lack of raw materials and investments, exports of oil products and fertilizers to the EU decreased. If during 2010-2012 the exports of oil products to the EU averaged $445 million per year, in 2016-2018 - $129 million. Similarly, the exports of fertilizers during 2010-2014 averaged $170 million per year, and during 2016-2020 - $60 million.

Exports of the most competitive Ukrainian goods to the EU have increased. In the EU market, such goods are: corn (HS 4-digit code - 1005), sunflower oil (1512), iron ore (2601), carbon steel semi-finished products (7207), insulated wires (8544). Exports of corn, sunflower oil and insulated wires increased after liberalization. Exports of carbon steel semi-finished products and iron ore decreased due to the loss of production capacity in Donbass.

The diversification of supplies of the most competitive goods within the EU has improved. If in 2011 large supplies of corn (more than $10 million per year) came to 7 countries, in 2019 - to 12 countries. Similarly, sunflower oil in 2011 was exported to 9 countries, and in 2019 - to 11 countries. Insulated wires in 2011 - up to 7 countries, and in 2019 - up to 9 countries.

Due to liberalization the geographical diversification of Ukrainian exports has improved. During 2010-2014, the largest importers of Ukrainian goods were Italy, Poland, Germany, Hungary and Spain. Exports to each of these countries exceeded $1 billion. The total share of these 5

countries in Ukrainian exports was 55%. After liberalization, the share of these countries in exports decreased to 54%. The share of other EU member states increased by 1%.

The share of EU-15 countries in exports to the EU has increased. During 2010-2014, the share of these countries averaged 54%. After liberalization during 2016-2020, it increased to 56%. Exports to the Netherlands (by 81%), Luxembourg (by 58%), Ireland (by 49%) and Denmark (by 46%) increased the most.

The commodity structure of exports to the EU has become more diversified. The number of commodity groups with large volumes of exports (more than $10 million per year) has increased in exports. During 2016-2020, the volumes of exports of the following product groups (HS 2-digit code) became large: "03 - Fish and crustaceans", "11 - Products of the milling industry", "49 - Printed books", " 56 - Wadding"," 96 – Miscellaneous manufactured product". Exports of product group "88 – Aircraft and spacecraft" became small. Exports of 30 product groups doubled or raised even more. Thus, the European market has opened up to a wider range of Ukrainian producers.

Tariff rate quotas have helped increase exports to the EU. The Association Agreement established tariff quotas for 36 product groups. For 29 product groups the quotas were larger than the actual volumes of imports before liberalization, and for 7 product groups - smaller. After the introduction of tariff quotas, exports of the vast majority of product groups increased. And the increase was significant. For 28 product groups, exports increased 2 or more times. The decrease in exports to the EU was recorded only for two product groups that were subject to tariff quotas.

During the first 5 years of formation of the DCFTA, not all product groups managed to use the opportunities of duty-free trade in the amount of tariff quotas. In addition to the two product groups for which exports decreased, quotas for another 22 product groups were not fully used during the year. This was due to three main factors: non-tariff barriers from the EU, low demand from the EU, and insufficient supply from Ukrainian producers. For each product group, the impact on exports of these three factors had its own features.

After the beginning of the formation of the DCFTA, the exports of furniture to the EU increased 3 times. It is important for Ukraine to increase the share of consumer goods in exports. Consumer goods have a wider market. It was possible to increase furniture exports due to EU demand and high-quality supply from Ukrainian manufacturers. The rate of import duty on furniture is free, and non-tariff barriers do not hinder exports. A wide range of furniture is exported to the EU. The furniture is exported to both Eastern and Western Europe. The share of finished products predominates in exports. If during 2011-2013 the share of finished furniture was 42% (other products were parts of furniture), in 2016-2018 the share of finished furniture increased to 52%.

Liberalization has helped increase imports of goods from the EU to Ukraine. If before liberalization during 2010-2013, imports increased by 40%, then with the beginning of the formation of the DCFTA during 2016-2019 it increased by 46%. If during 2010-2013 a decrease in imports to Ukraine was recorded for 19 commodity groups according to HS 2-digit code, during 2016-2019 there were only 8 such groups.

During 2016-2020, the average annual imports of goods from the EU were lower than during 2010-2014 by 8%. This was due to the loss of part of Ukraine's territory, as well as the general

decline in industrial production. However, for 37 product groups out of 95, the average volumes of imports during 2016-2020 were higher than during 2010-2014.

The European Union has not fully used the opportunity to export products to Ukraine under tariff quotas. The tariff quota "Pork" was used by European producers in 2016 by 14%, and in 2017 - by 26%. The difficult epizootic situation in the European region, namely outbreaks of infectious animal diseases (swine flu, African swine fever, etc.), has become an obstacle. Similarly, the quota "Sugar" in 2016 was used by 70%, in 2017 - by 3%, in 2018 - by 3%. Ukraine's domestic market of sugar remains closed to imports. This situation is unfavorable for consumers. Lack of competition does not allow to reduce the price in the domestic market. Local producers have no additional incentives to increase production efficiency.

The liberalization of trade with the EU has not led to a large expansion of imports in the domestic market of Ukraine. Seven most vulnerable product groups were selectively examined - confectionery (1905), carpets (5703), clothing (6110, 6115, 6204, 6212), footwear (6403). These sectors had the highest tariff protection (10-12%) before liberalization. Protection was abolished immediately after the formation of the free trade zone.

No excessive expansion of imports was recorded by product groups (1905, 5703, 6110, 6115, 6204, 6212 and 6403). In one commodity group (6110) the volumes of imports during 2016-2018 decreased. In three product groups (6115, 6212, 6403) the growth rate of imports during 2016-2018 was not higher than during 2011-2014. And only in three product groups (1905, 5703, 6204) the growth rate of imports accelerated somewhat. This acceleration did not significantly worsen the dynamics of domestic production.

The most noticeable was the expansion of imports in two product groups: motor cars (8703) and wine of fresh grape (2204). These product groups were protected by the transition period of 10 and 5 years, respectively. If during 2011-2013 imports of cars have increased by 15%, then after liberalization during 2016-2018 imports have increased 2.7 times. Large volumes of cars from the EU were smuggled into Ukraine. These were cars with foreign registration in the transit mode or the temporary importation mode. According to the State Fiscal Service of Ukraine at the end of 2018 in Ukraine there were 640 thousand cars with foreign registration. That is, during 2016-2018, averages of 213 thousand cars were imported to Ukraine in the transit mode or the temporary import mode per year. For comparison, in the normal mode of imports in 2016 - 52 thousand units were imported, in 2017 - 98 thousand units, in 2018 - 142 thousand units.

Imports of wine of fresh grape from the EU have also increased significantly. If during 2011-2013 these imports were at the same level, during 2016-2018 imports of wine of fresh grape increased by 36%. At the beginning of 2021, the prices for European wines in supermarkets of Ukraine were practically equal to the prices for wines of Ukrainian production. This is especially true for wines produced in Spain.

The imports of European made cars on the Ukrainian market have significantly affected domestic production. During 2010-2013, Ukraine produced an average of 72,000 cars a year. During 2016-2019, only 6,000 cars were produced per year. This was mainly a large-scale assembly of Skoda cars with a minimum level of localization.

After liberalization, the negative balance of trade in goods with the EU for Ukraine became smaller. Before liberalization in 2010-2013, the negative balance averaged $8.3 billion per year. After the start of liberalization during 2016-2019 the negative balance averaged $3.6 billion. This can be explained by the action of two main factors: 1) the relatively slow growth of the Ukrainian economy, and consequently the weak demand for investment and consumer goods; 2) competition from Chinese goods.

Imports of Chinese goods to Ukraine increase absolutely and relatively. This is especially true for consumer goods. The growth rate of imports from China is higher than the growth rate of imports from the EU. During 2010-2013 imports from the EU increased by 40%, from China - by 68%. After the start of liberalization, during 2016-2019, imports from the EU increased by 46%, from China - by 96%. During 2016-2019, China increased its imports to Ukraine in the vast majority of product groups. During 2016-2019, the share of the EU in imports of goods decreased from 44% to 41%, while the share of imports from China increased from 12% to 15%. In 2019, China was the largest importer of goods to Ukraine; Germany - the largest importer from the EU - was in third place. In 2019, for 19 product groups (HS 2-digit code) out of 95 Chinese imports were higher than imports from the EU.

The increase in trade between Ukraine and the EU has been hampered by certain artificial barriers. In particular, this applies to the introduction of a moratorium (by Ukraine, in 2015) on the exports of timber and lumber in raw form (rough logs). The vast majority of these exports came to the EU. The moratorium was introduced for 10 years. It was a forced measure aimed at protecting forests from predatory, unrestricted logging. Local woodworking companies benefited from the moratorium. Well-known international companies such as Kronospan have invested in the Ukrainian woodworking industry. However, the moratorium did not radically solve the problem of predatory logging. This is evidenced by reports from the British non-governmental company Earthsight (*Flatpacked Forests*, 2020). Radical reform of the State Agency of Forest Resources of Ukraine and the introduction of a civilized timber market are needed.

Trade liberalization has not helped to attract additional foreign direct investment from the EU into Ukraine's economy. If during 2010-2013 investments increased by 30%, during 2016-2019 they increased by only 18%. The absolute amount of investment also decreased. If during 2010-2014 foreign direct investment averaged $38.0 billion, and then during 2016-2020 - averaged $35.1 billion. This can be explained in part by the slower growth of the economy after liberalization, as well as the loss of control over part of the territory.

EU investment in Ukraine has become more diversified. The Netherlands, Germany, Austria and France were the largest investors in Ukraine before liberalization and remained so after the formation of the DCFTA. However, before liberalization, the total share of these countries in investment was 47%, and after the formation of the DCFTA it decreased to 41%. During 2016-2020, foreign direct investment increased from Luxembourg (3.0 times), Slovakia (2.8 times), Slovenia (2.2 times), and Croatia (2.1 times). The Netherlands, as the largest investor in the Ukrainian economy, also increased direct investment by 25%.

The DCFTA did not help reduce the share of offshore companies in foreign direct investment. During 2016-2020, the share of offshore companies registered in Cyprus in EU FDI in Ukraine was 41%. For comparison, during 2010-2014 their share was 34%. These are mainly investments of Ukrainian entrepreneurs who avoid taxation. These FDI do not contribute to the moderniza-

tion of the economy and the transition to European standards (Adarov & Havlik, 2016). In Eastern Europe, the share of offshore companies in investment is small, and the share of companies from Western Europe is large. In particular, in Poland the share of EU-15 countries in FDI in 2016 was 86%, in Romania - 80%, Slovakia - 70%, in Serbia - 64% (Adarov & Havlik, 2016).

According to the Association Agreement, Ukraine has undertaken to create a regulatory environment according to European standards. This is the main prerequisite for increasing European investment in the Ukrainian economy. Tax levels, political stability, a favorable macroeconomic environment, prospects for economic growth and increased household incomes are also important. In order to facilitate the attraction of foreign direct investment in 2016, the Ukraine Investment Promotion Office (UkraineInvest) was established under the Cabinet of Ministers of Ukraine. It was a permanent advisory body. In 2018 this advisory body received the status of a state institution.

Even before the establishment of the DCFTA, well-known European companies launched production activities in Ukraine: Carlsberg, Anheuser-Busch InBev, Bell Group, Electrolux, Fisher Sports, Nexans, Danone Groupe, Groupe Lactalis, Unilever, Pfeifer&Langen, and Pulp Mill Holding. These companies have mastered European production standards. There are no technical barriers to exporting their products to the EU market. Using Ukraine's cheap resources and the preferential treatment created by the DCFTA, they have the potential to increase exports to the EU. Moreover, after 2016 the CIS market for their products is closed.

The potential of European companies to increase exports to the EU was only partially used. Nexans increased its exports by 34%, while Fisher Sports exports decreased by 6%. Exports of beer after liberalization increased by 77%. However, the share of Ukrainian beer in exports to the EU is insignificant. In particular, in 2019 Ukraine exported $0.27 million worth of beer to Germany (United Nations, 2020). Mexico has also a free trade area with the EU. In 2019 Mexico exported $6 million worth of beer to Germany. Ukraine exported $0.04 million worth of beer to Italy. Mexico exported $34 million worth of beer to Italy in 2019.

Export of dairy products to the EU also remained minimal after liberalization. The French company Bel has production facilities in the city of Shostka. These are the only production facilities of this company in the CIS countries. During 2011-2013, the export of Ukrainian cheeses to the CIS countries averaged $387 million per year. In 2016-2018, exports decreased to $23 million on average per year. Proportionately, the exports of products of the Bel plant in Shostka to the CIS countries have decreased. However, exports to the EU were reoriented to a minimum. In particular, in 2019, Ukrainian cheese (0406) was not exported to Germany, France or Italy at all. At the same time, cheese exports from New Zealand amounted to $2 million. New Zealand has no preferences in trade with the EU.

The French companies Danone Groupe and Groupe Lactalis only partially took advantage of the preferential treatment. In particular, in 2018, the duty-free quota "Milk, cream, condensed milk and yogurt" was used by 6%, and the quota "Powdered milk" - by 35%. Thus, EU companies that are focused on the CIS market have made minimal use of the benefits of preferential trade with the EU. The same applies to multinational corporations from other countries that carry out production activities in Ukraine. The American company PepsiCo is engaged in the production of dairy products in Ukraine. Transnational corporations, which are mainly focused on the EU market (Nexans, Fisher Sports, Electrolux, etc.), have taken advantage of the preferential regime of the DCFTA.

After the introduction of the DCFTA of Ukraine with the EU, production from customer's materials was intensified. These activities were launched by EU companies long before the formation of the DCFTA. It mainly concerned the production of textiles and footwear of European brands at Ukrainian enterprises. All raw materials and equipment were imported from the EU. The vast majority of manufactured products were exported to the EU. During 2010-2013, exports to the EU of textiles, knitwear and footwear (HS 2-digit code - 61-64) decreased by 2%. After liberalization, during 2016-2019, exports increased by 19%. The increase occurred in all product groups.

Pursuant to Article 29 of the Association Agreement, after 5 years of the establishment of the DCFTA, the preferential terms of trade may be revised. The EU has opened 36 tariff quotas for Ukraine. Some of these tariff quotas were used for less than 1% over five years (mushrooms, processed butter products, lamb, etc.). It is advisable to reduce the volume of these quotas and increase the volume of quotas for products that are in high demand in the EU market (honey, corn, processed sugar products, processed milk cream products, etc.). The process of amending trade preferences began in July 2019 with the conclusion of the Agreement in the form of an exchange of letters between Ukraine and the EU on poultry meat and processed poultry meat (Council Decision, 2019).

4. CONCLUSION

The formation of the DCFTA between Ukraine and the EU has contributed to the development of Ukrainian exports. Exports to the EU have increased and become more diversified. The number of Ukrainian companies exporting products to the EU has increased. Further increases in exports were hampered by relatively small values of tariff quotas. Exports of 11 product groups were 2 or more times higher than the tariff quota. Technical barriers to trade and sanitary and phytosanitary measures also remain significant obstacles to increasing exports.

Trade liberalization has not helped attract foreign direct investment from the EU to Ukraine. The share of FDI of offshore companies remained large. The creation of a favorable investment climate and the introduction of European standards of business regulation remains an urgent task.

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POLICY FOR BALANCED REGIONAL DEVELOPMENT: POLICY SETTINGS ON REGIONAL LEVEL – EXPERIENCE AND PRACTICE

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Abstract: *Legally defined regional development is the process of identifying, promoting, managing and exploiting the development potential of the planned regions and areas with specific development needs. The policy of regional development is a system of goals, instruments and measures aimed at reducing regional disparities and achieving balanced and sustainable development of the Republic of North Macedonia. Following the adoption of the Law, activities and measures for its full implementation were carried out both at the central and regional level, creating necessary pre-conditions for achieving the policy objectives of balanced regional development: reduction of disparities in development levels between the eight planning regions, and reduction of the disparities in development levels within the planning regions. Experiences that are the result of more than twelve years of implementation of measures and activities to support balanced regional development allow identification of the main factors that enhanced successful implementation of regional development policy on a regional level in North Macedonia, at the same time identifying the conditions that constrained it. Both of these groups of factors are important for the answer to the questions: (i) Are the institutions on the regional level functional? and (ii) what should be improved?*

Therefore, this paper aims to give an overview of the institutions in charge of planning and implementation of the regional policy of the Republic of North Macedonia at the regional level – Council for Development of the Planning Regions and Centres for Development of the Planning Regions.

Keywords: *EU regional policy, Regional policy in Macedonia, Centres for Development of the Planning Regions.*

1. THE INSTITUTIONAL FRAMEWORK FOR REGIONAL DEVELOPMENT IN NORTH MACEDONIA

The Law on Balanced Regional Development established eight planning regions (following the NUTS III level) and defines the following policy stakeholders:
- Council for Balanced Regional Development of the Republic of Macedonia;
- Ministry of Local Self-Government (MLS),
- Councils for Development of the Planning Regions, and the following operational stakeholders in the regional development:
- Bureau for Regional Development,
- Centres for Development of the Planning Regions, and
- Units of the Local Self-Government (Official Gazette No 24, 2021, Article 16).

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The framework links the national Council, Ministry of Local Self-Government and the Regional Councils on a policy level, whereas the link between the Centres and municipalities, and the Bureau is established at the operational level.

2. POLICY SETTINGS ON REGIONAL LEVEL – EXPERIENCE AND PRACTICE

2.1. Councils for development of the planning region (RCs)

2.1.1. The Role and the main challenges of the Councils for development of the planning regions in the Republic of North Macedonia

The council for development of the planning region is established for each planning region. The constitutive session of the Council for development of the planning region is convened by the Mayor of the unit of local self-government with the largest population in the planning region. Members of the Council for development of the planning region are the Mayors of the units of local self-government which are part of the planning region.

With the new Law for Balanced Regional Development from January 2021, Article 21, the representatives from the civil society and business organisations will become members of the RCs (one representative from the citizen associations and one representative from the business community), without the right to vote latest by the end of 2021.

The upgraded structure of the Council might contribute to:
- more regular and productive meetings,
- a stronger regional focus of the activities,
- adequate representation of regional priorities,
- monitoring and evaluation of implemented projects, as well as solid and sustainable communication with the private and civil sector.

To ensure adequate representation of regional priorities, monitoring and evaluation of implemented projects, and solid and sustainable communication with the private and civil sector, it is necessary to include voting members in the Councils for development of the planning regions from those two sectors, to a minority of at least 30%.

2.2. Centres for development of the planning regions

2.2.1. The role of the Centres for development of the planning region in the Republic of North Macedonia

The Centres as the main operational bodies responsible for implementing the policy of balanced regional development represent a fundamental link in the regional development processes in the country.

The tasks of the Centres are highly complex. On the one hand, they are responsible for the planning of development activities at the regional level, i.e. preparation of Programmes for Regional Development, and on the other hand, they are responsible for preparation and implementation of all projects financed by different sources, but mostly from state Programmes for Balanced Regional Development.

Ideally, the Centres would have to be responsible for the spreading and fostering of the regional culture in the regions, for building cooperation within and between regions in the country and beyond, to nourish the regional policy pathway thus leading the region towards innovation, research and development, and encouraging all possible forms of cooperation and association (clusters, public-private partnerships, etc.) (Karaeva, Serafimovska, 2019, p.101). The regions have to become attractive places for investors, both domestic and foreign. And of course, to apply for projects, as until now, but not to engage the entire workforce in projects as it is currently done because the number of employees and the engagement in the projects requires so.

2.2.2. The effectiveness of CRDs

2.2.2.1. Methodology of analysis

The analysis was prepared based on data collected with respect to the operational costs of the Centres for development of the planning region (CRDs) and the funding available for implemented projects.

The collected information was analysed for each of the regions separately, followed by comparative analysis to determine differences between the regions.

The findings from 2019 were also compared to those of 2018. The cost-effectiveness of the CRDs was also prepared by calculating the projects-operational costs ratio.

2.2.2.2. Operational costs of CRDs

The total amount of funds received by the CRDs in all 8 planning regions for covering operational costs in 2019 was 39.163.128 MKD (636.798 EUR)(Karaeva, 2020, p.8).

2.2.2.3. Implemented projects through CRDs

In 2019 the CRDs of the 8 planning regions have implemented a total of 111 projects. The total value of implemented projects in all 8 planning regions in 2019 was 12.8 Mil EUR, (Karaeva, 2020, p.10).

2.2.2.4. Cost effectiveness of CRDs

By using the data for operational cost of the CRDs and the data for the implemented project, analysis can be made in terms of cost effectiveness by each of the CRD and cumulative for all planning regions for the period 2009-2019. For this period the most successful CRD from all 8-planning regions was the Centre for development of the East planning region, which has managed for every MKD spent for covering costs for its operations to secure 30 MKD investments in projects (Karaeva, 2020, p.14).

3.   CONCLUSION

The Mayors overlook the regional dimension of development, are prone to favour projects of benefit to own municipality; they lack time and capacity to do proper monitoring and evaluation of the regional development efforts and have very limited interest in involving the partners from the private and civic sector.

CRDs should continue applying for projects, in a more efficient mode, restricting the efforts of the team of the Centre towards leading and facilitation of the process by inclusion of a multitude of stakeholders and supporters (CSOs, citizens, consultants, businesses etc.). CRDs should also be responsible for building cooperation within and between regions in the country and the cross-border neighbourhood.

The successful functioning of the Centres and the continuous strengthening of their capacities to mobilize financial resources means paving the way for a more dynamic regional development.

Networking

The private and civic sectors are marginalized except on case-by-case basis when in bigger projects a partner from those sectors is required. But even then, the cooperation is for that project only and not longer-term cooperation.

Project implementation

The total value of projects implemented through 8 CRDs from their establishment in 2009/2010 until now has increased by more than 19 times. (from 965.903 EUR in 2009 to 12,8 Mil EUR in 2019) (Karaeva, 2020, p.13). During the period 2018 – 2019, 6 CRDs have increased the value of implemented projects by more than 100%. The structure of project financing in all regions is very different. While some of the regions are still mainly focused on implementing projects financed by the central budgets via MLS/BRD, others are showing impressive results achieved through the use of other sources of financing such as international donors and other national ministries. The East, Southeast and Northeast planning region differs from the other regions and achieves the best results according to: a) structure of funds for project implementation (predominantly donor-funded); b) highest volume of implemented projects with continuous growth over the period 2009-2016 and c) higher project-costs ratio. The ratio of the effectiveness of CRDs: operational costs / implemented project is constantly increasing. The ratio has increased from 4.8 in 2010 to 12.6 in 2018 and to 20,4 MKD in 2019 (Karaeva, 2020, p.14). For 2019, the most successful CRD from all 8-planning regions is the Centre for development of the Southeast planning region, which has managed for every MKD spent for covering costs for its operations to secure 36.2 MKD investments in projects.

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DEVELOPMENT OF REGIONAL DIFFERENCES
OF SLOVAK HIGHER TERRITORIAL UNITS IN YEARS 2009-2018

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Abstract: *The establishment of the regional level in Slovakia was one of the conditions for our accession to the European Union. Its real creation took place in the Slovak Republic two years before the accession to the European Community. Despite the efforts of the Cohesion Policy of the European Union to reduce regional disparities across the member states of the EU, at the regional level of the Slovak Republic, it is possible to constantly monitor differences in the development of the regions. Their elimination is the main objective of Slovak regional policy. The representatives of the national level use the European Union's support policy to gradually reduce or eliminate the regional disparities. This policy offers the possibility of drawing financial resources from several funds. The indicator of differences in regional development is the regional gross domestic product per capita. By monitoring and analysing its evolution over several years, it is possible to see whether disparities at the regional level are being reduced or, on the contrary, are deepening.*

In the following article, to determine the current state of regional differences, we present the development of regional disparities of Slovak higher territorial units in 2009-2018 through monitored data on regional gross domestic product per capita at current prices.

Keywords: *Regional differences, Regional development, Regional level, Regional gross domestic product.*

1. INTRODUCTION

The efforts of the Central and Eastern European countries to catch up with the economic standards of the original members of the community on the European continent have become a relatively debated topic since they acceded to the European Union. The process of real convergence has become the subject of attention again when some post-communist states had the interest to join the monetary union. The level of GDP per capita at the national level has become an indicator of convergence. In the context of the European Union cohesion policy, the aim is the effort to gradually reduce and close all types of regional disparities between regions in its Member States, from economic, through social, to territorial differences. Third of the EU budget of 27 countries of the European Community goes to the elimination of them.

By closing the gap, the EU is pursuing equal living standards for its approximately 437 million people. The financial instruments of the EU's solidarity regional policy are several funds. The three mains are the European Regional Development Fund, the Cohesion Fund, and the Euro-

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pean Social Fund. Besides, it is possible to draw money from the European Agricultural Fund for Rural Development and the European Community initiatives Interreg, Urban, Leader, and Equal. The European Community's regional policy[4], as it's the most important investment policy, seeks to improve the quality of life and promote the competitiveness of the regions through the new jobs creation or regional economic growth.

In the case of Slovakia, the first years, after the transformation of the political and economic system, were not characterized by significant interregional differences due to the absence of a regional level. In the Constitution of the Slovak Republic from 1992, the creation of a regional level was planned. Its real establishment did not occur until the 1st of January 2002. In Slovakia, eight higher territorial units were established, characterized by regional differences from the very beginning. The first group consisted of regions with a predominantly urban structure. Other were regions with a higher share of the population in rural settlements. The second group was also associated with other negative characteristics, including higher unemployment, a lower level of the population´s educational level, or unsatisfactory and missing transport infrastructure.

In her recent study, Júlia Karasová analysed the division of regions into two groups, in terms of the time evolution of regional disparities, dividing Slovakia into two subregions by an imaginary line. The dividing line of the southwest-northeast direction included the Bratislava, Trnava, Trenčín, and Žilina regions in the first group of higher territorial units, calling them dynamically developing regions. It specified them as the regions using foreign investment or structural funds, as regions with potential in the infrastructure, with a favourable age and educational structure of human resources, below-average unemployment rate, efficient regional economy, and advanced tourism. The author placed the remaining four self-governing regions in the second group, equally arithmetically represented. Within the mentioned second subregion, it is divided into two subgroups. According to Júlia Karasová, the first of them consists of the regions of the stagnant Prešov and partially developing Košice region. These regions are characterized by a firm core area with a regional city, also developing economic entities, higher unemployment rates, and a concentration of marginalized Roma communities. At the same time, these are regions characterized by an above-average level of risk of poverty, in which there is also a lack of adequate transport infrastructure. The second subgroup of moderately developed regions includes the Banská Bystrica and Nitra regions, which, according to it, are characterized by relatively low performance of the regional economy, weak connection to the multimodal transport network, and, as in the case of the Prešov and Košice regions, the concentration of marginal population groups. (Bardovič et al., 2018) We also work with the above study dividing the higher territorial units into two groups in our paper. We will take a closer look at the truthfulness of this regional division into two equally large groups. The look is based on the regional GDP of self-governing regions and their division according to the statistical method of average value into two groups.

Inequalities between Slovak regions are among the largest in terms of regional disparities in the Member States of the European Union. Slovakia is the country with the fourth most significant

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[4]   The European Union's regional policy focuses on five key areas. The first is, above all, the investing in people by promoting access to employment, education, and social inclusion opportunities. The second area is the support for small and medium-sized enterprises, on which the European Community places emphasis. In the third area of support, the EU seeks to make a difference in strengthening the research and innovation through investment and job creation in science and research. Improving the environment through the large investment projects is one of the four main areas of regional policy. The last one is the modernization of transport and energy production, with the accent on innovative transport infrastructure and energy production from renewable sources. (https://europa.eu/european-union/topics/regional-policy_sk)

regional differences in GDP per capita among the Organization for Economic Co-operation and Development members (OECD)[5]. The elimination of regional disparities of The Slovak self-governing regions is, therefore, the target point and starting point of every Slovak government. The governments want to contribute to the reduction of regional differences through the effective use of EU funds. Differences between regions have various causes and tend to have many consequences, social or economic ones. Disparities also have a significant impact on regional development, through which the overall development of Slovakia is determined. Attention, therefore, focuses on finding a suitable model and tools. These tools would contribute to the gradual elimination of disparities. In addition to the national level, the regions themselves are also interested in reducing interregional differences as much as possible. For the needs of regional development, the general strategic documents are adopted. They have the form of economic and social development plans. These strategies coordinate the activities, which support regional development. They also serve as the tool and the condition for drawing financial resources from various funds, European and non-European.

In the Slovak Republic, the higher territorial units represent the regions and characterize the degree between municipal and city self-governments and the central level. By the Nomenclature of NUTS Statistical Territorial Units, the European Union created a strategic framework to assert its regional policy in the member countries. The Slovak self-governing regions represent the NUTS III level in this nomenclature.

2. DESCRIPTION OF RESEARCH AND METHODOLOGY

The paper aims to present the development of regional differences in Slovak higher territorial units. This development is monitored after the adaption of the common European currency until the year 2018. The paper has the ambition to analyse the evolution of regional disparities over ten years. Regional differences can be expressed and quantified through different methods, and various indicators are used to represent them. In general, the regional policy follows up the differences in regional development. The mentioned policy, as a set of tools and measures, seeks ways to eliminate them.

We use the mean value and the Gini coefficient to compare the differences between higher territorial units in the paper. We determined the regions achieving regional gross domestic product per capita above and below the median value. We applied the Lorenz curve and the Gini coefficient to determine the differences in the regional gross domestic product. The obtained data, in tabular and graphical form, are made by the authors.

3. DESCRIPTION OF THE OBTAINED RESULTS

Regarding the use of European Union funds, the regional gross domestic product per capita can be considered as a relevant indicator of the assessment of eligibility or rather unauthorized drawing of European funds. "*Regional gross domestic product per capita is the share of two indicators - regional gross domestic product and the average number of permanent residents*

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[5] The strategic document entitled Vision and Strategy of Slovakia's Development until 2030 was prepared by the Ministry of Investment, Regional Development, and Informatization of the Slovak Republic. This strategy adverts to the differences in regional development that affect the availability of resources to meet the inhabitants' needs. The document cites the Bratislava Region as an example, with 184 % of the European Union average reaching up to 3.5 times higher GDP per capita than in eastern Slovakia, which has 53 % of the EU average. (Vision and development strategy ..., 2020)

in the region." (Matlovič - Matlovičová, 2011, p. 56) The mentioned data is often used for the evaluation of regional disparities. Several experts pointed out its weaknesses, in the form of deformation of this indicator due to the labour attendance phenomena from other regions.

In the following part, we processed the development of regional differences of self-governing regions in the observed period 2009-2018 and graphically represented it through the regional GDP of eight higher territorial units in Slovakia. At the same time, we evaluated the data using several methods.

We graphically monitored the increase in the values of regional GDP of individual self-governing regions per capita in current prices from 2009 to 2018, in Figure 1. We calculated the obtained data, and through the arithmetic average, we gained the national average, which created a dividing line between the regions with higher regional GDP and the regions with lower regional GDP per capita.
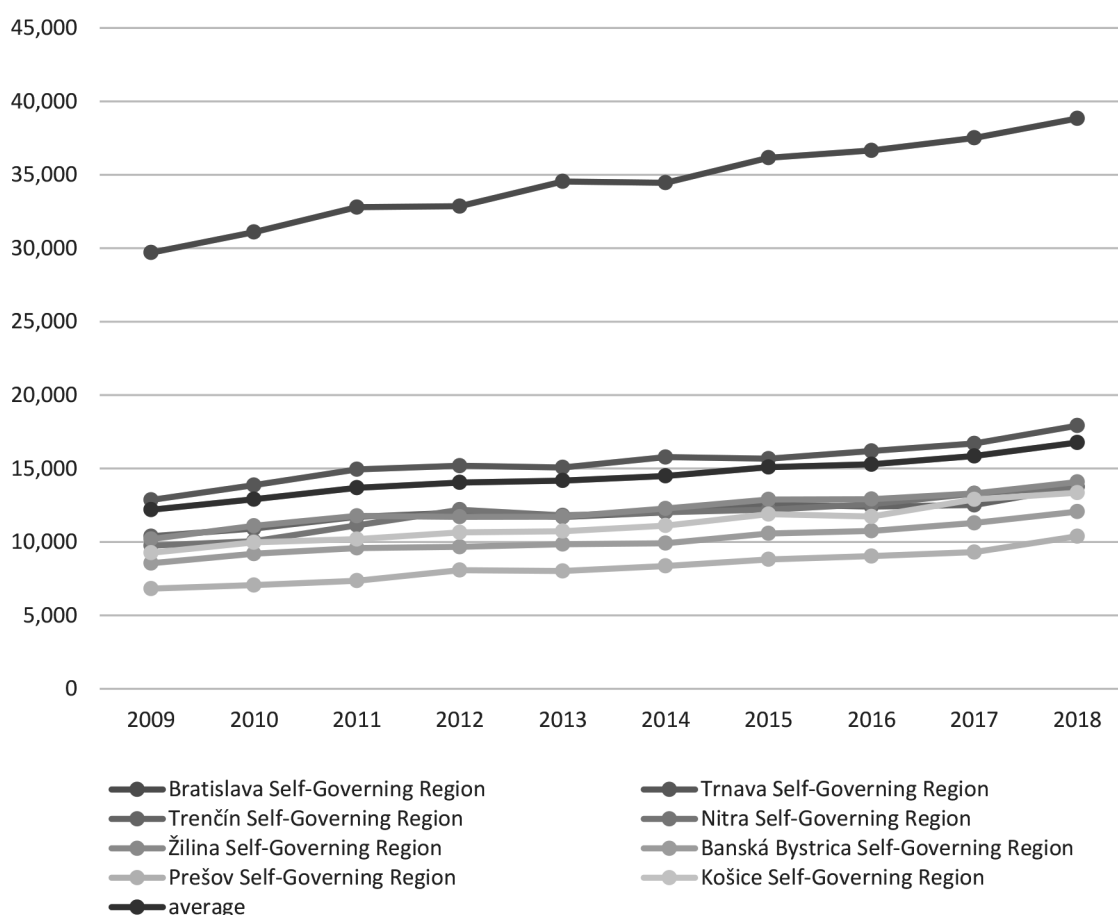
Figure 1. Development of regional GDP per capita at current prices in Slovak higher territorial units during the years 2009-2018

Source: own processing based on data from the Statistical Office of the Slovak Republic.

Based on the processed data, we can state that the Bratislava Self-Governing Region has been above the national average since the beginning of the observed period, followed by the Trnava Self-Governing Region with a larger gap. The remaining six self-governing regions were placed below the national average during the monitored ten years. In the long run, the Prešov Self-Governing Region shows the lowest regional GDP per capita in current prices in the period 2009-2018.

We also compared the obtained data of regional GDP per capita at current prices by using the statistical method of mean value, the median. The median is the mean value that divides the examined statistical set into two equally numerous parts, i.e., in half. One of its advantages is that its determination is relatively simple, and at the same time, the median is insensitive to extreme values.

Using the median, we divided the eight self-governing regions into two equally large groups. The first group includes four counties whose regional GDP is higher than the calculated median of the mean.

Table 1. Distribution of regions according to the median of regional GDP
in the monitored period

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
BSGR	29699	31096	32794	32862	34544	34461	36158	36657	37514	38836
TTSGR	12859	13864	14940	15187	15073	15778	15668	16191	16702	17917
TSGR	10387	10912	11706	12003	11700	12015	12553	12411	12512	13742
NSGR	9749	10052	11135	12189	11805	12029	12200	12572	13293	13769
ŽSGR	10199	11096	11770	11714	11718	12275	12891	12912	13306	14079
BBSGR	8548	9196	9586	9666	9847	9912	10578	10753	11292	12064
PSGR	6820	7058	7360	8076	8017	8360	8807	9036	9308	10389
KSGR	9262	9969	10191	10650	10732	11112	11891	11730	12896	13353
Median	9974	10482	11421	11859	11709	12022	12377	12492	13095	13755

Source: own processing based on data from the Statistical Office of the Slovak Republic.

Legend: BSGR – Bratislava Self-Governing Region
TTSGR – Trnava Self-Governing Region
TSGR – Trenčín Self-Governing Region
NSGR – Nitra Self-Governing Region
ŽSGR – Žilina Self-Governing Region
BBSGR – Banská Bystrica Self-Governing Region
PSGR – Prešov Self-Governing Region
KSGR – Košice Self-Governing Region
- The higher territorial units, which regional GDP is above the calculated value of the median, are marked gray.

Table 1 shows that the mentioned group involved the Bratislava, Trnava, Trenčín, and Žilina Region in 2009. The second group implies the Nitra, Banská Bystrica, Prešov, and Košice Region. The division into two groups was the same until 2011. The change occurred in 2012 when the Nitra Region entered the group of better higher territorial units based on the median value instead of the Žilina Region. This first group was formed by the Bratislava, Trnava, Nitra, and Žilina Region from 2013 to 2014. In 2015, the situation changed again. The first group included the Bratislava, Trnava, Trenčín, and Žilina Region. From 2016 to 2018, the Trenčín Region dropped out of the better half. In addition to the Bratislava, Trnava, and Žilina Region, the Nitra Region joined the group. From the above table, we can see that the regional GDP within individual higher territorial units, except for the Bratislava Region, is beginning to match. The share of the regional GDP of the Prešov Region in the regional GDP of the Trnava Region reached 53% in 2009. In 2018 it already got to the share of 58%. On the contrary, the difference between the Bratislava Region and other regions has been increasing during the period. The share of the regional GDP of the Bratislava Region on the value of the Trnava Region GDP during the entire monitored period moved between two to two and a half times.

In Figure 2, we used the variation range method, based on which we monitored the difference between the region with the highest regional GDP and the region with the lowest regional GDP in the period from 2009 to 2018. The variation range represents the difference between the highest and lowest observed values in the statistical series. It is characterized by ease and speed of calculation and is easy to interpret. Its disadvantages include a relatively large variability depending on the extreme values. The case of extreme values can cause a significant change in the range of variation.

We used the variation range method to compare the amount of regional GDP of the Bratislava Self-Governing Region as a higher territorial unit with the highest regional GDP, with the amount of regional GDP of the Prešov Self-Governing Region with the lowest values of regional GDP in the whole monitored period.
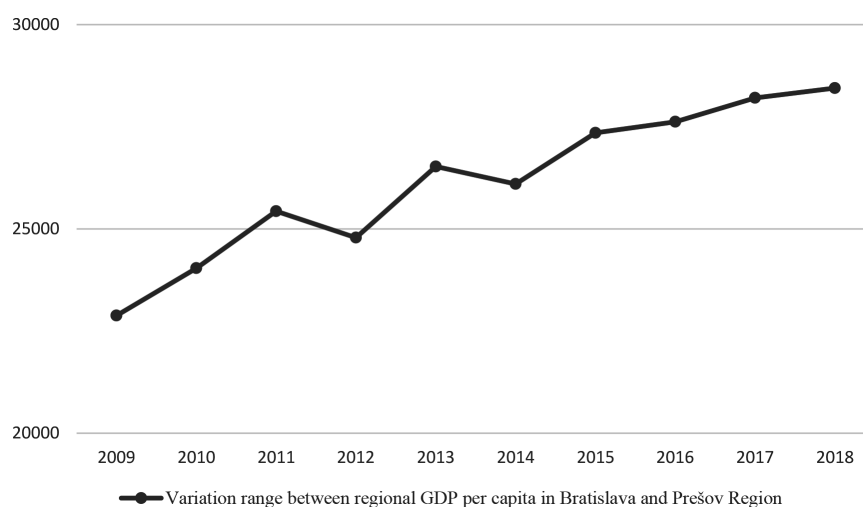
Figure 2. Variation range of regional GDP of higher territorial units in Slovakia
in the observed period 2009-2018
Source: own processing based on data from the Statistical Office of the Slovak Republic.

Based on the processing of the variation range of the regional GDP of the Bratislava and Prešov Region, it can be stated that the development of regional differences between the mentioned regions is continually increasing over ten years, with two small exceptions. In absolute terms, the difference in regional GDP per capita increased over the period under review from 22 879 € to 28 447 €.

To compare the regional disparities of higher territorial units, we also looked at the development of differences through the Lorenz curve. To calculate it, we used the values of regional GDP per capita of all regions and the total number of higher territorial units in Slovakia. As part of the processing, we chose 2009 and 2018 for a more evident evaluation of the development of regional disparities.

The representation of regional differences between self-governing regions in Slovakia by the Lorenz curve enabled us to calculate the Gini coefficient. We were able to express the degree of the uniformity of the distribution of regional GDP in the regions, thanks to the mentioned statistics. The advantage of the Gini coefficient is that it considers all data without distinction. Its expression is displayed in the range of values from 0 to 1. The Gini coefficient is regularly used to display and compare regional disparities between the Member States of the European Union, for which regional GDP per capita is used as a fundamental indicator.

A comparison of the Lorenz curve in 2009 and 2018 shows that regional disparities between higher territorial units in Slovakia start to gradually decrease in a very negligible way over a ten-year horizon. The Gini coefficient reached the value of 0.2378 in 2009, at the beginning of the period we monitored. In 2018, it got to the value of 0.2148.
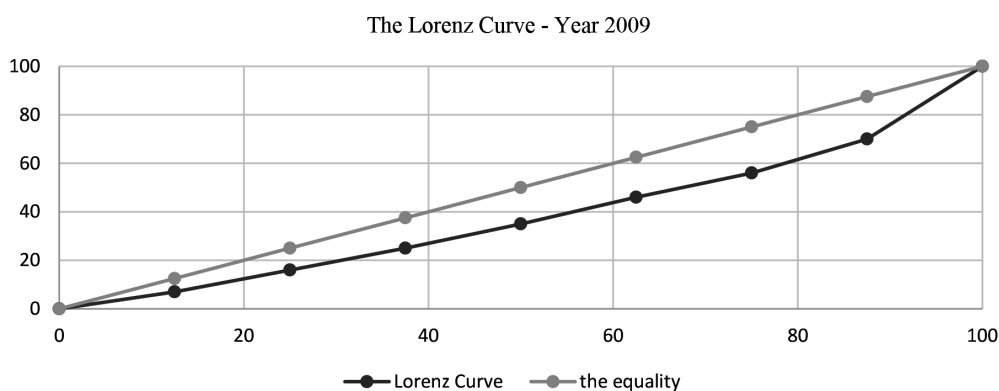
Figure 3. Comparison of regional disparities of self-governing regions through the Lorenz curve

Source: own processing
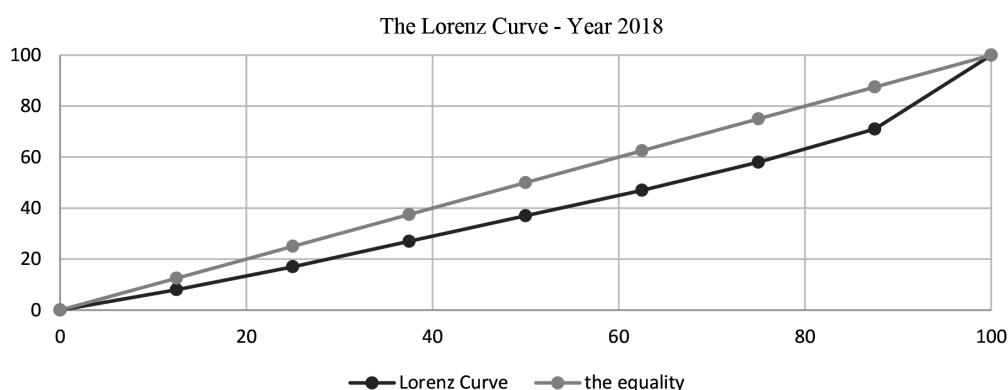
Figure 4. Comparison of regional disparities of self-governing regions through the Lorenz curve

Source: own processing

Given the above data, we can state that the regional disparities at the degree of higher territorial units in Slovakia have deepened in recent years, despite an indifferent reduction. The gradual slight diminution in regional development differences can be seen in seven Slovak self-governing regions, where regional GDP starts to fluctuate at similar levels. The Bratislava Region is the only one of the higher territorial units, which differs significantly from other regions in its regional GDP value. The difference in the amount of regional GDP in 2018 is almost double in the first - Bratislava and the second - Trnava Region, and nearly three times between the Bratislava Region and the last - Prešov Region.

4.   CONCLUSION

We compared the regional disparities of higher territorial units during ten years since the adaptation of the common European currency. We used the Gini coefficient and the mean value, based on which we found deepening of regional differences between the Bratislava Region and other regions and the balancing of the disparities between the other seven counties. We dare to

predict that we will witness a deepening of differences between the Bratislava Region and the remaining seven self-governing regions in the coming years. We also assume that the degree of regional GDP per capita from 2020 will most likely be lower in absolute terms than in 2009-2018 due to the COVID-19 pandemic.

The use of the statistical method of average value, based on regional GDP, enabled us to divide the eight Slovak regions into the category of developing higher territorial units and moderately developed units. In addition to the Bratislava and Trnava Self-Governing Region, we included the Žilina and Nitra Region in the first group based on the median. The economies of these higher territorial units are characterized by the presence of the automobile industry. This industry brings not only the growth of regional GDP per capita but also the decrease in unemployment. However, the Trenčín Region is catching up with these four regions with the mentioned values of regional GDP. The region awaits the transformation of the coal region of Upper Nitra into new, more ecological branches of the economic structure in the coming years. The temporary increase in unemployment is expected in the mentioned part of the Trenčín Region, in the condition of the transition to another type of industry and the retraining of thousands of miners.

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MODERN PENSION TRACKING SYSTEM
– THE CASE OF SLOVAK ORANGE ENVELOPE PLATFORM

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Abstract: *European Commission has a long-term objective of tackling the demographic issues of EU member states by creating a network of national pension tracking systems. The initiative launched in 2021 aims to present good practices in building modern pension tracking systems. The paper examines key aspects of a modern, consumer-driven non-governmental platform providing users with the features of pension entitlements across all pension pillars in Slovakia. The methodology is built on the case-study where governance, research, front-end and data management issues are elaborated. The paper presents in-depth steps and robustness of microsimulation model applied for the pension tracking platform. The results could serve for other countries and modern PensionTech providers as a good practice and a guideline to create a comprehensive integrated pension tracking system with minimum development and operational costs and extremely short time-to-market duration.*

Keywords: *Pension entitlements, Pension projections, PensionTech, Microsimulation, European tracking system.*

1. INTRODUCTION

Development of FinTech solutions intensively intervenes into the complex public policies, among which the pension systems are the dominant ones. Pension institutions are deemed to be one of the oldest institutions, where communication with participants uses old paper means. However, there is undoubtedly a shift towards digital communication.

More and more pension providers use web portals to give general information and build personal web environments for participants to see their entitlements and make pension calculations. However, fragmentation of provided information on expected pension benefits by particular pension providers organized as a form of public-private mix causes sub-optimal decisions of savers on their pension arrangements. Current trends and EU policies intensify the pressure on pension scheme providers to periodically provide information which allows individuals to make informed decisions. Even this trend is unstoppable, the provided information is in many cases retrospectively oriented and highly fragmented.

Only a few countries have grown to the level, where the information requirements are oriented on the provision of forward-looking information on expected pension benefits. Some pension providers also provide apps so that information is accessible to their participants on tablets and phones. Among them, only a few provide modern pension tracking systems allowing users to access their pension accounts to track their pension entitlements and evaluate the appropriate-

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ness of accumulated pension entitlements and assets. Pension tracking services in The Netherlands, Denmark, Norway and Sweden show overall positive user statistics both in terms of usage and satisfaction of service provided. Most existing tracking services continuously expand functionality. In a few countries where no national tracking service is yet in place, plans for creating one are (e.g. Ireland, United Kingdom) gaining greater momentum.

Pension providers are becoming faster to respond to trend changes and are better tuned to the users' needs. One limitation for pension providers is, however, that they have a restricted view on the financial situation of their participants. For pension providers of occupational schemes, for example, the information they have on the entitlements of their participants usually does not extend beyond the entitlements of the pension scheme they provide. Recent developments and technological advances have given rise to a new type of PensionTech companies that put on fast track technological superiority and the ability to develop applications that serve the consumer needs also in the area of pension entitlements. Modern PensionTech tracking services have an advantage here, being able to give a better overview across more providers and in some cases across several pillars with consumer centric approach and lean development and operations that are built on scalable software-as-a-service (SaaS) principle.

Our paper aims to bring more insight into the process of building a modern Pension tracking service as a case study. The paper is organized as follows. The introductory part has provided key insight into the development trends in the area of pension tracking systems. The second part focuses on key aspects that should be considered when designing and implementing the modern Pension tracking system as recommended by several EIOPA reports and evaluates the analyzed Orange Envelope platform. The third part presents key information on the robust microsimulation model employed by the Slovak pension tracking system – Orange Envelope platform. The part devoted to the future research directions discusses results from user-testing and presents some findings on development trends of analyzed pension tracking system based on agile development and consumer demand. The conclusion part summarized key findings and recommendations for other countries and PensionTech companies wishing to implement low-cost modern and agile pension tracking service.

2. EIOPA PRINCIPLES AND RECOMMENDATIONS ON BUILDING PENSION TRACKING SYSTEMS AND PENSION BENEFIT STATEMENTS PLATFORMS

The heterogeneity of pension systems and fragmentation of pension providers combined with the complexity of personal financial need and the interplay between economic considerations and individual aspirations make the problem of personal finance one of the most challenging in economics. As pointed out by Medova et al. (2008), all current solutions used in practice ignore one or more of the features of the full dynamic solution to make the problem easier. The impact of each of the incremental complexities involved is very poorly understood by practitioners and is often dismissed as unnecessary without hard evidence. Dempster (2016) argues that financial planning for the benefit of individuals is based on a variety of approaches internationally. These range from simple heuristic approaches for selecting portfolios to those incorporating the joint stochastic optimization of asset allocation, contributions to different savings vehicles and setting flexible saving and withdrawal rates. As affordable computing power and bandwidth continue to increase and the solution efficiency of large stochastic optimization problems expand, ever more complex financial planning tools are emerging. As we enter the age of big data,

this trend will surely continue. Building a successful pension tracking system requires a unique multidisciplinary approach that bridges the newest research on pension modelling with high-tech ICT and should involve not only researchers and IT developers, but other stakeholders both from the side of regulators as well as providers and users. Consumer-centric approach serves as a bridging principle.

European Commission in its Request to EIOPA (2020) seeks to develop best practices for the set-up of national tracking systems that facilitate access to individualized pension information. Current knowledge and recommendations on building a successful pension tracking system (EIOPA, 2020; TTYPE, 2015) recognizes four areas that needs to be scrutinized in detail. These areas include purpose and functionality, front-end and design, back-end and technical aspects of projections and platform, and governance and operational aspect of the platform.

Below we compare the recommended approach with the findings on the Slovak pension tracking system – the Orange Envelope platform (https://www.oranzovaobalka.sk/web/en/).

1. **Purpose and functionality aspects of the pension tracking system.**
   a. Recommendation: Pension tracking system should have a clear scope/coverage, targeted audience and users, type of information offered, type of functionalities developed in order to provide comprehensive and easy to understand information.
   b. Orange Envelope Platform: The platform has a clear scope of providing personalized pension projections across the entire pension system in Slovakia. The audience represents the working population with mandatory and voluntary participation in pension pillars (1st PAYG pillar organized by governmental Social Insurance Company, 1bis pillar provided by Pension Asset Management Companies, 3rd pillar provided by Supplementary Pension Asset Management companies, 4th pillar provided by Investment companies). Users are allowed to open an account and connect their providers via personalized security login credentials. The platform provides key functionalities on tracking existing pension entitlements, downloading and storing personalized pension records and provides personalized pension projections. Pension projections include recommended scenarios, while the scenarios are probability weighted (see more information on microsimulation model and pension projection part below).

2. **Front-end/design aspects.**
   a. Recommendation: Pension tracking system should adopt the recognized principle of layering information (EIOPA, 2013), user experience and testing with a periodical assessment of the platform scoring from the users´ view and present comprehensive information on the financial situation and expected pension benefits.
   b. Orange Envelope platform: When pension data from providers are synchronized, users are presented with 3 layers of information on expected pension income based on 4 sub-goals defined by EIOPA (2018). The initial layer contains broad information on overall pension income and expected replacement ratio supported by evaluation of the expected financial situation using Pension Traffic Light (https://www.oranzovaobalka.sk/index.html#!/16/pension/overview). Second layer provides detailed information on current pension entitlements and expected pension benefits from each pension pillar. Each section is organized in form of the questions a typical user asks, such as: "What Pension can I expect?", "How is the pension calculated?" and "How to improve my situation?". For each section, these key questions are presented in a multimodal way to support the under-

standability of information. Each year, users are tested by platform supporters to identify the overall success score of the platform and to identify bottlenecks and improvements. Standard testing is based on usability testing methods (Barnum, 2010). New functionalities are tested before implemented on the platform on a special focus group of users. Existing functionalities are reviewed once a year on a broader scale of platform users.

3. **Back-end and technical aspects of the platform.**
   a. Recommendation: The platform should employ digital identification tools, data standards for data transmission with other pension providers, stochastic pension projections techniques allowing for uncertainty and protocols for data exchange and data quality (e.g. record-keeping). When designing the back-end, there should be centralized (many-to-one) or decentralized (many-to-many) database and model of data transmission (data exchange) employed (see Figure 1).
   b. Orange Envelope platform: The platform has been initially built on the "many-to-one" principle, where the platform integrates pension reports pulled-out from partial pension providers. Later on, as broader cooperation with pension providers and other stakeholders has been developing, the platform has started to change the principle to "many-to-many" and started to provide aggregated data for other platforms as part of the business model. For example, pension providers found added value of the platform and ability to retrieve pension data of their clients including the clients′ pension projections and present the projections within providers′ platforms. Employers, who contribute the data on their employees into the platform retrieve reports and other data on the efficiency and costs of sponsored pension plans for managerial usage (see Figure 2 for the model of data transmission and exchange).
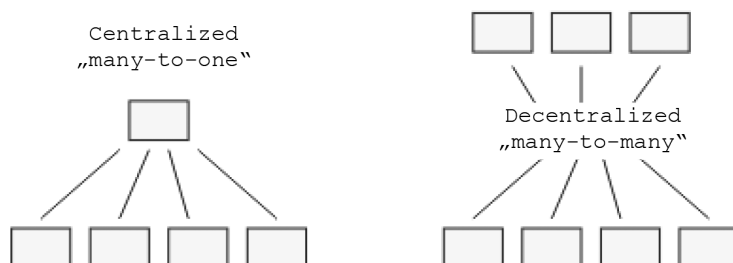
Figure 1. Database and data exchange model in Pension Tracking System
Source: Own elaboration
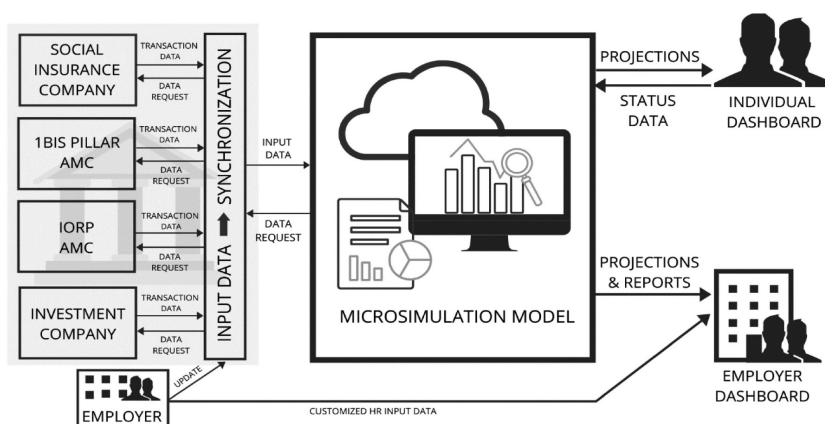
Figure 2. Orange Envelope architecture and data transmission
Source: Orange Envelope Technical Documentation, 2020

The data to other stakeholders are provided based on dedicated or open API protocols, where individual requests are examined on both sides of data transmission and data exchange. The flexibility of the platform allows for various communication protocols and dedicated API configuration based on the needs of stakeholders.

4. **Governance and operational aspects.**
   a. Recommendation: Pension tracking system/platform should have a clear business model of financing, partnership with basic pension data providers, clear rules on compliance/due diligence, cyber-security and personal data protection rules.
   b. Orange Envelope platform: The platform is provided by non-profit organization backed by university researchers, who devoted their state-of-the-art pension system microsimulation model to the platform and adjusted its functionalities to provide individualized pension projections. As a non-profit organization, the financing is based on multi-sourcing, where research grants, donors, revenues from pension providers for pension projections, payments from employers for provided pension reports for their employees and plans, as well as payments from end-users are used to cover the operating costs of the platform. Study on European Tracking System (TTYPE, 2016) estimates the operating costs of existing tracking services between € 0,15 and € 0,30. Orange Envelope platform should be able to operate at the cost of € 0,12 per economically active citizen per year as the development and implementation costs have been already accrued by the financing institutions within the initial 2 years of operation. The platform continues to create strategic partnerships with pension and long-term savings providers, ministries and other governmental bodies. Additional cooperation is active with research agencies and universities, consumer organizations and employers. The data protection and security are built on the GDPR rules, where the provision of initial status data is given based on the consent of the end-user. Using his login credentials, the platform retrieves raw data from pension providers using a secured connection and removes the login credentials from the server memory. Retrieved data are then synchronized within the database. The last step is the division of personal data and pension data. The data are encrypted and stored separately using a secure key to decrypt the connection between the personal data of a user and respective pension/financial data stored by the platform. When the user is securely identified (using login credentials at the platform or face-ID when using a mobile phone/tablet), the data are paired for the session.

3. MICROSIMULATION MODEL AND PENSION PROJECTIONS WITHIN THE "ORANGE ENVELOPE" PLATFORM

Current recommendations on building robust projection models for pension tracking systems (EIOPA, 2018) include stochastic assumptions on key macroeconomic variables (inflation, labor productivity, asset returns, interest rates, volatility, correlation among asset classes) as well as individual factors (life-cycle income) for modelling.

The Orange Envelope microsimulation model is an open, cohort based, stochastic model with a dynamically aging population that generates simulations based on moving-block bootstrapping technique (resampling). It connects key modules: demographic, macroeconomic, pension policy, individual micro-model and moves the population forward by a year. The details on the microsimulation model architecture are provided in Figure 3.
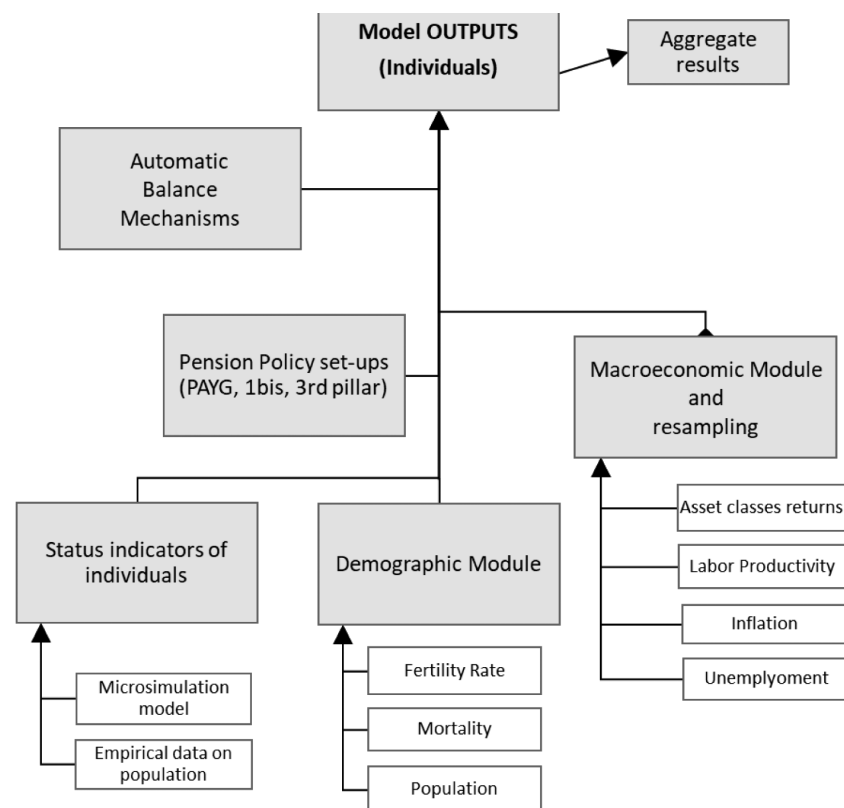
Figure 3. Orange Envelope stochastic microsimulation model architecture
Source: Orange Envelope Technical Documentation, 2020

The model generates a considerable size of the data when the entire population is covered (around 1.5 TB data), which significantly limits the direct connection of the model to the web application. Computational simplification was invented where the results are sorted into the data-cubes that include quantifiable measures (values) for attributes (indicators) across dimensions (scenarios) that prove to be statistically reliable while enabling the usage in a real-time environment (on-demand). By solving the relationships of data-cubes generated, the whole process was simplified and automatized for the web application. Created data-cubes (aggregated and individualized) containing the changes in pension policy and individual pension set-ups. The result will be a multidimensional data-cube system of individualized and aggregated variables, attributes, and dimensions. The system of model data-cubes is presented in Figure 4.

Maintaining relationships between macro variables allows their linking to individualized data provided by users.

In order to keep the whole system updated and to innovate user functionalities, the agile management based on RDD (research-develop-deploy) technique is implemented (Katz, D. S., McHenry, K., Reinking, C., & Haines, R., 2019). The research team receives the request from the consumer relations officer, who sets the priorities for the research based on consumer-centric approach. The research team immediately starts their tasks and as soon as the problem is solved, it is transferred to the IT development department, which takes over the management of the task. As soon as the coding/programming tasks are finished, consumer relation officer deploys the focus group to test new functionalities. Based on the consumer testing results, the solution is deployed to the platform or further improvements are suggested. The second alternative starts the new cycle. If the solution is successfully deployed, it is automatically involved in the periodical testing.
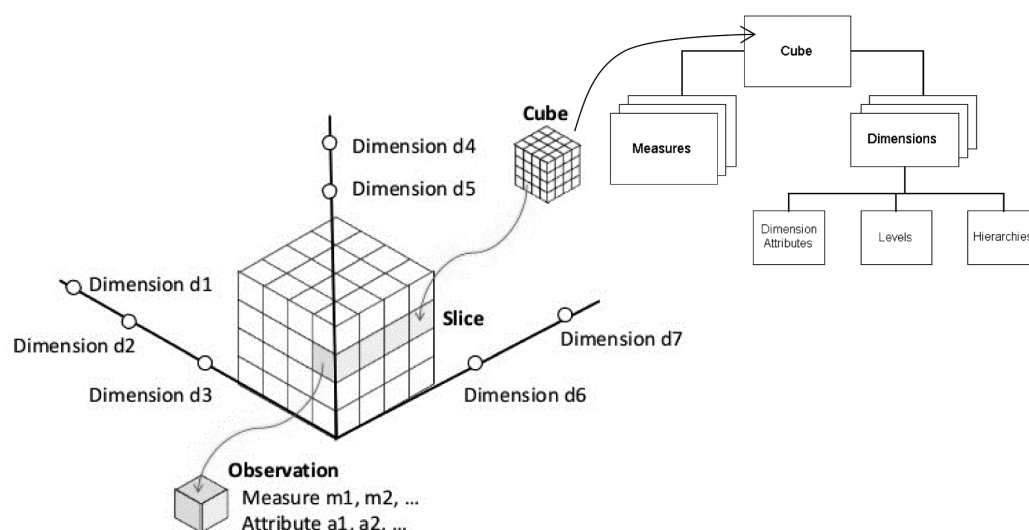
Figure 4. Multidimensional data-cube system of pension model
Source: Orange Envelope Technical Documentation, 20*20*

4.   FUTURE RESEARCH DIRECTIONS

Our paper shows, that linking research and value-added applications to a wider range of actors allows for the fast development of complex pension tracking system at minimum cost and time. We see the potential of gathering additional funding and development of functionalities, which would drive further development of traditionally centralized governmental solutions in the area of pension information provision. This allows the non-profit platform to grow faster and increase innovation, build digital public administration, digitize industry in ancillary services and create a new PensionTech industry, while providing integrated high value-added information in isolation pension entitlements across the pension system in the Slovak Republic.

In addition, the application is scalable in the part of defined contribution schemes, which opens up the possibility of wider use and the connection to the European tracking system.

Further development can be seen in opening new undiscovered area of complex financial planning tools, where the pension information are supplemented by private sector financial products such as investments, credits, insurance products or value of real-estate. This could lead to the new research area of individual asset-liability modelling.

We see the limitation of research in lower support from the dominant player in the market, the Social Insurance Agency, which restricts access to anonymized data to refine the microsimulation model for estimating the development of individuals' income and thus expected pension entitlements from the first pillar. Subsequent development and research should aim at improving the interconnection of providers' database systems in order to unify the way data is shared without the need to exchange sensitive personal data.

5.   CONCLUSION

The objective of the paper was to present as a case study a new way of developing a complex pension tracking system at a low cost without the intervention of state agencies. We have examined an existing non-profit pension tracking platform operated in Slovakia, that has been built

and operated by a group of researchers. We have examined the key aspects as recommended by EIOPA and critically evaluated strong and weak areas of the platform. At the same time, the article uncovers critical aspects of the development and operation of pension tracking platforms that are forced to provide an innovative and consumer-centric approach. We claim that the uncertainty of the funding leads to the sensitivity of the platform provider to the consumer requests that increases the innovation and lowers the time-to-market for new functionalities. The platform could be used as a good practice for other countries or research teams that want to provide pension projections to the users while significantly lowers the development costs and time.

ACKNOWLEDGMENT

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SECURITIZATION AS A FUNDING SOURCE OF COMPANIES

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Abstract: *Securitization is in wide use and a component of many risk transfer mechanisms between various parties. It is based on selling risky assets in absolute form, as well as the synthetic transfer of specific risk aspects. This paper aims to define securitization, various contexts of its use, transaction participants and their motivation. Securitization in practice is a process in which loans, receivables and other assets are gathered into pools (packages). Money flows in connection with them are employed as well as economic value as support to securities settlements. Securitization is turning illiquid securities and illiquid assets into liquid securities and liquid assets. The final result of securitization is providing funding for activities of companies by selling their assets gathered into pools (packages), instead of using loans. Methods used in this paper are desk research, as well as the method of analysis, practical application worldwide, etc. This paper proves that securitization can practically be based on any asset the relative value of which can be determined, or which generates relatively predictable future income flow, which does contribute to providing funding of current business activities of a company.*

Keywords: *Securitization, Pool, Assets, Risks.*

1. INTRODUCTION

1.1. Objectives of Securitization and Structuring

Securitization enables the creation of securities based on the total sum of the assets that are most attractive to many different investors. Each financial system is complex and within it, there are different organizational forms of financing as the financial area is very wide, and it is present in all spheres of social and economic life. Determining a country's economic policy is a very responsible job because very important decisions are made in the legal area, budget area, decisions on economic development policies, etc.

When it comes to an example of structuring, using mortgage loans as a representative asset, helps to classify the securitization in terms of the borrower's loan. The market can be roughly divided into primary borrowres and subprimary borrowers. The primary borrowers are those with high credit quality since they had a good employment and credit history in the past, an income sufficient to repay the loan without compromising their creditworthiness as well as sufficient equity in the underlying assets. Granted loans to such individuals are roughly classified as primary loans, as they have had a low incidence of delays and defaults in the past.

On the contrary, loans granted to borrowers with low credit quality with a potential to be in defaults are classified as subprimal loans so those borrowers are referred to as subprimal borrowers. The approval of subprimary loans relies on non-traditional measures of the credit risk assessments since the borrowers have lower incomes, fewer assets and poor credit history.

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After the loan is granted, the loan portfolio has to be serviced by special departments in order to monitor the repayments of subprimary loans. If there is a delay in repayment of the subprime loan, the servicers take immediate action either by helping the borrowers to meet their obligations or by mitigating possible losses due to default.

It is necessary to distinguish between transactions related to primary and subprimal loans because it affects the credit rating. The high credit quality of loans in the primary sector quite simplifies raising the credit ratings. For example, the mortgage loans that meet the standards are considered primary loans while the securities performed with the loans are referred to as agency transactions (agency deals).

Increasing the credit rating in the agency transactions is achieved through the guarantee mechanisms given by the agency that broadcasts the transaction. This guarantee is paid by the transaction sponsor via fee. In the case of the other primary loans' securitization, the used mechanism for increasing the credit rating is a subordinated structure where there are classes of bonds that have different priorities in relation to cash flows and write-offs of losses. Structures are flexible in terms of creating the most efficient credit rating raising in primary transactions, determining the necessary credit rating is often conditioned by the rating agency, while the suborded structures are relatively simple. The execution of the transaction is mostly influenced by the maturity date of the bond.

1.2. Ruling Perceptions

Securitization of sub primary loans has to be highlighted as in the case of the securitized primary loans, the sub primary loans securitization will have bond classes with different priorities compared to the cash flow. However, compared to the securitization of the primary loans, the securitization of the sub-primary loans requires a higher amount to raise the credit rating to create the older bond classes. This fact affects the economic justification factor of the primary transactions in relation to sub primary transactions. The motive for creating an efficient structure relates to the primary transactions is to shape the older bonds, while the goal refers to the subprimary transactions is to structure the transaction to produce an effective credit rating in order to protect the older bonds.

Although the structuring approach is similar in comparison to creating bond classes with different priorities and ratings, the credit rating-raising techniques used for the primary loans' securitization would not be effective enough if it has been applied to subprimary loans, especially if subording is used as the only form of credit support. There are at least two reasons for that. First, the subordinated bond classes would be higher compared to the bond classes in the primary loan securitization. In addition, the incremental interest rate paid by borrowers can be used optimally to provide credit support for older bond classes. For this reason, the securitization of subprimary loans uses a combination of mechanisms to raise the credit rating. Another reason is the cash flows allocation rules for the subprimary loan's securitization must have more tests to store older bond classes compared to the primary loan's securitization.

For the initiator, the investment bankers will structure the transaction by acting as agents or as the principals. It is not uncommon for some securitization to have dozens of bond classes, because maximizing the number of bond classes is not the goal of the structure. The only economic goal is to maximize the total revenue by selling all classes of bonds provided by pool assets. (In market jargon) the goal is to ensure the best *execution*. Alternatively, the goal is to acquire the lowest average cost for the financing.

Maximizing the assets securitization income can be achieved by structuring cash flow in two ways. First, shaping the cash flow of collateral to create the bond classes that better suit particular interest rate risk (i.e. effective duration, conversation and duration of the key rate) and yields or views of different investors. Another way of maximizing income in the assets securitization is when the investment banker tries to create more economical structures, especially for non-agency transactions where the cost of raising the credit rating is contained in the transaction through co-boarding mechanisms. In general, the securitization initiator in such cases will achieve better execution by creating the highest possible amount of the older bonds while at the same time receiving the highest possible income for the younger bond classes (i.e. sub-corporate bond classes and interests).

1.3. Future Income Securitization

Traditional transactions secured by the asset refer to the asset that exists, while the future flows transactions refer to the asset that is expected to be in place There is a source, business or infrastructure, from which the assets will arise. Business or infrastructure needs to be worked on to generate the revenue, in other words, the income is not created therefore the securities repayments are liquidated by themselves. On the other hand, the future flows are like corporate financing as the asset performance or infrastructure must be in place to see the cash flow that will repay the securities.

1.3.1. The Future Flows Can Be Securitized

The basic premise of the future flows` securitization is the framework's existence. Based on that the cash flows will occur in the future so they can be securitized. If the framework does not exist itself, the investors will expose themselves to the unknown risk, their rights would be less than insured lending.

The following future flows can be securitized: revenues from the sales of air tickets, electricity sales, telephone equipment rental, export revenues based on natural resources, etc.

1.3.2. Uncertain Receivables

The future flows receivables are uncertain and unpredictable therefore the initiator transfers a certain part of the receivables and keeps the excess above the transferred part as the seller interest. The transferred part is a basic receivable and it is based on the past recorded results. The transferred part is used to service investors, therefore the transferred part can be used as the requested funds for servicing the investors. The seller's interest varies depending on the initiation of the securitization in the process of the transaction.

1.3.3. Cash Flow Capturing

The future flow transaction essentially represents the cash flow capturing. The receivables sales mechanism is presumed to exist (the transaction is with receivables transfer) but it is obvious that the whole concept will not make sense unless the trust members have the ability to physically capture the cash flows that generate certain receivables before they are redirected to the initiator – since what is being sold has yet to be raised.

1.4. Categories Transaction Securitization

As the financial market matured and evolved, three general categories of securitization transactions were established. Financing and capital management transactions are the basic type of transactions in the securitization arena.

Initiators generate assets such as loans and receivables that represent the total payment obligations of their clients (debtors). When such assets are securitized (or interest per the asset), the initiator achieves liquidity. Clients typically do not know that the asset is securitized therefore there has been an effective change in controlling their obligation – the change does not have to be published, since the synthetic structure does not have to lead to any control changes but solely to risk transfer.

1.4.2. Arbitration Repackaging

Repackaging transactions are typically the Treasury Bills series issued as ABS (Asset Backed Securities) secured by the bond portfolio (including the ABS itself), credit derivatives, loan portfolio and other forms of credit risk. Arbitration exists between portfolio yield and the required total cost of bills, so the success is often measured by comparing the relative costs of the current assets "in the balance sheet" relative to possession through securitization structure.

1.4.3. Market Value Transactions

In relation to the market-based transactions, the asset manager must take certain measures, usually to sell the collateral, to liquidate assets. This puts the investor at liquidity and markets risk.

1.4.4. Transaction Characteristics and Participants in the Transaction

Securitization structures seem complex, but there are common characteristics that facilitate their understanding and enable analysis and comparison.

The initiator approves funds to the debtor, so the initiator buys or uses the assets. This creates financial assets. When it is created, the initiator usually continues to charge and manage the assets in accordance with the current lending and collection procedures. These activities are usually referred to as servicing and the party that performs it is called a servicer. To create the ABS (Asset Backed Securities), the initiator entrusts the assets to be securitized to another entity (it's usually the separate SPV (Special Purpose Vehicle). SPV or trustee issues debt securities for the capital markets. The Securities are typically bought by institutional investors (including banks, transaction brokers, insurance companies, pension funds and portfolio managers).

The Issuer uses the Treasury bills income to pay the purchase price of the asset being securitized. The transfer of initiator assets to the issuer is usually *a securitization with* receivables transfer (traditional securitization). Traditional securitization separates the assets from the assets in case of initiator's bankruptcy or insolvency. In line with that, the investors can expect payment only from the assets in case of the initiator's usual operations, as well as in the case of possible insolvency or bankruptcy. All these methods do not affect liquidity. An overview of the mechanisms is given in Table 1.

Table 1. Risk transfer mechanisms

Mechanism risk transfer	Measures taken	Effect on balance sheet
Traditional securitization	The initiator sells assets to SPV	The asset is usually erased from the initiator balance sheet
Assignment	The initiator ''assign' its interest to pool assets that are securitized in favor of the SPV	In the practice, the asset is erased from the initiator's balance sheet, but it is still in it – only risk and rights are transferred
Secured loan	SPV takes interest (Usually 1st priority)	Assets are still on the balance sheet
Default credit swap	SPV together with the initiator are in default credit swap, arranging the payment of certain amounts to the initiator in case of certain credit events in relation to the asset's securitization	The asset remains on the initiators´ balance sheet
Guarantee	SPV guarantees to the initiator, but the regulations refer to loan derivatives may not be applied on the guaranty	The asset remains on the initiators´ balance sheet

Source: Commerzbank Securities / 2012.

2. CONCLUSION

A securitization is a form of structural financing. Common to all types of transactions is that transactions are structured to modify or redistribute collateral risk to different classes of investors based on the structure.

Securitization implies the pooling (packages) formation of the assets/receivables and securities emissions by a SPV. The result of the transaction is the corporation can obtain funds by selling the assets. The asset securitization process transforms pool assets into one or more securities, such as ABS (asset backed securities) Securitization is different from traditional financing methods as the cash flow is generated by assets can be used for one or more securities. Three advantages of securitization in relation to non-regression factoring and factoring with the modified regression right are: the essence of the securitization is primarily the monetization of financial assets in a way that reduces collateral, risk (credit risk, interest rate risk, risk of early repayment and liquidity risk) primarily for their repayment, but not for the performance of the particular project or entity.

The most important reasons the corporations use securitization are the possibility of reducing funding costs, the ability to diversify funding sources, the ability to manage corporate risk, reducing the capital requirements, the possibility of generating income on the service basis commission. A key role related to the bond emissions has the SPV since the entity separates the assets and it is used as collateral for securitization compared to the corporation that needs the funds (initiator/seller).

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ACCOUNTABILITY AND TRANSPARENCY IN THE NONPROFITS: EVIDENCES FROM ONLINE CROWDFUNDING DURING COVID-19 PANDEMIC

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Abstract: *Through accountability, organizations provide key information for stakeholders enabling the latter to make an informed assessment of organizational performance. To achieve transparency, organizations must make information accessible and timely. During the crisis, as in the COVID-19 pandemic period, accurate accountability and transparency practices are most necessary so stakeholders can make informed decisions in an ongoing complex emergency. This study uses data available in an online crowdfunding platform to investigate to what extent are nonprofits implementing accountability and transparency policies regarding applications for funds published during the COVID-19 pandemic. A case study methodology is applied for providing evidence that nonprofits are not timely implementing transparency policies regarding fundraising campaigns. Nevertheless, results identify, in some cases, innovative accountability practices which impact funds raised must further be analyzed. These findings open up further investigations on the accountability of nonprofits during the crisis and on the online organizational transparency regarding fundraising.*

Keywords: *COVID-19, Accountability, Transparency, Nonprofits. Crowdfunding.*

1. INTRODUCTION

Nonprofits are different from other private organizations, namely in their goals – this is not to generate profit with their activities. This condition makes it difficult to find saving plans in these sector organizations. Indeed, operating reserves were found scarce among nonprofits, possibly because nonprofits are evaluated on how they spend money (Calabrese 2013).

In the context of the COVID-19 pandemic, nonprofits have seen their revenues decline (Deitrick et al. 2020). Several nonprofits decreased the number of services provided, but others were called to keep working in order to respond to the hard social and economic conditions people were living in, as a consequence of lockdown policies. In this financially challenging environment, fundraising campaigns are crucial initiatives for supporting nonprofits so they can keep their projects.

Donors behavior rely on the trust they have on nonprofits to meet their social goal. To continuously earn the public's trust, transparency and accountability practices have proved to be necessary. In this specific context of COVID-19 pandemic, in which work from home and lockdown policies made people to socially interact through online platforms, promoting transparency and accountability practices require being online, namely through official websites.

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Given the above, this study aims to contribute to the understanding of the accountability and transparency practices in place by the nonprofits during the COVID-19 pandemic, considering the claim for online proximity as a consequence of physical distancing rules. In this sense, the following research questions were formulated:

Research question 1: To what extent are nonprofits disclosing fundraising practices on their official websites during the COVID-19 pandemic?

Research question 2: Are nonprofits implementing accountability practices on their official websites during the COVID-19 pandemic?

A multiple-case study was conducted, comprising an in-depth analysis of the information disclosed on the nonprofit's websites with active campaigns, in a popular online crowdfunding platform. The results from five nonprofits provide academics with insights on the preparedness of nonprofits for accountability and transparency through electronic means, allowing to further investigate the level of adoption of such practices in a financial crisis scenario.

2. LITERATURE REVIEW

Nonprofits rely on the public trust to conduct their projects. Previous studies have proved that organization's reputation and donor's familiarity with the sector influence donor trust positively (Torres-Moraga et al. 2010). Theoretical contributions also reveal that reputation is a key piece of information in the decision to fund the activities of nonprofits, which makes reputation a survival factor (Gent et al. 2015). Thus, these organizations may be more consciously aware of their reputation.

Becker (2018) demonstrated that accountability practices in this sector can lead to a higher reputation for nonprofits. Accountability has been largely addressed in the nonprofits related literature, especially when investigating the governance relationship with stakeholders (Santos et al. 2020).

Past research has demonstrated that transparency practices relate to higher levels of trust and positive behavioral intentions of stakeholders (Auger 2014). Transparency also affects donations in a way that high levels of transparency can represent more revenues for nonprofits (Deng et al. 2015). Considering such evidence, it is not surprising that nonprofits' stakeholders ask for more transparency about their fundraising and spending (Ebrahim and Rangan 2010; Liket and Maas 2015).

To become transparent, nonprofits may disclose basic information in respect to the organization, but also governance, finance, and activity. In order to disclose such information, accountability practices need to be in place, including planning, monitoring, and evaluation; or learning from successes and failures (Kirsch 2016).

The COVID-19 pandemic is challenging all economic sectors, especially regarding financial management. This challenge is huge in nonprofits, which traditionally struggle to have financial balance. Preliminary studies provide evidence that nonprofits have had declining revenue over the first lockdown (Deitrick 2020). Nonetheless, the need for nonprofits services continues to grow considering the social and economic impact of the COVID-19 pandemic. In the challenging social and economic pandemic context, it is relevant to understand the transparency and accountability practices in place by nonprofits.

3. METHODOLOGY

The research questions formulated in the previous section were addressed by identifying active fundraising campaigns on GoFundMe website, a very popular online crowdfunding platform. On this website, nonprofits' fundraising projects were filtered and five top campaigns were selected considering the high amount of money requested. The selected projects are identified in Table 1.

Table 1. Identification of the fundraising campaigns

Name of the campaign	Name of the organization that benefits from the funds	Amount of funding goal
Help Lebanon with Rony Seikaly	Social & Economic Action for Lebanon, Inc.	$600,000
Covid-19 Mutual Aid Network - Los Angeles	People Organized For Westside Renewal	$500,000
Cut Red Tape 4 Heroes –PPE for Those in Need	Art Science Research Laboratory Inc.	$1.0M
G's NHS Zwift Shifts	Association of NHS Charities	£100,000
College Fund for African American Students	Thurgood Marshall College Fund, Inc. (TMCF)	$350,000

Source: GoFundMe.com, March 2021

In order to investigate the nonprofits' transparency practices, the official websites of each of the nonprofits beneficiary of the fundraising campaign were visited and the information available about the campaign were collected. In this phase, occurring in March 2021, also, the account-ability practices were analyzed. In this regard, the analysis of the information disclosed on the website was focused on the identification of the tools for monitoring and evaluating the level of success and failure in applying the funds.

In this sense, this study applies a qualitative case study methodology. Indeed, this was found as the accurate method for responding to the research questions formulated, insofar as it enables to conduct an in-depth exploration of the accountability and transparency practices on the nonprofits' website within this specific context of the COVID-19 pandemic (Rashid et al. 2019).

4. RESULTS

As a result of the visiting to the nonprofits' official websites, information regarding accountability and transparency was collected. The data collected was divided into areas: financial statements, information on the impact of the projects conducted, identification of the fundraising campaigns, and the people supported by their activities. The description of the information found on the nonprofits' official websites is presented in Table 2.

Table 2. Description of the information found on the nonprofits' official website

Name of the nonprofits	Financial statements	Impact of its activity	Identification of fundraising campaigns	People supported
Social & Economic Action for Lebanon, Inc.	Very detailed and easy to find	Very detailed on the project impact and social and economic change resulting from projects	Very detailed on the number of fundraising campaigns, funds raised and dates	Very detailed on the number of beneficiaries and supported community. Beneficiaries' testimonials are also provided.
People Organized For Westside Renewal	Not found	Generic information on the projects conducted	Not found	Generic information on the projects conducted

Art Science Research Laboratory Inc.	Not found	Very detailed on the project impact and social and economic change resulting from projects	Not found	Very detailed on the number of beneficiaries and supported community
Association of NHS Charities	Not found	Very detailed on the project impact and social and economic change resulting from projects	Disclosure of the fundraising campaigns and funds raised. Also impact reports for specific campaigns are provided.	Very detailed on the number of beneficiaries and supported community. The grants distributed per beneficiary is disclosed.
Thurgood Marshall College Fund, Inc. (TMCF)	Very detailed and easy to find	Very detailed on the project impact and social and economic change resulting from projects	Very detailed on the identification of the fundraising campaigns and channels to donate.	Very detailed on the number of beneficiaries and supported community. Beneficiaries' testimonials are also provided.

On all websites, it was possible to find a donate button, so visitors can donate to the nonprofits. Based on the data collected, the research questions were addressed.

Regarding research question 1, on the five websites visited, three nonprofits disclose information on the fundraising campaigns conducted along the time. In fact, in some cases (e.g., Social & Economic Action for Lebanon, Inc.) the fundraising campaigns are detailed by dates and funds raised. Also, nonprofits sometimes produce impact reports for specific campaigns, making stakeholders acknowledge the number of people supported and their impact on their lives.
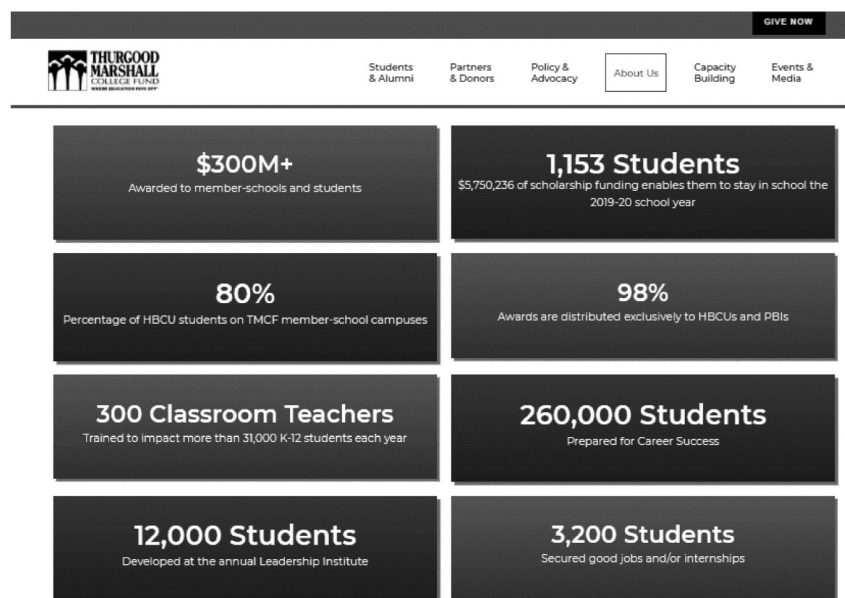
Figure 1. Dashboard for assessing the impact of TMCF activities
Source: TMCF's website, accessed in March 2021

Nonetheless, in two of the fifth cases analyzed, it was not possible to find the information regarding fundraising campaigns conducted. Even in this case, the visitor can donate funds for the nonprofits, through a link to PayPal platform or GoFundMe online crowdfunding platform.

Regarding research question 2, accountability practices were investigated. The dataset collected includes information on financial statements, the impact of its activity, or people supported. Results show that financial statements are not commonly disclosed by nonprofits. In fact, in the three case studies conducted, only on two websites was possible to find the financial statements.

In regards to the assessment of the impact of the projects conducted by the nonprofits, this is a practice significantly implemented by the nonprofits. Indeed, it was possible to confirm that all the nonprofits websites in the dataset have disclosed information in this regard. It is important to mention that in the majority of the cases, the information regarding the impact of nonprofits activity is very detailed and the stakeholders can have an in-depth assessment of different perspectives of assessment of impact. For instance, TMCF provides impact assessment regarding the number of students that secured good jobs, were prepared for career success, or trained, among others. This impact assessment is provided through a dashboard of impact indicators (Figure 1).

The same results were obtained when collecting data from nonprofits' websites regarding the people that benefit from their activity. The nonprofits disclosed information on the number of people supported, provides the amounts of grants delivered, and also a testimonial of beneficiaries' life change experience is shared.

5.   FUTURE RESEARCH DIRECTIONS

Further research could investigate how innovative practices on accountability (e.g., dashboards) can be related to the amounts of funds raised in online crowdfunding platforms.

6.   CONCLUSION

This multiple-case study analyzed five websites from nonprofits with ongoing campaigns in a popular online crowdfunding platform. Accountability and transparency practices conducted by these nonprofits were collected and analyzed through qualitative methods.

The results show evidence that nonprofits are not timely implementing transparency policies regarding fundraising campaigns. Nevertheless, results identify, in some cases, innovative accountability practices which impact funds raised must further be analyzed.

From a practitioner's point of view, benchmarking could be in place by nonprofits so they can acknowledge and implement transparency and accountability practices in order to produce superior results in terms of fundraising.

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RANDOM WALKS AND MARKET EFFICIENCY:
GOLD, PLATINUM, SILVER VS ASIA EQUITY MARKETS

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Abstract: *This paper aims to analyze the efficiency, in its weak form, in the markets of commodities, Platinum (London Platinum Free Market $/Troy oz), GOLD (Gold Bullion LBM $/t oz DELAY), SILVER (Silver – Zurich SW. francs/kg) and the stock markets of KOREA, CHINA, JAPAN, PHILIPPINES, INDONESIA, from January 1, 2019 to October 20, 2020. To perform this analysis, different approaches were undertaken to assess whether: (i) the Gold, Platinum, Silver markets have more robust levels of efficiency when compared to Asian stock markets? The results of the variance test indicate that the random walk hypothesis is rejected in the Gold, Platinum and Silver markets, as well as in the Asian stock markets, with no differences between markets. These findings show that profitability is auto-correlated over time, with a reversal of the mean, because the values of variance ratios are lower than the unit, i.e., price fluctuations are not i.i.d. The results have significant implications for investors, as market inefficiency can affect the domestic and international flows of an economy. In conclusion, the hypothesis of market efficiency, in weak form, may be questionable, since the prediction of the movement of a given market can be improved if the out-of-the-current movements of the other markets are considered, thus enabling the occurrence of arbitrage operations. These findings also make room for regulators in these markets to take steps to ensure better information between these markets and international markets.*

Keywords: *Commodities, Asia, Efficiency, Portfolio diversification.*

1.   INTRODUCTION

Globalization has accentuated the integration of international financial markets and has shown that the correlation between international financial markets has increased significantly. If a given stock market is strongly linked to another country's stock market, the financial stability of the former depends in part on the financial stability of the second. For this reason, a close or strong link between markets increases the levels of vulnerability to external shocks and, consequently, influences the economic conditions and levels of well-being of their countries, as well as the efficiency of the market itself. The hypothesis of market efficiency is a very relevant concept for international investors who want to have their portfolios diversified, with the purpose of mitigating the inherent risk of global financial markets. With the global economy increasingly integrated, international investors have sought to diversify their portfolios into more exotic markets in different ways, with the aim of the synchronism of their assets being low. Testing market synchronizations and

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deducing the existence of assumptions of portfolio diversification when markets are not integrated may lead to distorted indications. We have seen a strong correlation between past and future data series, which makes it possible for the investor to have an anomalous profitability when selecting an appropriate trading strategy, i.e., to obtain anomalous profitability without incurring additional risk. The possibility of investors being able to estimate price fluctuations may cause imbalances in financial markets, calling into question the implementation of strategies for efficient portfolio diversification (Alexandre, Dias, and Heliodoro, 2020; Alexandre, Heliodoro, and Dias, 2019; Diass, Rui; Carvalho, Luisa, 2020; Dias, Alexandre, and Heliodoro, 2020, 2020; Dias, da Silva, and Dionysus, 2019; Dias, Heliodoro, and Alexandre, 2019, 2020; Dias, Heliodoro, Alexandre, and Vasco, 2020b, 2020a; Dias, Heliodoro, Alexandre, et al., 2020a; Dias, Heliodoro, Teixeira, and Godinho, 2020; Dias et al., 2020; Dias, Pardal, Teixeira, & Machová, 2020; Heliodoro, Dias, and Alexandre, 2020; Heliodoro, Dias, Alexandre, and Vasco, 2020; Heliodoro, Dias, Alexandre, et al., 2020; Sparrow, P., Dias, R., Šuleř, P., Teixeira, N., and Krulický, 2020; Saints, Hortense; Dias, Rui, 2020).

The efficient market hypothesis (EMH) explains the random walk hypothesis, suggesting that stock prices are independent of each other, so it is impossible to achieve abnormal profitability without incurring additional risk. The positive effect of a well-functioning and highly efficient financial market in the global economy goes through massive modernization initiatives (Jr. and Camba, 2020).

This paper aims to analyze the efficiency, in its weak form, in the markets of commodities Platinum (London Platinum Free Market $/Troy oz), GOLD (Gold Bullion LBM $/t oz DELAY), SILVER (Silver – Zurich SW. and the stock markets of KOREA, CHINA, JAPAN, PHILIPPINES, INDONESIA from January 1, 2019 to October 20, 2020. The results show that the random walk hypothesis is rejected in all markets, with no efficiency differences between the Gold, Platinum, Silver and Asian stock markets. These findings show that the global pandemic has affected the memory properties of the markets analyzed suggesting that price fluctuations are not independent, which could lead to international investors obtaining anomic yields without incurring additional risk.

This research adds relevant contributions to the literature. The most relevant contribution is related to the comparison whether the Gold, Platinum and Silver markets have higher levels of efficiency when compared to Asian markets under analysis during the 2020 pandemic. Understanding the different predictability between the various markets analyzed could make it easier for international investors to protect their assets, as well as rebalance their portfolios in an international context. As far as we know the authors Aggarwal (2018), Rehman, Chhapra, Kashif, and Rehan (2018), Malafeyev, Awasthi, S.Kambekar, and Kupinskaya (2019), tested the random walk hypothesis in Asian markets, but the research questions, the markets analyzed, the sampling period and the methodology were essentially different from the one followed in this trial.

In terms of structure this paper is organized in 5 sections. Section 2 presents a Literature Review regarding articles on the random walk hypothesis in international stock markets. Section 3 describes the methodology and data. Section 4 contains the results. Section 5 concludes.

2. LITERATURE REVIEW

A market is designated as efficient, when all relevant information about the stock price is reflected in the market price. The lack of consensus among economists and financial analysts regarding market efficiency requires the study of the efficient market hypothesis (EMH). An-

other significant reason to study market efficiency is the role of stock markets acting as financial intermediaries between the saver and the borrower in the distribution of scarce resources via the price mechanism (Jain, 2020; Karasiński, 2020).

Nisar and Hanif (2012), Mehla and Goyal (2013), El Khamlichi, Sarkar, Arouri, and Teulon (2014), Hamid, Suleman, Ali Shah, and Imdad Akash (2017) analyzed Ásia's stock markets by testing the random walk hypothesis, i.e. if these markets have any predictability. Nisar and Hanif (2012) examined major stock exchanges in South Asia, including India, Pakistan, Bangladesh and Sri Lanka. The authors show that the random walk hypothesis is rejected and there is autocorrelation in profitability, that is, investors will be able to obtain abnormal yields based on historical prices. Mehla and Goyal (2013) show that India's stock market does not have random walk properties suggesting some predictability in price fluctuations. Hamid, Suleman, Ali Shah, and Imdad Akash (2017) analyzed the financial markets of Pakistan, India, Sri Lanka, China, Korea, Hong Kong, Indonesia, Malaysia, Philippines, Singapore, Thailand, Taiwan, Japan and Australia, evidencing that these markets are predictable and that prices are not i.i.d., or arbitrage levels are steep.

Aggarwal (2018), Rehman, Chhapra, Kashif, and Rehan (2018), Malafeyev, Awasthi, S.Kambekar, and Kupinskaya (2019), Pernagallo and Torrisi (2019) examined the efficiency of the market, in its weak form, in the international financial markets. Aggarwal (2018) analyzed the Korean stock price index from July 1997 to September 2016, showing that the series do not follow a random walk model. Rehman, Chhapra, Kashif, and Rehan (2018) analyzed the KSE 100, S&P BSE 500 and CSE All Share indices. The results show that these stock exchanges do not have random walk characteristics, i.e. investors may make additional gains based on historical price fluctuations. Malafeyev, Awasthi, S.Kambekar, and Kupinskaya (2019) studied the stock markets of China and India, analyzing the impact of the global financial crisis of 2008 and the recent Chinese crisis of 2015 Data from the last 20 years of the Bombay Stock Exchange (BSE200), and the Shanghai Stock Exchange Composite Index, that were selected and divided into four subperiods: before the period of the financial crisis (period I), during the financial crisis of 2008 (period II), after the *subprime crisis,* before the Chinese crisis (period III) and the beginning of the Chinese crisis to date (period IV). Evidence confirms that the Indian and Chinese stock markets show no market efficiency in its weak form. Pernagallo and Torrisi (2019) analyzed if the behavior of the diary profitability of the stock indices of 12 emerging economies corroborates the hypothesis of "fat tails" and if these series show long memory. The authors show that Hurst's exponents range from 0.51 to 0.62 showing significant long memories and similarities between the stock markets of emerging economies and developed countries.

In summary, this work aims to contribute to the provision of information to investors and regulators in the Gold, Platinum and Silver markets, as well as the Asian stock markets, where individual and institutional investors seek to efficiently diversify their portfolios, in a period of uncertainty and lack of confidence arising from the global pandemic (Covid-19).

3. METHODOLOGY

3.1. Data

Data are the commodity price indexes – Platinum (London Platinum Free Market $/Troy oz), GOLD (Gold Bullion LBM $/t oz DELAY), SILVER (Silver – Zurich SW. Francs/kg), that are quoted in US dollars and Swiss francs, respectively. Price indexes of the stock markets of KO-

REA, CHINA, JAPAN, PHILIPPINES, INDONESIA are quoted in local currency. The sample period covers the period from January 1, 2019 to October 20, 2020 (471-point data). The time scales are daily and were obtained from the *DataStream* database.

3.2. Methodology

Research will develop throughout several stages. Market graphs were made, at levels, and in profitability, to estimate the evolution of the markets under study. The characterization of the sample will be performed using descriptive statistics in order to verify whether the data follow a normal distribution. In order to assess whether the time series follow a white noise (mean = 0; constant variance), the unit root tests will be used in Hadri panel (2000), Levin, Lin, and Chu (2002) that postulate null hypotheses contracted. To answer the question of investigation we will use the method of the variance reason proposed by Lo and Mackinlay (1988) in order to evaluate the autocorrelation between the series of profitability. This is classified as a parametric test. The efficient market hypothesis in its weak form establishes that it is not possible to predict future prices based on historical prices. The author Rosenthal (1983) advocates whether a market is efficient in its weak form, then there should be no linear dependence between the profitability allocated both in the statistical sense (absence of autocorrelation) and in the economic sense (no positive profitability after considering transaction costs). The Lo and Mackinlay model (1988) defines how the P_t price of an asset in t and X_t as the natural logarithm of P_t, the random walk hypothesis is given by:

$$X_t = \mu + X_{t-1} + \epsilon_t \tag{1}$$

Where μ it is an arbitrary motion parameter and is the random error ϵ_t term; an important feature of the random walk process is that the variance of increments increases linearly according to the observation interval.

4. RESULTS

Figure 1 shows the swings in levels of the Platinum (London Platinum Free Market \$/Troy oz), GOLD (Gold Bullion LBM \$/t oz DELAY), SILVER (Silver – Zurich SW commodity markets, francs/kg), and the stock markets of KOREA, CHINA, JAPAN, PHILIPPINES, INDONESIA. The sample period comprises the period from January 1, 2019 to October 20, 2020, and it is a period of great complexity, due to the understanding of global pandemic (Covid-19). The markets analyzed clearly reveal the instability experienced in these markets in the first quarter of 2020.

Figure 2 shows the evolutions of the markets under analysis, and we can see that these indices present very similar patterns of behavior during the sampling period and that they were strongly affected by the pandemic. The values of the indexes suffered strong variations over the months studied. However, despite the strong variations, the yields present characteristics of seasonality in the average, giving the first indication that the series can be stationary. On the other hand, the graphical analysis also allows to verify the existence of a more pronounced bear market period in the first quarter of 2020, and to a lesser extent the third quarter. These indications arise due to the climate of pessimism and uncertainty experienced in international markets due to the evolution of the Covid-19 pandemic.
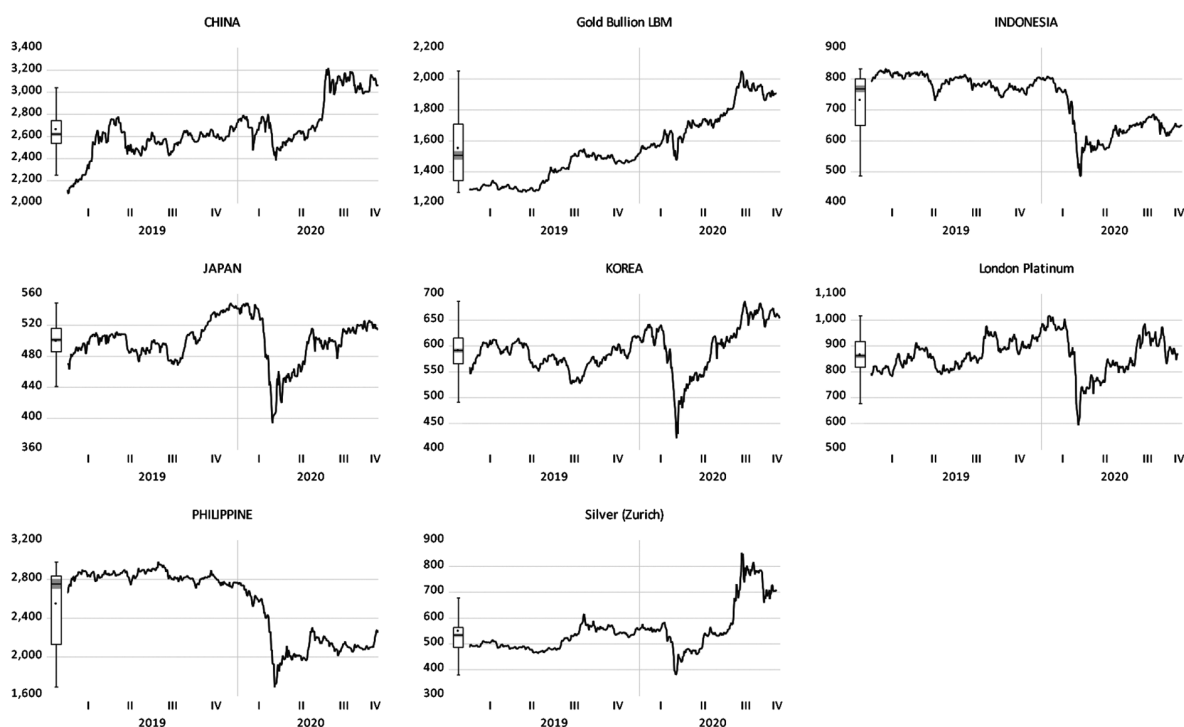
Figure 1. Evolution, in levels, of the 8 markets,
in the period from January 1, 2019 to October 20, 2020.

Source: Own elaboration.

Note: Thomson Reuters: January 1, 2019, 471-point data.
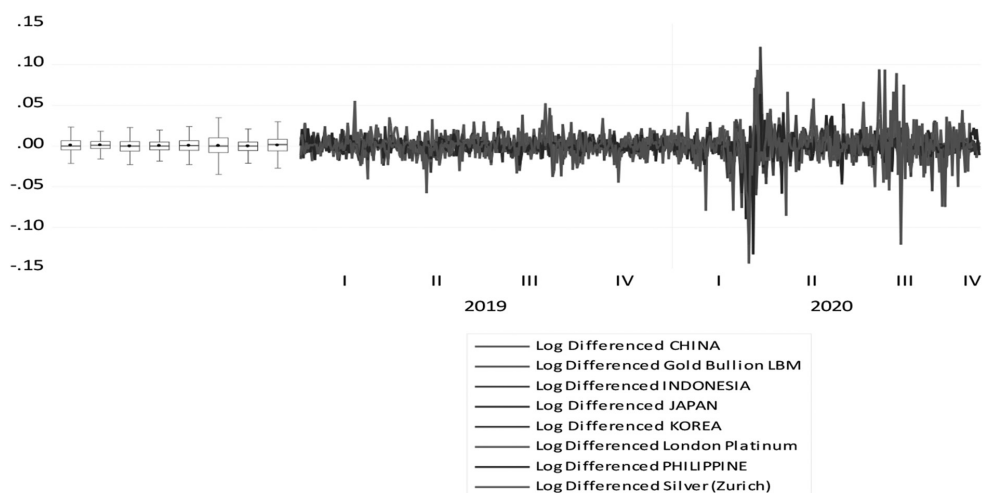
Figure 2. Evolution and return of the 8 markets,
in the period from January 1, 2019 to October 20, 2020.

Source: Own elaboration.

Note: Thomson Reuters: January 1, 2019, 470-point data.

Figure 3 shows the average yields of the Platinum (London Platinum Free Market $/Troy oz), GOLD (Gold Bullion LBM $/t oz DELAY), SILVER (Silver – Zurich SW commodity markets, francs/kg), and the stock markets of KOREA, CHINA, JAPAN, PHILIPPINES, INDONESIA. Markets in CHINA (0.000831), GOLD (0.000844), JAPAN (0.000206), KOREA (0.000356), PLATINUM (0.000189), SILVER (0.000797) have positive average yields, while PHILIPPINE markets (-0.000442), INDONESIA (-0.000432) have negative averages.
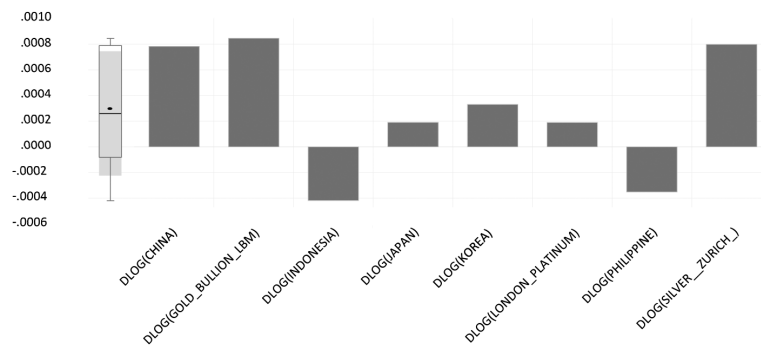
Figure 3. Evolution of average yields on the 8 markets January 1, 2019 to October 20, 2020.
Source: Own elaboration.

Figure 4 shows the standard deviations for the 8 markets under review. Commodity markets, namely SILVER (0.020311), PLATINUM (0.018795) have the sharpest standard deviations, while GOLD (0.009371) presents the lowest risk. The INDONESIA stock markets (0.014654) have the sharpest standard deviation, while the stock indices of KOREA (0.013826), PHILIPPINES (0.013766), CHINA (0.012678), JAPAN (0.010971) show less marked standard deviations.
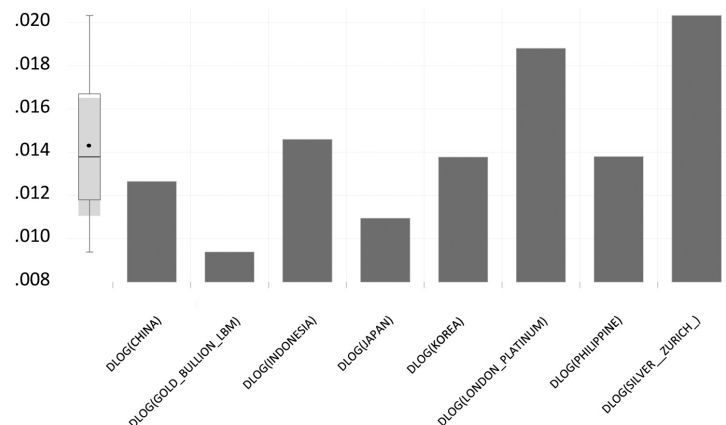
Figure 4. Evolution of Standard Deviations
for the 8 markets under review from January 1, 2019 to October 20, 2020
Source: Own elaboration.

Figure 5 shows the Skewness for the 8 markets under review. Commodity markets, namely PLATINUM (-1.026253), SILVER (-0.445377), have negative asymmetries, while GOLD (-0.305960) has smaller (negative) asymmetry. Philippine stock markets (-2.684595), JAPAN (-0.079217) CHINA (-0.690930), KOREA (-0.039344) have negative asymmetries, while INDONESIA (0.422974) has positive asymmetry. These values are different from the reference values for normal distributions (Skewness = 0).

Figure 6 shows the Kurtosis of the Platinum (London Platinum Free Market \$/Troy oz), GOLD (Gold Bullion LBM \$/t oz DELAY), SILVER (Silver – Zurich SW commodity markets, francs/kg), and the stock markets of KOREA, CHINA, JAPAN, PHILIPPINES, INDONESIA. The PHILIPPINE market (27.59491) has the strongest value, while INDONESIA (16.87296), PLATINUM (13.10225), SILVER (12.36280), KOREA (11.15687), CHINA (9.130501), JAPAN (8.980370), GOLD (8.137330) have smaller Kurtosis values. However, these values are different from the reference values (Skewness = 0; Kurtosis = 3), so we can evidence that time series do not follow normal distributions.
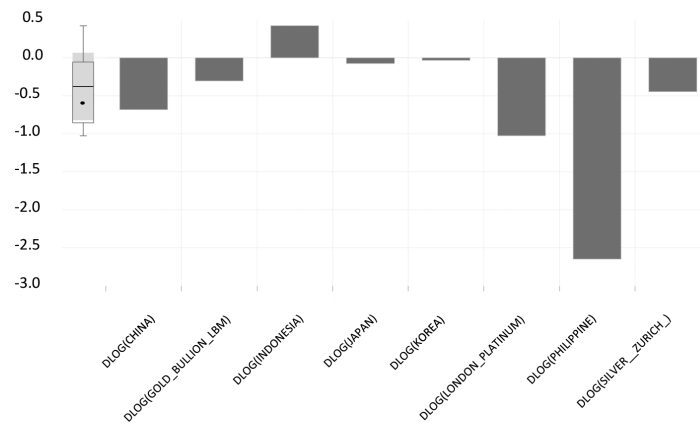
Figure 5. Evolution of the Skewness, concerning the 8 markets under review,
January 1, 2019 to October 20, 2020.
Source: Own elaboration.
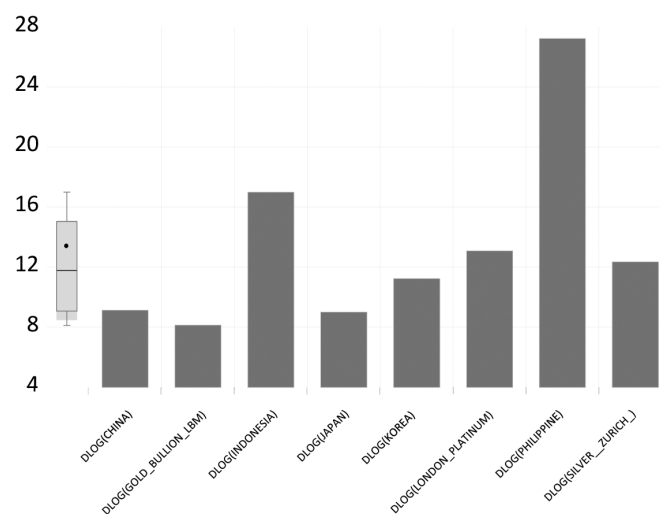
Figure 6. Evolution of Kurtosis for the 8 markets
under review January 1, 2019 to October 20, 2020
Source: Own elaboration.

Table 1 shows the results of the Jarque-Bera adherence test and we can see that the null hypothesis that time series follow a normal distribution are rejected with a significance level of 1%. These results corroborate the analyses previously performed on asymmetries and Kurtosis, which confirmed that time successions do not follow normal distributions.

Table 1. Jarque-Bera test for the 8 markets
under review from January 1, 2019 to October 20, 2020.

	China	Gold	INDONE-SIA	Japan	KOREA	Platinum	PHILIP-PINES	Silver
Jarque-Bera	775.0418***	525.2947***	3791.051***	702.3773***	1305.861***	2085.515***	12437.11***	1735.940***
Observations	471	471	471	471	471	471	471	471

Source: Own elaboration.

Figure 7 shows the stability tests performed on stock market residues, measuring the existence of disturbances in variance. Additionally, when examining the graphs and the probability limits of 95% we verified the existence of violation of probability limits, therefore, the time series show an unstable behavior.
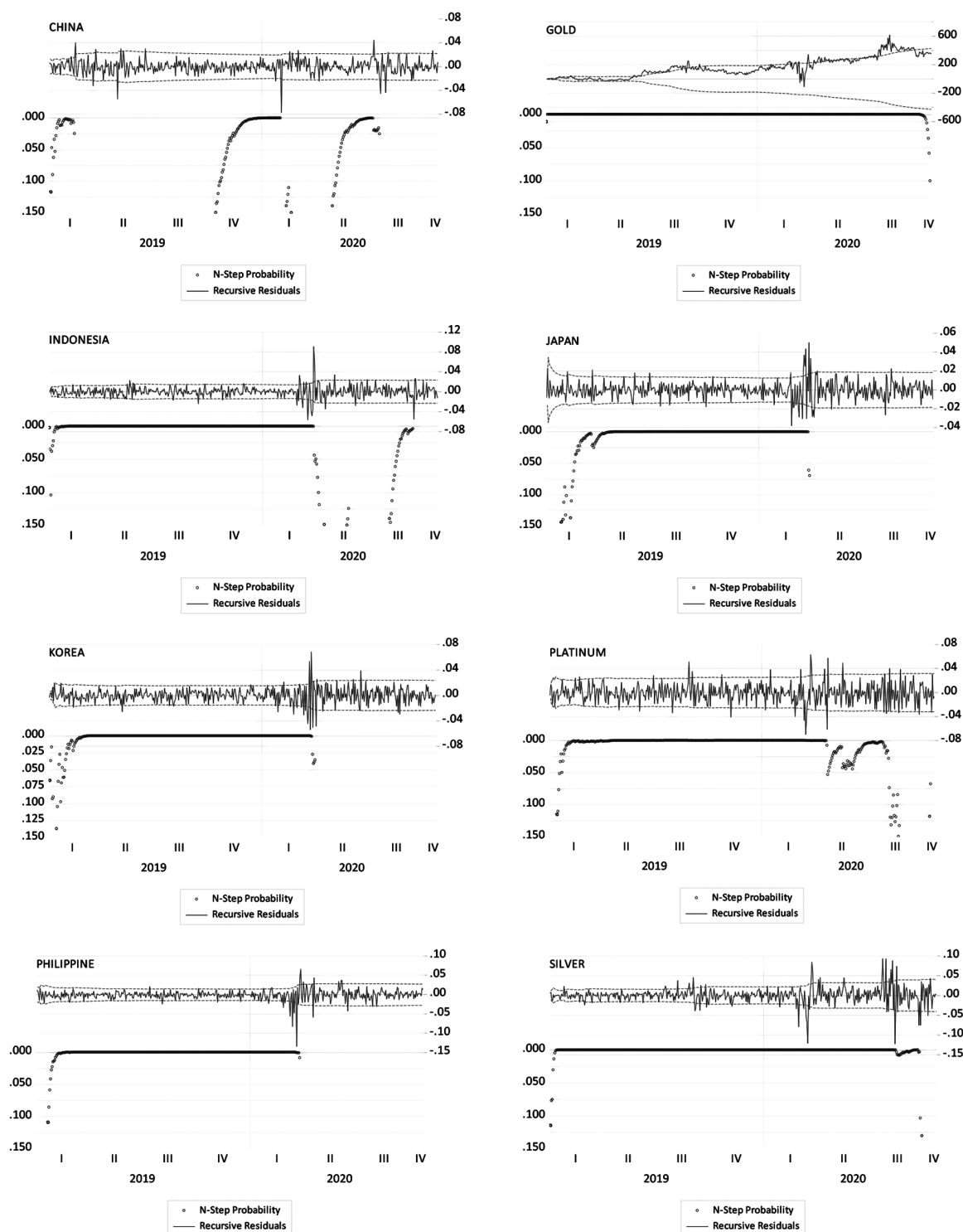
Figure 7. Stability tests carried out on waste for the 8 markets
under analysis January 1, 2019 to October 20, 2020.
Source: Own elaboration.

Since we are in the presence of time successions, we should study the stationary nature of the series concerning the 8 markets under analysis. For this, we use the tests of unitary roots in panel of Hadri (2000), Levin, Lin, and Chu (2002), which postulate null hypotheses contrary to the intersections of unitary root tests in panel and show the temporality of the time series, in the first differences, that is, we are facing a white noise (average = 0; constant variance) (see tables 2 and 3).

Table 2. Hadri parking test (2000) for the 8 markets
under review January 1, 2019 to October 20, 2020.

Method		Statistic	Prob.[**]
Hadri Z-stat		-1.42427	0.9228
Heteroscedastic Consistent Z-stat		-1.71740	0.9570
Intermediate results on D(UNTITLED)			

Series	Lm	Variance Hac	Bandwidth	Note
D(CHINA)	0.0643	1174.127	1.0	475
D(GOLD)	0.0688	197.7653	15.0	470
D(INDONESIA)	0.0657	108.1340	8.0	475
D(JAPAN)	0.0717	28.17722	1.0	475
D(KOREA)	0.0606	71.83385	7.0	475
D(PHILIPPINES)	0.1399	1174.302	8.0	475
D(PLATINUM)	0.0419	310.1432	6.0	470
D(SILVER)	0.0962	161.7774	13.0	470

Source: Own elaboration.

Note: [**] Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution.
All other tests assume asymptotic normality.

Table 3. Levin, Lin, and Chu parking test (2002) for the 8 markets
under review from January 1, 2019 to October 20, 2020.

Method				Statistic		Prob.[**]	
Levin, Lin & Chu t[*]				-59.6755		0.0000	
Series	2nd stage Coefficient	Variance Of Reg	HAC of Dep.	Lag	Max Lag	Band-Width	Note
D(CHINA)	-0.98331	1154.9	68.025	0	17	35.0	474
D(GOLD)	-0.94440	237.16	6.5022	0	17	69.0	469
D(INDONESIA)	-0.93152	85.989	0.7427	0	17	229.0	474
D(JAPAN)	-0.95345	26.922	0.9894	0	17	56.0	474
D(KOREA)	-0.84577	54.542	1.9817	1	17	63.0	473
D(PHILIPPINES)	-0.81165	874.75	10.254	2	17	200.0	472
D(PLATINUM)	-0.75950	234.09	6.7638	1	17	75.0	468
D(SILVER)	-0.90342	158.35	5.7795	1	17	59.0	468
	Coefficient	T-Stat	Reg SE	mu[*]	sig[*]		Note
Pooled	-0.91299	-48.210	1.002	-0.500	0.707		3772

Source: Own elaboration.

Note: [**] Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution.
All other tests assume asymptotic normality.

Table 4 presents the results of the variance ratio methodology proposed by Lo and Mackinlay (1988) in order to evaluate the autocorrelation between the profitability series. In all cases, statistics were calculated for 2- 16-day lags, with intervals of 1 day. The results of the variance test indicate that the random walk hypothesis is rejected in the Gold, Platinum and Silver markets, as well as in the Asian stock markets, with no differences between markets. These findings show that profitability is auto-correlated over time, with a reversal of the mean, because the values of variance ratios are lower than the unit, i.e., price fluctuations are not i.i.d. These results suggest that the hypothesis of efficiency and market, in weak form, may be questionable, since the prediction of the movement of a given market can be improved if the out-of-lag movements of the other markets are considered, thus enabling the occurrence of arbitrage operations. In the face of these events, investors adjusting their trading strategies to the necessary missteps will be able to achieve anomic profitability without incurring additional risk.

Table 4. Tests of the Variance Ratios of Lo and Mackinlay, return, for the 8 markets under analysis, in the period from January 1, 2019 to October 20, 2020.

Null Hypothesis: CHINA is a random walk

Joint Tests		Value	Df	Probability
Max |z| (at period 2)		9.891207	470	0.0000
Wald (Chi-Square)		129.3755	15	0.0000
Individual Tests				
Period	Var. Ratio	Std. Error	z-Statistic	Probability
2	0.543753	0.046127	-9.891207	0.0000
3	0.371040	0.068761	-9.146993	0.0000
4	0.325561	0.086295	-7.815513	0.0000
5	0.258539	0.101058	-7.336967	0.0000
6	0.248294	0.114028	-6.592297	0.0000
7	0.202096	0.125720	-6.346684	0.0000
8	0.190771	0.136444	-5.930841	0.0000
9	0.168921	0.146404	-5.676603	0.0000
10	0.153518	0.155741	-5.435183	0.0000
11	0.147128	0.164558	-5.182809	0.0000
12	0.142113	0.172932	-4.960836	0.0000
13	0.134540	0.180923	-4.783574	0.0000
14	0.124183	0.188580	-4.644282	0.0000
15	0.123604	0.195940	-4.472782	0.0000
16	0.117778	0.203035	-4.345163	0.0000

Source: Own elaboration.

Null Hypothesis: INDONESIA is a random walk

Joint Tests		Value	Df	Probability
Max |z| (at period 3)		9.247328	475	0.0000
Wald (Chi-Square)		108.3891	15	0.0000
Individual Tests				
Period	Var. Ratio	Std. Error	z-Statistic	Probability
2	0.581053	0.045883	-9.130744	0.0000
3	0.367496	0.068399	-9.247328	0.0000
4	0.318554	0.085840	-7.938610	0.0000
5	0.264649	0.100525	-7.315114	0.0000
6	0.230427	0.113426	-6.784788	0.0000
7	0.221823	0.125056	-6.222611	0.0000
8	0.210580	0.135724	-5.816359	0.0000
9	0.200735	0.145632	-5.488263	0.0000
10	0.197452	0.154919	-5.180424	0.0000
11	0.194629	0.163690	-4.920112	0.0000
12	0.183545	0.172019	-4.746301	0.0000
13	0.176481	0.179969	-4.575905	0.0000
14	0.179603	0.187585	-4.373477	0.0000
15	0.169953	0.194906	-4.258706	0.0000
16	0.168940	0.201964	-4.114893	0.0000

Source: Own elaboration.

Null Hypothesis: PHILIPPINES is a random walk

Joint Tests	Value	Df	Probability
Max |z| (at period 2)	9.969695	475	0.0000
Wald (Chi-Square) Individual Tests	134.1463	15	0.0000
Period	Var. Ratio	Std. Error	z-Statistic	Probability
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2	0.542559	0.045883	-9.969695	0.0000
3	0.352370	0.068399	-9.468469	0.0000
4	0.286863	0.085840	-8.307794	0.0000
5	0.256082	0.100525	-7.400328	0.0000
6	0.192431	0.113426	-7.119775	0.0000
7	0.175003	0.125056	-6.597002	0.0000
8	0.147364	0.135724	-6.282125	0.0000
9	0.135041	0.145632	-5.939360	0.0000
10	0.119308	0.154919	-5.684840	0.0000
11	0.124550	0.163690	-5.348237	0.0000
12	0.110563	0.172019	-5.170565	0.0000
13	0.111237	0.179969	-4.938434	0.0000
14	0.102427	0.187585	-4.784899	0.0000
15	0.098169	0.194906	-4.627005	0.0000
16	0.093598	0.201964	-4.487936	0.0000

Source: Own elaboration.

Null Hypothesis: JAPAN is a random walk

Joint Tests	Value	Df	Probability
Max |z| (at period 2)	10.95323	475	0.0000
Wald (Chi-Square) Individual Tests	164.0095	15	0.0000
Period	Var. Ratio	Std. Error	z-Statistic	Probability
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2	0.497431	0.045883	-10.95323	0.0000
3	0.398386	0.068399	-8.795712	0.0000
4	0.293969	0.085840	-8.225016	0.0000
5	0.246203	0.100525	-7.498602	0.0000
6	0.201813	0.113426	-7.037065	0.0000
7	0.193042	0.125056	-6.452757	0.0000
8	0.173259	0.135724	-6.091334	0.0000
9	0.157409	0.145632	-5.785772	0.0000
10	0.152183	0.154919	-5.472636	0.0000
11	0.139889	0.163690	-5.254529	0.0000
12	0.143912	0.172019	-4.976699	0.0000
13	0.129846	0.179969	-4.835037	0.0000
14	0.114014	0.187585	-4.723128	0.0000
15	0.121050	0.194906	-4.509611	0.0000
16	0.114978	0.201964	-4.382078	0.0000

Source: Own elaboration.

Null Hypothesis: KOREA is a random walk

Joint Tests	Value	Df	Probability
Max |z| (at period 2)	11.46637	475	0.0000
Wald (Chi-Square) Individual Tests	197.8483	15	0.0000

Period	Var. Ratio	Std. Error	z-Statistic	Probability
2	0.473887	0.045883	-11.46637	0.0000
3	0.376193	0.068399	-9.120178	0.0000
4	0.309891	0.085840	-8.039521	0.0000
5	0.257482	0.100525	-7.386407	0.0000
6	0.231423	0.113426	-6.776012	0.0000
7	0.221925	0.125056	-6.221791	0.0000
8	0.219534	0.135724	-5.750380	0.0000
9	0.184520	0.145632	-5.599609	0.0000
10	0.200278	0.154919	-5.162183	0.0000
11	0.182925	0.163690	-4.991616	0.0000
12	0.186375	0.172019	-4.729848	0.0000
13	0.175934	0.179969	-4.578944	0.0000
14	0.169966	0.187585	-4.424850	0.0000
15	0.166790	0.194906	-4.274934	0.0000
16	0.172180	0.201964	-4.098847	0.0000

Source: Own elaboration.

Null Hypothesis: GOLD is a random walk

Joint Tests	Value	Df	Probability
Max |z| (at period 2)	10.74843	470	0.0000
Wald (Chi-Square) Individual Tests	129.2428	15	0.0000

Period	Var. Ratio	Std. Error	z-Statistic	Probability
2	0.504212	0.046127	-10.74843	0.0000
3	0.393245	0.068761	-8.824065	0.0000
4	0.336479	0.086295	-7.688999	0.0000
5	0.278858	0.101058	-7.135909	0.0000
6	0.231306	0.114028	-6.741278	0.0000
7	0.216106	0.125720	-6.235249	0.0000
8	0.197247	0.136444	-5.883376	0.0000
9	0.178571	0.146404	-5.610693	0.0000
10	0.174708	0.155741	-5.299124	0.0000
11	0.164645	0.164558	-5.076359	0.0000
12	0.154382	0.172932	-4.889888	0.0000
13	0.144675	0.180923	-4.727556	0.0000
14	0.129343	0.188580	-4.616920	0.0000
15	0.124668	0.195940	-4.467349	0.0000
16	0.125460	0.203035	-4.307326	0.0000

Source: Own elaboration.

Null Hypothesis: LONDON PLATINUM is a random walk

Joint Tests	Value	Df	Probability
Max |z| (at period 2)	10.14569	470	0.0000
Wald (Chi-Square)	107.9239	15	0.0000
Individual Tests			
Period	Var. Ratio	Std. Error	z-Statistic	Probability
2	0.532014	0.046127	-10.14569	0.0000
3	0.391688	0.068761	-8.846704	0.0000
4	0.318037	0.086295	-7.902700	0.0000
5	0.270666	0.101058	-7.216969	0.0000
6	0.229260	0.114028	-6.759226	0.0000
7	0.206900	0.125720	-6.308476	0.0000
8	0.191467	0.136444	-5.925737	0.0000
9	0.169198	0.146404	-5.674710	0.0000
10	0.157813	0.155741	-5.407604	0.0000
11	0.153138	0.164558	-5.146288	0.0000
12	0.151540	0.172932	-4.906326	0.0000
13	0.141592	0.180923	-4.744598	0.0000
14	0.132280	0.188580	-4.601345	0.0000
15	0.128408	0.195940	-4.448263	0.0000
16	0.122997	0.203035	-4.319456	0.0000

Source: Own elaboration.

Null Hypothesis: SILVER is a random walk

Joint Tests	Value	Df	Probability
Max |z| (at period 2)	10.78277	470	0.0000
Wald (Chi-Square)	145.8002	15	0.0000
Individual Tests			
Period	Var. Ratio	Std. Error	z-Statistic	Probability
2	0.502628	0.046127	-10.78277	0.0000
3	0.410889	0.068761	-8.567464	0.0000
4	0.308393	0.086295	-8.014456	0.0000
5	0.266180	0.101058	-7.261360	0.0000
6	0.224454	0.114028	-6.801373	0.0000
7	0.215455	0.125720	-6.240421	0.0000
8	0.191659	0.136444	-5.924335	0.0000
9	0.169664	0.146404	-5.671532	0.0000
10	0.169570	0.155741	-5.332115	0.0000
11	0.165985	0.164558	-5.068216	0.0000
12	0.163239	0.172932	-4.838673	0.0000
13	0.160215	0.180923	-4.641665	0.0000
14	0.151248	0.188580	-4.500762	0.0000
15	0.153894	0.195940	-4.318192	0.0000
16	0.145504	0.203035	-4.208604	0.0000

Source: Own elaboration.

5. CONCLUSION

The general conclusion to be withheld and supported by the results obtained, through the Lo and Mackinlay variance ratio methodology, shows that the random walk hypothesis is rejected in the Gold, Platinum and Silver markets, as well as in Asian stock markets, with no differences between markets. These findings show that profitability is auto-correlated over time, with a reversal of the mean, because the values of variance ratios are lower than the unit, i.e., price fluctuations are not i.i.d. These results suggest that the hypothesis of efficiency and market, in weak form, may be questionable, since the prediction of the movement of a given market can be improved if the out-of-lag movements of the other markets are considered, thus enabling the occurrence of arbitrage operations. In order to conclude the global pandemic of 2020 affected the memory properties of these foreign exchange markets, the authors suggest that the implementation of strategies for diversifying efficient portfolios in these markets may be questionable. These findings also make room for regulators in these markets to take steps to ensure better information between these markets and international markets.

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WTI OIL SHOCKS IN EASTERN EUROPEAN STOCK MARKETS: A VAR APPROACH

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Abstract: *The 2020 Russia-Saudi Oil Price War was an economic war triggered in March 2020 by Saudi Arabia in response to Russia's refusal to reduce oil production to keep oil prices at a moderate level. In view of these events, this study aims to analyze oil shocks (WTI) in the eastern European stock markets, namely the stock indices of Hungary (BUX), Croatia (CROBE), Russia (MOEX), Czech Republic (PRAGUE), Slovakia (SAX 16), Slovenia (SBI TOP), Bulgaria (SOFIX), from September 2019 to January 2021. The results show mostly structural breakdowns in March 2020, while the VAR Granger Causality/Block Exogeneity Wald Tests model shows two-way shocks between oil (WTI) and the stock markets analyzed. These findings show that the hypothesis of portfolio diversification may be called into question. As a final discussion, we consider that investors should avoid investments in stock markets, at least as long as this pandemic last, and rebalance their portfolios into assets considered "safe haven" for the purpose of mitigating risk and improving the efficiency of their portfolios.*

Keywords: *Oil (WTI), Eastern European markets, shocks, portfolio diversification.*

1. INTRODUCTION

Globalization has accentuated the integration of international financial markets and has shown that the correlation between international financial markets has increased significantly. Since the mid-2000s, international financial markets have been subject to a number of significant financial crises, notably the *subprime crisis in* the US in 2008, and the sovereign debt crisis in Europe in 2010, which originated in developed economies. These events significantly infected developed economies, however, this significance was not dense in emerging economies. The interdependence and integration of financial markets are quite different concepts, with the interdependence between markets associated with the phenomenon of co-movements between the prices of various markets, even though there are no justified economic bases or sufficient knowledge about the facts that led to this joint movement occurrence. On the other hand, we are dealing with integrated markets when assets with similar risk but belonging to different markets are associated with similar yields. The understanding of the synchronizations between the stock markets, as well as the study on the occurrence of movements, in periods of turbidity, is important for investors, investment fund managers, academics, in various aspects, particularly when it is to implement strategies for diversification of efficient portfolios (Alex-

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andre, Dias, and Heliodoro, 2020; Alexandre, Heliodoro, and Dias, 2019; Days, Rui; Carvalho, Luisa, 2020; Dias, Alexandre, and Heliodoro, 2020, 2020; Dias, da Silva, and Dionysus, 2019; Dias, Heliodoro, and Alexandre, 2019, 2020; Dias, Heliodoro, Alexandre, and Vasco, 2020b, 2020a; Dias, Heliodoro, Alexandre, et al., 2020a; Dias, Heliodoro, Teixeira, and Godinho, 2020; Dias et al., 2020; Dias, Pardal, Teixeira, and Machová, 2020; Heliodoro, Dias, and Alexandre, 2020; Heliodoro, Dias, Alexandre, and Vasco, 2020; Heliodoro, Dias, Alexandre, et al., 2020; Sparrow, P., Dias, R., Šuleř, P., Teixeira, N., and Krulický, 2020; Santos, H.and Dias, R. , 2020).

The 2020 Russia-Saudi Oil Price War was an economic war triggered in March 2020 by Saudi Arabia in response to Russia's refusal to reduce oil production to keep oil prices at a moderate level. This economic conflict resulted in a sharp drop in the price of oil in the spring of 2020. On March 8, 2020, Saudi Arabia started a price war with Russia, facilitating a quarterly drop of 65% in the price of oil. In the first weeks of March, oil prices in the United States fell 34%, crude oil fell 26% and Brent oil fell 24%. The price war was triggered by a disruption in dialogue between the Organization of the Petroleum Exporting Countries (OPEC) and Russia over proposed cuts in oil production due to the 2020 global pandemic. Russia withdrew from the agreement, leading to the fall of the OPEC alliance. The price of oil had already fallen 30% since the beginning of the year due to the drop in demand. Price war is one of the main causes and effects of the ongoing global stock market crash. In early April 2020 and again in June 2020, Saudi Arabia and Russia agreed to cuts in oil production. The price turned negative on April 20. Oil production can be slowed, but not completely halted, and even the lowest possible production level resulted in higher supply than demand; investors who owned it in their oil futures portfolios even paid to unload oil contracts they thought they would not be able to store (Cardona-Arenas and Serna-Gómez, 2020; Dias, Heliodoro, Alexandre, et al., 2020b; L. Liu, Wang, and Lee, 2020; M. Osagie Adenomon, 2020; Mzoughi, Urom, Uddin, and GUESMI, 2020; Sakurai and Kurosaki, 2020; Salisu, Ebuh, and Usman, 2020; Sharif, Aloui, and Yarovaya, 2020; Villarreal-Samaniego, 2020).

In view of these events, this study aims to analyze oil shocks (WTI) in the eastern European stock markets, namely the stock indices of Hungary (BUX), Croatia (CROBE), Russia (MOEX), Czech Republic (PRAGUE), Slovakia (SAX 16), Slovenia (SBI TOP), Bulgaria (SOFIX), from September 2019 to January 2021. The results show the strong co-movements between the WTI index and the Eastern stock markets, as well as clashes between the stock markets analyzed. These findings call into question the hypothesis of efficient portfolio diversification.

This research differs from the studies conducted so far, on the impact of the WTI index on the eastern European stock markets; as far as we know, the authors Xiao and Wang (2020), Alqahtani, Lahiani,and Salem (2020), Naeem, Hasan, Arif, Balli, and Shahzad (2020), Dias, Heliodoro, Alexandre, et al. (2020b) analyzed the oil shocks in the various financial markets, but the research issues, the sample, and the approach was essentially distinct from the one followed in this trial.

In terms of structure, this paper is organized into 5 sections. In addition to the current introduction, section 2 presents a Literature Review on articles on the impact of oil on international financial markets, section 3 describes the methodology and data, section 4 contains the results. Section 5 presents the general discussions of the work.

2. LITERATURE REVIEW

The economic turbulence associated with the global 2020 pandemic has widespread and serious repercussions on financial markets, including the oil war and currency fluctuations. The oil price war between Russia and Saudi Arabia comes after an agreement was reached by the Organization of petroleum exporting countries (OPEC), which led to a collapse in oil prices and a sharp drop in international financial markets in March 2020 (G.Sudha and V.Sornaganesh, 2020).

Xiao and Wang (2020), Alqahtani, Lahiani, and Salem (2020), Naeem, Hasan, Arif, Balli, and Shahzad (2020), Dias, Heliodoro, Alexandre, et al. (2020b) analyzed oil shocks in international stock markets. Xiao and Wang (2020) examined the co-movements between crude oil (WTI and Brent) and 8 stock markets; the authors show nonlinear two-way causation relationships between the oil markets and the stock markets. Alqahtani, Lahiani, and Salem (2020) analyzed the impact of international oil prices on the stock markets of gulf cooperation council (GCC) countries from April 7, 2004 to August 15, 2018. The authors show the existence of shocks between oil and stock markets; in view of these results investors and portfolio managers should have some caution in the diversified action of their portfolios in these regional markets. Naeem, Hasan, Arif, Balli, and Shahzad (2020) show that the global financial crisis of 2008 has increased the shocks between BRIC countries stock markets and oil and gold prices. Dias, Heliodoro, Alexandre, et al. (2020b) analyzed the shocks between oil (WTC) and the stock markets of Brazil (BOVESPA), China (SSEC), India (SENSEX), Russia (IMOEX) in the period from January 2019 to May 29, 2020. The authors show shocks between oil (WTC) and the stock markets analyzed, with the exception of the China market.

Sparrow, P., Dias, R., Šuleř, P., Teixeira, N., and Krulický (2020), Dias et al. (2020), Dias and Pereira (2020), He, Liu, Wang, and Yu (2020) analyzed several international stock markets in the context of the global pandemic. Sparrow, P., Dias, R., Šuleř, P., Teixeira, N., and Krulický (2020) examined the diversification of portfolios in the stock markets of Austria (ATX), Slovenia (SBITOP), Hungary (BUDAPEST SE), Lithuania (OMX VILNIUS), Poland (WIG), Czech Republic (PX PRAGUE), Russia (MOEX) and Serbia (BELEX 15), showing that these markets have sharp levels of integration which calls into question the diversification of portfolios in this period of global pandemic. Dias et al. (2020) analyzed the Belgium (index BEL 20), France (index CAC 40), Germany (index DAX 30), USA (index DOW JONES), Greece (index FTSE Athex 20), Spain (index IBEX 35), Ireland (index ISEQ), Portugal (index PSI 20) and China (index SSE), from December2019 to May 2020, showing that the global pandemic caused sharp imbalances in these regional stock markets. Dias and Pereira (2020) analyzed the evolution of the numbers Covid-19 (confirmed cases and deaths) and the stock markets of Greece (ATG), France (CAC40), Germany (DAX 30), United Kingdom (FTSE 100), Italy (FTSE MID), Spain (IBEX 35), Ireland (ISEQ) and Portugal (PSI 20), in the period from December 2019 to 23 July 2020. The authors suggest that the Covid data do not cause shocks in Europe's stock markets, but evidence emerges of imbalances in the stock markets analyzed due to the uncertainty and pessimism experienced in the global economy. He, Liu, Wang, and Yu (2020) examined the direct effects and repercussions of Covid-19 on the stock exchanges of the People's Republic of China, Italy, South Korea, France, Spain, Germany, Japan and the United States. The authors show that Covid-19 has a negative but short-term impact on the stock exchanges of the affected countries and that the impact of Covid-19 on stock exchanges has two-way effects between Asian, European and American markets.

In summary, this work aims to contribute to the provision of information to investors and regulators in eastern European stock markets, where individual and institutional investors seek diversification benefits, as well as to help to promote the implementation of policies that contribute to the efficiency of these markets. Therefore, the objective of this work is to examine the co-movements between WTI and eastern European stock markets in order to test whether these markets are immune to oil shocks on international markets.

3. METHODOLOGY

3.1. Data

The data analyzed relate to the prices indexes of the stock indices of Hungary (BUX), Croatia (CROBE), Russia (MOEX), Czech Republic (PRAGUE), Slovakia (SAX 16), Slovenia (SBI TOP), Bulgaria (SOFIX) and Crude Oil (WTI), from 2 September 2019 to 11 January 2021. The time series have daily scales, and were obtained from the *DataStream* platform, and the prices index is in local currency, to mitigate distortions in exchange rates.

Table 1. The name of countries and their indices used in this paper

Country	Index
Hungary	BUDAPEST IF BUX
Croatia	CRObe
Russia	MOEX
Czech Republic	PRAGUE
Slovakia	SAX 16
Slovenia	SBI TOP
Bulgaria	SOFIX
Crude Oil-WTI Spot Cushing U$/BBL	WTI

Source: Own elaboration

3,2, Methodology

The development of the research took place through several stages. The characterization of the sample used was made through descriptive statistics, the adherence test of Jarque and Bera (1980),as well as graphs of stability to the residues. As we are estimating time series we should examine the stationary nature of the data series through the tests of Hadri (2000), Levin, Lin, and Chu (2002). To estimate the structural breakdowns in the financial markets, we used the unit root test of Clemente et al. (1998) . To evaluate the co-movements between WTI and the Eastern European stock markets under analysis, we used the VAR *Granger Causality/Block Exogeneity Wald Tests model,* which uses Wald's statistic, which tests whether the null hypothesis that the coefficients of the endogenous variables lain in the variable "cause" are null or not "cause" in the Granger sense of the dependent variable. It should be noted, however, that the result of this test has a high sensitivity to the number of lags considered in the model, so the first concern is to conveniently estimate this value, in order to reach robust evidence (Gujarati, 2004). Additionally, to determine the number of lags to be included in the causality tests, we used the LR: sequential modified LR test statistic (each test at 5% level), and to measure the robustness of the model we applied the VAR Residual Serial Correlation LM Tests.

4. RESULTS

Figure 1 shows the evolution of central European financial markets, and the WTI index, at levels, from September 2 to January 11, 2021. We easily see that stock markets, and WTI, show significant declines, which coincides with the upheaved oil trade war in 2020.
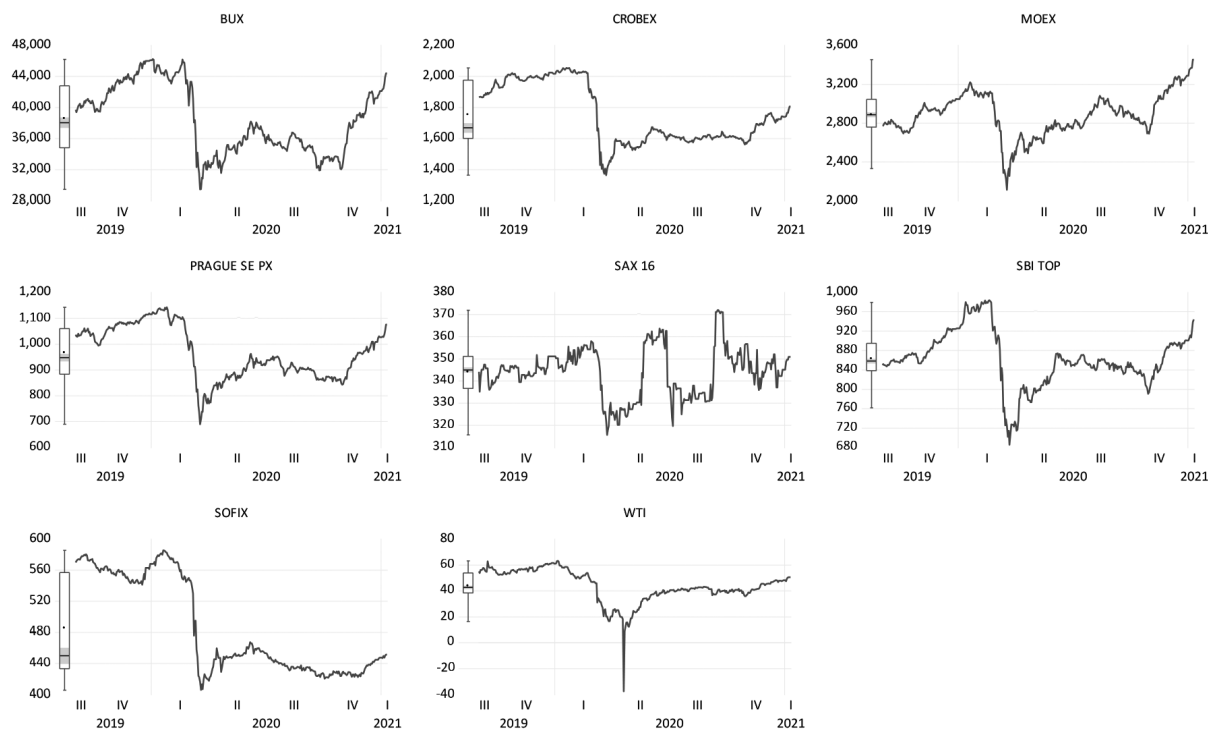
Figure 1. Evolution, in levels, of the eight financial markets
in the period from September 2, 2019 to January 11, 2021.
Source: Own elaboration

Figure 2 shows the evolutions in return of the 8 financial markets, namely Budapest (BUX), Croatia (CROBE), Russia (MOEX), Czech Republic (PRAGUE), Slovakia (SAX 16), Slovenia (SBI TOP), Bulgaria (SOFIX), Crude Oil (WTI). In all series, a relatively high dispersion around the mean is noted, as well as a relatively synchronized behavior between the data series. Through graphical analysis, high volatility is observed, especially in February, March and April 2020.
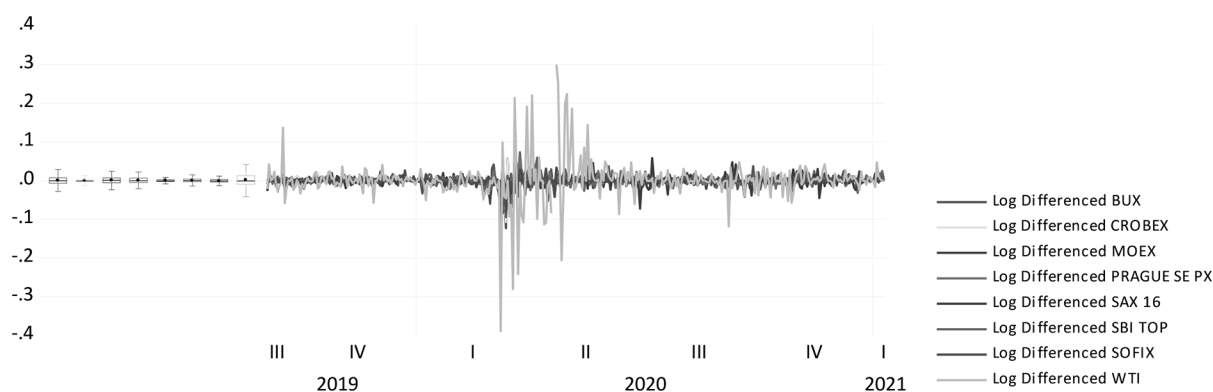
Figure 2. Evolution, in levels, of the 8 financial markets
in the period from September 2, 2019 to January 11, 2021.
Source: Own elaboration

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Table 2 shows the main descriptive statistics of the yields of the seven Eastern European stock markets and Crude Oil (WTI), as well as the Jarque-Bera adherence test. The analyses of descriptive statistics show profitability, present positive daily averages, with the exception of the stock markets of Croatia and Bulgaria with negative average yields; The Market of Russia (MOEX) presents the highest standard deviation, while the Bulgarian stock market (SOFIX), presents the highest levels of shortness and asymmetry. Additionally, the coefficients of asymmetry and kurtosis are statistically different from those of a normal distribution, and such indications were corroborated with the Jarque-Bera adherence test that rejects the null hypothesis with a significance of 1%.

Table 2. Descriptive statistics on profitability of the 8 financial markets
from September 2, 2019 to January 11, 2021.

	BUX	CROBEX	MOEX	PRAGUE	SAX 16	SBI TOP	SOFIX	WTI
Mean	0.000454	-6.21E-05	0.000674	0.000176	5.48E-05	0.000389	-0.000542	0.001794
Std. Dev.	0.016651	0.012412	0.014333	0.013931	0.011578	0.011574	0.010270	0.053849
Skewness	-1.650667	-3.570529	-0.969373	-1.194833	-0.100943	-2.318422	-4.552123	-0.261100
Kurtosis	14.20073	33.88451	13.71982	12.85617	11.46669	22.85478	47.87305	20.13644
Jarque-Bera	2011.2***	14821.5***	1750.432***	1517.1***	1057.9***	6131.7***	30923.0***	4335.5***
Observations	354	354	354	354	354	354	354	354

Note: ***, **, * represent significance at 1%. 5% and 10%. respectively.

Source: Own elaboration

Figure 3 shows the stability tests carried out on the waste of the time series of the eastern European stock markets, namely the stock indices of Budapest (BUX), Croatia (CROBE), Russia (MOEX), Czech Republic (PRAGUE), Slovakia (SAX 16), Slovenia (SBI TOP), Bulgaria (SOFIX), and Crude Oil (WTI) for the purpose of corroborating the presence of structural breakdowns. The determination of the structure break is relevant because it has a potentially similar effect to that of the unit roots. Through graphical analysis we can assess the existence of disturbances in variance. Additionally, when examining the graphs and the probability limits of 95% we verified the existence of violation of probability limits, therefore, the time series show an unstable behavior.
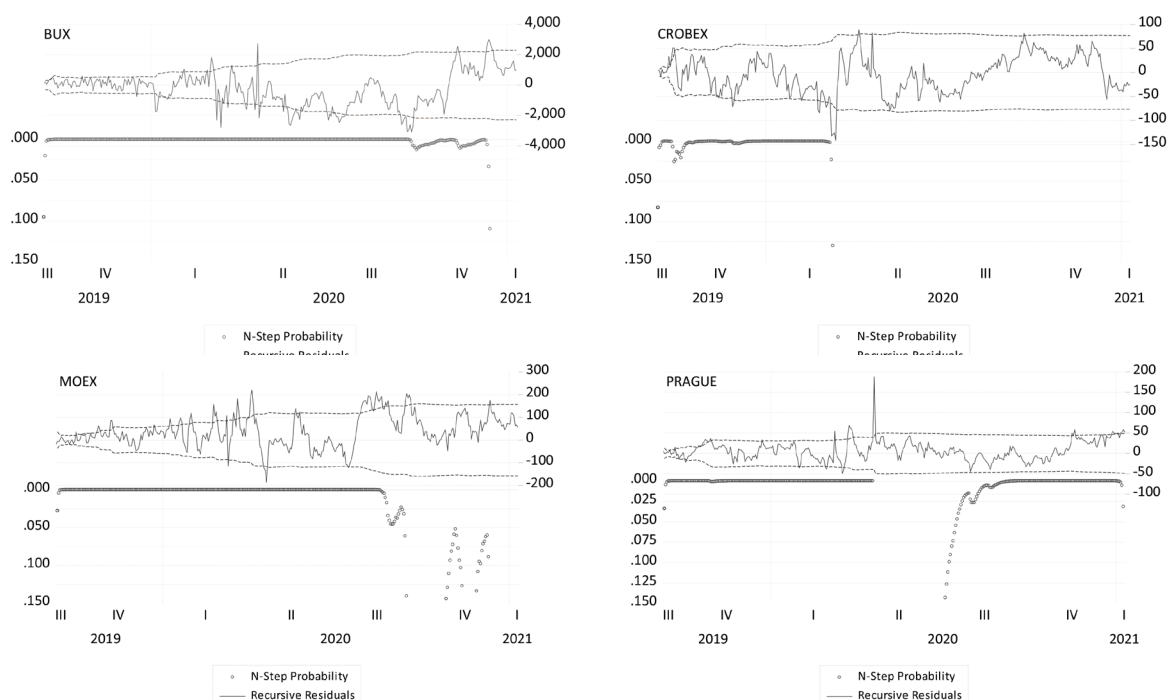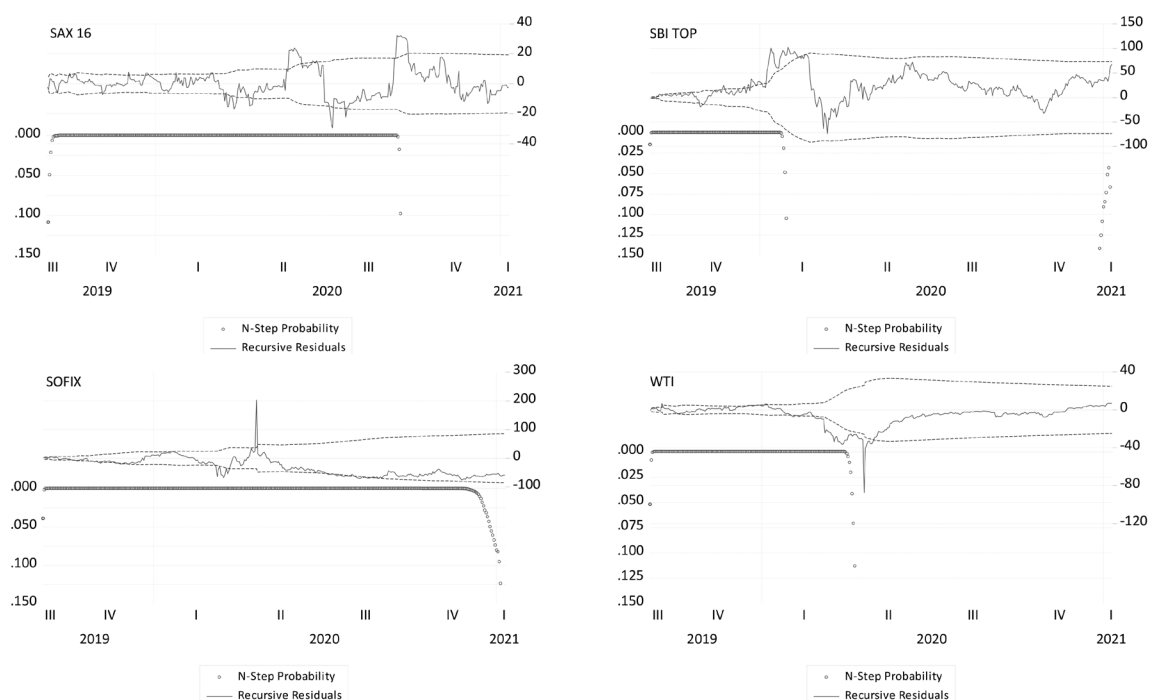
Figure 3. Stability tests carried out on the waste of Europe's 8 financial markets in the period from September 2, 2019 to January 11, 2021.

Source: Own elaboration

As we are estimating time series, we should examine the stationary nature of the data series of the 7 Eastern European stock markets and Crude Oil (WTI). The Tests of Hadri (2000), Levin, Lin, and Chu (2002) performed postulate contrary hypotheses. The intersection of unit root tests shows the temporality of time series in the first differences. However, we must highlight the lags of the tests, which suggest that the time series may not be stable and, in view of this indication, we will perform the test by Clemente et al. (1998) that analyzes the parking with structural breaks (see tables 3 and 4).

Table 3. Levin, Lin , and Chu parking test (2002), applied
to the 8 financial markets of Europe, from September 2, 2019 to January 11, 2021.

Method						Statistic	Prob.**
Levin, Lin & Chu t*						-34.5961	0.0000
Series	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Note
D(BUX)	-0.93576	371735	24864.	0	16	31.0	354
D(CROBEX)	-0.55923	350.01	51.194	2	16	14.0	352
D(MOEX)	-0.87141	1416.2	15.625	1	16	191.0	353
D(PRAGUE)	-0.69468	142.10	37.920	1	16	7.0	353
D(SAX 16)	-1.09964	15.406	0.5797	0	16	81.0	354
D(SBI TOP)	-0.62732	79.328	11.420	5	16	17.0	349
D(SOFIX)	-0.49905	21.869	3.3382	4	16	13.0	350
D(WTI)	-1.67107	14.082	0.5940	1	16	58.0	353
	Coefficient	T-Stat	SE Reg	mu*	sig*		Note
Pooled	-0.91464	-35.446	1.025	-0.503	0.719		2818

Note: ** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution.
All other tests assume asymptotic normality.

Source: Own elaboration.
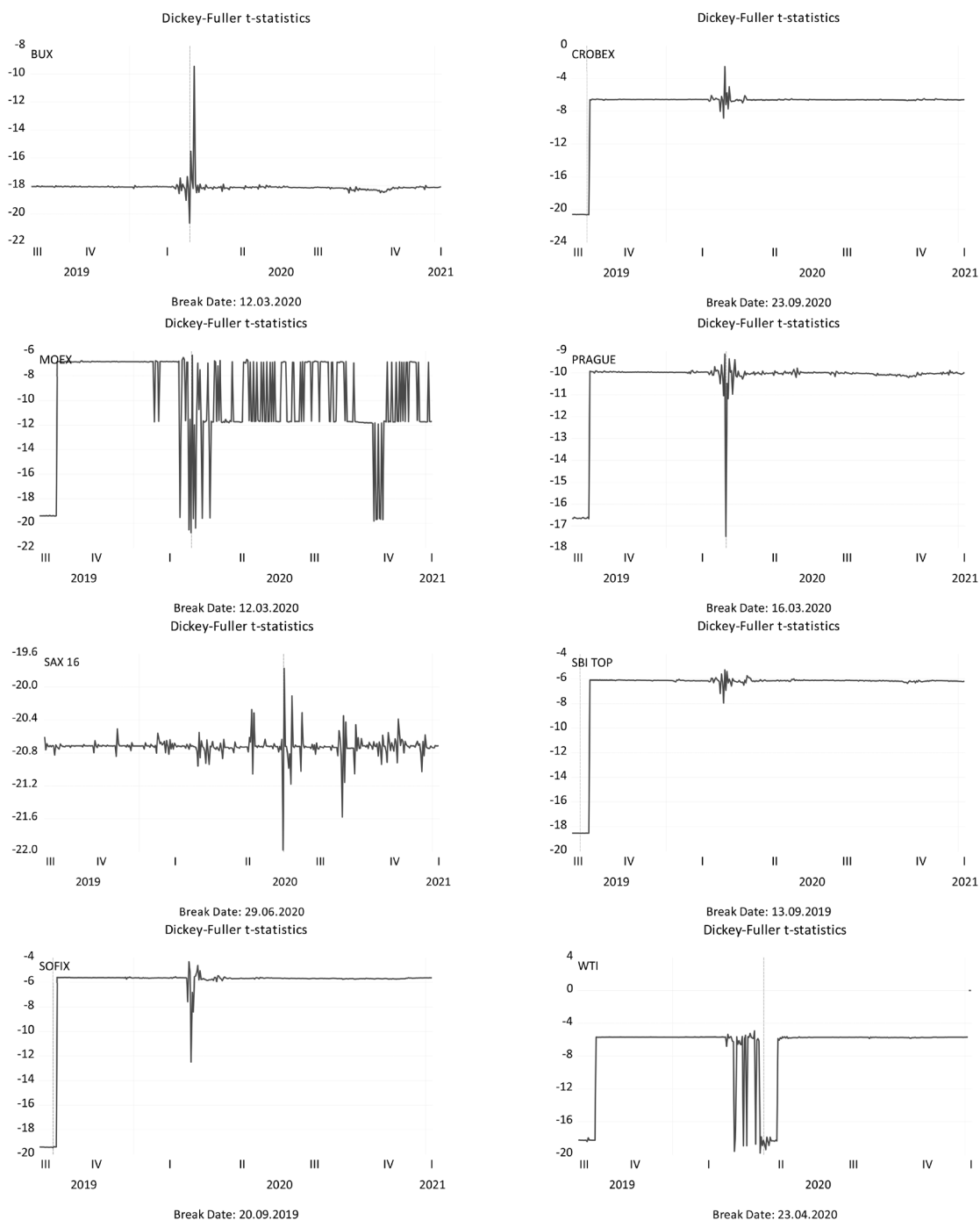
Note: Lag Length (Automatic Length based on SIC). Break Selection: Minimize Dickey-Fuller t-statistic

Figure 4: Parking tests with structural breaks by Clemente et al. (1998) , return, referring to the 8 financial markets, in the period from September 2, 2019 to January 11, 2021.
Source: Own elaboration

Figure 4 shows the results of unitary root tests, with structural breaks, by Clemente et al. (1998); the results suggest sharp breaks in the stock indices BUX (12/03/2020), CROBE (26/09/2019), MOEX (12/03/2020), PRAGUE (16/03/2020), SAX 16 (29/06/2020), SBI TOP (13/09/2019), SO-FIX (20/09/2019), and WTI (22/04/2020). These findings are corroborated by the authors Sansa (2020), He, Liu, Wang, and Yu (2020), who show structural breakdowns in financial markets, resulting from the uncertainty in international financial markets.

Table 4. Hadri stationary test (2000), applied to the 8 financial markets of Europe, from September 2, 2019 to January 11, 2021.

Method		Statistic	Prob.[**]
Hadri Z-stat		0.78067	0.2175
Heteroscedastic Consistent Z-stat		-0.58845	0.7219
Intermediate results on D(UNTITLED)			
		Variance	
Series	Lm	Hac	Bandwidth	Note
D(BUX)	0.2082	530994.2	8.0	355
D(CROBEX)	0.1341	837.4791	12.0	355
D(MOEX)	0.1580	2055.180	8.0	355
D(PRAGUE)	0.2027	269.4124	9.0	355
D(SAX 16)	0.0279	13.73427	6.0	355
D(SBI TOP)	0.0963	165.7788	12.0	355
D(SOFIX)	0.1198	46.71800	13.0	355
D(WTI)	0.1381	4.632343	14.0	355

Note: [**] Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Source: Own elaboration.

To analyze the significance of causality relationships between the financial markets in analysis, the *VAR Granger Causality/Block Exogeneity Wald Tests model was applied.* To determine the number of lags to be included in the causality tests, we used the LR: sequential modified LR test statistic (each test at 5% level), which suggests 10 lags (see table 5).

Table 5. VAR Lag Order Selection Criteria, from September 2, 2019 to January 11, 2021.

Lag	LogL	Lr	Fpe	Cbl	Sc	Hq
0	8030.962	In	1.89e-31	-48.04169	-47.95041[*]	-48.00529[*]
1	8140.091	212.3772	1.44E-31	-48.31192	-47.49036	-47.98436
2	8226.022	163.1140	1.26e-31	-48.44325	-46.89140	-47.82451
3	8340.234	211.3264	9.37e-32	-48.74392	-46.46180	-47.83400
4	8426.771	155.9733	8.22E-32	-48.87887	-45.86647	-47.67778
5	8499.645	127.8563	7.83E-32	-48.93200	-45.18933	-47.43975
6	8593.648	160.4243	6.59e-32[*]	-49.11166[*]	-44.63871	-47.32823
7	8654.454	100.8583	6.78e-32	-49.09254	-43.88930	-47.01794
8	8707.798	85.92573	7.32E-32	-49.02873	-43.09522	-46.66296
9	8765.379	89.99087	7.74E-32	-48.99029	-42.32650	-46.33335
10	8825.302	**90.78256[*]**	8.11E-32	-48.96588	-41.57181	-46.01776

Source: Own elaboration

Table 6. VAR Residuals Test, from September 2, 2019 to January 11, 2021.

Lag	LRE[*] stat	Df	Prob.	Rao F-stat	Df	Prob.
1	78.95130	64	0.0988	1.240908	(64, 1379.2)	0.0990
2	91.50767	64	0.0136	1.444744	(64, 1379.2)	0.0137
3	81.54046	64	0.0687	1.282791	(64, 1379.2)	0.0689
4	95.94926	64	0.0060	1.517282	(64, 1379.2)	0.0060
5	93.92517	64	0.0088	1.484197	(64, 1379.2)	0.0088
6	80.30698	64	0.0819	1.262829	(64, 1379.2)	0.0821
7	69.79313	64	0.2891	1.093378	(64, 1379.2)	0.2895
8	85.56653	64	0.0372	1.348071	(64, 1379.2)	0.0373
9	96.38754	64	0.0055	1.524453	(64, 1379.2)	0.0055
10	82.93244	64	0.0559	1.305340	(64, 1379.2)	0.0561
11	**74.30488**	**64**	**0.1777**	**1.165939**	**(64, 1379.2)**	**0.1779**

Source: Own elaboration

In table 6 we can verify the autocorrelation test to the residues with 11 lags, which validates the VAR Lag Order Selection Criteria test at 10 lags. A smaller number of lags increases the degrees of freedom, a greater number of lags decreases the problems of autocorrelation; in view of this we estimate a VAR with 10 lags for the time series concerning the stock markets of Eastern Europe and WTI.

The results of the Granger causality tests are shown in Table 7 for the stock markets of Budapest (BUX), Croatia (CROBEX), Russia (MOEX), Czech Republic (PRAGUE), Slovakia (SAX 16), Slovenia (SBI TOP), Bulgaria (SOFIX), and Crude Oil (WTI). The results show two-way sharp shocks between WTI and Eastern European stock markets, namely WTI (7 out of 7 possible), CROBEX (6), PRAGUE (6), SBI TOP (6), SOFIX (6), BUX (5), MOEX (5), while SAX 16 (2) has clashes with WTI and the Russia (MOEX) stock index. These findings show that the assumption of the hypothesis and efficiency of the markets may be questionable, since the prediction of the movement of a given market can be improved if the out-of-lag movements of the other markets are considered, thus enabling the occurrence of arbitrage operations. These findings are validated by the authors Xiao and Wang (2020), Alqahtani, Lahiani, and Salem (2020), Naeem, Hasan, Arif, Balli, and Shahzad (2020), Dias, Heliodoro, Alexandre, et al. (2020b) that show sharp shocks between Crude Oil and stock markets.

Table 7. Causality Tests of Granger / Block Exogeneity Wald Tests, from September 2, 2019 to January 11, 2021.

Null Hypothesis:	Note	F-Statistic	Prob.
CROBEX does not Granger Cause BUX	346	5.69983	7.E-08
BUX does not Granger Cause CROBEX		1.40462	0.1767
MOEX does not Granger Cause BUX	346	3.67392	0.0001
BUX does not Granger Cause MOEX		5.15719	5.E-07
PRAGUE does not Granger Cause BUX	346	2.86241	0.0020
BUX does not Granger Cause PRAGUE		3.64061	0.0001
SAX 16 does not Granger Cause BUX	346	0.68923	0.7345
BUX does not Granger Cause SAX 16		1.41183	0.1735
SBI TOP does not Granger Cause BUX	346	7.38134	1.E-10
BUX does not Granger Cause SBI TOP		2.30116	0.0127
SOFIX does not Granger Cause BUX	346	9.53497	6.E-14
BUX does not Granger Cause SOFIX		2.03207	0.0297
WTI does not Granger Cause BUX	334	3.68278	0.0001
BUX does not Granger Cause WTI		3.46809	0.0002
MOEX does not Granger Cause CROBEX	346	6.93822	7.E-10
CROBEX does not Granger Cause MOEX		8.02118	1.E-11
PRAGUE does not Granger Cause CROBEX	346	1.97742	0.0351
CROBEX does not Granger Cause PRAGUE		8.46398	3.E-12
SAX 16 does not Granger Cause CROBEX	346	0.81027	0.6189
CROBEX does not Granger Cause SAX 16		1.90390	0.0439
SBI TOP does not Granger Cause CROBEX	346	2.98974	0.0013
CROBEX does not Granger Cause SBI TOP		5.60654	1.E-07
SOFIX does not Granger Cause CROBEX	346	6.24072	1.E-08
CROBEX does not Granger Cause SOFIX		4.94031	1.E-06
WTI does not Granger Cause CROBEX	334	3.76993	8.E-05
CROBEX does not Granger Cause WTI		6.77669	1.E-09

PRAGUE does not Granger Cause MOEX	346	3.54124	0.0002
MOEX does not Granger Cause PRAGUE		5.01766	9.E-07
SAX 16 does not Granger Cause MOEX	346	0.40062	0.9460
MOEX does not Granger Cause SAX 16		1.22508	0.2737
SBI TOP does not Granger Cause MOEX	346	6.02939	2.E-08
MOEX does not Granger Cause SBI TOP		4.40757	8.E-06
SOFIX does not Granger Cause MOEX	346	7.45435	1.E-10
MOEX does not Granger Cause SOFIX		4.07718	3.E-05
WTI does not Granger Cause MOEX	334	4.65539	3.E-06
MOEX does not Granger Cause WTI		5.04551	8.E-07
SAX 16 does not Granger Cause PRAGUE	346	0.82241	0.6072
PRAGUE does not Granger Cause SAX 16		1.21640	0.2792
SBI TOP does not Granger Cause PRAGUE	346	6.39602	5.E-09
PRAGUE does not Granger Cause SBI TOP		3.46976	0.0002
SOFIX does not Granger Cause PRAGUE	346	7.52665	9.E-11
PRAGUE does not Granger Cause SOFIX		3.41856	0.0003
WTI does not Granger Cause PRAGUE	334	2.52353	0.0062
PRAGUE does not Granger Cause WTI		4.43079	8.E-06
SBI TOP does not Granger Cause	346	1.28692	0.2365
SAX 16 does not Granger Cause SBI TOP		0.87334	0.5585
SOFIX does not Granger Cause	346	1.53807	0.1245
SAX 16 does not Granger Cause SOFIX		0.42656	0.9333
WTI does not Granger Cause SAX 16	334	1.65242	0.0912
SAX 16 does not Granger Cause WTI		1.70412	0.0788
SOFIX does not Granger Cause SBI TOP	346	7.96135	2.E-11
SBI TOP does not Granger Cause SOFIX		2.42949	0.0084
WTI does not Granger Cause SBI TOP	334	4.82750	2.E-06
SBI TOP does not Granger Cause WTI		4.34235	1.E-05
WTI does not Granger Cause SOFIX	334	2.94509	0.0015
SOFIX does not Granger Cause WTI		4.84227	2.E-06

Source: Own elaboration

5. CONCLUSION

The overall conclusion to be withheld and sustained in the results obtained, through tests carried out with econometric models show that oil (WTI) causes shocks in all stock markets in Eastern Europe. We also found that these co-movements are two-way, i.e., the shocks are from WTI to the stock markets, but also from the stock indices to the WTI. These findings show that hypothesis and efficiency of the markets may be questionable, since the prediction of the movement of a given market can be improved if the out-of-lag movements of the other markets are considered, thus enabling the occurrence of arbitrage transactions. In conclusion, we consider that the global pandemic of 2020 and the war over petroleum affected the properties of the markets analyzed. These findings are relevant to regulators and supervisors as well as to individual and institutional investors operating in these regional markets, when they want to maximize the profitability and diversification of their portfolios.

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TRANSPARENCY OF FINANCIAL STATEMENTS
AND COMPARATIVE ANALYSIS OF BANK LIQUIDITY, SOLVENCY
AND PROFITABILITY INDICATORS IN THE REPUBLIC OF SERBIA
AS AN INDICATOR OF BANK PERFORMANCE MEASUREMENT

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Abstract: *The banking sector is an important segment of the economic system. Strengthening the role of the non-banking sector, liberalization and deregulation on the financial market have encouraged faster development and transformation of the banking sector. The analytical significance of banks' balance sheet information was previously used primarily for statistical and monetary analysis. In modern conditions, the financial statements of banks are a significant information resource for many internal and external users. The paper aims to, through the analysis of liquidity, solvency and profitability indicators of the 5 largest banks in the Republic of Serbia, according to the criterion of balance sheet assets for the period from 2017 to 2019, point to their trend in the banking sector, bearing in mind that selected banks make half of the balance sheet assets of the sector.*

Keywords: *Financial statements, Indicators, Banks, Republic of Serbia.*

1.   INTRODUCTION

Banks are characterized by complex business activities and need a well-established accounting information system to collect, classify, record and consolidate information. Such systematized information is disclosed in financial statements, the quality of which determines the interest of investors, shareholders, the state, the public and other interested users. Financial reporting on banks' operations provides us with accurate, timely and relevant information when making business decisions. In recent years, the role of financial reporting in banks has been very important for assessing business efficiency.

The subject of this paper is the analysis of the banking sector operations of the Republic of Serbia through insight into the performance indicators of the 5 largest banks according to the criterion of balance sheet assets. The paper structure includes three parts. The first part of the paper focuses on the transparency of financial statements in banks. The second part of the paper will present the theoretical and methodological assumptions of the analysis of liquidity, solvency and profitability indicators. The final part of the paper is dedicated to the comparative analysis of liquidity, solvency and profitability indicators of selected commercial banks in the Republic of Serbia.

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2.   TRANSPARENCY OF FINANCIAL STATEMENTS IN BANKS

General-purpose financial statements provide information about the financial position of the reporting entity, i.e. information on the economic resources of entities and the requirements of other parties in relation to the reporting entity (Conceptual framework for financial reporting). They are compiled at the end of the year, but also semi-annually or quarterly. By linking the relevant information contained in the reports, the banks' return power, the efficiency of asset and resource management, as well as exposure to financial risks can be viewed. Also, financial statements are the starting point for assessing the development prospects of banks and their performance. According to the Law on Accounting (Article 2), the basic financial statements are: Balance sheet; Income statement (Profit and Loss Statement); Statement of net comprehensive income; Cash Flow Statement; Statement of Changes in Equity and Notes to the Financial Statements.

The global financial crisis has affected accounting and financial reporting. Therefore, the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) have disclosed the postulates in order to establish an adequate form of financial statements. Standards regarding the manner in which financial statements are prepared and the financial reporting function are recognized by the Securities and Exchange Commission and the American Institute of Certified Public Accountants. The financial crisis has highlighted the importance of the following principles of transparent financial reporting (Zajmi, 2013, p.63):

- *Effective financial reporting* – should provide relevant, transparent and reliable information on the economic performance of entities. Reporting depends on the quality of accounting standards and their application.
- *Limitations in financial reporting* – users of information should not only rely on financial statements, but should also recognize limitations. The financial statements provide only information for a certain period, they do not take into account other relevant qualitative and quantitative information.
- *Harmonization of accounting standards* – a set of quality harmonized financial reporting standards should be achieved, regardless of the geographical location of the reporting entity.
- *Independence and accountability of accounting standards makers* – makers must have a high degree of independence from commercial pressures, but also an appropriate degree of responsibility when adopting standards.

The Association of Accountants and Auditors of the Republic of Serbia has an important role in the process of harmonization of regulations in the field of accounting and transparency of financial reporting. Implementation of International Accounting Standards for financial reporting in national legislation is a necessary but not sufficient condition for harmonizing financial reporting. It is necessary to improve the segment of quality control of financial reporting. The benefits arising from the process of harmonization of financial reporting in the Republic of Serbia can be direct and indirect. The direct benefits are: the growth of national accounting regulations into supranational regulations, easier preparation of financial statements, continuous improvement of financial reporting. Indirect benefits, in turn, are reflected in stimulating the inflow of foreign investment, reducing investment risk, reducing the price of capital, increasing the efficiency of the financial market and the like.

3. THEORETICAL AND METHODOLOGICAL ASSUMPTIONS IN THE ANALYSIS OF BANK LIQUIDITY, SOLVENCY AND PROFITABILITY INDICATORS

A well-designed performance measurement system allows commercial banks to monitor, measure and control their performance in accordance with the defined strategy. As the operations of banks differ from the operations of entities in the non-financial sector, the financial statements must reflect the specifics of banking operations. What the financial statements have in common is that the balance sheet equation assets = liabilities must be met, while the structure of the report differs. As Savić (2016) points out, this is exactly the reason why, in recent years, special attention has been paid to the regulation of financial reporting and efforts have been initiated to standardize and harmonize this process. By researching the academic literature, we come across different approaches in measuring the financial performance of banks.

Bassei et al. (2016) point out that bank performance is a concept that should be used to achieve sustainable profitability. Khravish (2011) states that bank's financial performance can be measured by three different variables. First, the most important profitability ratio is the rate of return on assets (ROA), which shows a bank's ability to make a profit. The second variable is the rate of return on equity (ROE) which shows the return on invested capital of shareholders, while the last variable is the return on investment (ROI) which uses the invested capital to measure the efficiency of the bank. It was Etebari (2018) who used the previously mentioned variables and combined the analysis of financial indicators with a benchmark to measure performance in relation to the budget, while other authors used the net interest margin, return on equity, investment and the like.

Among the mentioned indicators, ROA is most often used, which has been confirmed by numerous authors in their studies. Hassan and Bashir (2003) point out that ROA not only shows the profit that results from investment but also reflects the ability and efficiency of management to use the invested resources in order to achieve a higher amount of profit. However, the European Central Bank (2010) announced that a good performance measurement structure should cover more aspects than just profitability indicators. According to Abubakar (2015), if we look only at the total amount of credit approved by the bank, we cannot determine whether the bank is over-indebted. A more useful indicator in this context is the leverage ratio, which represents the relationship between assets and capital in a bank. A higher level of leverage ratio shows that the bank uses a higher amount of debt to finance its assets compared to its own capital.

Baharuddin and Azmi (2015) point out that the deposit ratio in relation to the loan ratio has a more desirable impact on improving bank profitability, while Naceur (2003) emphasizes the positive impact of bank loans and interest rates on bank profitability. Tarawneh (2006) finds that banks that have high capital, deposits, loans, or total assets do not always record good performance. Operational efficiency and asset management, in addition to the size of the bank, have strongly and positively influenced the financial performance of banks.

For the purposes of this paper, we opt for the indicators presented by Lukić (2018). This author observes various aspects of banks' operations, namely: liquidity and portfolio management, loan portfolio, liability and capital-leverage management, efficiency and productivity and profitability.

The bank's liquidity represents the ability to unconditionally settle liabilities at any time during their maturity. Cash and other liquid assets are used to ensure liquidity, as well as money ob-

tained in the form of short-term liabilities (Ibidem, p.245). For the needs of liquidity assessment, four liquidity ratios were developed, presented in the following table.

Table 1. Liquidity ratio

Liquidity ratio	Formula
First liquidity ratio	Average liquid assets/Average total assets
Second liquidity ratio	Average liquid assets/Average deposits
Third liquidity ratio	Average net deposits/Average deposits
Fourth liquidity ratio	Average short-term liabilities/Average total assets

Source: Authors based on Lukić, 2018, p. 245

In order to protect banks from risk, bank analysts attach great importance to the net value of the bank, which is the difference between the total assets and liabilities of the bank. The leverage ratio, expressed through four indicators, is used to assess the solvency of banks.

Table 2. Leverage ratio

Leverage ratio	Formula
First leverage ratio	Capital/Average total assets
Second leverage ratio	Capital/Average risk assets
Third leverage ratio	Capital/Average net loans granted
Fourth leverage ratio	Capital/Average given deposits

Source: Authors based on Lukić, 2018, p. 245

The profitability analysis was performed by applying the appropriate rates of return, namely: rates of return on total assets and rates of return on equity. The calculation formulas are given in the following table.

Table 3. Profitability ratio

Profitability ratio	Formula
Return on assets (ROA)	(Total revenue/Total average assets)* (Period profit/Total revenue)
Return on equity (ROE)	(Total revenue/Total average assets)* (Period profit/Total revenue)* (Total average assets/Equity)

Source: Authors based on Lukić, 2018, p. 245

4. COMPARATIVE ANALYSIS OF LIQUIDITY, SOLVENCY AND PROFITABILITY INDICATORS OF BANKS IN THE REPUBLIC OF SERBIA

At the end of December 2019, the banking sector of the Republic of Serbia consisted of 26 banks, and the organizational network consisted of 1598 business units and 23087 employees. Banks are majority owned by foreign entities. Banks originating from Italy, Hungary and Austria (a total of six banks) have a dominant share in the banking sector of Serbia, with a share in the total balance sheet total of 53.7%.

The paper performs a comparative analysis of commercial banks in the Republic of Serbia, which are ranked according to the criterion of total balance sheet assets for the IV quarter of 2019. The process of restructuring the financial system in the countries of Central and Eastern Europe is characterized by the dominance of banks with majority foreign ownership. It was no-

ticed that the "domestic" owners did not adequately "take care" of their property, which resulted in a change in the ownership structure (Dimić & Barjaktarović, 2017, p. 90).

When defining the sample, based on the quarterly report for the fourth quarter of 2019 of the National Bank of Serbia, we considered the share of the 5 largest banks according to the criterion of the total balance sheet assets, which amounts to 53.4%. We were guided by the view that the share of these banks with over 50% in total balance sheet assets significantly determines the performance of the overall sector. According to this criterion, the largest bank in Serbia is Banca Intesa a.d. Belgrade, which has a market share of 16%, followed by: UniCredit Bank Srbija a.d. Belgrade, Komercijalna banka a.d. Belgrade, Raiffeisen Bank a.d. Belgrade and OTP Bank Srbija a.d. Belgrade. In order to assess the relative share of the mentioned banks in the total balance sheet assets, the period from 31 December to 30 September 2019 was observed. The following table shows their share in the observed period.

Table 4. Ranking of the 5 largest banks according to the criterion of balance sheet assets (in billion RSD, in %)

Bank	31.12.2018.			30.09.2019.			31.12.2019.			ΔG	ΔT
	Amount	Share	Ranking	Amount	Share	Ranking	Amount	Share	Ranking		
Banca Intesa a.d. Belgrade	571	15.1%	1	633	15.9%	1	653	16.0%	1	-	-
UniCredit Bank Srbija a.d. Belgrade	437	11.6%	2	458	11.5%	2	442	10.8%	2	-	-
Komercijalna banka a.d. Belgrade	401	10.6%	3	420	10.5%	3	432	10.6%	3	-	-
OTP Banka Srbija a.d. Belgrade	316	78.4%	4	331	8.3%	4	336	8.2%	4	-	-
Raiffeisen Banka a.d. Belgrade	292	7.7%	5	314	7.9%	5	319	7.8%	5	-	-

Source: IV quarter report, National Bank of Serbia, 2019.

Bearing in mind that the ranking of the observed banks did not change in the analyzed period, and given the defined subject and goal of the paper, the performance indicators of banks were analyzed in accordance with the previously selected methodology. The first, second and fourth liquidity ratios were determined, as well as their average values in the period from 2017 to 2019 (Graphs 1, 2 and 3).
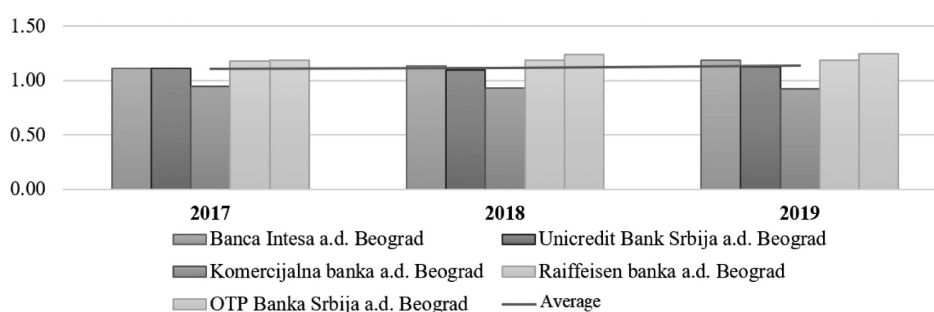
Graph 1. Indicator of the first liquidity ratio of banks
Source: Author's calculation

Graph 1 for the observed period shows the share of average liquid assets in the average total assets. Values range from 0.93 to 1.25, with all analyzed banks, except Komercijalna Banka, having values above the average. In the observed period, we can notice that the value of liquidity indicators is constant, with a small decline in 2017. This may be due to a smaller amount of deposits collected, or their withdrawal. Komercijalna banka has the lowest liquidity ratio during the observed period, while OTP Banka has the largest share of liquid assets in total assets.

Observing the values of the second liquidity ratio in Graph 2, it can be seen that in 2017, Raiffeisen and OTP Bank had a value higher than one and above average value, which may be a consequence of higher lending activity of banks, rather than a decrease in their deposit potential. During 2019, a larger decline in this indicator is noticeable. Analyzing the movement of the reference interest rate, which gradually decreased during the period, we can conclude that as a result, the demand for loans increased. As banks followed the trend of decreasing the reference interest rate they could reduce the lending interest rate they charge their clients so they can become more attractive. The reason for the decrease in deposits is the low (close to zero) interest rate on deposits, due to the negative interest rate on deposits of European banks.
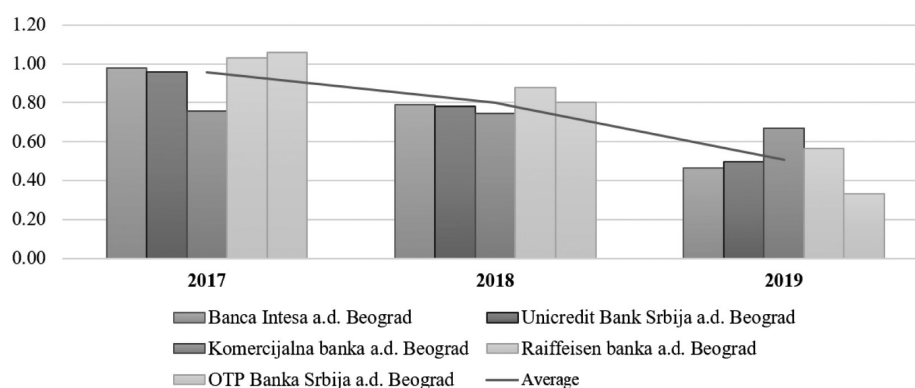
Graph 2. Indicator of the second liquidity ratio of banks

Source: Author's calculation

Banks have a small share of capital and a large share of liabilities in their sources of financing, because the largest part of the liabilities of the Bank's Balance Sheet consists of deposits. The fourth liquidity ratio shows us the relationship between short-term liabilities and total assets. The average values of this indicator show a slight increase in the period from 2017 to 2019. The share of banks' liabilities in total assets is about 80%. Intesa and Raiffeisen Bank have the lowest value in 2017, which tells us that they have a smaller share of liabilities in their sources of financing compared to other banks.
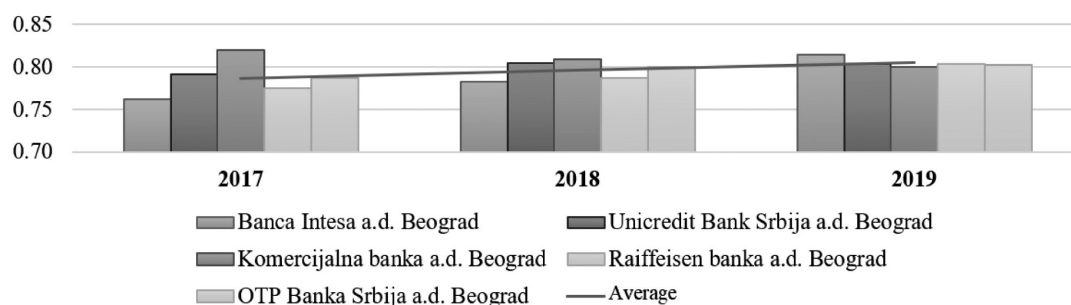
Graph 3. Indicator of the fourth liquidity ratio of banks

Source: Author's calculation

We analyzed the bank's solvency through the leverage indicator. Solvency analysis is important for both existing and potential investors. Within solvency, we observed two indicators.[4] The first measures the relationship between capital and total assets, i.e. shows the level of possible reduction of assets to the level of liabilities and is often called the stock multiplier. The second measures the ratio of capital to deposits, i.e. the coverage of capital by deposits. The increase in the value of these indicators indicates that the bank is more solvent from period to period. In the observed period, Komercijalna banka stood out, recording a high value of indicators in relation to other banks.
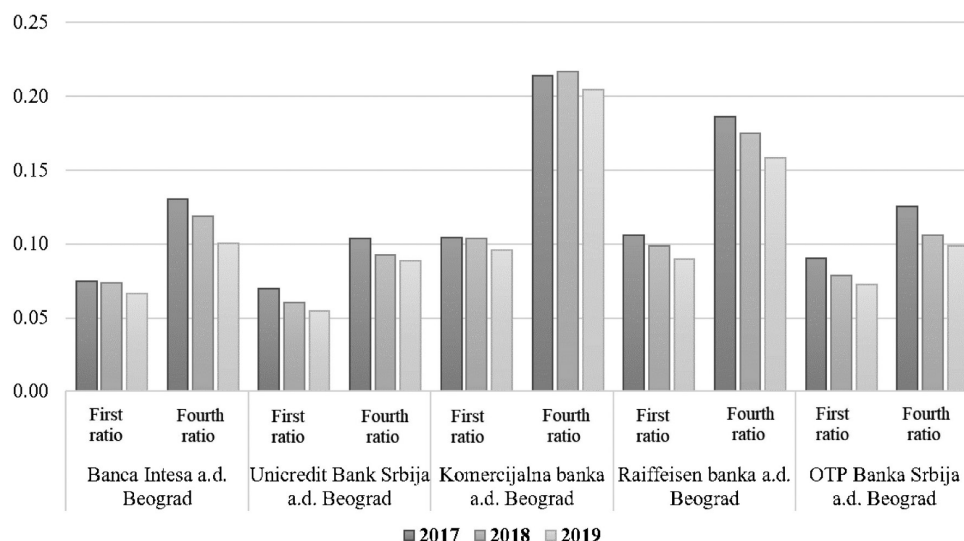
Graph 4. Leverage ratio
Source: Author's calculation
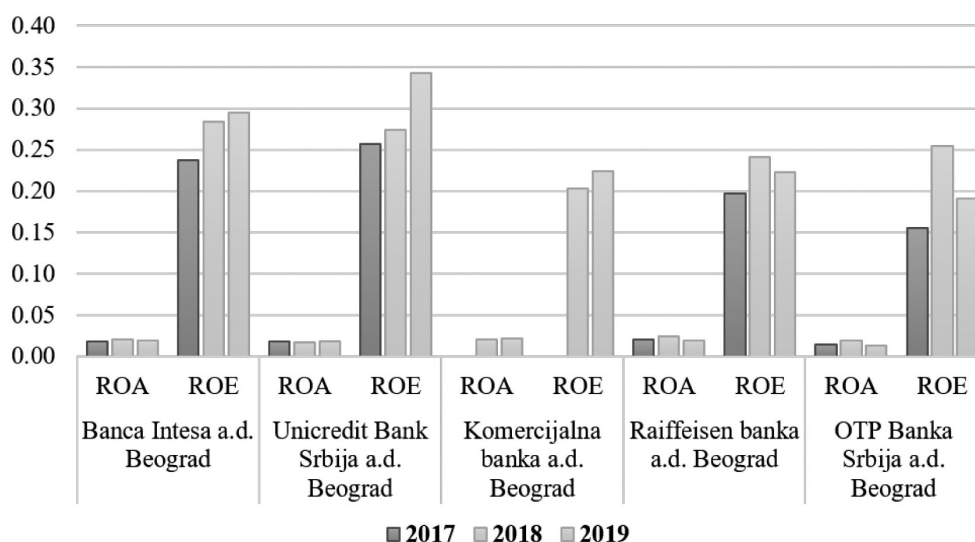
Graph 5. Banks' profitability indicator
Source: Author's calculation

To analyze the profitability of banks, we used well-known indicators – rate of return on assets (ROA) and rate of return on equity (ROE). ROA acknowledges the fact that profitability is the relationship between equity and borrowed capital. However, when calculating it, the sum of net

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4 The second leverage ratio was not calculated due to the lack of information on the presence and amount of government securities in banks. The fourth leverage ratio was also not calculated due to the lack of information on the position of net loans.

profit and interest expenses should be used as a measure of return on all assets, because assets are financed from borrowed sources. Given the different structure of the entities, it is necessary to harmonize the effect of financial leverage by adjusting the total profit for the effect of tax savings, which was achieved thanks to financing from borrowed sources (Malinić, 2019, p.113). Thus, the numerator approximates the value of the net profit that would have been realized if the entity had financed its assets entirely with equity. On the other hand, ROE shows us return on invested capital that belongs only to the owners of the entities. In Graph 5 we can see that our banks are profitable [5], that they record a high value of ROE, so the profitability of equity grows in the analyzed period and that the rates of return on equity are above the industry average (Graph 6).
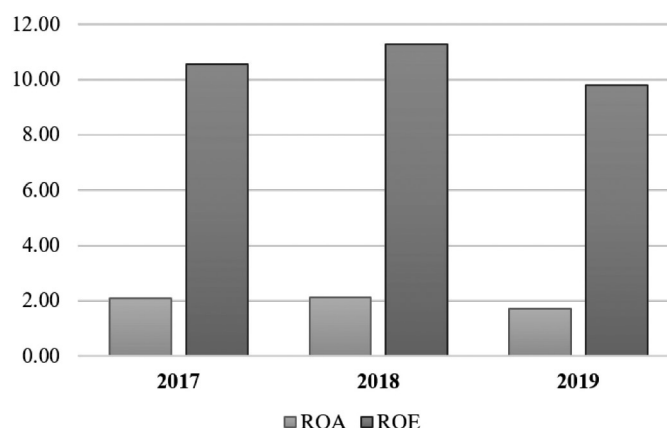
Graph 6. Profitability indicator of the banking sector
Source: National Bank of Serbia, 2019.

5. CONCLUSION

Banks are specially regulated institutions, which are obliged to report on their operations through annual financial reports. In compiling them, they must apply International Financial Reporting Standards. The data contained in the financial statements has its analytical use for many users. Among others, these are shareholders, employees, the state, tax authorities, but also the bank's clients themselves. Given that confidence in the banking and overall financial system is based on confidence in the sustainable and profitable operations of individual banks, the paper first presents the analysis of bank performance indicators that make up half of the balance sheet assets of the Serbian banking sector. In that sense, the liquidity, solvency and profitability of 5 banks in the system were analyzed, as follows: Banca Intesa a.d. Belgrade, UniCredit Bank Srbija a.d. Belgrade, Raiffeisen Bank a.d. Belgrade, and OTP Banka Srbija a.d. Belgrade and Komercijalna banka a.d. Belgrade.

When assessing the liquidity of banks, two indicators were calculated. Their values are for all analyzed banks, except Komercijalna banka a.d. Belgrade in the observed period, above average. A slight decline in the value of liquidity indicators was noticed in 2017, which may be a consequence of a smaller inflow of deposits into banks or their withdrawal from banks. Komercijalna banka has the lowest liquidity ratio during the observed period, while OTP Banka has the largest share of liquid assets in total assets. In interpreting the movement of the second ratio, we started from the movement of the reference interest rate and stated that, among other things,

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[5]   In 2016 and 2017, Komercijalna banka recorded a zero value of ROA and ROE, which is why the bar on the chart is missing. During that period, the bank was operating at a loss and therefore it was not possible to calculate ROA and ROE.

due to its gradual decrease, the demand for loans increased. The cause of the reduction can also be sought in the low (close to zero) interest rate on deposits. The analysis of bank solvency in the observed period shows an increase in the value of the observed indicators, which confirms the satisfactory solvency of banks. Banks that make up the banking sector in the Republic of Serbia are profitable, because by determining the rate of return on assets and rates of return on equity, we noticed that they record a high value of these rates, as well as that the values of rates achieved are above the average in the banking sector in the analyzed period.

In the forthcoming period, it is necessary to maintain the values of the achieved indicators, which is possible through: increasing the number of bank branches and developing alternative (digital) distribution channels for banking services; encouraging the growth and development of small sectors in underdeveloped areas; continued use of advanced technology, such as electronic banking; developing new ways to collect deposits; providing greater value for service users, through improving the communication system between service users and employees and pointing out the importance of the achieved values of liquidity, solvency and profitability indicators through greater transparency of balance sheet information.

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PANDEMIC CRISIS AND ITS EFFECTS
ON BULGARIAN BANKING SYSTEM'S EFFICIENCY

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Abstract: *The economies are once again facing the challenges of another crisis related to the spread of coronavirus in 2020. The banking sector, being one of the main intermediaries in the economies, is also affected by the spread of the new crisis, which is different compared to the previous crises such as the global financial crisis in 2008 and the European debt crisis in 2012-2013. Still, the banking sector in Bulgaria suffers from the pandemic crisis due to decelerated growth rate of loans, provided to households and non-financial enterprises, as well as declining profits related to the narrowing spread between interest rates on loans and deposits. The pandemic crisis, which later turned into an economic one, is having a negative impact on the efficiency of the banking system. To prove the negative impact of the pandemic crisis on the efficiency of banks, the non-parametric method for measuring the efficiency, the so-called Data envelopment analysis (DEA), is used.*

Keywords: *Banks, Loans, Deposits, Efficiency.*

1. INTRODUCTION

Economies have once again faced the challenges of a new crisis – pandemic crisis, triggered by the spread of a new virus, the so-called COVID-19. The new crisis is different compared to the previous crises, which we have seen in the last two decades: the global financial crisis in 2008 and the European debt crisis in 2012-2013. Still, all the crises had their negative consequences on the economic development of the countries on a global scale. The banking sector also suffered from the negative effects of the coronavirus pandemic. It is one of the main intermediaries in most of the countries, accumulating free financial resources and providing them to sectors that are short of funds. The role of the banks increases in case of the pandemic crisis as they could help countries to overcome the recession faster. The banks are not responsible for the pandemic crisis, as it was the situation in the global financial crisis in 2008.

The banking sector in Bulgaria is also the main financial intermediary in the economy. Its assets accounted for about 105% of GDP as of the end of 2020. Thus, the analysis of the banking sector's performance and their efficiency is an important research problem.

The research aimed to analyse the effect of the coronavirus pandemic on the Bulgarian banks' efficiency. The study defends the hypothesis that the banking system in Bulgaria suffered from the pandemic crisis in terms of its efficiency as it reported decelerated growth rates of loans, provided to households and non-financial enterprises. The intermediation role of the banking sector was limited. Still, the banking sector succeeded to withstand the negative effects of the coronavirus pandemic because they entered the crisis much better prepared compared to the period of the global financial crisis in 2008-2009, having a much higher capital base and liquidity position. The new institutional and regulatory reforms in the last decade helped the banking system to alleviate the negative effects of the pandemic crisis.

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To measure the effect of the pandemic on the Bulgarian banking system, the non-parametric approach Data Envelopment Analysis (DEA) is used.

The research contributes to the economic literature in two ways. First, the existing studies concentrate on the analyses of certain indicators. No studies are investigating the effect of the pandemic crisis on the banking system's efficiency measured by the complex indicator for efficiency such as technical efficiency, obtained by the DEA approach. Secondly, the effects of the coronavirus crisis on the development and performance of the banking sector, in the particular Bulgarian banking sector was not investigated that much.

The study is structured as follows. The first part presents the aim of the study, as well as the hypothesis tested. The next part makes a review of the literature on the research topic. The third part presents the methodology and the data used for the purpose of efficiency measurement. The fourth part analyses the obtained results on the Bulgarian banking system's efficiency. The final part concludes.

2.   REVIEW OF THE LITERATURE

The financial system and banking sector respectively are closely related to economic development. The observed shocks in aggregate demand or supply could be transmitted directly to the financial system. The small and medium sized banks, having low capital positions and worse liquidity, are most vulnerable to the negative effects of crises, in particular the coronavirus pandemic crisis. (ECB, 2020).

The increasing risks and decreasing revenues for the German banks in terms of the coronavirus crisis were investigated by Strietzel et all. (2020). Mihaylova-Borisova (2020) analysed the banking sector in Bulgaria in terms of pandemic crisis through analyses of the traditional indicators such as ROA, ROE, capital adequacy, non-performing loans.

Giese and Haldane (2020) analysed the effect of the coronavirus crisis on the financial system, in particular the banking system. They concluded that the financial system was better prepared for the pandemic, caused by the COVID-19, than for the global financial crisis.

Tyson (2020) studied the effect of COVID-19 on Africa's banking system. The researcher pointed out the worsened economic outlook for Africa, which would affect the banking sector's performance. The regulators have undertaken steps to sustain the financial stability, reducing the risk for banking system failure. However, the stability of Africa's banking system is threatened as non-performing loans were at a high level of 11% as of end-2019, tending to increase in the future.

Tobias and Natalucci (2020) stressed that the banking system has more liquidity and capital base as compared to the period of the global financial crisis, placing it at a better position than ten years ago. Still, there was a risk in front of banks as the economic downturn and financial resources outflows could be much severe than it was expected and anticipated.

Economics Observatory (2020) defined several channels of influence of the coronavirus crisis on the development of the banking sector. First of all, the households and enterprises lose a lot of incomes and revenues, which lead to repayments of the granted loans by banks. Thus, the

net profits and efficiency, measured by the return on assets (ROA) and return on equity (ROE) decrease. Secondly, the pandemic crisis leads to a decrease in prices of financial instruments, which generates a loss for banks. Thirdly, the decelerated economic growth rates in terms of pandemic crisis leads to lower number of transactions. Finally, some positive effects could be observed in terms of faster digitalization of services and products, offered by banking system. It has also been analysed by EY (2020), showing the positive effects of digitalization in the banking sector due to changing consumer expectations.

The existing studies on the effect of the coronavirus pandemic crisis were concentrated on the expected channels of influence on the banking system. In addition, the more traditional approaches to the analyses have been used. So, the study will fill the gap in the literature by using more sophisticated method for bank efficiency measurement, transforming several inputs and outputs in one coefficient for the banking system's efficiency.

3. METHODOLOGY AND DATA USED

To measure the banking system's efficiency, a non-traditional approach – non-parametric method Data Envelopment Analyses (DEA) is used. The choice of the method is supported by the fact that it is one of the most commonly used methods for measuring the efficiency of banks (Efendic (2011), Kumar, Gulati (2008), Pawtowska (2005), etc.), and by the fact that it is also applied to small data sets of production units. At the end of 2020, there were 24 banks.

3.1. Methodology

The DEA is a linear programming method, which measures the efficiency of a specific production unit (Decision-making unit – DMU) in comparison with the remaining units, included in the sample. The method is based on the determination of a production frontier, based on the most efficient decision-making units. The efficiency of the remaining units, which do not lie on the production frontier, is measured relative to the most efficient units (Loukoianova (2008), pp. 26).

The method DEA is introduced by Farrell (1957) and further developed by Charnes at all. (1978). They included several inputs and outputs in the model. The DEA approach has been applied for non-profit organizations such as hospitals, universities, municipalities, but later it has been applied for profit institutions, including banks.

The non-parametric method DEA is appropriate to be applied for small sample of production units. It does not depend on the form of the production frontier, which could be Cobb-Douglas, Translog production frontier, etc. However, it depends on the extreme observation and the deviation from the production frontier could be due to the inefficiency or to the random error (Mihaylova-Borisova, 2015).

The DEA approach had two forms. On the one hand, the DEA is output-oriented i.e. the production units minimize inputs in order to produce a certain level of outputs. On the other hand, the DEA is input-oriented i.e. the production units maximize outputs in order to produce a certain level of inputs.

The production frontier of a production unit, having one output and one input, could be presented as follows (Figure 1):
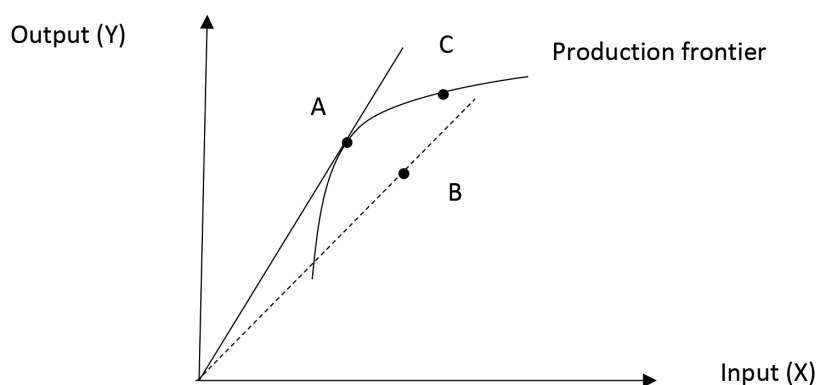
Figure 1. Production frontier of production unit
Sources: Mihaylova-Borisova, 2015; Nenovsky, Mihaylova, Ivanov, 2008

The production frontier includes all points, having a maximum output at given input. The production unit is technically efficient when it lies on the production frontier – point A. When the production unit lies below the production frontier it is not technically efficient, for example, point B, as it could produce higher output at a given input factor. Production unit at point A produces at the maximum level of productivity (Coelli, Rao, O'Donnell and Batesse, 2005) and the so-called technologically optimal scale of production, using the scale of production. The production unit at point C is technical efficiency, but its productivity is not at the maximum level. At point C the production unit works at decreasing scale of production so its works at a variable return to scale.

3.2. Data Used

To calculate the technical efficiency of banks in Bulgaria, the software DEAP 2.1 is used (Coelli, 1996). Among the available approaches for defining the inputs and outputs (production approach, intermediation approach, asset approach, user-cost approach, and value-added approach), the intermediation approach is applied. The most used approach for defining outputs and inputs is the intermediation approach, especially when the banks mainly attract deposits and give loans to the economic agents in the economy (Andries, Cocris, 2010). Thus, for the purpose of the current study, an intermediation approach is applied.

According to the intermediation approach, three inputs are defined: labour, capital and attracted deposits, and two outputs: loans and securities. As a measure for labour administrative expenditures are applied[2], while as a measure of capital – material and non-material assets are used. The study period is 2004-2020 and aims to cover several years before the global financial crisis in 2008 and 2020 when the pandemic crisis occurred. The descriptive statistics of inputs and outputs are presented in Table 1.

Table 1. Inputs and outputs, descriptive statistics

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Number of banks	35	34	32	29	30	30	30	31	31
Loans									
Average	394440	540562	711580	1548241	1859127	1925964	1947257	1947778	1998356
Standard Deviation	507421	696715	867638	1847564	2367974	2443047	2364508	2388985	2435597

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[2]   The administrative expenditures are applied instead of number of employees due to a lack of the public data
      for employees by banks (Nenovsky, Mihaylova, Ivanov, 2008).

Securities									
Average	108846	139198	150235	153223	148919	134980	167142	177905	236996
Standard Deviation	209920	221494	215534	223632	219574	182355	222287	230938	272166
Material and non-material assets									
Average	22763	26616	44774	43954	46128	52613	52084	51420	62860
Standard Deviation	36819	38392	81086	64088	67970	75446	73738	73841	98514
Deposits									
Average	557955	747427	1024075	1799875	2029320	2027779	2095241	2109343	2272957
Standard Deviation	721382	887841	1163168	2138551	2485451	2525505	2416226	2437693	2557820
Administrative expenditures									
Average	25224	32054	41077	44978	51036	56109	56379	55860	56615
Standard Deviation	30961	36248	42608	53031	60343	61107	60462	61685	61492

	2013	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Number of banks	30	28	28	27	27	25	25	24
Loans								
Average	2163038	2258924	1974845	2064814	2211104	2780535	3284150	3290106
Standard Deviation	2533301	2826034	2528754	2637219	2758918	3347072	4110888	4498238
Securities								
Average	272391	308991	371926	465164	514755	449101	509011	513338
Standard Deviation	316071	373491	506564	673529	803670	802156	939978	874187
Material and non-material assets								
Average	68817	76330	79082	73191	77992	84790	118298	122415
Standard Deviation	117478	134480	137343	97801	99517	105325	140569	158976
Deposits								
Average	2462748	2639391	2626870	2839967	3118212	3626065	4100635	4461954
Standard Deviation	2654782	2997449	3209625	3543227	3754369	4194497	4827159	5868687
Administrative expenditures								
Average	59446	62807	46540	44050	59743	68694	69340	69866
Standard Deviation	62225	66678	50077	47582	63516	69920	74294	82883

Sources: BNB, own calculations

4. RESULTS

The results of the banking system in Bulgaria at the variable return to scale is analysed, as most of the banks do not operate under constant return to scale due to competition and market failures. The average technical efficiency of the Bulgarian banking system accounted for 0.82 in 2020 (Figure 2), which means that the banks do not use efficiently 18% of their inputs in 2020. At the same time, the level of technical efficiency in 2009 is lower – 0.798, which showed that the banking system in Bulgaria was better prepared in 2020 to withstand the coronavirus crisis. The banking system in Bulgaria had much better financial indicators before the coronavirus crisis, as after the global financial crisis there were new regulations, strengthening the capital and liquidity position of the banks. The global regulatory frame Basel III introduced higher capital requirements at the European level by Directive 2013/36/EU (CRD IV), which was also applied in Bulgarian legislature in Ordinance No 8 for capital buffers of banks. As a result, the capital adequacy of the Bulgarian banks reached 20.4% in 2020 versus 14.9% in 2009. The Bulgarian

central bank also undertook measures to counter the negative effects of the coronavirus crisis by introducing measures to improve the capital and liquidity of the banks in March 2020.

The decrease in technical efficiency confirmed the hypothesis that the pandemic crisis had negative effect on the banks' efficiency, due to the limitation of the intermediation role of the banking system in the country.

The reason for the lower technical efficiency in the pandemic 2020 year was related to the changed dynamics of the outputs. The pandemic crisis led to the decelerated growth rate of loans, provided to households and non-financial enterprises. The loans, provided to households reached BGN 25.5mn in 2020, decelerating their growth rates from 9.5% in 2019 to 6.6% in 2020. At the same time, the loans, provided to non-financial enterprises reached BGN 36.6bn in 2020, decelerating their growth rates from 6.6% in 2019 to 2.3% in 2020. Despite the decelerated growth rates of provided loans, they are higher compared to the crisis year 2009. In 2009, the growth rate of loans provided to households was 5.8%, while the growth rate of loans, provided to non-financial enterprises, was 2.2%. The banks also suffered through the declining profits related to the narrowing spread between interest rates on loans and deposits. Still, better performance of banks during the pandemic crisis was due to the higher liquidity buffers, which banks had in 2020 as compared to 2009.
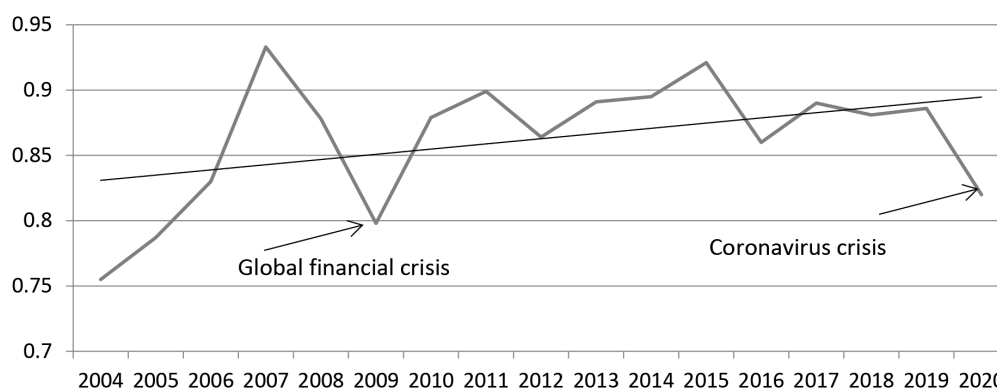
Figure 2. Technical efficiency of the Bulgarian banking system in the period 2004-2020
Source: author's calculation

At the same time, deposits retained its high growth rate as economic agents would like to secure resources for unexpected circumstances. The deposits of non-financial enterprises rose by 9.8% y/y in 2020, decelerating from 15.1% y/y, while the deposits of households accelerated their growth rate from 8.6% y/y in 2019 to 10.4% y/y in 2020.

The pandemic crisis continues all over the world, including in Bulgaria, having retained effects on the economic performance due to the measures for social isolation and lockdowns of the businesses. In 2020, the technical efficiency of the banking system is deteriorating, but it is at a much better level than in the years of the global financial crisis. In addition to the fact that in the pandemic crisis the banks were not the cause of the crisis, as was the case in the global crisis, the banks applied the so-called private moratorium on the liabilities of households and companies to them. The private moratorium contributes to postponing the deterioration of the quality of banks' loan portfolios. The non-performing loans accounted for 7.45% of the total amount of loans as of end-2020, while they were 6.5% as of end-2019. The further deterioration of the loans portfolio could be expected in the following years, which could have negative consequences on the banks' efficiency.

5. CONCLUSION

The pandemic crisis has negative consequences not only on the economy but also on the banking system in Bulgaria in terms of declining technical efficiency. The technical efficiency of banks is measured by the non-parametric method for measurement efficiency – Data envelopment analysis. The respective input and output products for the banks in Bulgaria are defined, through which a single efficiency index is obtained.

The results show that banking efficiency decreased in the pandemic year 2020 due to the disruption of the intermediary function of banks. However, the efficiency of Bulgarian banks in the year of the pandemic is at a better level compared to the period of the global financial crisis due to the fact that banks are better prepared for the current crisis and have a better liquidity and capital base.

Despite the negative effects of the pandemic crisis on the Bulgarian banks' efficiency in 2020, there are some positive factors for the better future development of the banks through the digitalization of the services and the supply of new products.

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IMPACT OF LIQUIDITY MANAGEMENT
ON COMMERCIAL BANKS PROFITABILITY IN KOSOVO
DURING THE PERIOD 2011-2019

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Ardi Ahmeti[2]
Albina Kalimashi[3]

Abstract: *Liquidity management and its impact on the profitability of commercial banks are two issues of particular importance in the further development of the business and at the same time two sources of concern for financial managers. For this reason, this study aims to determine the impact of changes in liquidity levels on the profitability of commercial banks in Kosovo. The study is based on secondary data for nine commercial banks in Kosovo over 9 years, respectively for the period from 2011 to 2019, taken from the audited annual statements of these financial institutions. The study measures the relationship between liquidity management and profitability and its impact on profitability. In order to process the data, regression analysis and correlation were used, while the findings determine whether there is a significant relationship between liquidity management and profitability in commercial banks in Kosovo. The current ratio, the quick ratio, the cash ratio and the capital adequacy ratio have been taken as liquidity indicators, while return on assets and return on equity are considered as profitability indicators.*

Keywords: *Liquidity, Liquidity management, Profitability, Impact of liquidity management on profitability.*

1. INTRODUCTION

In the banking system of Kosovo, commercial banks have undergone major changes since 2000. These changes are a result of the entry of foreign banks, changes in the regulatory environment, technological change, but also by increased competition (Ahmeti, Hoti, Alshiqi, 2014). As a result of the financial crisis in 2008, and the changes in the banking system that followed, commercial banks faced increased operating costs, which also affected the quality of bank loans and the performance of the banking sector in Kosovo. Banks now offer a variety of products and services. Deposits are secure by the government and loan procedures for businesses and consumers are much easier.

The number of commercial banks in Kosovo has constantly increased. In 2001, seven commercial banks operated in Kosovo, while in 2019 the banking system is operating with ten fully private commercial banks. The Central Bank of Kosovo played a major role in establishing many regulations to protect consumers from taking advantage of non-insurance banks, and at the same time keeping banks under control with their loans and credit lines. The banking sector is dominated by capital from the EU, which participates as 57.5% of the total assets of the banking sector. However, banks from other countries, mainly Turkey, with a more proactive approach to market penetration have gradually increased their presence to 16.9% of the sector's assets. Such developments have contributed to increased competitiveness of services and reduced banking concentration (CBK – Financial Stability Report, 2019).

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In 2019, the banking sector has shown good financial performance, although there has been a decline in profits, which has increased the risk of profitability. In terms of banking liquidity, the decline in liquidity risk compared to the same period last year came as a result of increased liquid assets, in the form of deposits and assets held in the CBK. The increase in the risk of solvency is attributed to the decrease in the level of capitalization, but it is still significantly higher than the minimum required by the CBK regulations. (CBK – Financial Stability Report, 2019).

The research aims to analyze the impact of liquidity management on the profitability of nine commercial banks operating in Kosovo during the period 2011-2019. The analyzed factors are: current ratio (CR), quick ratio (QR), cash asset ratio (CAR) and capital adequacy ratio (CADR) as a measure of liquidity management and return on assets (ROA) and return on equity (ROE) as a measure of profitability. The data are taken from the annual reports of commercial banks in Kosovo for the period under investigation.

2. LITERATURE REVIEW

Liquidity management is an integral function of financial institutions and includes intercession between lenders and financial instrument seekers. Liquidity is a necessity for firm survival. For banks, liquidity expresses the capacity to provide the necessary financial resources by withdrawing deposits of companies or individuals, through their available cash or even by mortgaging its assets to other financial institutions that can easily are converted into cash through financial markets.

According to Anyanwu (1993), liquidity means the ability to convert an asset into cash with minimal delay and minimal loss/cost, while Ibenta (2005) says that liquidity tells us about the firm's ability to meet short-term needs for financial assets. On the other hand, Spindt and Tarhan (1980) point out that in the portfolio of commercial banks, liquidity assets play a very important role because banks operate mainly with financial assets borrowed from depositors in the form of deposits. These liquidity assets are the core assets of the balance sheet that have the ability to maintain the confidence of depositors which is the most valuable intangible asset for the banking business. Mohammad (2015) argues that in the financial system, bank liquidity can be categorized into two types: asset liquidity and financed liquidity. While asset liquidity is related to the risk or inability of banks to easily balance or sell assets with market volatility as a result of insufficient market strength or market distraction, funded liquidity is related to the risk with which the bank is not able to efficiently meet its debts as they become mandatory. Profitability from financial institutions receives deliberate attention from bank management to strike a balance between profitability and liquidity which are two conflicting goals (Harrison Kyalo Song'e, 2015). In the literature, the profitability of banks is expressed by two alternative measures: return on assets (ROA) and return on equity (ROE). Some other authors also consider the third ratio, namely the net profit margin (NIM).

Bank performance evaluation is a complex process that involves assessing the interaction between the environment, internal operations, and external activities (Kosmidou and Pasiouras, 2007). Internal determinants are factors that are mainly influenced by bank administration decisions and policy objectives. Such determinants of profitability are balance sheet structure, provisioning policy, capital adequacy, cost management and bank size. On the other hand, external determinants, related to the industry as well as macroeconomic ones, are variables that reflect the economic and legal environment in which the credit institution operates. According

to (Syafri, 2012), the factors that affect the profitability of the bank can be external and internal. Based on the same source, external factors can be all factors that are not under the control of the bank, such as: competition, government regulations, money supply and inflation.

Research by (Staikouras and Wood 2004) on bank profitability determinants includes 685 European banks. Their analysis focused on the following variables: return on assets, loan risk, capital adequacy, capital risk, variable rate of interest, bank size, cost-effectiveness, rate of interest, GDP growth rate and gross per capita income for each European country. Finally, the authors concluded that the adequacy of the bank's capital and bank size positively affects the bank's liquidity, while the risk of loans and the risk of capital were related contrary to the bank's profitability. In terms of macroeconomic variables, interest rates have a positive effect, while changes in interest rates and GDP growth have a negative effect on the bank's profitability.

Another study on the impact of liquidity on profitability was conducted by Zygmunt (2013). The author states that liquidity is important for the firm's performance and can therefore affect its profitability. To analyze this impact, the author analyzes the impact of independent variables (current ratio, quick ratio, receivable conversion period, inventory conversion period, payable conversion period and cash conversion period) on dependent variables (Return on assets, Return on equity and Return on Sales). The study confirms that all independent variables, except the quick ratio, have an impact on the ROA, only the payable conversion period has an impact on the ROE while the receivable conversion period and inventory conversion period has an impact on the ROS.

Rasul (2013) analyzed the relationship between liquidity and profitability by selecting 2 Islamic banks in Bangladesh during the period 2001-2011. Analyzed ratios were cash & due ratio from banks to total assets, investment to total assets, cash & due from banks to total deposits and Investment to total Deposits. The ratios for calculating profitability are ROE ROA and ROD (Return on Deposits). The study confirms the strong impact of liquidity on profitability.

Hoffmann (2011) analyzed the profitability determinants of banks operating in the US for the period 1995-2007. The study undertook internal and external factors that affect the profitability of banks in the US. The study found that there is a negative relationship between the ratio of capital and profitability that confirms the belief that banks are working harder to avoid opportunities for profit in possible trade changes. The cost advantages due to the size of the bank do not affect the profitability of the US banking industry.

Maqsood et al. (2016) explained that there is a significant impact of liquidity management on profitability in the banking sector. The data used in this study are taken from the financial statements of eight different banks from 2004 to 2015. This study uses the regression and correlation technique. To measure liquidity, they used the current ratio and the cash ratio as independent variables, and to measure profitability they used the Return on Assets as a dependent variable.

Ikeora and Andabai (2016) found that there is a positive relationship between dependent variables (profitability) and independent (liquidity management) using time series data scanning (1989-2013). Liquidity management involves the broad supply of money and general bank deposits, while profitability is measured through the asset return ratio. The small squares method was used to analyze the hypotheses.

In the study of Anila Çekrezi (2015), the objective was to find the relationship between internal factors and the profitability of banks in Albania. Bank profitability (ROA) in this study was measured through the ratio of income to total assets (Obamuyi, 2013; Ongore & Kusa, 2013; Frederic, 2014; Syafri, 2012). As independent variables, Çekrezi used: bank size, capital adequacy, liquidity and age of bank. According to her study, bank size and bank age have a positive impact on banks' profitability, while liquidity and capital adequacy have a negative impact on banks' profitability.

Nabeel and Hussain (2017), aimed to measure the impact of liquidity management on bank profitability, and they have considered liquidity metrics such as: current ratio, quick ratio, cash ratio, capital adequacy ratio and interest coverage ratio, while ROA, ROE and Earnings per share as a measure of profitability. The findings of their study clarify that the interest coverage ratio has a positive and significant relationship with the profitability of banks when analyzed with ROA and ROE. The capital adequacy ratio has positive and significant relationships with ROE and EPS. Quick ratio has a positive relationship with profitability. The current ratio suggests positive but insignificant relationships when looking at relationships with ROA, while the current ratio suggests negative and significant relationships with ROAs and insignificant ones with EPS. Overall results explain that liquidity management is positively related to the profitability of banks.

Dawood (2014), in order to analyze the factors that affect profitability, took into account the factors: cost efficiency, liquidity, capital adequacy, deposits and size of the bank. The results of this research show a significant positive relationship of capital adequacy, bank deposits and size in profitability, and a negative impact of cost efficiencies and liquidity on profitability.

Ndoka, Islami, Shima (2017) in their study investigated the impact of liquidity risk management on the profitability of commercial banks in Albania during the period 2005-2015. In order to analyze the relationship between liquidity risk management and profitability, the secondary data of banks published by the Bank of Albania were taken into account. Profit before tax is used as an indicator to measure the profitability of banks while deposits, cash and liquidity gap as indicators of liquidity risk. The results of the regression analysis show that the correlation between earnings before taxes and cash are statistically significant. However, the results of regression analysis show that there is a negative relationship between de-positivism and pre-tax profit, and liquidity gap is statistically significant in these correlations.

Bordeleau and Graham (2010) investigated the impact of liquidity on the profitability on a sample of major US and Canadian banks. The results suggest that profitability has improved for banks holding certain current assets; however, there is a point at which holding further current assets reduces a bank's profit; everything else is the same. Moreover, empirical evidence also suggests that relationships vary depending on a bank's business model and the state of the economy.

3. RESEARCH OBJECTIVES

The main purpose of the study is to discover the impact of liquidity management on the profitability of commercial banks in Kosovo. The following objectives are in the function of achieving the main goal:
- Measuring the relationship between liquidity management and profitability.
- Identification of factors that significantly contribute to liquidity and profitability management.
- Analyzing the effects of liquidity management on the profitability of commercial banks in Kosovo.

4. HYPOTHESIS AND ECONOMETRIC MODEL

Three hypotheses have been constructed for this study:

H1: There is a significant relationship between liquidity management and profitability.

H2: Cash ratio, quick ratio and capital adequacy ratio have a positive and significant relationship with bank profitability.

H3: Current ratio has a negative and significant relationship with bank profitability.

The study population includes nine out of a total of ten commercial banks licensed in Kosovo.

Data for this study were collected from secondary sources, such as the balance sheet and statement of income from a total of nine commercial banks in Kosovo. The data are taken from the annual audited financial reports of the banks published on their official websites, for the period 2011-2019. Based on the review of the literature, the internal elements with the greatest impact on the profitability of banks in Kosovo were considered: ROA and ROE, which are used in almost all empirical studies as a measure profitability. According to the econometric model, profitability was considered a dependent variable being influenced by other independent variables: current ratio, quick ratio, interest coverage ratio, cash asset ratio and the capital adequacy ratio. Study hypotheses will be tested by correlation and linear regression. The following models represent the research model:

$$ROA = \alpha + \beta1\ CR + \beta2\ QR + \beta3\ CAR + \beta4\ CADR + \varepsilon$$

$$ROE = \alpha + \beta1\ CR + \beta2\ QR + \beta3\ CAR + \beta4\ CADR + \varepsilon$$

Table 1. Liquidity management and profitability determinants of banks

Determinants	Variable	Measures	Reference	Symbols
Liquidity ratios	Current Ratio	Current assets / Current Liabilities	Nabeel, Hussain (2017) Maqsood et al. (2016) Elsharif (2016) Zygmunt (2013)	CR
	Quick ratio	Quick assets / Current Liabilities	Nabeel dhe Hussain (2017) Elsharif (2016) Zygmunt (2013)	QR
	Cash asset ratio	Liquid assets / Total Assets	Nabeel dhe Hussain (2017) Rasul (2013), Elsharif (2016) Zygmunt (2013)	CAR
	Capital adequacy ratio	Regulatory capital to risk-weighted assets	Çekrezi (2015), Frederic (2014) Obamuyi (2013) Ongore and Kusa (2013)	CADR
Profitability ratios	Return on assets	Net profit / Average Total assets	Çekrezi (2015), Frederic (2014) Obamuyi (2013), Ongore and Kusa (2013) Dawood (2014)	ROA
	Return on equity	Net profit / Average Total Equity	Nabeel dhe Hussain (2017) Rasul (20 (2013) (Harrison Kyalo Song'e, 2015) Zygmunt (2013)	ROE

Such a model determines the effect of liquidity management on the profitability of banks in Kosovo. Liquidity is controlled by four different liquidity ratios and profitability is controlled by two different profitability ratios.

5.   DATA ANALYSIS

This report includes statistical analysis and interpretation of appropriate regression models between liquidity management and profitability of commercial banks in Kosovo. Models need to determine which liquidity indicator has a strong impact on the profitability of these banks. ROA and ROE are used as a measure of bank profitability and act as dependent variables in the regression model, while the main liquidity predictors are CR, QR, CAR and CADR.

6.   DESCRIPTIVE ANALYSIS

This section highlights the need to evaluate, analyze and interpret the models that were already formulated. Hypotheses will also be tested. Only secondary data sources are considered.

Table 2. Descriptive statistics

Variable	2011	2012	2013	2014	2015	2016	2017	2018	2019
CR	39.6	40.8	47.1	41.3	37.3	41.3	35.9	33.5	35.1
QR	33.7	31.7	35,7	32.4	30.9	34.4	30.3	28.2	30.0
CAR	26.6	25.3	27.7	25.9	24.2	26.3	25.4	21.1	22.3
CADR	17.6	14.2	16.7	17.8	19.0	17.9	18.1	17.4	16.8
ROA	1.7	0.8	1.0	2.2	2.5	2.4	2.8	2.5	2.5
ROE	17.4	8.6	10.6	22.5	21.6	19.9	22.1	19.0	17.7

Source: CBK – Financial Stability Report, Various Reports

Table 3. Descriptive analysis (Descriptive Statistics)

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
CR	9	13.6	33.5	47.1	39.10	4.15	17.21
QR	9	7.5	28.2	35.7	31.92	2.37	5.63
CAR	9	6.6	21.1	27.7	24.98	2.11	4.47
CADR	9	4.8	14.2	19.0	17.28	1.34	1.81
Dependent variable ROA	9	2.0	.8	2.8	2.04	.716	.513
Dependent variable ROE	9	13.9	8.6	22.5	17.71	4.97	24.68

Through the analysis of linear regression, the liquidity indicators (CR, QR, CAR, CADR) were put in relation, which are treated as independent variables, and the profitability indicators (ROA, ROE) were treated as dependent variables, in order to result in the strong connection between these variables. The tables described below show the regression model for the dependent ROA variables, respectively ROE:

Table 4. Linear regression analysis: Liquidity indicators vs. ROA indicator

Determination coefficient – ROA				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.934[a]	.873	.746	.3611
a. Predictors: (Constant), CADR, CAR, CR, QR				

Table 5. Linear regression analysis: Liquidity indicators vs. ROE indicator

Determination coefficient – ROE				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.929[a]	.863	.725	2.6038
a. Predictors: (Constant), CADR, CAR, CR, QR				

Tables 4 and 5, presented above, reflect values R and R^2. The R-value represents the simple correlation, which for the ROA indicator is 0.934 and for the ROE indicator is 0.929 (Column "R"), which indicates a high degree of correlation. The R^2 value (column "R Square") indicates how many of the total changes in the dependent variable are described by the independent variable. In our case, the models presented are explained as follows:

- 87.3% of the changes in the ROA profitability indicator are explained through independent liquidity variables CR, QR, CAR, CADR;
- 86.3% of the changes in the ROE profitability indicator are explained through independent liquidity variables CR, QR, CAR, CADR;

The very high percentages of the coefficient of determination for the analyzed variables, helped us to prove our first hypothesis, also proving that there is a significant relationship between the management of liquidity and profitability indicators.

The second hypothesis (Cash ratio, quick ratio and capital adequacy have a positive and significant relationship with bank profitability) is built on the assumption that the positive trend of liquidity indicators affects the creation of a positive trend of profitability indicators, i.e. the growth of one variable causes the other variable to increase as well. For testing the second hypothesis, we analyzed the relationship orientation between the independent variables QR, CAR & CADR and the dependent variables ROA & ROE. Such an analysis was performed through correlation coefficients.

Table 6. Correlation coefficient: QR, CAR, CADR & profitability indicators

Correlations		ROA	ROE	QR	CAR	CADR
ROA	Pearson Correlation	1	.916[**]	-.558	-.513	.762[*]
	Sig. (2-tailed)		.001	.118	.158	.017
	N	9	9	9	9	9
ROE	Pearson Correlation	.916[**]	1	-.356	-.257	.868[**]
	Sig. (2-tailed)	.001		.348	.504	.002
	N	9	9	9	9	9

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

In order to clarify the results, we mention that the correlation can be presented in values between intervals -1 and 1. Based on the result presented above, derived from the input of data in SPSS, we notice that the correlation coefficient for the indicators of profitability is negative for QR and CAR indicators with a very high level of significance. Such a level of significance does not allow us to conclude the positivity of the association of CAR and QR liquidity indicators with the profitability indicators ROA and ROE. On the other hand, the correlation coefficient for the CADR indicator (capital adequacy indicator) compared to the ROA and ROE indicators is

positive. The CADR vs ROA correlation coefficient is 0.762, while the CADR vs ROE correlation coefficient is 0.868. Such values give us the indication that there is a fairly strong positive relationship between capital adequacy and ROA & ROE indicators. Thus, with the increase of the CADR liquidity indicator, the profitability indices ROA and ROE also increase. Meanwhile, regarding the liquidity indicators QA and CAR, with the data we have, it cannot be ascertained whether there is any positive or negative impact between these indicators and those of profitability. The third hypothesis (Current ratio has a negative and significant relationship with bank profitability) is built on the assumption that the current asset indicator has a negative ratio and this ratio is strong enough to influence the creation of a negative trend in commercial bank profitability. To test such a ratio, the correlation analysis, presented in the table below, was also used.

Table 7. Correlation coefficient: CA indicator & profitability indicators

Correlations		ROA	ROE	CR
ROA	Pearson Correlation	1	.916**	-.721*
	Sig. (2-tailed)		.001	.028
	N	9	9	9
ROE	Pearson Correlation	.916**	1	-.518
	Sig. (2-tailed)	.001		.03
	N	9	9	9

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Regarding the relationship between the independent variable CR and the dependent variable ROA, the correlation coefficient is -.721, with a significance level <.05, so we can conclude that there is a strong relationship between these two indicators which is inversely proportional, i.e. with the increase of one, the other decreases and vice versa.

Regarding the relationship between the independent variable CR and the dependent variable ROE, the correlation coefficient is -518, with a significance level <.05, so we can conclude that between these two indicators there is a strong negative correlation, i.e. when the value of one variable increases with respect to a decrease in another or vice-versa.

7. CONCLUSION

The overall result of the study from published statistics shows that there is a significant relationship between liquidity and profitability indicators for commercial banks, whose indicators have been analyzed throughout this study.

The resulting values of the correlation coefficients give us an indication that there is a fairly strong positive relationship between capital adequacy and profitability indicators ROA & ROE. So, with the increase of the CADR as a liquidity indicator, the profitability indicators ROA and ROE also increase. Meanwhile, regarding the liquidity indicators QA and CAR, with the data we have, it cannot be ascertained whether there is any positive or negative impact between these indicators and those of profitability. Regarding the relationship between the independent variable CR and the dependent variables ROA & ROE, the resulting correlation coefficients, with a significance level <.05 give us a solid basis to conclude that there is a strong negative correlation between these indicators; thus, with increasing values of the independent variable, the values of the dependent variables decrease and vice versa.

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TAXATION ARISING FROM DIGITALISATION: ISSUES AT STAKE

Silvia Velarde Aramayo[1]

Abstract: *The OECD is leading global efforts to reach an international consensus around the BEPS Project with the G20 support. Action 1 works on the tax challenges of the digital economy and its proposals have been made with the «inclusive framework» participation that brings together more than 137 countries. The article focuses on the legitimacy, operation, and consequences of all this work for developing countries that, according to estimates of the UNCTAD, lost annually U$100 billion due to tax avoidance schemes by MNEs. The OECD/G20 inclusive framework is designing a new global tax structure and its proposals attempt to introduce new rules on taxing rights allocation and distribution. At the same time, some countries have adopted unilateral measures in order to tax some digital businesses. Finally, the European Union Countries continue to delay the adoption of the CCCTB and DST Directive proposals, and the United States has introduced the GILTI legislation that seeks to tax the global intangible income. Everything seems to indicate that in the next years the international tax architecture will be changed in deep.*

Keywords: *Taxation, Digitalization, G20, OCDE, Multinationals companies (MNE's).*

1. INTRODUCTION

In the last fifteen years, the world has undergone unprecedented change as a result of the new technological advances, the "platform revolution" (Parker et al, 2016), and the digitalization of the whole economy (Knickrehm et al, 2016). On the other hand, the new business models (OCDE, 2015) have shown their high capacity to use optimization practices to avoid paying their fair share of taxes exploiting loopholes in the international tax regulation, distorting the meaning of the Double Tax Conventions, and taking advantages of inadequate principles, outdated concepts and unsatisfactory policies to taxing the international income (Graetz, 2001), especially the income earned by Multinationals Companies (MNE's).

In this context, and probably due to the scandals related to the low taxes paid by some of these companies, the G20 and the OCDE has been encouraging the Base Erosion and Profit Shifting Project (BEPS) with the participation of the inclusive framework, that is, one hundred and thirty-seven countries and jurisdictions interested to collaborate in the implementation of the BEPS package, including fourteen observer organizations. According to the last inclusive framework Progress Report (OCDE, 2020), it is a major shift in global governance on international tax matters that has occurred. Together, only a hundred members represent more than 93% of global GDP, reflect a broad diversity of economic profiles and levels of development and show that the tax challenges are global and require global solutions through enhanced international cooperation.

So, the G20/OCDE inclusive framework on BEPS is working intensely in order to design a "new international tax architecture", to solve the big challenges that the digital economy has created. In that context, it is important to keep in mind how, for example, UNCTAD (2019) has

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highlighted that the digital technologies and digital platforms are closely linked to two countries: the United States and China. These two economies account for 75% of all patents related to blockchain technologies, 50% of global spending on the Internet of things, at least 75% of the cloud computing market, and 90% of the market capitalization value of the world's 70 largest digital platform companies (Europe's share is 4% and Africa and Latin America's together is only 1%). In addition, for example, the seven biggest platforms (Microsoft, followed by Apple, Amazon, Google, Facebook, Tencent and Alibaba) account 2/3 of the total market value and the only United States hosts more than half of the top hundred websites used in the world.

The article wants to deepen this topic and analyze what are the main consequences of the G20/OCDE new design. The inclusive framework has a legitimacy deficit or is it the best way to introduce changes at the global level? Who are the winners and losers of this new design?

2.   INCLUSIVE FRAMEWORK AND SOFT LAW

According to the initial OECD Reports on BEPS (2013), the weaknesses of the international tax structure put the original consensus-based framework (League of Nations, 1920) at risk. The multilateral inaction in this area could cause that some governments – who would not be willing to continue losing corporate tax revenues – to decide to replace this consensus with unilateral measures in order to protect their tax base and create global tax chaos marked by uncertainty and unrelieved double taxation. In that context, the G20 Leaders saw multilateralism as the best asset to resolve the global economy's difficulties and opt to design the new international standards to ensure the coherence of corporate income taxation at the international level in order to cut loopholes, gaps, frictions, or mismatches created by the interaction of countries domestic tax laws. At this time, the OCDE/G20 highlight how the International Tax Law is the key pillar in supporting the growth of the global economy and only talks about international coordination.

So, in June 2016 the inclusive framework was established, and the developing countries (non-OCDE members) were invited to participate on an equal footing which provided such countries implementation of "four minimum standards" to deal with harmful tax competition (action 5), treaty abuse (action 6), transfer pricing documentation (action 13) and mechanism of dispute resolution (action 14). The four standards will be subject to a peer review and monitoring process in all the countries participating on the BEPS inclusive framework. In the same line to what has been done, for example, through the *Global Forum on Transparency and interchange of information for Tax purpose* (with over 160 members including all the OCDE members, Financial Centres, Developing Countries and 19 Organisations as observers) the implementation of two international standards has been achieved:

(1) The AEOI (automatic exchange of information), which in the last three years has allowed the interchange of 84 million of financial accounts, covering a total asset of EUR 10 trillion.
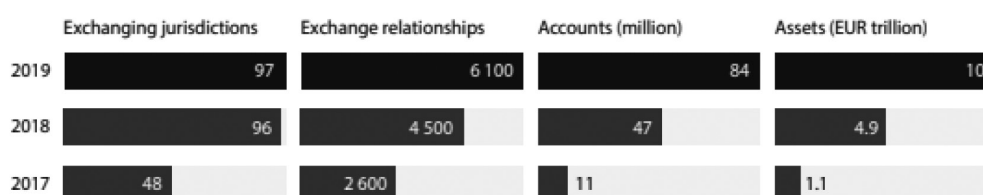
Figure 1. AEOI (automatic exchange of information)
Source: Global Forum on Transparency (2020).
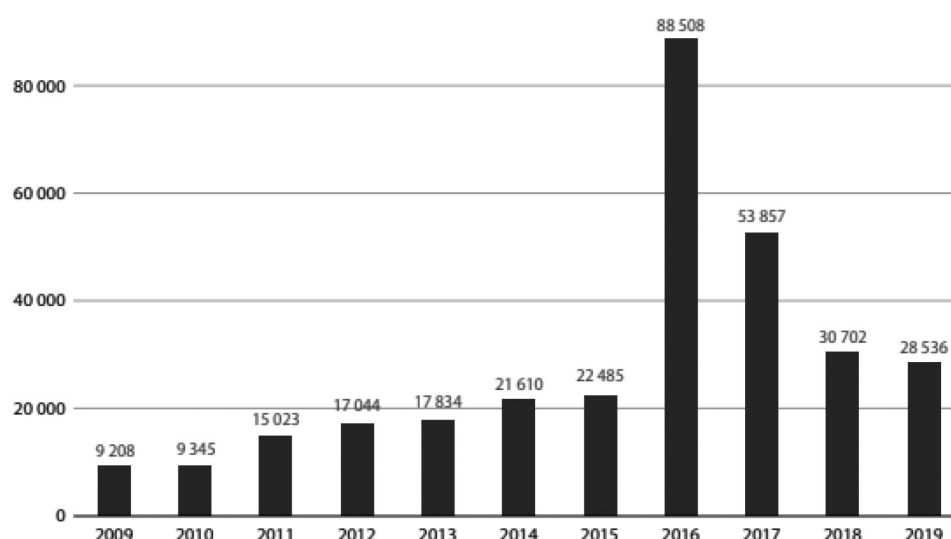
Figure 2. EOIR (exchange of information on request)
Source: Global Forum on Transparency (2020).

(2) The EOIR (exchange of information on request) that in ten years has tripled the number of requests of tax information from 9.208 in 2009 until 28.536 in 2019 (figure 2).

As regards the satisfactory implementation of the "tax transparency standards" the G20 Finance Ministers requested to the OECD a regular report about the jurisdictions that "fail" to comply with these standards in order to ensure a level playing field. In the last Report (2021) the number of opaque jurisdictions has decreased from 15 to 5, that is: **Dominica, Niue, San Martin, Trinidad and Tobago and Anguilla**. In other words, after all these years only these five little jurisdictions are considered "non-cooperative" (read as "tax havens") and obviously that´s unconvincing to some unbelievers.

Furthermore, the 2021 aforementioned Report states the result of the compliance with the four international tax standards required to be part of the OCDE inclusive framework: 300 tax regimens reviewed (action 5), 95 jurisdictions signed the BEPS Multilateral Instrument (action 6), 90 jurisdictions introduced the Country-by-Country reporting (action 13) and 82 jurisdictions have been reviewed in order to improve mechanism on dispute resolution and around 1800 recommendations have been made (action 14). All this is only the beginning of the "new global tax physiognomy" if we consider the fifteen BEPS actions and the number of inclusive framework members.
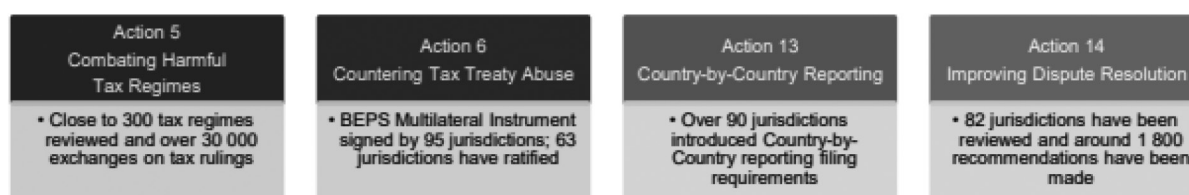
Figure 3. Four international tax standards
Source: OECD (2021)

For the OCDE (2021) to build effective tax systems in developing countries has never been more important, and to achieve that goal is necessary «to ensure that developing countries benefit from significant changes in the international system». In this context, it has launched 43 bespoke induction programmes to support the inclusive framework members to implement "their

BEPS priorities and build capacity" and has encouraged the OECD/UN Tax Inspectors Without Borders (TIWB) initiative – with 84 programmes completed and 21 forthcomings – that have helped to raise over USD 774 million in additional tax revenues and overall tax assessments in excess of USD 2.3 billion up to the end of 2020.

Undoubtedly, the OCDE (2020) is making the international tax structure more uniform with the support of the inclusive framework currently distributed as follow: Africa 18%, Asia-Pacific 15%, Western Europe 22%, Americas (North America, Latin America and the Caribbean) 26%, and Eastern Europe-Central Asia 19%. At the tax level, this is – together with the European Union harmonization process – the most important change that has ever been made and probably for that reason some institutions have questioned the legitimacy of all this work. Thus, for example, the Independent Commission for the Reform of International Corporate Taxation (ICRICT, 2019) has pointed out that the OECD/BEPS process has been designed by developed countries, mainly for developed countries, and most developing countries may not have the capacity to assess and reap its benefits.

The ICRICT is concerned about the legitimacy of the OECD about the way developing countries are participating in the shaping of global tax standards. The BEPS process "is being implemented as the new global standards applicable to all countries and the developing countries should therefore carefully evaluate the opportunity cost of engaging in the inclusive framework and the practicability of signing up to and implementing the BEPS outcomes that may not address their needs".

In November 2019, the ICRICT has been ever harder: "The distributive implications of the pillar one proposal are unclear, as the OECD has not published any economic impact analysis in order to support their proposal. Countries are asked to sign up to a "consensus proposal" without the economic impact being made publicly available for scrutiny". The ICRICT urged the OECD secretariat to publish the economic impact analysis of this proposal before the inclusive framework meeting in January 2020, along with the full data from multinationals country by country reporting. Thus, in October 2020 the OCDE has been published the economic impact assessment and we are waiting for the ICRICT detailed analysis about it without losing sight that the Report on Pillar One Blueprint has been published at the same time. Curiously, the Inclusive Framework meeting on 8-9 October 2020 approved the Report on the Pillar One Blueprint for public release in the following terms:

«It is designed to deliver a sustainable taxation framework reflective of today's digitalizing economy, with the potential to achieve a fairer and more efficient allocation of taxing rights. The Blueprint reflects the extensive technical work that has been done. Though no agreement has been reached, the Blueprint nevertheless provides a solid foundation for a future agreement that would adhere to the concept of net taxation of income, avoid double taxation and be as simple and administrable as possible. The Blueprint offers a solid basis for future agreement ... We agree to swiftly address the remaining issues with a view to bringing the process to a successful conclusion by mid-2021 and to resolve technical issues, develop model draft legislation, guidelines, and international rules and processes as necessary to enable jurisdictions to implement a consensus-based solution».

The United Nations (2019) has also noted that any consideration of tax measures in response to the digitalization of the economy should include a thorough analysis of the implications for developing countries with a special focus on their unique needs and capacities. Nevertheless,

the United Nations Tax Committee (2021) recently – in time to include the new article 12B on automated digital service in the 2021 Model Convention – has indicated in relation to the "tax consequences of the digitalized economy: issues of relevance for developing countries" and the work developed by the OECD/G20 Inclusive Framework on BEPS, that is better "be awaited to ensure that any United Nations alternative *would be consistent* with a multilateral approach". It is not surprising because in the twentieth session of the Tax Committee (2020) many members have stated their intention to follow the OECD/G20 Inclusive Framework position.

In short, probably within some time, the action one on the BEPS OCDE/G20 Project will be adopted and its conclusions will be applied progressively, at least, in one hundred and thirty-seven countries around the world. The picture is similar to that which has developed under the umbrella of the OECD Model on Double Tax Convention since most of the bilateral Tax Treaties have been signed following not only its articles but also its interpretation guidelines. The OECD is no longer limited to giving Recommendations to its Countries Members but now is in charge of design the new global tax structure. Obviously, its legitimacy is in question, but its proposal goes ahead and is very difficult for that to change due to the interest at stake and the lack of valid interlocutors. It is the new international tax soft law? Or is more than it?

3.   WHAT ARE THEY GOING TO CHANGE?

The digital economy is characterized by an unparalleled reliance on intangible assets, the massive use of data (including personal data), the widespread adoption of multi-sided business models capturing value from externalities generated by free products, and the difficulty of determining the jurisdiction in which the value creation occurs (OECD, 2013). In that context, the key questions are how MNE's in the digital economy add value and make their profits, and how the digital economy relates to the concepts of source and residence or the characterization of income for tax purposes. In fact, the new ways of doing business may result in a relocation of core business functions and, consequently, in a different distribution of taxing rights.

For those reasons, initially, the BEPS Project sought four specific objectives: (1) Establishing international coherence of corporate income taxation (action 2, 3, 4, and 5); (2) Restoring the full effects and benefits of international standards (action 6, 7, 8, 9 and 10); (3) Ensuring transparency while promoting increased certainty and predictability (action 11, 12, 13 and 14); and, (4) Agreed policies to tax rules, that is, swift implementation of the measures adopted (action 15). In that context and four years after the establishment of the inclusive framework, the Blueprint Report (OCDE/G20,2020) stated how Pillar One is focused on finding *new nexus and profit allocation rules to ensure the allocation of taxing rights with respect to business profits* no longer exclusively circumscribed by reference to the physical presence of the MNE's.

The traditional notions of permanent establishment and the arm's length principle has been changed and are important enhanced tax certainty through a more extensive multilateral tax cooperation. Thus, right now the Pillar One show three key elements: (1) A new taxing right for market jurisdictions over a share of residual profit calculated at an MNE group level (called amount A); (2) A fixed return for certain baseline marketing and distribution activities taking place physically in a market jurisdiction, in line with the arm's length principle (called amount B); and (3) A processes to improve tax certainty through effective dispute prevention and resolution mechanisms.

For the construction of Pillar One, the OCDE have been identified eleven building blocks that constitute the bedrock of its work that can be grouped as follows: (a) In relation to the above first element (called amount A) the blocks are tax scope, nexus, revenue sourcing, tax base determination, profit allocation and elimination of double taxation; (b) In respect to the second element (called amount B) the blocks are tax scope and quantum; and, (c) Looking tax certainty, the blocks are dispute prevention and resolution for amount A, and dispute prevention and resolution beyond amount B. The building is close to analyzing the best way to implement and administration of the new rules. Explain in detail all these technical issues and their possible consequences are not appropriate for an article like this, however, anyone can guess its importance especially for most developing countries.

Probably due to this lack of confidence, in relation to some types of digital activities, some countries have adopted unilateral measures around the world. In *Europe*, for example, Spain, France, Italy, Austria, Hungary, Poland, Turkey and the United Kingdom have implemented a *Digital Service Tax* (DST). Belgium, the Czech Republic, and Slovakia have published proposals to enact a DST, and Latvia, Norway, Slovenia, Russia and Denmark have announced their intention to implement such tax (Tax Foundation, 2021). In *America*, countries like Argentina, Costa Rica, México, Uruguay and Paraguay have introduced a DST, Canada announced its intention to introduce one, and Brazil has already drafted its proposal. In addition, *Asia* countries like Malaysia, Indonesia, Pakistan, Taiwan, Vietnam and India have enacted legislation to tax digital services, Thailand already has a proposal and Israel is considering it. Also, *Africa* countries like Nigeria, Kenya, Tunisia, Zimbabwe and Sierra Leone tax digital services and Egypt has the intention to implemented one. Finally, in the *Pacific*, a New Zealand DST may regain momentum if international progress stalls. Instead, countries like United States, South Africa, Switzerland, Sweden or Singapore are waiting for a global solution (KPMG, 2021).

Along with this confusing and diffuse panorama, some issues are still on the table. First, why the European OECD countries have not adopted yet the Proposal for a Council Directive on the common system of a digital services tax on revenues resulting from the provision of certain digital services, or at best, what future awaits this proposal. Second, the OECD/G20 inclusive framework introduces proposals about "taxing rights allocation" and "taxing rights distribution", then, why the European Union Council has not yet adopted the Common Consolidate Corporate Tax Base (CCCTB) relaunched in 2016. Third, the OECD/G20 BEPS proposals are compatible with the *Global Intangible Law Tax Income* (GILTI) legislation introduced in the United States in December 2017 that some scholars see as the most significant tax code overhaul in over three decades?

4. CONCLUSION

The OECD, with the support of the G20, and the participation of the «inclusive framework» are approving a set of proposals that will change the global tax structure. The key issue on all this process is if the debates and decisions about the reform of the international tax architecture are legitimate and if the final result will be a fair and balanced distribution of taxing rights between developed and developing countries. To ensure wider and true participation of developing countries it would be good if other international and regional organizations could participate as well other independent or academic organizations.

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HEALTHY ECONOMY:
MOBILE APPLICATION TO PROMOTE SUSTAINABILITY IN TIMES OF PANDEMIC

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Abstract: *Information and communication technologies enhance the digital transformation of society by accelerating and impacting changes in people's lives. This paper presents a technological solution, within the scope of the Sustainable Development Goals that intends to implement initiatives to "Eradicate Poverty" and "Healthy Living", namely an application that provides suggestions to optimize savings. The application has underlying concerns in the scope of Psychological Health, as an integral part of the Health of the human being, allowing to perceive the user's state of mind. It is also considered relevant that people have good psychological health so that they can manage their resources in a rational and intelligent way. The agile methodology was behind the development of the project as a process that combines the iterative model and the incremental model. The Healthy Economy application thus contributes to raising awareness of the rational management of financial resources, promoting the Sustainable Development Goals.*

Keywords: *Agile software development, Information systems, Information and communication technologies, Sustainable development goals.*

1. INTRODUCTION

Currently, it appears that most people find it difficult to effectively manage their financial resources to have minimal monthly expenses. It is considered that the abundance of available resources does not mean that they are inexhaustible; in this sense, if the resources are used in a balanced and rational way, more resources will be left for the most disadvantaged. The Sustainable Development Goals (SDGs) represent the priorities for the 2030 agenda signed by more than 190 countries. These require action on a global scale by governments, companies, and civil society to eradicate poverty and promote quality health in order to create a life with dignity and opportunities for all, within the limits of the planet. In view of financial concerns and aiming to optimize household spending, incorporating sustainability concerns, there is a need to manage monthly expenses and implement control mechanisms.

The importance of sustainability is increasingly recognized, but the broader impacts of software systems on sustainability are still unknown. It is important to mention that some case studies have shown that the inclusion of sustainability factors since the beginning of the process is an asset and promotes the Sustainable Development Goals (Reis, Silveira, Carvalho, & Mata, 2020; Silveira, Reis, Santos, & Mamede, 2020; Silveira, & Reis, 2021).

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The main objective of this study is the development of a technological solution, with a functional prototype, based on the needs of the citizens, that can contribute to a more sustainable world, incorporating SDG 1 and SDG 3. The application, Healthy Economy, has underlying concerns in the field of Psychological Health and Expense Management. Raising awareness of sustainability among users is another goal.

2. BACKGROUND

The Agenda for Sustainable Development, defined 17 objectives and 169 objectives, covering the social, economic and environmental dimensions worldwide (UNDP, 2021). These objectives focus on people, human rights and respond to growing social inequalities and pandemics. They also integrate issues such as peace, security and climate change. Currently, the world is facing a global health crisis due to COVID-19. In this analysis we highlight the SDG 1: End poverty in all its forms everywhere, and the SDG 3: Ensure healthy lives and promote well-being for all of all ages. Figure 1 illustrates these two SDGs.
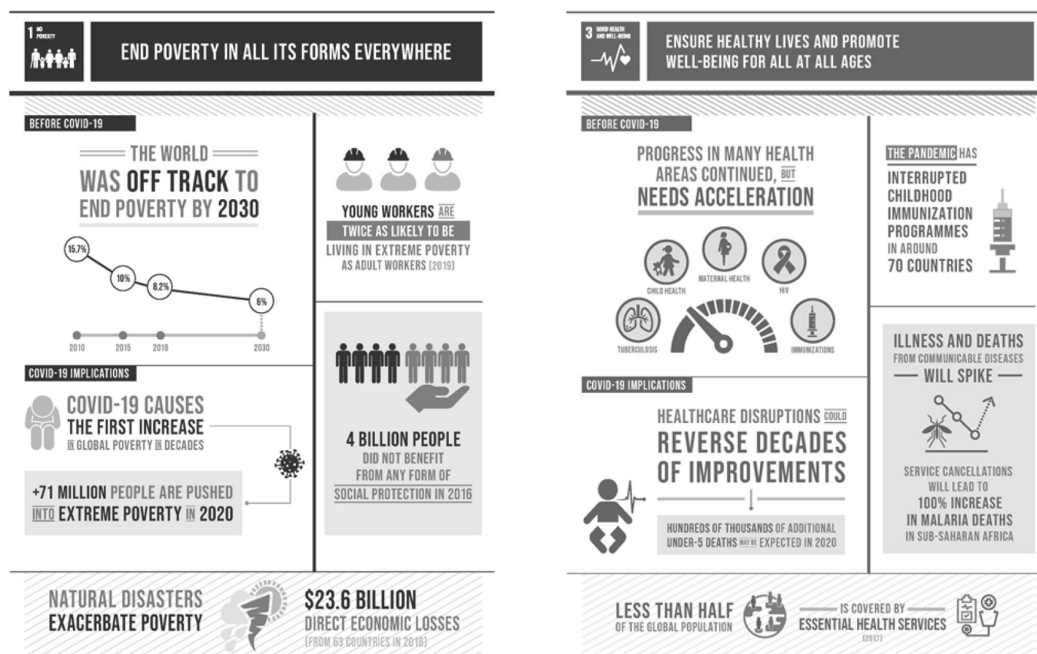
Figure 1. Goal 1 and Goal 3
Source: UNDP, 2021

Eradicating poverty in all its forms remains one of humanity's greatest challenges. Statistics indicate that 736 million people still live in extreme poverty (UNDP, 2021). Universal health coverage will also be essential to achieve SDG 3, eradicate poverty and reduce inequalities. In reality, good health is essential for sustainable development.

One of the current imperatives is to put health and sustainability at the center of the economy, implementing post-COVID-19 policies that achieve multiple goals - health, environmental sustainability, employment, and equitable socio-economic recovery (Guerriero, Haines, & Pagano, 2020). The emergence of mental health problems during a pandemic is extremely common, although difficult to address due to the complexity involved (Ransing *et al.*, 2020). In this sense, the proposed application implements integrated solutions for SDG 1 (No poverty), and SDG 3 (Good health and well-being).

Table 1 shows four existing applications in the market, two related to Expense Management and two related to Psychological Health. An analysis of these applications will help identify the requirements for inclusion in the Healthy Economy application.

Table 1. App features for expense management and psychological health promotion

Functional requirements	Mobills	Monefy	Sanvello	MindShift	Healthy Economy
Expense Management	Yes	Yes			Yes
Category management	Yes	Yes			Yes
Alerts and notifications	Yes	Yes			Yes
Answer questionnaire			Yes	Yes	Yes
Send and receive messages			Yes	Yes	Yes
Questionnaire history			Yes	Yes	Yes

Mobills is an application for personal financial control (Mobills Labs, 2021), with simple solutions for everyday problems. Users can enter all their expenses in the application and receive alert notifications. The Monefy application (Aimbity AS, 2021) allows you to add expenses or income by category. The Sanvello application (Sanvello Health, 2021) focuses on assisting people with anxiety problems. It is a solution based on empathy: meeting people where they are in times of need and surrounding them with tools and strategies that provide relief. The Mind-Shift CBT application (Anxiety Canada, 2020) promotes a change in mentality and empowers patients to deal with different consequences of anxiety attacks.

The study of these applications allowed the identification and comparison of the main functional requirements. We found that it was necessary to have an application that integrated both dimensions (helping to manage expenses and helping to promote psychological health).

3. DEVELOPMENT OF THE HEALTHY ECONOMY APP

The agile methodology was selected to develop the Healthy Economy application as it improves the quality of the iterations in the development process. In this view, agile software development teams are responsible for applying the methods they consider necessary for the project in question, adapting the development process throughout the project as needed (Jacobson & Seidewitz, 2014).

3.1. Requirements Analysis

The Use Case practice is a requirements analysis technique that has been widely used in modern software engineering since its introduction by Ivar Jacobson. Use cases can help teams understand the big picture, indicating ways to use a system to achieve a specific goal for a specific user – called an actor (Jacobson, Lawson, McMahon, & Goedicke, 2017). The activity begins with the identification of actors.

To identify the actors of the application, the following questions were answered:
- Who is interested and who benefits from the application?
  Citizens with psychological and/or financial problems or with difficulty in managing their spending. A Psychology Professional who will provide psychological support to the citizen.

- Who provides, uses and deletes the information?
  The citizen himself who uses the application. He will, with his experience, share new solutions and give his opinion on those already provided by the app. A Psychology Professional who will create questionnaires, savings suggestions and send messages to the citizen.

Through these responses, it is concluded that we will have two main actors: Citizen and Psychology Professional. Table 2 shows the actors and their objectives. These objectives correspond to the use cases.

Table 2. Use Cases and actors

Actor	Use Cases
Citizen	Insert own expenses (e.g. food, restaurant, light, income)
	View own expenses and available balance
	Create spending limits by category
	Receive savings suggestions for overspending categories
	Receive psychological help
	Answer psychology questionnaires
	Send a request for help to the Psychology Professional
	View survey results
	Insert, change, and view user
Psychology Professional	Create and delete savings suggestions
	Create questionnaires
	Send and receive messages
	View survey results

Use cases provide the structure of requirements, that is, a systematic way of organizing requirements. This structure facilitates analysis, user interface design, architecture design, implementation, and testing.
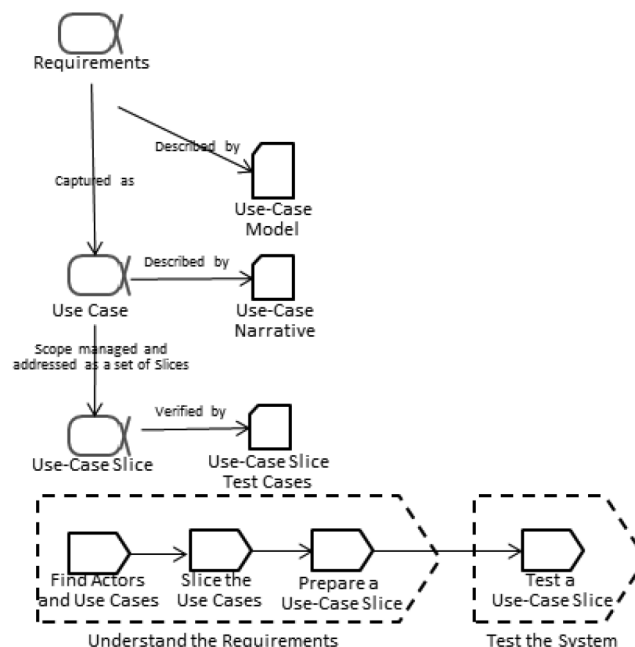
Figure 2. Capture requirements with use cases - Essence notation
Source: Jacobson, Lawson, McMahon, & Goedicke, 2017

Figure 2 represents the activities involved in capturing requirements with use cases, showing that the **Requirements** are decomposed into **Use Cases**, which in turn are divided into **Use Case Slices**. These are the three important things with which we have to work and make progress.

3.2. Technologies used

To develop the Healthy Economy app, the following technologies were used:
- Android studio - official development environment for Android app development;
- Android - operating system used;
- Firebase - store all data from the Health economy app;
- GitHub - repository to store all application code;
- Java - programming language used.

3.3. Prototypes of the app Healthy Economy

Figure 3 shows the application prototypes for: User login; View all expense categories and Insert own expenses by category.

Figure 4 shows the application prototypes for: Answer psychology questionnaires, Receive psychological help, and Send a request for help to the Psychology Professional.

The Healthy Economy mobile application is still under development and will be tested in the real context of a social organization.
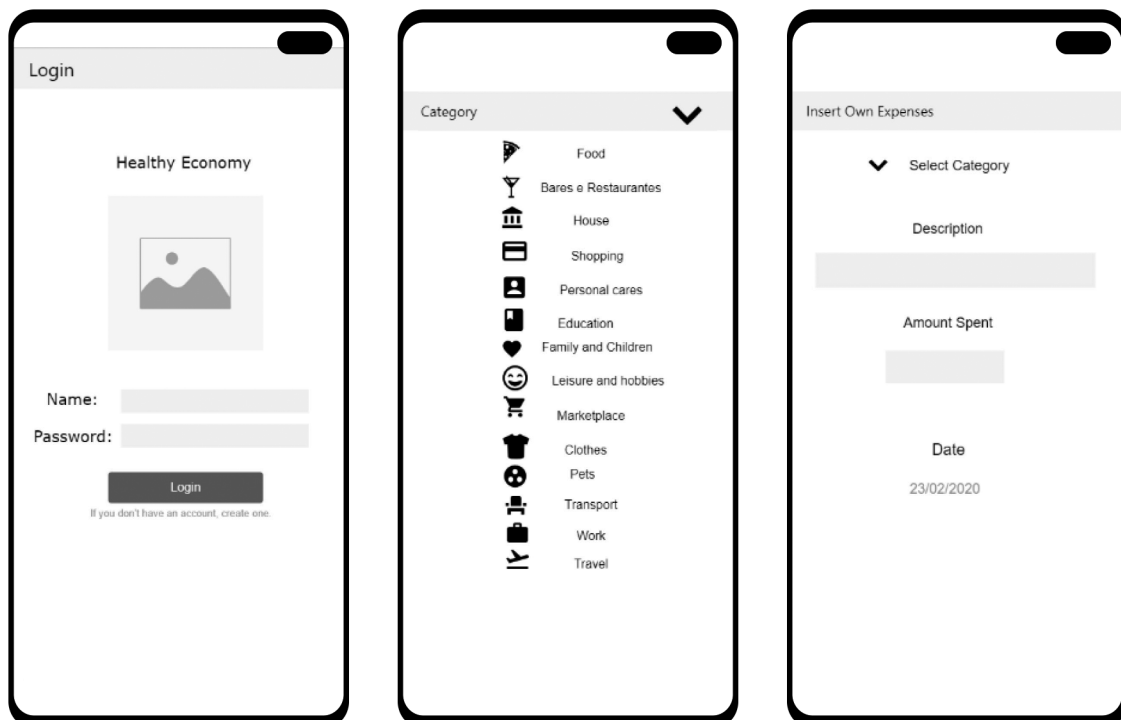
Figure 3. Application prototypes: Login, View expense categories, and Insert own expenses
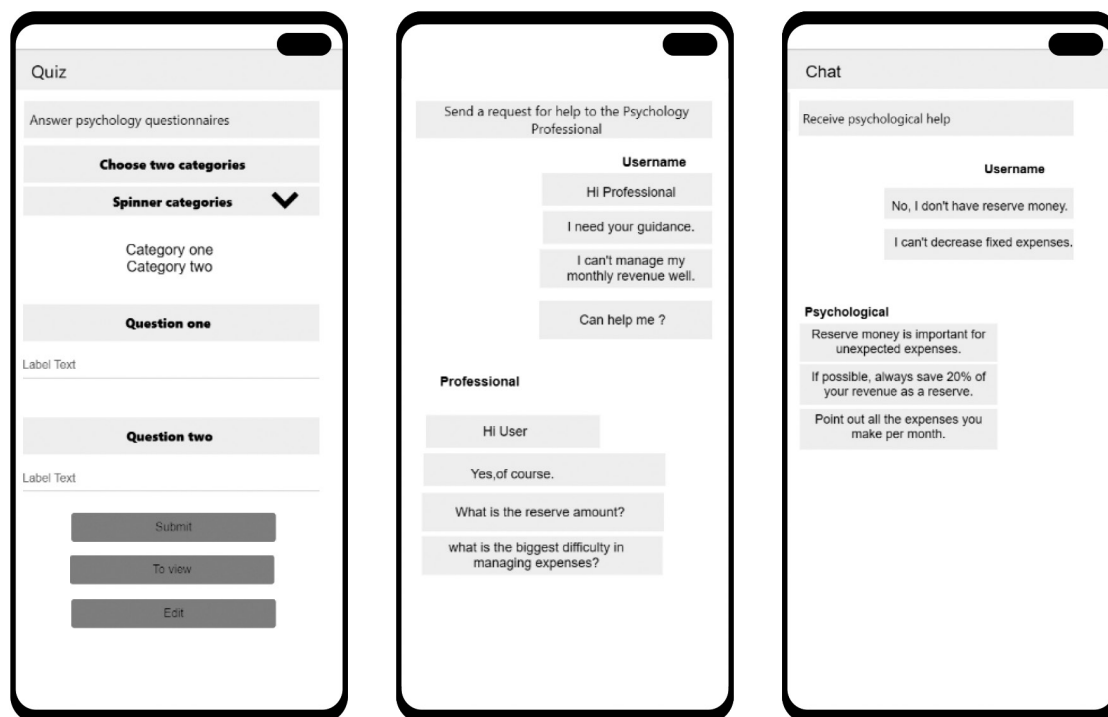
Figure 4. Mobile app prototypes for psychological help

4. FUTURE RESEARCH DIRECTIONS

The principles of the Karlskrona Manifesto are applied to the development of software systems (Becker et al., 2015; Penzenstadler, 2015), in particular: sustainability requires long-term thinking, as we must assess the benefits and impacts at various time scales: it is possible to meet the needs of future generations without sacrificing the prosperity of the current generation, as we can identify and make choices that benefit the present and future generations. For future work, it is relevant to continue to include sustainability factors in the development of software. On the other hand, technologies have an impact on the sustainability of people and the world, so we must continue to pass on the principles of sustainability knowledge to students in this field.

5. CONCLUSION

The Healthy Economy app aims to promote the SDG 1: End poverty in all its forms everywhere, and the SDG 3: Ensure healthy lives and promote well-being for all at all ages. It is important to note that this is not an easy task, it will be a long and difficult path, but this application is a contribution to achieve that goal. In pandemic times, it is very important that people have good psychological health so that they can manage their resources in a rational and intelligent way.

Software development incorporating sustainability concerns is a topic of great relevance. Given this relevance, this paper is a contribution to raise awareness among software professionals and end-users about the concepts underlying sustainability and the SDGs. It is also important to mention the importance of awareness for financial literacy and the consequent effect that it may have on the financial footprint. In this sense, the Sustainable Development Goals include the ambitions to be achieved for a better future.

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SMART CITIES AND THE NECESSITY OF OPENING OF THE DATA IN THE CZECH REPUBLIC AS AN EXAMPLE OF CEE COUNTRY

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Abstract: *Transparency and openness should be the basic principle of modern public administration. Many cities want to become smart cities, so they develop smart city strategies and realise specific smart city projects. However, only a few of the Czech cities are actually successful in this area. This paper studies the problems of the open data approaches in cities' practice. The public administration collects and stores data representing a smart city's critical element and one of the smart governance's essential tools toward modern public administration.*

The study aims to analyse the situation of open data and smart city measures in the Czech Republic and demonstrate the obvious separation of smart city implementation, data utilisation and smart governance in cities' practice.

The Czech Republic is one of the CEE countries that could benefit from more comprehensive smart cities measurement applications because some of its regions lag in digitalisation development. The opening of the data and the utilisation of them could be the first step for the cities or regions to implement advanced methods and technologies to become smart city. The only cities with successfully implemented smart city measures are the ones that are also relatively successful in open data publishing.

Keywords: *Public administration, Smart governance, Digitalisation, Open data.*

1. INTRODUCTION

The paper focuses on the importance of Open Data in the perspectives of Smart Governance and Smart City implementation. The problem of the open data approaches in cities' practice is demonstrated in the Czech Republic's case as an example of a CEE country. This paper consists of a theoretical literature review regarding Smart City and Smart Governance and Open data in the context of Smart Cities. This provides the theoretical framework for the case study in the empirical part. The case study deals with implementing open data in the Czech Republic. It compares the situation in the cities' practice in the Czech Republic and foreign experiences in CEE countries. The article discusses the results of the contemporary situation and the possibilities to improve, as well as the potential consequences.

2. SMART CITY AND SMART GOVERNANCE

Many cities want to become Smart Cities. The Smart City concept has become a widely discussed research topic in various perspectives such as technological, economic, public policy, social or environmental subjects. According to Gil-Garcia, Pardo, and Nam (2015 p. 62) and

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Chourabi et al. (2012), Smart City creates a response to the solution of new problems arising from urban development and urbanisation. Moreover, ICT development/digitalisation and economic perspective are often considered as the key drivers of the development of a Smart City. Augustyn (2013, p. 4) refers to the growing importance of ICT as an initiating force for economic competitiveness, environmental sustainability and the general viability of urban development.

There are extensive academic discussions regarding the concepts of a Smart City and public policy decision-making. To build a Smart City, strategic planning and evidence-based/expert approaches are needed. The concept of smart cities usually includes several key concepts. Lombardi et al. (2012) define six fundamental smart dimensions – a smart economy, smart mobility, smart environment, smart people, smart living and smart governance.

Authors focus on Smart Governance, despite the fact that there is no single conclusive definition of this term. In authors' views, the objective of smart governance is the higher transparency of city planning and decision-making, as well as a higher level of information for citizens based on using ICT tools. Smart Governance represents smart management in public administration based on selected attributes and at the same time, an equally important role of SG is the management and implementation of Smart City projects. SG is therefore an important part of the Smart City concept.

Bolívar and Meijer (2016) identify six defining elements of Smart Governance – the use of ICT technologies, external collaboration and participation, internal coordination, decision-making process, e-administration and outcomes. These attributes are in various extents presented by academic discussion. Nam (2012) goes beyond that by promoting leadership, communication, data-exchange, accountability and transparency. Similarly, (Gil-Garcia et al., 2015) refers to governance based on ICT technology which represents a set of technologies, people, policies, resources and information supporting city management for governing cities. Furthermore, (Gil-Garcia et al., 2015) identify three parts of governance: e-governance, the involvement of stakeholders, the public, communities and networking, partnerships and cooperation.

Besides that, the weakness of the contemporary approach to Smart Governance is objectively measurable indicators that are unclear, and the non-standardization of rules or framework for SG implementation. This leads to a certain overall uncertainty of SG and ambiguity, what the implementation of SG means in practice and what outputs it brings. This is also the situation in the Czech Republic, where the implementation of SG is in the initial phase.

In general, academic discussions pay less attention to SG measurability (e.g. Giffinger et al., 2007; Lombardi et al., 2012). Although, Kumar, Singh, and Gupta (2016) state there is a wide list of SG indicators based on a literature review. A significant part of identified indicators has subjective character (e.g. friendly access to information for the public, transparency in management processes, etc.) and hereby it is limited in response to the problem of measurable indicators and the implementation of SG in practice.

Kumar et al. (2016) emphasise transparency and the openness of public administration together with orientation to the public, providing information and e-services as a best practice approach. Therefore, Smart Governance tools are oriented to benefit citizens. In general, it is characterised by increasing the number of public e-government services, enhancing public participation and data utilisation. SG tools represent open data, participatory budgeting, participation platforms, etc. The subject of study is focused on open data as an important tool to build modern public administration in a Smart City.

3.   OPEN DATA IN THE CONTEXT OF SMART CITIES

In the Czech Republic, the Ministry of Regional Development (MMR) issued a methodology of evaluation of sustainable Smart Cities (Ministry of Regional Development, 2018). The methodology includes identified indicators for Smart Governance. The methodology assigns units and calculation determinations to specified indicators of sub-areas. There are often ratio indicators (%) used, although source data for calculations are usually not publicly available.

One of the sub-areas is defined as "ICT Infrastructure" which represents three objectives – maximise the utilisation of internet connection, increase the efficiency of data collection and their evaluation for practical use, and maximise the sharing of open data for their subsequent use. This objective consists of two indicators – the utilisation of municipal open data and the availability of open data.

There are several definitions of open data, but for the purposes of this article, the definition stated by M. Janssen, Charalabidis, and Zuiderwijk (2012) is going to be used. According to them, open data is data that is not confidential, created by using public money and is made completely public without any restrains concerning their usage.

Public administration is one of the biggest producers of data (K. Janssen, 2011), so the public sector can utilise the power of information and communication technologies by using only this data. Without proper open data about the municipality, there are negative consequences when it comes to urban management and planning (Chakraborty et al., 2015). Some authors also argue that the public sector's data should be publicly available for the reason that the public sector is gathering and processing the data using the tax-payers' money. Therefore, tax-payers (citizens and corporations) should be able to get and use this data.

The role of open data in the life of citizens is well described in the literature. For example, Tolbert and Mossberger (2006) explained how open data and online available governmental information improves public trust and transparency of public administration. In recent work, Ruijer et al. (2018) confirmed that open governmental data should enhance the transparency and participation of the public. However, the full potential of those improvements has still not been fulfilled. Despite the above stated benefits, there are still reasons why open data is not widely and universally used across all parts of public administration. There are also some barriers for (local) governments to publish open data. Conradie and Choenni (2014) conducted a study about the processes that lead to the publishing of open data. They also warn against publishing the data just for the sake of publishing and recommend taking small steps when it comes to data publishing rather than implementing big, expensive and complex open data programs.

4.   OPEN DATA AND SMART CITIES IN THE CEE REGION

The region of central and eastern Europe has undergone rapid development in the last 30 years in virtually all areas. The utilisation of ICT and modern technologies in the public sector is one of them. The important aspect of this development is that this utilisation can improve the rate and the speed with which the region is further developing.

Table 1 shows a comparison of the CEE countries according to the Global Open Data index in 2017. The Open Knowledge Foundation (2017) is assessing open government data publication from a civic perspective. The best state of open data is in Latvia, which is ranked 14th. The Czech

Republic is third when it comes to all CEE countries that are on the list. From this perspective, the Czech Republic is one of the best in the given region but the overall state of open data in the CEE region is not good. Only one country is in the top 20, while the rest is rather far down the list. This means that the CEE region lags behind the more developed countries in the world.

Some cities or countries in the region are using smart city tools and applications to help promote themselves or to increase their attractiveness for visitors. An example could be the Romanian city of Brasov, which uses an augmented reality application, Virtual Brasov, which informs tourists about the city's history and points of interest (Briciu, Briciu, & Kavoura, 2020).

Table 1. The CEE counties results according to the Global Open Data Index

Rank	Country	Score
14	Latvia	64%
24	Romania	51%
27	Czech Republic	50%
28	Poland	49%
28	Slovenia	49%
31	Ukraine	48%
32	Slovakia	47%
36	Bulgaria	45%
41	Serbia	41%
44	Croatia	39%
47	Albania	36%
58	Bosna and Herzegovina	26%

Source: (Open Knowledge Foundation, 2017)

For a broader usage of open data and smart city measures, accepting the cities' management and employees is important. Several surveys studied the attitudes toward new technologies and methods in the government. For example, Bătăgan, Constantin, and Moga (2017) found that most employees from their survey in Romania think that using open data solutions are important and at the same time they acknowledge their positive effects. Despite those findings, some other authors see the attitude of public service and government employees as one of the barriers to broader usage. This disparity may indicate differences in the attitudes and knowledge of individual employees.

Pašalić, Ćukušić, and Jadrić (2020) present the state of research in the area of a Smart City in Southeast Europe. They point out that most research focuses on the Smart City's theoretical side and only a small part is based on actual empirical evidence. The lack of practical examples from this area can be the reason for this. The findings of other research support this theory. Jurlina Alibegović, Villa, and Šagovac (2018) say that only two cities in Croatia have a smart strategy. Only a few of the cities in the country have developed some kind of SC projects.

Usually, the capital city is often pursuing the goal to become one of the Smart Cities. Still, some other cities in the CEE region are also starting to implement some SC practices, for example, the cities of Debrecen and Szeged (Losavio et al., 2018).

5.   OPEN DATA AND SMART CITIES IN THE CZECH REPUBLIC

According to the National Catalogue of Open Data, Prague is (with 322 published data sets) the fifth-biggest publisher of open data. Among the cities or regions, Prague is the biggest one (Ministry of the Interior of the Czech Republic, 2021). Second in this category is the city of

Pilsen, which has 166 published datasets. This is one of the signs that open data is much more developed in the capital city than in other regions or smaller cities.

Table 2 shows an overview of the state of open data in specific regions and municipalities of the Czech Republic. Most of the municipalities on the list are bigger cities, often capitals of the given region. However, there is one exception, being the municipalities of Bohumín and Huntířov, which are rather small towns but which are also collecting and publishing quite a large number of datasets. These towns can serve as an example that the opening of data and transparency, in general, are not limited to big cities.

Table 2. Overview of the state of open government data in regions of the Czech Republic

Publisher	Region / Municipality	Platform	# of datasets	URL
Municipality	Praha	CKAN	328	https://opendata.praha.eu/
	Plzen	CKAN	166	https://opendata.plzen.eu/
	Ostrava	Own solution	80	https://opendata.ostrava.cz/
	Brno	ArcGIS Hub	46	https://data.brno.cz/
	Decin	CKAN	39	https://opendata.mmdecin.cz/
	Bohumin	Own solution	20	https://www.mesto-bohumin.cz/cz/radnice/otevrena-data/
	Olomouc	CKAN	17	https://kod.olomouc.eu/
	Opava	ArcGIS Hub	14	https://okod-opava.opendata.arcgis.com/search
	Pardubice	Own solution	14	https://mapy.pardubice.eu/MyCity
	Huntirov	Own solution	5	http://www.huntirov.cz/datove-sady/ms-4033/p1=4033
	Karvina	CKAN	4	https://opendata.karvina.cz/
	Hradec Kralove	CKAN	3	http://opendata.mmhk.cz/
	Vrchlabi	Own solution	2	https://www.muvrchlabi.cz/otevrena-data/ds-1288/p1=7928
Region	Hradec Kralove	Own solution	62	https://www.kr-kralovehradecky.cz/cz/kraj-volene-organy/sklad/opendata/otevrena-data-301831/
	Central Bohemian	Own solution	1	https://doprava.kr-stredocesky.cz/site/openData
		ESRI ArcGIS	27	https://gis.kr-stredocesky.cz/JS/MAPY/
	Plzen	Own solution	8	https://www.plzensky-kraj.cz/otevreny-kraj
		ESRI ArcGIS	15	http://geoportal.plzensky-kraj.cz/gs/
	Vysocina	Own solution	16	https://opendata.kr-vysocina.cz/
	Olomouc	Own solution	17	https://data.olomouc.eu/
	South Moravian	Own solution	10	https://mapy.jmk.cz/geoportal/DATA/OTEVRENA-DATA.aspx
	Usti nad Labem	Own solution	7	https://portabo.cz/
	Zlin	Own solution	4	https://www.kr-zlinsky.cz/otevreny-urad-cl-3812.html
	Liberec Region	Own solution	3	https://dopravnimapy.kraj-lbc.cz/open-data/?id=584a7ad7-1680-4d8d-a20b-7068c371c416
	South Bohemian	Own solution	3	https://geoportal.kraj-jihocesky.gov.cz/
	Moravian-Silesian	Own solution	3	https://www.msk.cz/scripts/detail.php?pgid=47

Most municipalities and regions publishing data are doing it via their own solution without using some specialised platform. The reasons for this can be the lack of expertise or change aversion. That can lead to lower usability and efficiency of the data usage and can inhibit the open data's possibilities to be widely used in applications and for implementing it into the Smart City ecosys-

tem. An example from the Czech Republic could be that the open data in the region of Plzen is not in one place. There are datasets in different places on the region's website and the open geo-data are even published on its own portal. The same situation is in the Central Bohemian Region.

There is an interesting difference between regions and municipalities. The municipalities seem to be more effective in publishing open data and using better ways to do it. 8 out of the 12 analysed municipalities are using a solution that is made for publishing data. In most cases, the platform is CKAN. This technology is widely used and thanks to its widely recognised quality, it is used by many institutions, for example, the open data portals of Switzerland[3], Canada[4], Mexico[5] and many others.

The regional open data portal or websites are not built on any platforms and in most cases, are just downloadable as a file from some city or region webpage. The only exceptions are geographical data provided by Plzen and the Central Bohemian Region. This disparity between two different government levels can mean that there is no effective system for knowledge and skill sharing.

Another difference between municipalities and regions is in the number of datasets that are published. The average municipality has published more datasets than the average region. The value of regional data can be higher because there are more potential users of the applications or services built on them. On the other hand, the data acquisition and processing for the bigger area with a bigger population can be more expensive and difficult.

Like almost all other European capitals, Prague is aiming to engage in processes towards implementing new technologies and the utilisation of them to improve the quality of life in the city as well as to enable better public participation in addition to the transparency of public administration.

In the Czech Republic, several cities are trying to implement Smart City measures (Prague, Plzeň, Brno, Jihlava). Still, Prague's Smart City initiative is undoubtedly (and without surprise – Prague is by far the biggest city with the most resources) the most developed in the Czech Republic. Its position is also good among the world's other cities. The city became the 19th smartest city in the world, according to the IMD Smart City Index 2019 (IMD World Competitiveness Center, 2019).

Although Prague today is the best in implementing the SC measures, other cities in the Czech Republic are implementing them as well. For example, the city of Plzen has its own Smart City portal, where it presents its projects and initiatives to improve the life of its citizens. The city regularly publishes its ICT and Smart City strategies, while there are more than forty finished or ongoing projects right now (City of Pilsen, n. d.).

The second biggest city in the Czech Republic is Brno, which has a strategy for becoming a Smart City. There is a Commission for the open and Smart City within the city's government and implementing the changes leading to a smarter city is one of the themes in the city's long-term strategy as is stated in the strategy Brno 2050 (https://brno2050.cz/).

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[3]   https://opendata.swiss/de

[4]   https://open.canada.ca/ckan/en/dataset

[5]   https://datos.gob.mx/

Several other smaller cities and towns declared their intentions to became a Smart City. For example, Pardubice and Jihlava both have published their Smart City strategies and both focus mainly on traffic and energy. Despite the word "city" in the term Smart City, the regions can adopt the Smart City measurements as well. Unfortunately, no Czech Republic regions adopted or implemented any significant project or measure in this regard.

6. FUTURE RESEARCH DIRECTIONS

The literature review revealed that the public sector employees could be discouraged by the possible disclosure of problematic information or misinterpretation of published data. Future research should aim to put those fears and anxieties in the context of real benefits so that future lobbyist in the open data field will be able to communicate these issues.

7. CONCLUSION

All three cities (Prague, Brno and Pilsen) currently pushing the SC projects are all at the top of the list of the cities with the most open data datasets published, and all are using an advanced platform to share their data. Open data is also one of the main themes the Smart City initiatives are built around.

On the one hand, this can mean the data's opening enabled the further application of SC measures and is therefore important. On the other hand, opening data and making the city smarter can be both taking place in parallel. The fact that both initiatives emerged simultaneously suggests that the later eventuality may be more likely.

Based on the literature review, one of the main barriers to changes in the public sector is the attitudes of the city's employers and managers as well as their risk and change. The relation between the advanced open data portal and the Smart City development may indicate that the city's management in addition to its courage and commitment to using modern technologies leads to success.

The open data's overall situation in the Czech Republic is not good, except for Prague and a few other big cities. The short analysis of the open data portals and websites presenting the open data of regions or bigger cities shows that there are significant differences among them and that there are not any generally accepted rules and standards for the publishing of open data.

The differences in the development level in these areas cannot even indicate greater differences in the way the cities are managed and in the overall state of the cities (or regions). Still, they can also contribute to further divergences in the cities' situations and development, so the poorer regions can even worsen their prospects and opportunities.

Part of the regions did not have any website or portal specifically dedicated to open data and even when they do publish some of the data, they place the data somewhere in the cities' or regions' website. This makes it difficult for public members who are interested in open information about the public sector to find and use the data.

Another possible factor slowing down the application of open data initiatives and Smart City measures can be the opinions and behaviour of the public sector employees. The solution for this can be to provide information and have better and more detailed training.

There is still a long way to go when it comes to the wider adoption of open data as well as SC methods and techniques. The first point should be the processing and publishing of the data. Since the public sector is already collecting a large amount of data, there should not be any significant amount of work or resources needed for that. The data opening can be the first step in pursuing more radical changes, like implementing procedures to make the city smarter. These small steps could also break the risk aversion of the management and can change the attitudes of public officers.

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E-PARTICIPATORY AND COMMUNICATION MOBILE APPLICATIONS: CASE STUDY OF PRAGUE

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Abstract: *Worldwide usage of mobile Internet significantly increases, which underlines the importance of mobile applications as a tool for involving residents in local public affairs and decision-making processes. However, the Czech level of e-participation is below the EU average in the long term. Using an exploratory case study, tis article aims to identify all available e-participatory and communication mobile applications designed for the city of Prague and its inhabitants offered on Google Play Store and Apple App Store. Moreover, using the content analysis method, features of identified mobile applications are explored and described. The majority of identified applications serve as one-way communication channels, and one application has a function that allows it to collect opinions of residents through voting polls. It is essential to significantly increase the user base of these applications and thus to ensure efficient development of e-participation in Prague and also in the Czech Republic in the future.*

Keywords: *E-participation, Communication, Citizen, Municipality.*

1. INTRODUCTION

Participatory practices and tools such as public assemblies, meetings, public hearings, etc. have been known around the world for many years. However, the resulting effect of these tools may vary depending on the specific situation and location (OECD, 2001). Those practices are usually held during standard working hours at the fixed locations and thus, personal inconveniences might often discourage citizens from participating and lead to a low level of citizens' involvement in participatory projects (Kingston, 2007). However, digitalisation and widespread Internet access have made the tools of citizens' participation much easier and more accessible. Thus, the concept of e-participation is based on the assumption of the use of ICT to involve citizens into public affairs (Peristeras et al., 2009). Macintosh (2006) defined e-participation as *"the use of information and communication technologies to broaden and deepen political participation by enabling citizens to connect with one another and with their elected representatives"*. According to this definition, e-participation can also be divided into three interrelated dimensions: **1)** *e-enabling* – disseminating (providing) information to as many potential participants as possible and using appropriate tools in the most clear and understandable way; **2)** *e-engaging* – involving citizens into the discussion and consultation related to important decision-making processes influencing public life; **3)** *e-empowering* – active involvement of citizens into the decision-making processes in which citizens are treated as political partners.

Through the increased Internet access, a large number of citizens are enabled to express their opinion without the necessity to join personally any civic association or other institution of a similar nature and their voice serves as a valuable input for decision-making at the national and also local administrative level (Loukis et al., 2010). Generally, the most common tools used for

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e-participating and on-line communicating are social media, websites or web platforms and mobile applications (Gao & Lee, 2017). Moreover, usage of mobile Internet connections on a day-to-day basis significantly increases, which underlines the importance of mobile applications as a tool for involving residents in local public affairs and decision-making processes (Stieglitz & Brockmann, 2013).

Through mobile applications, citizens can directly provide opinions, feedback or voice concerns within the community (Höffken & Streich, 2013; Thiel & Lehner, 2015). Mobile applications may provide users with various functions such as sharing information from the area of city services, mobility, safety, statistics, news and events or environment (Beutelspacher et al., 2018). On the other hand, mobile online surveys or consultations represent valuable e-participatory tools (Wimmer et al., 2013; Zheng, 2017). Following the definition of the dimensions of e-participation by Macintosh (2004), social media and smartphones seem to have a big potential to support especially the stages of e-enabling and e-engaging (Stieglitz & Brockmann, 2013).
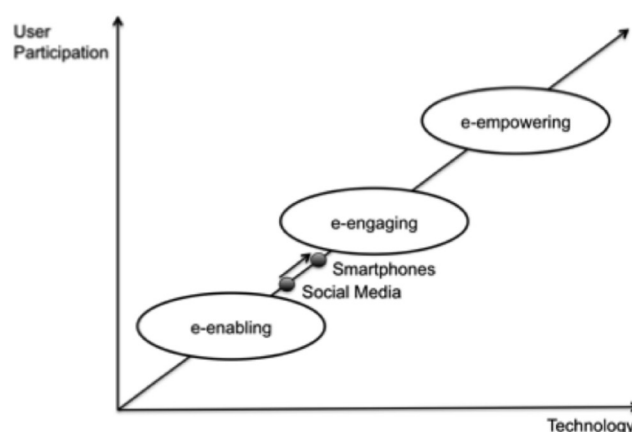
Figure 1. Degrees of E-participation with Support of Social Media and Smartphones
Source: Stieglitz & Brockmann, 2013

The level of e-participation in the Czech Republic has for a long time been relatively low. For international comparison, Figure 2 below shows the development of the E-Participation Index designed by the United Nations. Achieved values of the E-Participation Index for the Czech Republic are below the European regional average Index value in the whole monitored period of 2010-2020. Moreover, the Czech Republic ranked 65th place among 193 evaluated countries in 2020, when the regional and also global leader became Estonia with an Index value of 1 (United Nations, 2020).
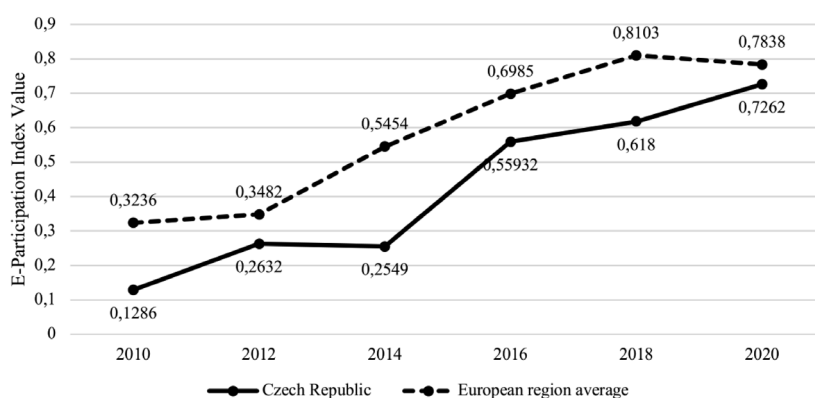
Figure 2. E-participation Index Development
Source: United Nations, 2020

It is now a crucial question of what kinds of obstacles prevent the successful development of e-participation in the Czech Republic, and thus prevent it from getting below-average values and approaching closer to regional leaders in this field in the future. However, to successfully identify and overcome these barriers, it is desirable to focus separately on each component of which the overall concept of e-participation is composed. The following text, as well as the main goal of this article, deals mainly with the issue of e-participation and communication between citizens and municipal leadership through on-line tools, particularly on-line applications designed for their use in smartphones.

As fundamental international statistics and relevant data from the area of mobile Internet access show, the Czech infrastructure seems to be relatively wide, and the number of mobile Internet users corresponds with the EU average. According to DESI (Digital Economy and Society Index) evaluation, 4G mobile Internet network in the Czech Republic covers 99.6 % households (percentage of populated areas with coverage by 4G - measured as the average coverage of telecom operators) and the so-called Broadband price index, which represents prices of representative baskets of fixed, mobile, and converged broadband offers, in the Czech Republic is below the European Union average (European Commission, 2020).

Moreover, 70.5 % of the Czech population aged between 16-74 years reported using mobile Internet access regularly on a daily basis in 2019. For comparison, the European leader with the greatest number of mobile Internet users is Sweden (91.9 % of the population in the age group of 16-74), the country with the lowest share of mobile Internet users is Italy (49.2 %) and the European Union average of mobile Internet users is 72.7 % (Eurostat, 2020). The above-mentioned data may indicate that the main reason for the low use of municipal online mobile platforms among city and municipal residents is not the infrastructure itself. Therefore, the research might focus on why people are not interested in using these applications and how to expand their user base.

Relatively little scientific evidence related to the design and functionalities of mobile participatory and communication applications has been published so far. Studies addressing these questions mostly focus on analysing single case studies and projects (Cristobal et al., 2018; Briciu et al., 2020). This article serves as an initial description of the state of supply of e-participatory mobile platforms in the Czech Republic, which represents one of the key areas of the e-participation concept. Particularly, this article aims to identify and describe the e-participatory and communication mobile platforms offered to citizens of Prague. A thorough description and characteristics of the current state is a necessary prerequisite for determining the starting point for further follow-up research in the field of e-participation in the Czech Republic.

2. METHODOLOGY

The aim of this article is to 1) map all available e-participatory and communication mobile applications designed for the city of Prague and its inhabitants offered on Google Play Store and Apple App Store and 2) explore functionalities of identified mobile applications. The study uses the exploratory case study method, which can be defined as "an empirical inquiry that investigates a contemporary phenomenon (the 'case') in depth and within its real-world context" (Yin 2014), as a main research technique.

Firstly, the following search keywords were used to identify relevant mobile applications on Google Play Store and Apple App Store (see Table 1): "Praha" (Prague) and "participace"

(participation) or "komunikace" (communication) or "informace" (information) or "hlášení" (announcement) or "občan" (citizen) or "správa" (administration) or "veřejnost" (public). The search was conducted between the 1ˢᵗ of December and the 5ᵗʰ of December 2020. Most of the e-participatory and communication mobile applications were identified after using keywords "Praha" (Prague) and "občan" (citizen) or "hlášení" (announcement). After we filtered out duplicities, a total of 13 relevant mobile applications designed for communication and participation between the city of Prague or its municipal districts and their citizens were identified.

Table 1. Search keywords

Main search keyword		Complementary search keyword	Number of relevant results
"Praha" (Prague)	*and*	"participace" (participation)	1
		or	
		"komunikace" (communication)	3
		or	
		"informace" (information)	2
		or	
		"hlášení" (announcement)	7
		or	
		"občan" (citizen)	9
		or	
		"správa" (administration)	1
		or	
		"veřejnost" (public)	1
Number of identified applications after removing duplicities			**13**

Secondly, using the content analysis method, features, and functionalities of identified mobile applications were explored and described as well as their level of usage among Prague citizens. All 13 identified mobile applications were downloaded and individually assessed by researchers, and consequently, their functionalities were examined.

3. E-PARTICIPATORY AND COMMUNICATION MOBILE APPLICATIONS IN PRAGUE

The city of Prague with more than 1.3 million inhabitants is managed by the Prague City Hall. However, Prague is further divided into 57 city districts, each of which has its own City Hall and municipal representation. Many of these Prague districts have therefore decided to provide their residents with their own communication or participatory application, independently of the mobile applications run by the Prague City Hall. Therefore, the identified mobile applications can be divided into two main groups: 1) mobile applications with use and functionalities that are designed for all Prague residents and 2) mobile applications with use and functionalities that are designed for residents of particular Prague districts.

Firstly, we characterize mobile applications designed for all residents of Prague, regardless of particular citizens' place of district residence within Prague:

● *"Moje Praha" (My Prague)*

The primary goal of this mobile application is to provide citizens of Prague with basic and practical information. Therefore, its functionalities include providing information ranging from the availabil-

ity of free parking places (including direct payment option), live traffic cameras, contacts and opening hours of municipal authorities, list of city police headquarters, information on cultural events, weather conditions, lists of pharmacies, playgrounds, parks and public toilets, list of the most important telephone numbers for crisis situations to interactive map of Prague. The nature of this mobile application is therefore purely informative and does not serve as a two-way communication channel.

- *"Změňte.to" (Change.it)*

The second identified mobile application designed for all Prague residents is called "Změnte.to" (Change.it), which serves as a means of informing Prague City Hall employees and its subordinate organizations on all types of maintenance issues and disruptions in service of public transportation, roads, public lighting, litter, etc. Users can locate the disruption directly on the map via the mobile application, attach a photo and send it with a short comment directly to relevant city employees. Recently, the application has been extended with the addition of functionality enabling users to evaluate services at the city's bureaus. This application, therefore, represents an opportunity to draw attention to accidents, disorders, or several other facts with which citizens of Prague are not satisfied and wish to change them.

Secondly, we characterize mobile applications designed for residents of particular Prague districts:

- *"Mobilní Rozhlas" (Mobile Broadcast)*

This smartphone application, also available as a web platform, represents one of the most used online communication and participatory platforms among Czech cities and villages. The application can be characterized as a universally designed product that offers a various number of functionalities and the city management itself can decide which of these available functions it is to offer to their citizens. If a municipality opts for using this application, its citizens can simply download it onto their mobile devices and then search for the name of their preferred city, subscribe to its newsletters and start using the available functionalities. The application offers functionalities such as: sharing news, reporting defects and filing complaints (in a similar way as the above-mentioned "Změňte to" application), emergency communication, information on cultural events, tips for trips, information regarding the waste and its collection, providing contacts and opening hours of municipal authorities or information on parking spaces. In addition, this smartphone application also offers an opinion poll tool, through which the leadership of municipalities can gather opinions of their citizens on various issues. A total of 12 Prague city districts are actively using this application (see more information in the Discussion section).

- *"Hlášení Rozhlasu" (Broadcast announcement)*

Another very commonly used, universally designed application is called "Hlášení Rozhlasu" (Broadcast Announcement). As well as in the case of the above-mentioned "Mobilní Rozhlas", if a municipality opts for using this application, its citizens can download it onto their mobile devices and then search for the name of their preferred city, subscribe to its newsletters and start using the available functionalities. However, the range of functionalities of this application is limited compared to the previous option as the platform only offers newsfeed, emergency communication, reporting defects and complaints (in a similar way as above mentioned "Změňte to" application) or providing contacts and opening hours of municipal authorities. A total of eight Prague city districts actively use this application.

- *"Praha 4 v mobilu" (Prague 4 in Mobile), Praha 12 v mobilu (Prague 12 in Mobile), Praha 13 v mobilu (Prague 13 in Mobile)*

Districts of Prague 4, Prague 12 and Prague 13 are using the same universally designed application which, however, does not use a single application name (as above mentioned "Mobilní Rozhlas" and "Hlášení Rozhlasu"), but is named after the name of the particular city district itself. This application provides its users with newsfeed, information on cultural events, possibility to report defects and complaints (in a similar way as the above-mentioned "Změňte to" application), contacts and opening hours of municipal authorities, a tourist guide to the city's cultural sights or upcoming weather conditions.

- *"Praha Libuš" (Prague Libuš), "Praha Petrovice" (Prague Petrovice), "Moje Kunratice" (My Kunratice)*

Districts of Prague Libuš, Prague Petrovice and Prague Kunratice also decided to use the same universally designed application, which works in a similar way to the previous example and holds the name of the particular city district. This type of applications offers the following functionalities: newsfeed, contacts and opening hours of municipal authorities, communication channel (feedback from citizens on any issue), information on cultural events, current issue of the city newspaper or information regarding waste and its collection.

- *"Praha 5 v mobilu" (Prague 5 in Mobile)*

The city district of Prague 5 has decided to develop its own mobile application. However, its functionality does not differ from the above-described examples. It therefore offers the same functions, namely: newsfeed, contacts and opening hours of municipal authorities, information on cultural events and reporting defects and filing complaints.

- *"Praha 18 Letňany" (Prague 18 Letňany)*

In the same way as Prague 5, the city district of Prague 18 Letňany also established its own municipal mobile application. Nevertheless, this application does not offer anything that is not included in the previous examples and therefore also serves more as a one-way communication channel. Citizens of Prague 18 Letňany can use functions such as: newsfeed, contacts and opening hours of municipal authorities and information on cultural events.

- *"Lepší šestka" (Better Six)*

City district of Prague 6 also runs its own mobile application. However, the purpose of this application is just to report city defects and complaints. After reporting the issue, the message is always handed over to the relevant official, who arranges for its resolution. This application does not offer any other features.

4. DISCUSSION

In 2020, Prague was home to more than 1.3 million citizens. The overall share of Prague citizens aged 16+ who use their mobile phone for Internet access on a daily basis grew by more than 33 % between 2015 and 2019, and their number continues to grow (Czech Statistical Office,

2020). Therefore, the city of Prague had more than 795 thousand citizens in 2019, who represent the potential user base of municipal communication and e-participatory mobile platforms. However, to access all the available online mobile functions, a citizen of Prague needs to download to his device various distinct mobile applications. As our research shows, the Prague City Hall runs two different mobile applications for defects and complaints reporting and another application for sharing information from the City Hall, information on free parking capacity, cultural events etc. Moreover, the city of Prague is further divided into 57 city districts each of which has its own City Hall and municipal representation. 29 of these city districts thus decided to use mobile applications for communication and participation with their citizens, independently from the two applications mentioned above managed by the Prague City Hall. This fact might be quite confusing for the inhabitants of Prague, and can impact their willingness to use this combination of mobile applications and fully utilize the functions that they offer.

From a total of 29 Prague city districts that decided to provide their citizens with a mobile application, eight of them use universally designed application called "Hlášení Rozhlasu" (Broadcast Announcement), nine of them use more custom designed applications named after the name of the particular Prague city district, and 12 of them use also universally designed application called "Mobilní Rozhlas" (Mobile Broadcast). Universally designed application "Mobilní Rozhlas" (Mobile Broadcast) is also the most used participatory and communication mobile application among all Czech municipalities. According to the information provided by the operator and developer of this online mobile tool, this mobile application is used by more than 1 300 Czech cities and municipalities, which is approximately 20 % of the total number of registered municipalities in the country.

The official website of "Mobilní Rozhlas" also tracks how many users are logged in to the profile of a particular municipality that decided to provide their citizens with this platform. Table 2 below shows the share of registered citizens among Prague city districts who use "Mobilní Rozhlas". So far, 29.9 % of the population of the city district Prague 7 have registered to use the application, 25.5 % of the population have registered in city district Prague – Dolní Měcholupy and 17 % of the population have registered in city district Prague – Ďáblice. In other monitored Prague districts, the user base of this application is significantly lower. Despite the rapidly growing number of daily mobile Internet users in Prague, the user base of communication and participatory mobile applications is relatively small.

Table 2. Prague City Districts Using "Mobilní Rozhlas"
(Mobile Broadcast) Application and Share of Citizens Registered

City district	Total number of citizens	Number of registered citizens	Share of registered citizens
Prague 3	75 309	2 456	3.3 %
Prague 7	44 793	13 379	29.9 %
Prague 9	59 174	435	0.7 %
Prague 14	47 375	1 349	2.8 %
Prague 15	34 351	2 871	8.4 %
Prague 21	10 822	690	6.4 %
Prague 22	12 143	805	6.6 %
Prague - Běchovice	2 694	116	4.3 %
Prague - Ďáblice	3 639	619	17.0 %
Prague - Řeporyje	4 829	536	11.1 %
Prague - Čakovice	11 437	779	6.8 %
Prague - Dolní Měcholupy	3 147	803	25.5 %

Source: Mobilní Rozhlas website, Czech Statistical Office

5. FUTURE RESEARCH DIRECTIONS

This research paper serves as a description of the current status of the participatory and communication mobile applications in Prague which can be considered as a starting point of consequent research in this area. Future research direction might therefore aim to describe domestic and also world best-practices with characteristics of key barriers and benefits from the project implementation, examine the methods of working with application tools effectively and how the continuous promotion of those applications might effectively be implemented.

6. CONCLUSION

Most of the mobile applications we identified serve only as one-way communication channels, providing residents of Prague with up-to-date information from the City Hall, emergency communication, allowing citizens to report defects and file complaints or providing them with contacts and opening hours of municipal authorities. One identified mobile application has a function that allows to collect opinions of residents through opinion polls on various projects and issues and thus can be considered as a participatory tool.

Following the theoretical framework defined in the Introduction section of this paper, it is necessary and essential 1) to adopt the tools of *e-enabling* successfully (providing information to as many potential participants as possible and use appropriate tools in the clearest and most understandable way), and 2) to proceed to the second stage of *e-engaging* (involving citizens in the discussion and consultation related to important decision-making processes influencing the public life). Given the relatively small current user base of Prague city mobile applications, potential turnout in participatory projects would also be very low and thus would represent only a very small part of the city population's opinion. Therefore, it is essential to significantly increase the user base of these mobile applications to ensure efficient development of the concept of e-participation in the city of Prague and also the whole Czech Republic in the future.

ACKNOWLEDGMENT

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DIGITAL INJECTION OF UNCERTAINTY:
THE INFLUENCE OF SOCIAL MEDIA
ON VACCINATION HESITANCY IN THE EUROPEAN UNION

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Abstract: *The influence of social media on vaccine hesitant users is concerning, as it most often negatively affects the decision about vaccination of oneself and their children, encourages the spread of misinformation and leads to the endangerment of the population. Giving all the potential that the online sphere obtains, this work is meant to bring awareness of the issues caused by social media regarding anti-vaccination and encourage closer monitoring of such content in order to battle hesitancy. The territory of interest for this research is European Union, as despite its unsullied prior record, the most recent data has been showing outbreaks of vaccine-preventable diseases due to insufficient vaccination coverage rates. (European Commission, 2016)*

Analyzing European vaccination data and patterns, EU-focused academic researches and literature and social media presence of the "anti-vax" campaigns, the work brings up the prospects and suggestions for the possible solutions to the problem.

Keywords: *Medical communication, Social media, Anti-vaccination.*

1.   INTRODUCTION

Powerful claws of the Internet are reaching far and wide into our everyday life. It is also well-known that even the most crucial parts of it, such as the health sector, for example, are under the influence of the digital media, allowing to experience both good and bad sides of it. The latest tendency that has been spreading noticeably fast is the so-called "anti-vax", or anti-vaccination campaign, the point of which is to make more and more affectionate people to refuse the general practice of immunization. The situation got to the point when it strengthens another phenomenon called "vaccine hesitancy" – the overload of the information causing patients to be indecisive and suspicious about the vaccination and its benefits. Obviously, the movement did not start with the rise of the Internet, as there were always doubtful individuals expressing their concerns and influencing others to question vaccination practices. However, the actual danger developed with the wide access to social media platforms where anyone can freely communicate their views and ideas. As far as the Convention for the Protection of Human Rights and Fundamental Freedoms Article 10 Freedom of expression 1 (effective 3 Sep. 1953)[2] is concerned, the freedom of expression is a basic human right that allows people to hold opinions and ideas without intervention from the side of the authorities. This makes it even harder to control the spread of misinformation and misinterpretation regarding vaccination practices, making more people unsure of the rightfulness of their choices.

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[2]   It is commonly known as the European Convention on Human Rights and is the first instrument to give effect to certain human rights and make them binding.

The importance of this topic at the time of writing is even more undeniable, considering the recent breakout of COVID-19 and the potential endangering of the population of the world due to the misinformation spreading throughout the Internet.

The population of the European Union is of special interest for this work, as it is known for a significantly rising number of vaccine hesitant people (Larson et al., 2018, p. 8).

2.   EU ON THE NEEDLE

Qualitative research of this work can be divided into two groups: the analysis of different European countries based on the pre-existing research and analysis of the Hungarian social media platforms, conducted for this research.

Within the first group of the qualitative research, we can see that Italian YouTube studies show that clips that disapprove of the vaccination practice are more liked and shared, therefore attracting more attention. (Covolo et al., 2017), The analysis of the Italian Twitter scene proves that the anti-vaccination community online can be very influential due to their build-up and online prevalence. (Cossard et al., 2020)

Slovenian research concluded that the communicational and online activity of mothers grows proportionally to their concern level. Most often they seek information from their friend groups or on the Internet, which also proves the essentiality of proper professional communication both off- and online. (Vrdelja et al., 2018).

Video analysis focused on France has shown similar results, the difference between YouTube views of the French-language anti-vaccination clips happens to be almost 54% more than the ones promoting vaccination. (Lahouati et al., 2020).

3.   COVID-19

It is important to mention that during the course of conducting this research the world has entered a global pandemic (this work has been finished in November 2020).

A study that concentrated on the willingness of the representatives from 7 different European countries has shown that almost 74% would agree on the COVID-19 vaccine upon availability, around 19% were not sure, and approximately 7% would refuse. Amongst the reasons for refusal, the majority referred to the vaccine's safety and the fast paste of its creation. (Neumann-Böhme et al., 2020)

4.   CASE STUDY OF HUNGARIAN COVID-19-RELATED
VACCINE HESITANCY

Local to the research scene (Hungary) had not been a stranger to the active discussions. In order to explore the researched topic, several social media platforms have been searched for the COVID-19 vaccination-related content.

Even though the study of Instagram and Twitter had shown a rather positive dynamic with either regulated content or simply the prevalence of the pro-vaccination, on gyakorikerdesek.hu

the effects of the negative influence of social media can be seen. "Vaccine" ("Oltás") appears to be one of the most popular topics of discussion at the moment of writing (autumn 2020). Several questions have been created regarding the COVID-19 vaccine, the two most recent of which have been analyzed for this research.

Whenever asked by peers to provide proof of their anti-vaccination statements, many refer to naturopathic articles, YouTube videos, blogs and refuted studies.

The majority of the respondents also would not like to vaccinate themselves against COVID-19. Amongst the reasons behind their decision, side-effects, mistrust towards the ingredients and "injectable nanorobots controlled by 5G" have been mentioned.
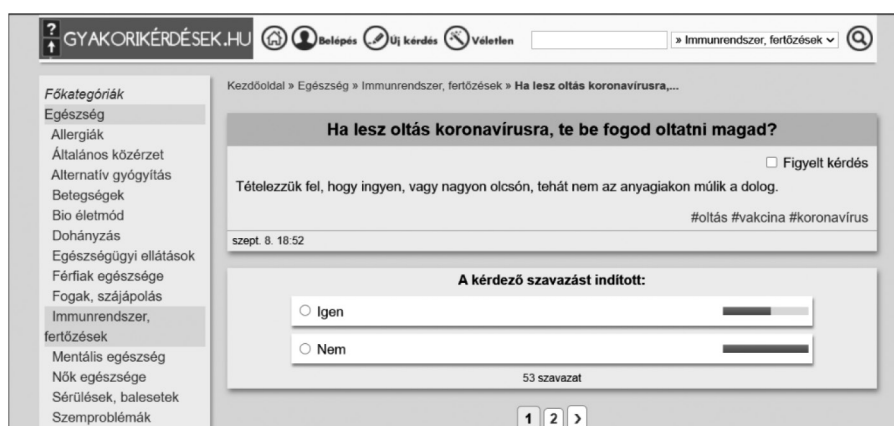
Figure 1. "If there is a vaccine against coronavirus,
will you vaccinate yourself?" (translation).
Source: Anonym, gyakorikerdesek.hu, last access: 13 Oct. 2020
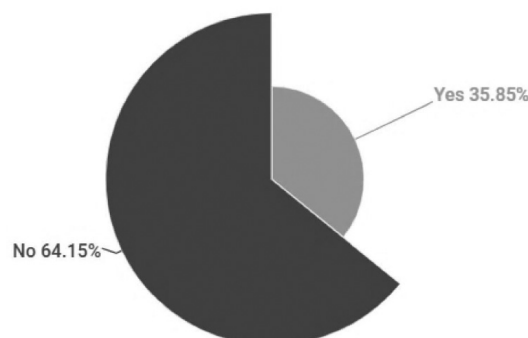
Figure 2. Results of the 1st question on gyakorikerdesek.hu
Source: Sidorina, E., 2020

5.   RESEARCH

The main research of this work is a questioner-based review of participants' knowledge on the "anti" or "pro"- vaccination propaganda on social media, the effect this information has made on them, and the attitude towards the availability of such content. (The method of sampling is a non-probability voluntary response, the information had been received from the volunteer anonymous respondents via Google Form questionnaire, the condition for participation has been to be a resident or a citizen of one of the European Union countries. The time of data collection is October 2020)

RQ 1: How old are you?

RQ 2: What country are you currently living in?

RQ 3: If different from previous answer, which country were you born in?

RQ 4: If needed, will you be able to receive medical care in your current country of residency?

RQ 5: Do you use social media sites?

RQ 6: If yes, which media sites do you use the most?

RQ 7: Have you ever used social media sites to find any medical information?

RQ 8: Are you supporting vaccination practice?

RQ 9: Have you ever used social media sites to find any information related to vaccination?

After this question, the participants have been asked to elaborate on their answer. Depending on their reply, they are directed to one of the following sections: "If the answer is yes" or "If the answer is no".

First section includes:

RQ 10: Share your story!

RQ 11: How would you rate the usefulness of the information you have received? (on the scale of 1-5, 1 - not useful, 5 - very useful)

RQ 12: How would you rate the way this information affected your opinion on vaccination? (on the scale of 1-5, 1 - not at all, 5 - very much)

Second section consists of:

RQ 10: Please explain why

RQ 11: Would you ever use social media to find more information about vaccination?

In both cases, the respondents have been encouraged not to provide any private information in order to keep their anonymity.

RQ 12/13: In your opinion, can social media sites be considered a valid source of medical information, especially regarding vaccination?

Figure 3. Research questions for the main questionnaire
Source: Sidorina, E., 2020

Participants of the research are representing different age groups, the youngest being 13 years old and the oldest reported to be 66. The majority of the respondents happened to fall in 22-26 years old category. The most commonplace of the current residence turned out to be Hungary (45), which was followed by the United Kingdom (7) and the Netherlands (6).

Only one person out of all participants have answered negatively to the question regarding the ability to receive medical care in the country of residency, therefore one can make an assumption that almost all of the participants have access to vaccination. In the 5th research question, the respondents have been asked whether they use any type of social media sites, to which 92.4% gave a positive answer. This fact proves that the majority of respondents might be exposed to the influence of their peers via social media platforms. The most used social media of the participants are Facebook, Instagram, YouTube and Twitter. The next question showed that 58.2% of the people have never used social media platforms for finding any type of medical information. Another important question in this particular research is whether the respondents are supportive of the vaccination practice. 75% gave a positive answer to this question, 15.8% – negative and the remaining responses could be united by the "Depends" category. Only 18.4% of the research contributors have used social media plat-

forms to find any vaccination related information. The reasons for that were the core information on the vaccines' effects, peer recommendations, a vaccine against COVID-19, vaccination policies in European Union or the pop-up articles on social media. When asked to rate the usefulness of the information they have received on the scale of 1-5 (1 – not useful, 5 – very useful), the materials were mainly estimated to be rather useful (4 out of 5). The effect of this information on partici-pants' opinion on vaccination have been rated 3 by the majority. The most common reason among those who do not use social media sites for the information on vaccination was the unreliability of the sources. Those participants stated that they would never use social media for finding materials on vaccination. The analysis of the final question showed that more than half of the people would not consider social media platforms to ever be a valid source for any sort of medical information, including materials on vaccination, 20.25% do consider it to be reliable and the remaining 15.19% of the responses can be categorized as "Depends". The reasons that have been brought up by this group included doubts regarding sites or people providing the information, the inability to prove the quality of data or the competency of the users, the possibility of being influenced by the social media due to the "bubble effect" (unconscious formation of views and opinions based on the people the user is following on social media) and the exclusive trust to the medical professionals.

The main research gave the opportunity to get a picture of the social media's effect on vacci-nation-related decision-making process and the awareness of the unreliability of many online sources. The results show that the majority of participants recognize the unreliability of the information on medical topics, including vaccination. Their critical thinking has allowed them to stay indifferent towards the propaganda and unprofessional opinions. People are more willing to turn to medical professionals and valid sources for information on the vaccination, which is definite proof of the upcoming changes in medical and social media literacy.

Additionally, medical experts have been interviewed on the potential solutions to the vaccina-tion hesitancy issue have been collected and included in this research.

RQ 1: Which country are you currently living in?

RQ 2: If different from previous answer, which country were you born in?

RQ 3: What is your occupation? (please include your specialization)

RQ 4: Do you find social media platforms' effect on vaccine hesitant individuals to be rather positive or negative? Please explain why

RQ 5: What kind of solutions could you suggest for fighting vaccine hesitancy?

Figure 4. Interview questions for medical professionals
Source: Sidorina, E., 2020

Three medical professionals, residents of Germany, France and Hungary have agreed to par-ticipate in the interview. For all except one the country of residency also happened to be the country of origin. The occupations of the respondents are the following: Head of Emergency Department; Physician specialized in internal medicine and emergency medicine; Consultant in mental wellbeing and Dermatologist. All of the respondents find social media platforms' effect on vaccine hesitant individuals to be negative. The reasons for the opinion is common as well, which is the prevalent misinformation and propaganda on social media. One of the respondents also mentioned the "defense of the truth" regarding the vaccination, which is lacking on social media. According to the participant, the action of debating on rightfulness is often a great con-sumption of one's time and energy.

Suggested solutions include more active engagement of the medical professionals on social media sites, especially Facebook and Twitter, actively putting effort into fact-checking and clearly communicating information regarding vaccination, with its pros and cons.

Several possibilities for future research have been considered during the course of this study. Firstly, potential research can be done on the long-term effect of the moderated social media consumption on people. Secondly, research involving volunteer medical professionals from the European Union who would agree to make educational and entertaining content on the topic of vaccination for a set target audience has been considered. Both of the research ideas would provide very useful insides into the interconnection between vaccine hesitancy and social media, allow a deeper, more practical study of medical communication online and serve as an example of the application of the potential solutions to the real-life medical and digital media practice.

6.   STUDY LIMITATIONS

During the course of the research, certain limitations have been faced, such as the majority of data collected having a stronger regional (Hungarian) focus due to the main location and participants of the research and the limited amount of collected data due to time limitations of this study. The research is also focused primarily on a younger population, as this particular segment happened to be easier to access.

7.   CONCLUSION

Anti-vaccination-related content on social media is often preferred by the algorithms and more noticeable among the rest of the materials due to its activity levels and the enthusiastic, tightly-connected supporters. COVID-19 appeared to be a significant addition to the pre-existing vaccination confidence issues.

Using the power of social media to educate and actively discuss the worrying issues can be a key to a greater digital footprint and a healthier world.

This proves the need for clear medical communication on the social media platforms in order to better assist the needs of the vaccine hesitant individuals of the European Union, as well as in other places.

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OPPORTUNITIES AND CHALLENGES
OF APPLYING BLOCKCHAIN TECHNOLOGY AT AIRPORTS

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Abstract: *The outbreak of the Covid-19 pandemic has attracted more attention and highlighted the value of public health as well as the need for safe travel. When it comes to the tourism industry affected by the pandemic, the current global situation requires market transformation and innovation in the function of renewing tourist travel. Blockchain technologies in air transport are directing their business solutions towards the most promising opportunities and possibilities of application of this modern technology, now with a focus on overcoming the impact of the Covid-19 pandemic on business in the tourism industry. Blockchain-based applications have the potential to improve the user experience in the process of tracking luggage and goods, tracking the health of passengers, managing digital currency for the purchase of airline tickets, passenger identity management, loyalty programs, and more. Blockchain technology has already found application in financial management, storage and management of our personal data and information through a chain that is interconnected in time as a distributed book that records transactions between the parties involved, securely and permanently. This paper aims to present the possibilities of Blockchain technology and contribute to raising awareness of the great potential of application in the business of the airport within the tourism industry.*

Keywords: *Blockchain, Air traffic, Airport, Tourism.*

1.   INTRODUCTION

Air traffic connects the world in a specific way and thus contributes to global economic development. It enables the creation of new jobs, facilitates international trade and tourism development. According to the data of the World Tourism Organization (UNWTO, 2019), 58% of world tourists travel to destinations by plane, which shows that air transport contributes the most to the development of international and domestic tourism. According to ATAG (Air Transport Action Group) data for 2019, the impact that the global aviation industry has had on the economy including direct and indirect impact, induced and through tourism has reached 3.5 trillion USD, of which direct revenues from tourism amount to 1 (one) trillion dollars. Over 87.7 million jobs worldwide are in air transport and related jobs in tourism. Directly in air transport, 11.3 million jobs have been provided, which generate 961.3 billion dollars of GDP through the provision of air transport services. World airlines served 4.5 billion passengers in 2019, 61 million tons of cargo were transported (ATAG, 2020, p. 5-12), and it is predicted that by 2038, air traffic will directly contribute 1.7 trillion dollars to world GDP.

As a repercussions of the Covid-19 virus pandemic during 2020, the world has faced serious health and economic crisis, in which the tourism sector has been severely affected, which also

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affected jobs in air transport, supply chains, and the wider economy. The complete closure of airports and state borders for several months, the introduction of travel restrictions have caused the loss of 46 million jobs. International tourism has faced its worst crisis since 1950 (UNWTO, 2020), and the impact of the crisis will be felt in differing degrees depending on the global region.
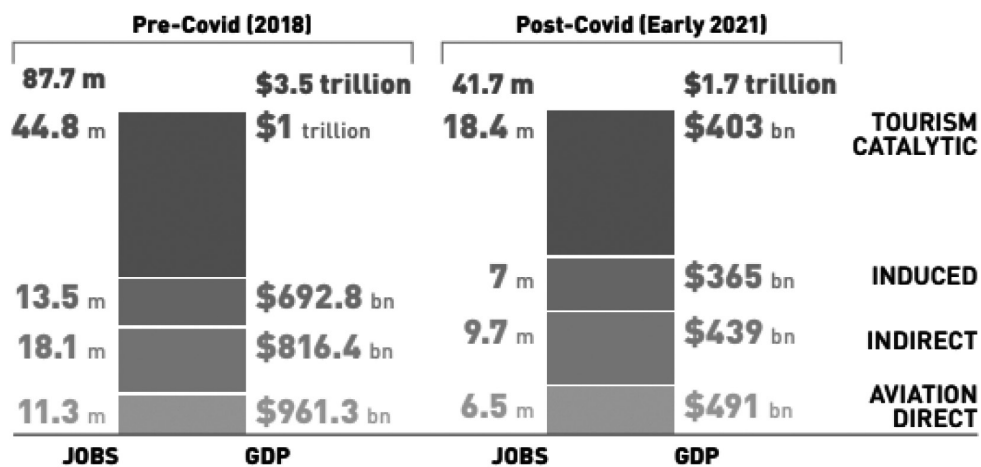
Figure 1. The impact of Covid-19 on the participation of global air traffic
Source: ATAG, Aviation Benefit Beyond Borders 2020. p.5

According to ATAG data, historically observed in proportion to the consequences of previous crises (shown in Figure 2), which had a negative impact on air traffic such as the demolition of the Twin Tower on September 11, 2001, the SARS virus which occurred in 2003, the 2008 global economic crisis, shows us that all previous crises have resulted in a relatively rapid recovery, only the Covid-19 crisis can have a slightly longer recovery period.
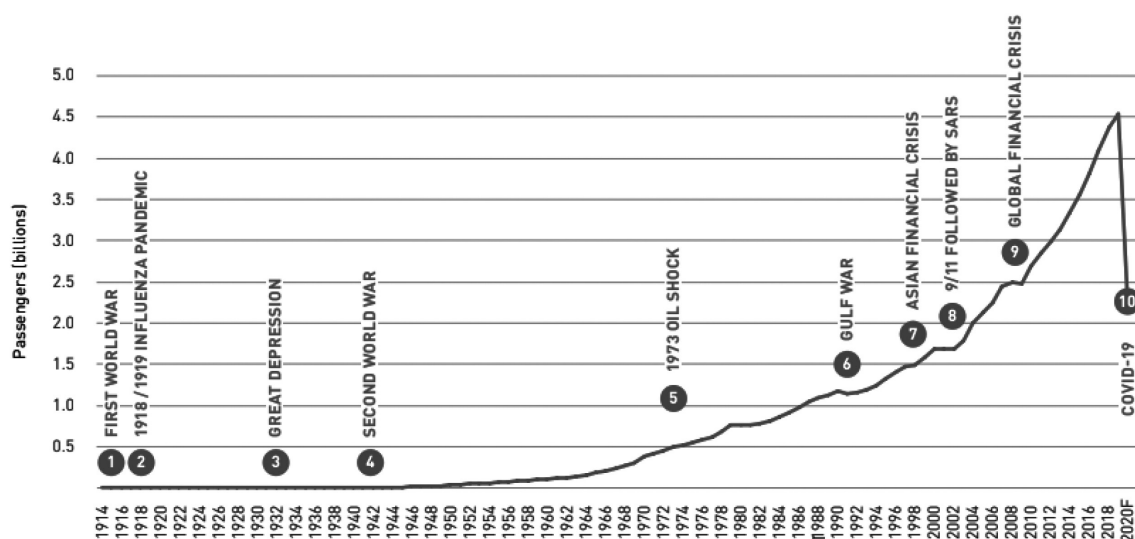
Figure 2. Global growth of air passengers after earlier crises 1914-2020.
Source: Air Transport Action Group (ATAG) – Waypoint 2050, 2020

The restart of air traffic will certainly depend on the adoption of government protective measures due to the restriction of passenger movement. Long-distance routes are most affected due to the concern of passengers to travel far from their homes, and long-distance air traffic represents the largest percentage of revenue per passenger kilometer. With the growing economic stress and uncertainty of reducing air traffic and passenger traffic at airports for their survival and further management, it

is necessary to re-establish new previously established plans based on past experience to improve the ability to manage emergencies such as the Covid-19 pandemic persisted in the future and increased resistance to possible future disturbances (Volchanski J. & Le Bris G., 2021). The need and desire for travel does not stop, and the resumption of travel and air traffic at the level achieved in 2019 due to the consequences of the pandemic and slower recovery can be expected only in 2024 (ATAG, Aviation Benefits Beyond Borders, 2020). Following a longer recovery period in travel demand after Covid-19 will result in a reduction in the world's air traffic forecast, which is estimated to be 16% lower in 2050 than previously thought before Covid-19 (ATAG, Waypoint-2050, 2020).

Air transport involves a complex business process exchanging a large amount of data and information in which the airline or airport is only one of the participants in the supply chain of passenger products or services, but all come together to meet passenger expectations and deliver a complete service that he sees as one from the moment of searching for an airline ticket on the Internet until the moment of its arrival at the final destination. Larger commercial airports have their own data center, but collecting and processing an immense amount of data on the movement of passengers and goods requires their storage and transmission using standards to protect against cyber-attacks. It is Blockchain technology that can help airports and their stakeholders process information exchange and facilitate the validation process. In the long run, this technology will also be available to smaller regional airports with less passenger traffic, but with scalable solutions that would be adapted to them (Le Bris, G., Nguyen, LG, & Tagoe, B., 2020. p. 21-22).

According to Ludeiro (2018), the biggest fear for passengers is lost luggage, especially for those who travel long distances and for passengers who change two or more planes to their final destination. Applying Blockchain technology could locate lost luggage much faster and more efficiently in real time, by sharing information between multiple actors and reducing costs to airlines (p. 451-456). According to Akmeeman (2017), air traffic is one of the most sensitive branches that is subject to various unpredictable challenges that interfere with the normal course of business such as terrorism, government regulations, natural disasters, etc., which has affected the downfall of many airlines. This is one of the challenges for the introduction of technological innovations in air transport, and Blockchain has the ability to provide a set of services to minimize such impacts with a focus on closer and better cooperation between airlines and stakeholders by improving the user experience in flight booking and tickets, implementation of passenger compensation, safe realization of the award from the Frequent flyer program, keeping records of the crew and customs, maximum utilization of the capacity of charter lines, etc. According to Robinson (2017), digitalization is already transforming travel, which not only improves the travel experience, but also develops more cost-effective optimized solutions for airport infrastructure by requiring solutions at the global level in order to achieve trust in data sharing (p. 355-368).

By applying the "desk research" method, quantitative and qualitative analysis and synthesis, we came to the results of the assumption that the application of Blockchain technology has an effect on air traffic which will enable renewal and development. The contribution of this paper is reflected in the presentation of the application of Blockchain technology within airport operations in the function of faster recovery of air traffic from the negative global repercussions of the Covid-19 virus pandemic, and to improve the user experience, especially in monitoring passenger health. In this regard, the following hypotheses were formed:
   H1: Blockchain technology is rapidly contributing to the recovery of air traffic
   H2: Blockchain technology contributes to passenger confidence in air traffic safety and in business processes at airports.

This paper is organized into four sections. The first section includes an introductory part and gives a brief overview of the impact of the current pandemic on tourist trends. The second segment presents an analysis of the literature on the application of Blockchain technology and explains the importance of using Blockchain at airports. In the third section, data on the areas of application of Blockchain applications at airports are presented, and finally, in the fourth segment, concluding observations are given.

2. LITERATURE REVIEW

2.1. The basics of Blockchain technology

Blockchain technology has gained in importance with the growing popularity and use of Bitcoin in the market, which is based on this technology, as well as other digital currencies. According to Radović et al., (2018), Blockchain is a type of database based on a mathematical algorithm for the distribution of cryptographic information whose specificity is reflected in immutability because data can be entered into the database, but cannot be changed and removed without consensus. All changes are assembled and registered in series called "blocks" and added at the end of the "chain" of blocks created so far, forming a database which, thanks to its structural specificity and formation process, was named Blockchain. Blockchain enables an interconnection of digital data that are not in one place but can be shared on several computers in the network (smaller nodes) connected in an unbreakable chain by exchanging information and data, i.e. transactions that remain recorded through blocks without or with a smaller number of intermediaries reducing transmission costs. Blocks are updated by participants without central authority, which enables that a transaction initiated by a machine or a person cannot be misused, deleted or changed. Each transaction goes through verification and validation with certain rules of decentralized consensus that differ from node to node encoding in the general ledger. Each of the nodes in the chain is encrypted by updating each initiated transaction.

Blockchain technology is a platform that takes note of all transactions and monitors digital assets through a network distributed book (Peters & Panayi, 2016), that is basically a public book of all executed and shared transactions or digital events verified by consensus, which allows that once entered information can never be deleted (Crosby et al, 2016, p. 7-8). It is a digital environment for information management and enables the movement of value through digital channels, which ensures secure transfer of value of money, data or digital assets between organizations or people electronically without the use of intermediaries such as banks, freight forwarders, etc. (Leopold, 2018, p. 7).

Blockchain solutions include certificates, paper elimination, tracking, eliminates human error and extensive manual entries, long data processing times, has the potential for transparency in the supply chain, financial transactions are realized in a lasting and secure way as well as data security and protection. Once entered, the data cannot be changed retroactively without the prior consent of all blocks in the chain, and at the same time transaction transfer costs can be reduced (e.g. credit card fees, exchange rates, bank transaction fees).

According to Adams (2020), there are several different types of Blockchain:
- **Private** (characteristic for this type of chain is that this is an efficient and fast model, but there is a great possibility of hacking because all chains are controlled by only one side)

- **Blockchain consortium** (this chain is managed by several parties who mutually agree on the rules of transaction confirmation, the chain model is efficient, but there is a lack of decentralization)
- **Public** (safest chain model because it is fully decentralized) (p. 4).

2.2. Blockchain for COVID-19

The period of the Covid-19 pandemic pointed to weaknesses in business processes and the need for greater cooperation, the introduction of standardization and tools for data exchange between health care institutions and centralized actors to contribute to connecting the airport, as a major hub for passengers and airlines, hotels, tourist destinations. When technology is successfully established between centralized actors, no one will forbid a healthy traveler to travel (Xin B., 2020, p. 13-14). Blockchain technology could help monitor the health of passengers, i.e. Covid-19 status test results, while personal health records would be protected from misuse, but passengers would be able to share and pass on their test and diagnostic history to those parties who need the data so that the traveler can journey. The biggest problem is that there are a large number of applications for monitoring the pandemic, but there is no interconnection of global scale between customs, government and health institutions in order to securely exchange data, which requires an open interface with other systems such as decentralized technology and it is Blockchain technology that could contribute to connecting all actors in a way that enables data security and privacy. This technology could be useful for a particular application because it facilitates data sharing, includes use where location is recorded, i.e. transactions are recorded as well as the status of changes, which requires a large database that allows very fast data processing, but also entry by several independent executors who have their central body.

According to Xin (2020) "GreenPass" is one of many Blockchain applications that provides challenges and opportunities to develop a health application based on the QR code of personal health status generated and based on the entry of data on passenger health status and report on health assessment, temperature and location of passengers (p. 12-13). According to Marbouh et al, (2020), the application of Blockchain technology creates the possibility to be used in real-time recording of clinical data, which improves the reliability of data exchange, monitoring, recording and auditing of data. Intensive dissemination of misinformation in the system of monitoring data on the Covid-19 virus through the media and other external sources leads to public panic and inappropriate behavior, and all previous platforms lack the confirmation of data authenticity. It is the application of this technology that would make it possible to update the information placed by public and state institutions in the fight against the pandemic. In this regard, the Government of Canada has implemented a "Civitas" application based on Blockchain technology that has helped the government sector and local government control whether or not a person leaves their home during quarantine, which is necessary to minimize the spread of this virus. At the same time, this application allows physicians to monitor the progress or appearance of new adverse symptoms in monitored individuals, as well as to submit a prescription of medication use (Marbouh, D. et al., 2020, p. 1-17).

2.3. Airport operations and areas of Blockchain application

According to Halpern et al. (2021), today's airports have fully embraced the digital changes directed by already existing or innovative technologies such as: augmented reality, Big Data analytics, Blockchain, cyber security, IoT, cloud computing, virtual modeling and simulation,

etc. These technologies allow airports to visualize procedures and activities in real time, as well as connect all stakeholders so that they can implement the changes necessary for digital transformation. There are four phases of digitization that the airport went through during the period:

- Airport 1.0 – an analog model where airport staff perform most of the process operations manually, causing delays in data processing.
- Airport 2.0 – partial digitization of airport technology with a multitude of available passenger-oriented services e.g. during check-in and security, obtaining information about passengers, making it easier to find an exit to the terminal.
- Airport 3.0 – involves the widespread application of passenger-centered digital technology including e-commerce, self-service kiosk, beg drop, mobile boarding pass scanner, body scanner, digital self-service data and location-based amenities.
- Airport 4.0 – a new digital transformation has been applied here where the main goal is passenger satisfaction, allowing the collected data to be shared among stakeholders and used in real time. By showing the movement of passengers at the entrance and through the terminal, as well as following the queues, it provides an even distribution of airport staff and thus provides the passenger with reduced waiting time for border and passport control.

Airport 4.0 is a synonym for the smart airport – the airport of the future and only those airports that want to be more competitive in the market must apply the process of digitization not only passenger and airport operations, but also human resources management, infrastructure and management of all administrative and business operations (Halpern et al., 2021).

According to IATA, White paper (2018), there are five areas of Blockchain application in the aviation industry (Fig. 3):

- **Tokenization** – Represents the conversion of real assets into digital twins as a cryptocurrency. Refers to the issuance of a security token or asset token (display of a specific asset or utility). The advantage of tokenization is that it includes lower costs, faster settlements and reconciliations, and enables greater risk management. Each transaction must pass the check of all blocks in the chain, so the advantage of tokenization is that it prevents double consumption of digital assets, such as a voucher issued to a traveler cannot be spent more than once but only once. Then, compensation vouchers such as points from the Frequent flyer program that remain in the traveler's account until he uses them.
- **Provenance** – Represents the tracking of the source of origin, status of change and place of origin of value of virtual and physical property that changes ownership due to high frequency which can include tracking and tracing of passengers' luggage, cargo and spare parts, in addition, it can also be used to track the movement of the aircraft which, during its life cycle, changes the ownership several times. It is the immutable digital record that could be of great importance to stakeholders and other entities that do not trust each other in the process.
- **Digital Identity** – Blockchain technology is suitable for managing the identity of passengers and crew on and off the plane, protecting privacy and enhancing the passenger experience. Thanks to the digital identity, all actors know who they do business with and can manage risks, and immutability and integrity are one of the main features of its connection. The use of mobile face recognition applications allows the passenger to quickly, securely and easily share their personal data that can be stored in their phone for more comfortable travel organization (e.g. travel document management, visa, health passport), and verified by airlines, airports and authorities without abusing the privacy of passenger data. It allows passengers to create their own digital passports, obtain certificates and share certificates of testing and vaccination, improving the passenger experience.

- **Certification** – Involves the "Confirmation" procedure by which the other party checks the correctness of the data and verifies the record (such as stamping) which allows the creditor to later confirm the correctness of user data, and also includes additional data such as biometrics, tokens, status. It is Blockchain technology that has the ability to simplify the certification of data, persons, equipment, etc. enabling airlines and stakeholders to maintain a high standard of safety and security. Certification would fully support digital identity e.g. with crew members (pilots, flight attendants), then airport staff, security staff, repair and overhaul service providers and more.
- **Smart contracts** over the travel value chain – These are digital contracts that are protected from unauthorized access because they depend on a decentralized consensus by automatic execution (Cong & He, 2018). A smart contract can be initiated when particular circumstances are met, and the transaction can be executed simultaneously without the involvement of a third party (Nzuva, 2019). In air transport, all actors associated with the realization of travel trade in economic consumption which have significantly high costs during the administration of contracts, observing the fulfillment phase, invoicing and more, while smart contracts can significantly eliminate the costs of their business. By applying smart contracts, human errors would be minimized and procedures and administration would be simplified. Their advantage is that they can be programmed to run independently because they are powered by a neutral data source as well as predefined conditions.
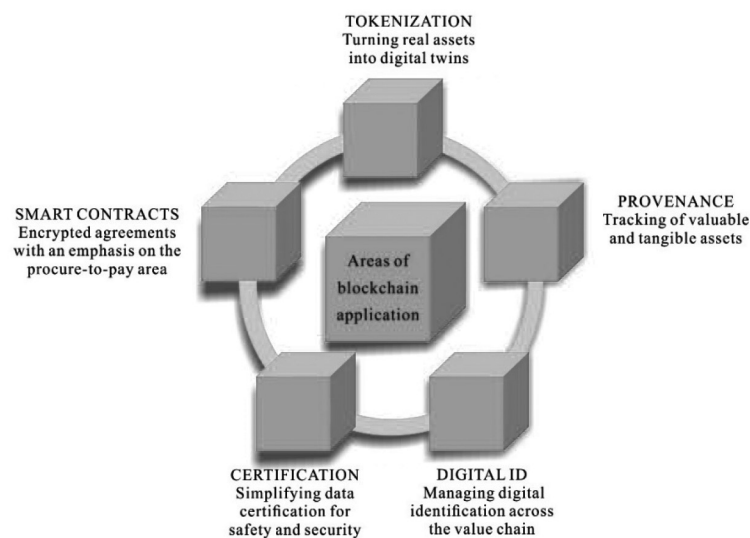
Figure 3. Areas of Blockchain technology application in aviation
Source: IATA, White paper, 2018, p.4.

3. BLOCKCHAIN APPLICATION IN AIRPORTS

At airports, the application of Blockchain technology includes customer-oriented applications, such as: baggage handling, security, ticketing and operational activities such as cargo tracking, chronology and data origin tracking, as well as compliance with legal regulations. At airports, there is the possibility of introducing numerous applications shown in Figure 4. Blockchain could allow users to identify the point where the data has changed, determine how and who changed it if unauthorized or hacked access occurred.

This technology enables the advancement and monitoring of merchandise and travelers in real time through Supply Chain Management (SCM). It improves cyber security and protection of

Operational Management (OM), has a positive impact in reducing costs and provides greater security, and is especially effective in preventing fraud. In spite of the fact that the implementation of Blockchain technology brings an immense amount of benefits, mainly in improving operational management, it still does not guarantee the accomplishment of the leading performance in terms of efficiency, effectiveness as well as, sustainability. Contributions to Sustainable Supply Chain Management (SSCM) are still small (Di Vaio, A., & Varriale, L., 2019).

Figure 4. Opportunities of applying Blockchain technology at airport
Source: Authors

Blockchain is environmentally friendly, because the printing of forms and documents is not applied, which is a significant issue in air traffic and environmental responsibility. In this way, tracking passengers is effectively ensured without compromising the privacy or confidentiality of data, bearing in mind that passengers are reluctant to share their personal data due to uncertainty as to who may have access to the data or possible misuse. The application of this technology gives users complete control over their data, which is encrypted, time-stamped and immutable, which prevents access by unauthorized persons, and promotes transparency of use and completely eliminates discrepancies. Airports, airlines and third parties must share information in real time without interruption and security, and Blockchain could be an application that enables this to happen. It could help improve the accuracy and timeliness of information, which can positively affect customer satisfaction.

Regardless of the type of transport, today's passenger uses, i.e. whether it is an airplane, ship or train, the realization of travel requires activities and methods when tracking property, goods and people, and for data verification it is necessary to support them and respect regulations on transportation, liability claims and accident investigation, warranty management, etc. to improve passenger satisfaction during services as well as during baggage handling (IBM, 2018).

German airline „Hahn Air" was the first to launch an online airline ticket sales service based on Blockchain to minimize the possibility of fraud in the form of issuing fake airline tickets. Also one of the good examples of the introduction of Blockchain was launched by the Singapore airline "Kris Flyer" by automating MRO services (Maintenance, Repair and Overhaul), secure implementation of loyalty programs and reliable cargo tracking, but which even now is in the early stages of expansion and implementation (Ahmad R.W. et al, 2020, p. 8).

In today's specific business environment affected by the Covid-19 virus pandemic, according to Plofchan (2020) travel must be safe and undisturbed which is made possible by the use of biometrics providing seamless and reliable movement of passengers at the airport, but creates a law enforcement problem. Blockchain applications could contribute to solving the problem with the help of verification that corresponds to the verification of the identity of passengers through new technology (p. 31).

A case study conducted at Copenhagen Airport on the application of the Blockchain involved, in addition to the airport, a number of airlines and authorities. The study identified four problems that arise between stakeholders: different business goals, system management process, services and data. The analysis confirmed that there are common interests between the airport and the airlines, only the authorities had their non-financial goal. It was found that there is limited trust between actors in data exchange, but that the acceptance of Blockchain-based technology could solve this. It was confirmed that standards are necessary that would enable easier connections between actors operating in various international locations, otherwise the non-existence of these standards would limit further progress of Blockchain technology. The availability of additional data would enable stakeholders to conduct their business operations more efficiently and thus improve passenger satisfaction which contributes to the creation of other new opportunities (Friis-Hansen, F., & Jeppesen, F. R., 2020).

4. CONCLUSION

Digital passenger information in the form of notifications and alerts requires very fast data processing and settlement of transactions, and is crucial for airlines and their passengers. As the aftermath of the Covid-19 virus pandemic, air transport companies will have to align their operations with the government health measures of each country individually, in order to restart the international air transport sector. The health, safety and security of passengers is of the utmost importance, and it is precisely the opportunities and challenges of applying Blockchain technology that will contribute to a greater extent to the renewal of air traffic and tourism. The experience of passengers during their stay at the airport, as well as during the trip on the plane, must be safe and without major physical contact, so it is necessary to accelerate the application of artificial intelligence. The aftermath of the Covid-19 pandemic has affected the implementation of new adaptation strategies and the resumption of operations of airports and their stakeholders in the post-pandemic period, which will result in adaptation to possible future crises. Adaptation to new needs for travel safety should contribute to the adoption of new innovative technologies, which requires the exchange of data and information at the national and international level in order for airports to progress in the future and the passenger to be satisfied with the service.

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INFORMATION ASYMMETRIES IN ALGORITHMS AT DIGITAL PLATFORMS: MOTIVATIONS TO PARTICIPATE AND EU REGULATORY APPROACH

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Abstract *The junction of economy, law and technology is an important topic in the world that is increasingly moving online. Digital platforms "match" supply and demand by using large amounts of data and algorithms. Some digital platforms dominate travel markets because of platforms' data and networks effects. Digital platforms in travel industry use algorithms to generate suggestions to consumers via recommendation (ranking) systems. Ranking has important implications not only for business users of digital platforms, but for consumers' choice as well. This research explores motivations to participate in digital platforms for short-term vacation rental and it sheds light on information asymmetries in regard to algorithms generating ranking in search results. This research also briefly explores EU regulatory approach to digital platforms and looks at the latest EU legal texts in regard to fairness and transparency in ranking.*

Keywords: *Fairness, Ranking, EU Regulation, Algorithm.*

1. INTRODUCTION

Technological developments have influenced tourist industry by facilitating the growth of a business model called "sharing" or "collaborative". This business model enables individuals and others to advertise their spare rooms or properties for short-term stay on online platforms such as Airbnb and Booking.com. In travel industry, algorithms used by digital platforms for short-stay accommodation provide suggestions about accommodation to travelers. Intermediation services offered by online platforms may be essential for the success of those who want to "share" their accommodation. Algorithms are among the most important technological drivers (Bundeskartellamnt-Autorité de la Concurrence, 2019) of these new business models. The market for short-term vacation rentals has been growing fast, outperforming the growth of traditional accommodation providers (World Travel and Tourism Council, 2019). A relatively small number of online platforms[2] increasingly provide the main connection between accommodation providers and travelers. The relationship between an online platform and its business user (accommodation provider) is called platform to business (P2B) relationship. Since most of the internet traffic is generated via online search engines and online platforms, medium, small and micro-sized companies and individuals are becoming more and more dependent on online platforms in order to reach their customers at home and abroad. Small, medium and micro-accommodation providers need large online platforms to succeed in their business. This dependency is reinforced by strong, online platforms' data-driven network effects, entailing some potentially damaging practices (European Commission, 2018)

There have been questions and concerns that self-regulation by online platforms would not be effective in ensuring more relevant fairness and transparency (Cauffman, 2016). Limiting EU

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[2]   The terms "digital platforms" and "online platforms" are used interchangeably in this paper

action to only self-regulation of these platform would essentially rely on the platform industry's own incentives and willingness to change the status quo. As noted by European institutions (European Parliament, 2018) this type of relationship can be exploited by the platform, and some legislative steps in this regard were taken. The result is the EU's Regulation 2019/1150 of the European Parliament and of the Council of 20 June 2019 on promoting fairness and transparency for business users of online intermediation services ("P2B" Regulation) that entered into force in July 2020. The Regulation introduced a number of obligations for online platforms.

This research contributes to the growing debate about how to regulate digital platforms. The research is not about consumer protection although it does relate to the question how to enhance trust of European citizens in the digital world that has been increasingly "ruled" by large digital platforms. This research is about the digital platforms-to-business (P2B) relationship in regard to ranking. The focus of the research is information asymmetry in algorithms at digital platforms Airbnb and Booking.com in regard to key parameters set unilaterally by both platforms. Algorithmic decisions leading to ranking of an accommodation have a considerable impact on the revenue of business users and, indirectly on consumer choice as well. In line with the findings in this research, the paper looks at the EU regulatory approach and the relevant provisions in relation to ranking.

2. DATA, RESEARCH AND KEY DEFINITIONS

2.1. Data and research

The conceptual viewpoint of this paper is at the intersection of the EU's competition and consumer policy. The research was carried out in the beginning of November and December 2020, and in January 2021. The search for an accommodation on both platforms and listing a property on both platforms generated relevant data. These data have been analyzed from the viewpoint of the latest EU legal texts in regard to ranking and highlighting information asymmetries vis-à-vis business users at both digital platforms. The data that were generated by listing a property on both platforms and searching for accommodation at both platforms shed new light on the practices of online platforms and provides a deeper look into algorithmic decisions at two largest online platforms for short-stay accommodation, Booking.com and Airbnb.

2.2. Key Definitions

What is an algorithm? Any algorithm consists of a sequence of steps intended to produce a desired outcome through algorithmic decisions (Cobbe and Singh, 2019). Any kind of software consists of one or more algorithms (Autorite de la concurrence and Bundeskartellamt, 2019). According to the Article 2(8) of the P2B Regulation, the term "ranking" can be thought of as a form of data-driven, algorithmic decision-making. When digital platforms present, organize or communicate information on accommodation services for consumers, they "rank" results on the basis of certain parameters. Online platforms that connect travelers to the providers of accommodation are called peer-to-peer platforms (P2P) and they operate as two-sided markets bringing together demand and supply. On the demand side are consumers (guests or travelers) and on the supply side are accommodation providers[3]; both supply and demand participants are called platform peers (European Commission, 2017). Online platforms monetize the use of the under-exploited resources of the suppliers. A digital platform is the "matchmaker" that is de-

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[3]   The terms "accommodation provider", 'business user" and "host" are used interchangeably in this paper.

fined by the P2B regulation as the "provider of online intermediation services" to business users. A provider of online intermediation services is defined in Article 2(3) of the P2B regulation as "any natural or legal person which provides, or which offers to provide, online intermediation services to business users" (p.68). Online intermediation services are, according to the Article 2(2), services which constitute information society services within the meaning of point (b) of Article 1(1) of Directive (EU) 2015/1535 of the European Parliament and of the Council. Information society services are characterized by the fact that they aim to facilitate the initiating of direct transactions between business users and consumers, irrespective of whether the transactions actually happen. Airbnb and Booking.com meet all the requirements to be considered as providers of online intermediation services which constitute information society services. Second, both online intermediation services enable business users to offer services to consumers by facilitating the initiation of direct transactions between them. Third, their online intermediation service is provided on the basis of a contractual relationship between the online intermediation service (platform) and the accommodation providers which offer services to consumers.

On the supply side of this peer-to-peer market is a seller of accommodation services (accommodation provider), such as hotels, small and medium businesses, micro-entrepreneurs and individuals. P2B Regulation defines the peer on the supply side, the accommodation provider, as business user of the online platform. A business user is any legal person or private individual, acting in a commercial or professional capacity who, through online intermediation services, offers goods or services to consumers for purposes relating to their trade, business, craft or profession.

3. MOTIVATIONS TO PARTICIPATE

3.1. Consumer (traveler)

Online platforms reduce transaction costs and provide information and pricing efficiencies (Edelman and Geradin, 2016). Internet plays a role in this as it makes it easy to find and compare products and services around the world (European Commission, 2016). When searching for accommodation online, one of the filters provided by online platforms for vacation rental is price. Price is high on the list of motivations when deciding upon a particular accommodation. It has been established (Guttentag et al, 2017) that Airbnb's comparatively low cost has been the top motivation for travelers to choose Airbnb as a platform through with they want to book an accommodation. It can be inferred that looking for a cheap accommodation is in line with the growing inequality in the EU (European Commission, 2015) as many travelers choose cheaper options for their vacation. Private accommodations listed on online platforms are generally cheaper than hotels (Bivens, 2019).

3.2. Accommodation providers, business users of digital platforms

According to the European Commission (2016) motivations that lead individuals to participate in "sharing" on online platforms are many. The European Economic and Social Committee (2014) found that the new trend towards collaborative consumption represents great alternatives in times of crisis. The European Parliament (2018) found that some owners are letting out their second homes or apartments for short-term lets for tourists because they find it more profitable than to rent their houses long term to residents.
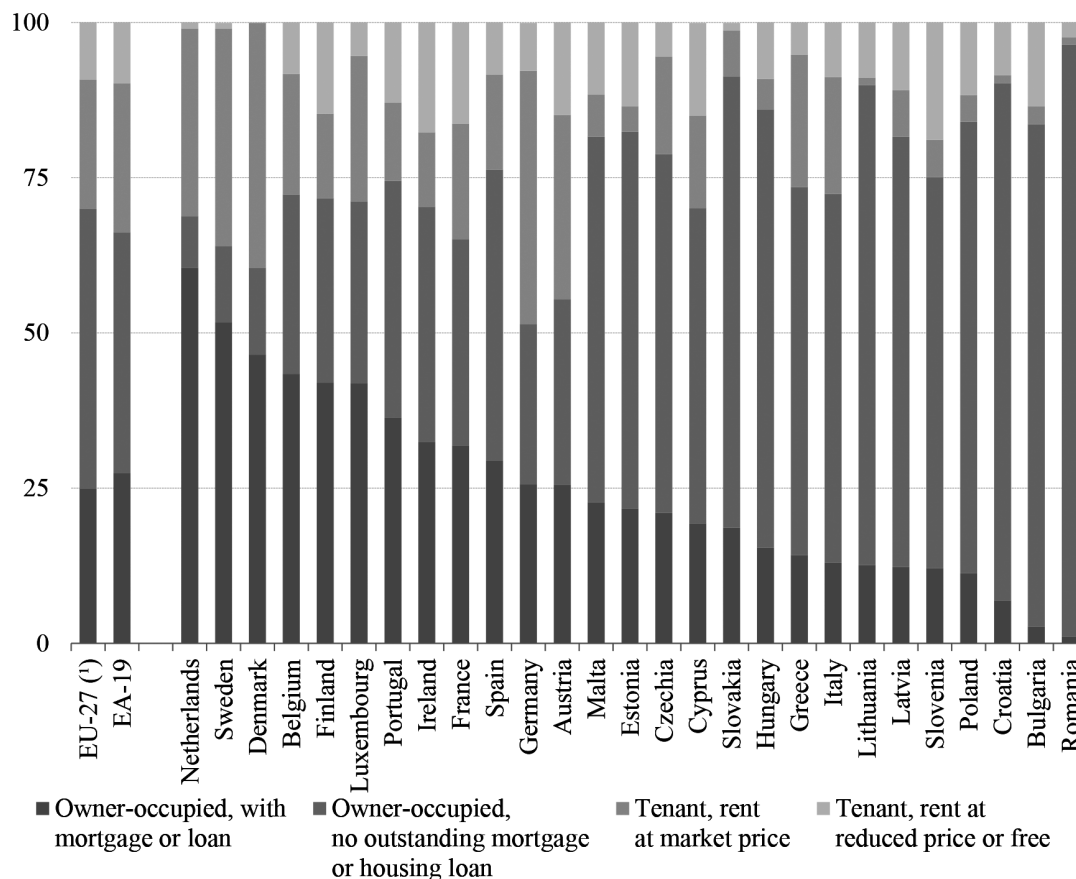
Figure 1. Distribution of population by tenure status in the EU, 2018 (%)
Data source: Eurostat, 2020

The "boom" of sharing economy has been influenced by the economic crisis, when people had to find alternative means of income as they lost their jobs (Henten and Windekilde, 2015). Economic reasons for listing a property on online platforms comes from the fact that owners of an unused dwelling can earn substantial income by renting out their spare accommodation (Jung, 2019). Some countries in the EU have a high share of ownership of houses, flats and similar (Figure 1) and some of them have a significant number of second homes that are unoccupied or reserved for seasonal or secondary use, such as holiday homes (Eurostat, 2020). In 2011 there were 23 (out of the -315) regions in the EU where the share of unoccupied dwellings rose to 50 % or more. Almost half of these were in Greece (Eurostat, 2020a) and many were popular holiday or summer destinations. "Sharing" an accommodation became an important source of self-employment and income in tourist destinations such as Greece, especially during and after the last global financial crisis. In countries with a high share of second homes, it is likely they will use spare dwellings to earn an additional income.

3.3. Digital platforms

Digital platforms' motivations are purely commercial which can be seen from their business models (Table 1). Airbnb and Booking.com are giants in regard to the opportunities they can provide for short-term vacation accommodation. Both platforms make money from fees they charge to the accommodation provider and/or travelers.

Table 1. Key elements of digital platforms' business model
in relation to platforms' business users (accommodation providers)

Aspect	Airbnb	Booking.com
Fee payable by accommodation provider to online platform per each actualized reservation	Typically 3%*	15%-30%
Fee payable by guest to online platform per each reservation transaction	From 6 – 12%*	/
Revenue model: fee charged to one peer only (accommodation provider)	No*	Yes
Reviews by host	Yes	No
Reviews by guest	Yes	Yes
Payments' timing to the accommodation provider	Within 24 hours after guest checks-out	If the accommodation provider has an agreement with Booking.com that the company administers the payment process, Booking.com pays net revenue per guest's stay to the accommodation provider's bank account about 10 to 14 days after guest checks-out
Payments handled by	All payment through Airbnb. Some exceptions allowed [1]	Optional. Booking.com (via bank transfer to the accommodation provider's bank account) or accommodation provider (direct cash payment or credit card payment by guests if accommodation provider can charge credit card at the property)
Security deposit	Optional	Owner handles

Note: *There are some exemptions from the rule

Data source: Author's compilation of information from Airbnb's and Booking.com's websites

Airbnb's business model is to charge the accommodation provider a relatively modest 3% commission per stay (unless otherwise specified), and to charge guests a booking fee from 6 to 12% per stay (unless otherwise specified) (Airbnb's Terms of Service). The company looks after all payments and payment procedures. Cash payments by guests are typically not allowed. Airbnb pays the net revenue to the owner's account within 24 hours after the guest checks out. Airbnb does not charge anything for the processing of the payment.

On the other hand, Booking.com business model is that it does not charge any fee to guests but it does charge a hefty fee, typically minimum 15% to accommodation providers. In terms of payments for the stay at accommodation, Booking.com has a few options. The money can be collected from guests by the accommodation provider via credit card or cash. After the Booking.com issues its invoice to the accommodation provider, the latter pays the invoice in the amount of the fee for Booking.com's service. The other option is, if the accommodation provider cannot charge guests' credit card at the property, to have an agreement with Booking.com so that Booking.com handles the whole payment process (Figure 3). In that case, in addition to its fee per each actualized guest's reservation, Booking.com also deducts a service charge of about 1,4% per stay. This service charge is for administering the payment to the accommodation owner's bank account. Booking.com makes a transfer of the net revenue per guest's stay to the accommodation provider's bank account about 10-14 days after the guest checks-out.
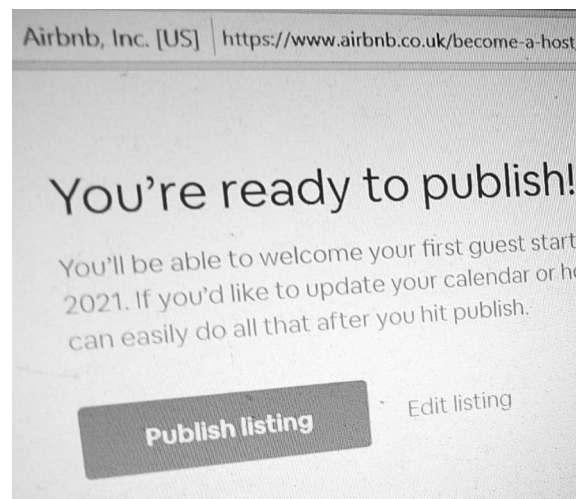
Figure 2. Airbnb – Listing published
Source: Author's screenshot from Airbnb's website after registering
a hypothetical property on Airbnb's website

The Airbnb has made it very easy to list an accommodation on its website (Figure 2). Airbnb's revenue model is such that basically all payments, with only few exceptions for payments in person (Airbnb's Terms of Service)) are taken care by Airbnb. At Airbnb you can list your property and put all relevant information into their online registration procedure in a few minutes and also do all the verification requirements in the same day. Airbnb's website is therefore very user friendly to register and provide bank account information to where the payment should be made, anywhere in the world. On the other hand, Booking.com has a complicated and cumbersome procedure if the accommodation provider's property is in one EU country and his/her bank account is in another EU country. So, if an accommodation provider has an agreement with Booking.com to handle the whole payment process, it may take weeks for Booking.com to enable its system to register the accommodation provider's bank account (if it is in another EU country, different from where the accommodation is).
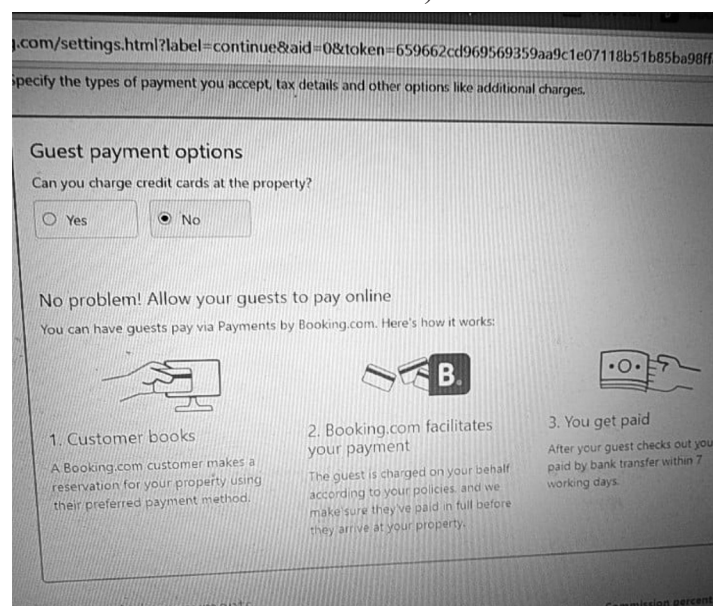
Figure 3. Booking.com – payment options
Source: Author's screenshot from Booking.com's website in the process of listing
a hypothetical property on Booking.com's website

4. ALGORITHMS FOR DEFAULT RANKING IN SEARCH RESULTS

When travelers look for accommodation, their basic search is usually about their chosen parameters, such as the date of travel, number of people travelling, a particular place of travel (country, city, island, mountain etc.). Travelers may see an array of accommodations set out and grouped in many different ways when they look at any page on a digital platform's website. Algorithmic sequencing of results in response to a search query is a way of how accommodations can be presented as part of a ranking mechanism communicated by digital platforms.

In addition to "default" ranking of accommodations that travelers may navigate at the most basic level and basic search query, travelers may also have other criteria for their accommodation, such as the price of an accommodation, parking place, view, amenities, location etc. When travelers apply these criteria as different filters on digital platforms, they get search results, based on the required criteria, displayed in a new, particular ranking order, different from the default ranking.

The position in the ranking of an accommodation in search results is meant to differentiate and select the most relevant results for travelers. Hence some level of differentiation is therefore logical, as has been already established (Graef, 2019). However, the position of an accommodation in search results is not dependent upon search criteria chosen by a traveler only. There are other parameters that affect the position of an accommodation provider in a ranking. These other parameters are set by digital platforms unilaterally (e.g. fees that have to be paid to the platforms) or are produced at digital platforms (e.g. guest reviews) and/or are generated by platforms' algorithms (e.g. dynamic pricing). These parameters are outside of the accommodation providers' influence but they can crucially determine their financial success and also impact on travelers' choice.

The financial revenue of a business is directly influenced by the visibility it gets (European Commission, 2018) on online platforms. Hence a business would typically want to be ranked high in search results in order to receive more attention by travelers. Accommodations that appear at the top of search results get considerably more bookings than listings lower down the page. The top five search results attract about 88% views, while there are only about 1% views beyond the 10th place in a search. Accommodation providers are aware that the position of their listing in search results is crucial for their business turnover and the likelihood of success. Accommodation providers have to navigate between the demands of guests and the suggestions and algorithms of Booking.com and Airbnb. The stress and uncertainty that they experience when dealing with guests and when dealing with Booking.com's or Airbnb's algorithms has been described by some researchers as "algorithm anxiety" (Jhaver, Karpfen and Antin, 2018).

A search for accommodation for one person was carried out at the Booking.com's website in mid-January 2021. The search only specified the date of stay (April 2021) and the city of stay (Thessaloniki, Greece). Booking.com displayed search results in default ranking based on the personal search as per above criteria, without any other filters. The search results in default ranking of accommodations were neither ranked by price nor by accommodation score (overall rating) or by the number of guest reviews of the accommodation. More data were generated by searching for accommodation with the same search parameters, adding a new parameter, a price filter. The search results that were displayed at Booking.com's website were again ranked neither by price nor by accommodation's score (overall rating) nor by the number of reviews an accommodation received. When searching for accommodation on the Booking.com's website there are some additional op-

tions that a traveler can choose. A traveler can scroll through this default ranking or choose and add various additional filters and sort by alternative criteria to receive a subsequent ranking based on additional search criteria. There are many algorithms used to produce ranking results based on the choice among additional search criteria such as "top picks for solo travelers", "entire homes and apartments", "prices (lowest first)", "review score and price", "stars" and others, such as "distance from city center" and "top reviewed". Apart from "distance from city center" and "prices (lowest first)" where the ranking of displayed search results was logical and clear to the criteria chosen; clicking on other icons, search results were not ranked by price, nor by the number of guest reviews or by the overall accommodation score by guests who submitted their review of the accommodation. It seems that the algorithms that produce ranking of accommodation might be considerably influenced by parameters other than price, guest reviews or overall accommodation score. Among these other important factors are fees paid by accommodation providers to the digital platforms.

Accommodations displayed in search results at Airbnb, based on the same basic search parameters as at Booking.com's website, were neither ranked according to the price nor according to the score of the accommodation (overall rating), nor by the number of reviews an accommodation received until that moment. When adding a particular criterion to the search such as price filter (accommodation up to a certain amount) accommodations displayed in default ranking were no longer ranked by price nor by the score of the accommodation (overall rating) nor by the number of reviews an accommodation received.

Although all parameters that influence the position (ranking) of an accommodation in search results, are stated in the Airbnb and Booking.com's terms of service on both platforms' websites, not all is done in line with P2B regulation. Article 5(1) of the P2B Regulation states that providers of online intermediation services shall set out in their terms and conditions "the reasons for the relative importance of those main parameters as opposed to other parameters", which is not explained anywhere on the websites of both platforms. Hence, from the explanation at both digital platforms' websites one could conclude that it is not clear which parameters in their algorithms are more important than others and why. Second, Article 5(3) states that where the main parameters include the possibility to influence ranking against any direct or indirect remuneration paid by business users to the digital platform, that platforms shall also set out a description of those possibilities and of the effects of such remuneration on ranking. There is no explanation of that to be found on both platforms' websites.

5.   DYNAMIC PRICES IN ALGORITHMS DETERMINING RANKING

The financial success of accommodation providers is influenced by the visibility they get online. Accommodations that appear at the top of search results typically get more bookings. Search results depend on a traveler's search criteria and on parameters in algorithms set by digital platforms. In addition to key parameters unilaterally set by digital platforms (e.g. fees) there are some other, specific parameters that are also included -in algorithms determining ranking. Accommodation providers should provide as speedy and easy booking process as possible, otherwise their listing will be ranked lower in search results, so they may get fewer reservations (Figure 4). Allowing easy and speedy results (without proper ex-ante requests sent by potential guests) is therefore a parameter influencing ranking at Airbnb's website.

Airbnb aims to persuade an accommodation provider to lower its price (Figure 5) and to choose a dynamic pricing option (Figure 6), the option that gives, albeit within a certain range, the

power to Airbnb to determine a nightly price of accommodation by using its algorithm. It is impossible for the accommodation provider to inspect and verify this algorithm.

The most common parameters that influence ranking and are, at least in part, set unilaterally by both digital platforms, as summarized in Table 2 below:

Table 2. Key parameters in algorithms set by both platforms

Aspect	Airbnb	Booking.com
'Dynamic pricing'	Yes	No
Guest reviews in ranking of accommodation	Yes	Yes
Guest reviews in dynamic pricing	Yes	No
Fee paid	Yes	Yes

Data source: Author's compilation of information from Airbnb's and Booking.com's websites

In relation to the case Airbnb Ireland C-390/18 (Judgement of the Court as of 19 December 2019, Case C 390/18) at the Court of Justice of the European Union, the Advocate General in his Opinion delivered on 30 April 2019 stated that in the case of short-term accommodation, the price does not play such a significant role and that there are other, economically significant aspects, such as a location and standard of accommodation which are of major significance in the case of such a service (Opinion, para 71, p.17). Further he writes that "it would be difficult to assert that an average client seeking for accommodation in a particular place decides to choose the cheapest available accommodation. I would dare to say that even if Airbnb, to some extent, influenced the price, the question of whether this would amount to exercising decisive control over the conditions of the provision of accommodation services would be still open" (Szpunar, 2020, p.405).
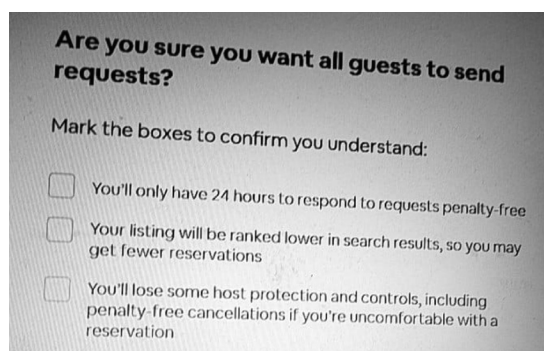
Figure 4. Airbnb – what influences ranking
Source: Author's screenshot from Airbnb's website on booking policies in the process of listing a hypothetical property on their website
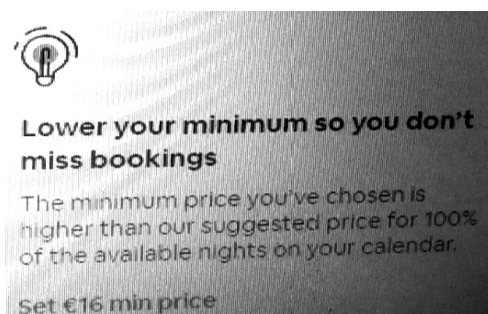
Figure 5. Airbnb – influencing price
Source: Author's screenshot from Airbnb's website on nightly price in the process of listing a hypothetical property on Airbnb's website

Hosts that have their properties listed on the Airbnb website would most probably not agree with the conclusions of the Advocate General Maciej Szpunar. If a host chooses a dynamic pricing option, which Airbnb recommends, it is Airbnb's algorithm that decides a particular price for a particular guest's stay, regardless of the fact that the highest and the lowest limits are set by the accommodation provider. A property owner who wants to have their property listed on the Airbnb website, has to agree to terms and conditions unilaterally set by the Airbnb. In relation to Booking.com that charges minimum 15% for its service, Airbnb with its typically 3% fee is much more attractive for property owners. Therefore, recommendations by the Airbnb may have a stronger effect on behavior of the accommodation provider. The Airbnb suggests (Figure 5) to the accommodation provider to "Lower your minimum so that you don't miss bookings" and continues with "The minimum price that you have chosen is higher than our suggested price for 100% on the available nights on your calendar". The owner gets a tip from Airbnb what the lowest price should be, based on "the prices in the area for similar accommodation."

A dynamic price setting, called "Smart Pricing", means that hosts set the highest and the lowest limit for the nightly stay at the accommodation but the actual price of a stay can be anywhere in between the limits and it is an Airbnb' algorithm that chooses the actual price for a particular stay. The owner has to trust the Airbnb's algorithm that allegedly knows exactly what is happening with the demand in the neighborhood so that it can adjust its price "dynamically" and accordingly.
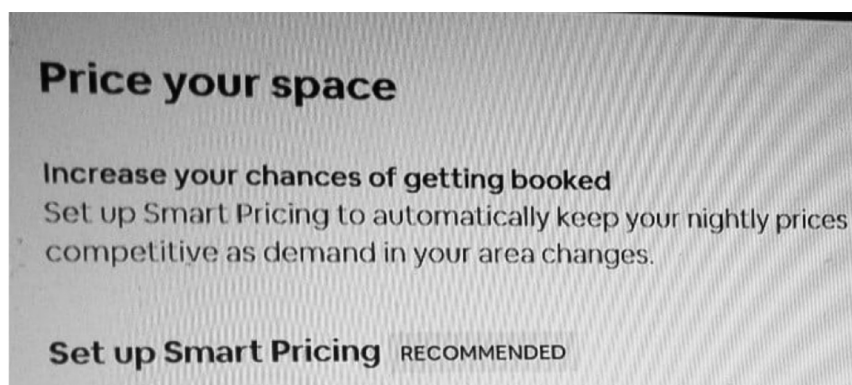
Figure 6. Airbnb – "Price your space"
Source: Author's screenshot from Airbnb's website on setting up smart pricing
in the process of listing a hypothetical property on Airbnb's website

6. EU REGULATORY APPROACH AND ITS LIMITATIONS

6.1. Regulatory approach

One of the goals in the Digital Single Market Strategy, adopted in 2015, was to create a fair and competitive digital economy where companies can compete on equal terms and use digital technologies, products and services to improve their productivity and global competitiveness, while consumers can be, at the same time, confident that their rights are respected. The European Commission has been generally very friendly towards digital platforms. Most regulatory institutions in the EU were reluctant to take public intervention about digital platforms for many years. That has changed in the last few years. The change happened when platforms in many areas grew so big that they became "superdominant" and their behavior against their small-businesses became non-transparent and anticompetitive (Di Porto and Zuppetta, 2020). In recent years it has been acknowledged that the digital platforms require a new approach and

as some researchers have put it, the question is not if urgent regulatory reform is necessary, the question is how it should be implemented (Marsden and Podszun, 2020).

Since some of the issues in regard to the operation of digital platforms could not be solved within the EU competition law or within the EU consumer law, new legislative steps had to be taken. The result is the EU's Regulation 2019/1150 ("P2B Regulation"), that was followed by the Guidelines on ranking transparency pursuant to Regulation (EU) 2019/1150 of the European Parliament and of the Council ("Guidelines"). According to the European Commission, the purpose of measures in P2B Regulation is to contribute to the properly functioning of the internal market by establishing rules to ensure that business users of online intermediation services are given appropriate fairness, transparency and effective redress possibilities. In regard to suitable and effective possibilities to redress, providers of online intermediation services should ensure an internal complaint-handling system which has to be based on principles of transparency and equal treatment. To ensure the effective application of P2B Regulation organizations, associations representing business users or corporate website users, as well as certain public bodies set up in EU member states, should be granted the possibility to take action before national courts in accordance with national law, including national procedural requirements. All EU member states should ensure adequate and effective enforcement of this regulation.

Online intermediation services typically have a global dimension. The P2B Regulation applies to providers of online intermediation services regardless of whether they are established in the EU or outside the EU, if through their provision, online services are provided to consumers located in the EU. The Regulation is in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty on the European Union. Since providers of online intermediation services tend to use pre-formulated terms and conditions, the P2B regulation applies where the terms and conditions of a contractual relationship are unilaterally determined by digital platforms. Terms and conditions must be drafted in plain and intelligible language.

The P2B Regulation in Article 2(8) defines ranking as the relative prominence given to the goods or services offered through online intermediation services, as presented, organized or communicated by the providers of online intermediation services irrespective of the technological means used for such presentation, organization or communication. Article 5(1) of the P2B Regulation stipulates that providers of online intermediation services shall set out in their terms and conditions the main parameters determining ranking and the reasons for the relative importance of those main parameters relative to other parameters. The Article 5(3) obligates online intermediation services to set out a description of those possibilities where the main parameters include the possibility to influence ranking by any direct or indirect remuneration paid by business users. The paragraph 5 of Article 5 says that the descriptions referred to in paragraphs 1 and 2 shall be enough to enable business users to obtain an adequate understanding of whether, and if so how and to what extent, the ranking mechanism takes account of the characteristics of the services offered to consumers through the online intermediation service and the relevance of those characteristics for those consumers. Article 5(6) of P2B Regulations stipulates that providers of online intermediation services shall, when complying with the requirements of this article, not be required to disclose algorithms or any information that, with reasonable certainty, would result in the enabling of deception of consumers or consumer harm through the manipulation of search results.

In the beginning of December of 2020 the Guidelines on ranking transparency pursuant to Regulation (EU) 2019/1150 of the European Parliament and of the Council were published. The

purpose of the guidelines is to assist digital platforms in applying the requirements in P2B Regulation. Since the Guidelines are not legally binding, it is digital platforms' own responsibility to ensure compliance with Article 5 of the P2B Regulation while it is only the Court of Justice of the EU to interpret the requirements.

6.2. Limitations

In the last few years there has been a lot of debate about how to regulate digital platforms as they have produced concerns about negative externalities, fairness, transparency, tax conformity, privacy breaches, pricing pressures and review and rating asymmetries. The introduction of P2B Regulation in 2019 and its enforcement in 2020 came rather late considering the expansion of online platforms in the last 15 years. The Guidelines that were to accompany the P2B Regulation, were published in December 2020, about 5 months after the P2B Regulation became effective.

According to the European Commission's explanation on its website, the P2B Regulation that has been applied from 12 July 2020 in all EU member states, aims to achieve more fairness and new transparency between online platforms and their business users. However, as some researchers have already noted, the P2B Regulation is not really about fairness (Graef, 2020). That is very clear from the Guidelines which say in 1.2 (14) that although there is no limit in choice of the ranking providers may want to use, the aim of the Article 5 is to improve predictability for users considering that businesses do "not always know the reasons for their performance in ranking and if they could perform better, potentially with the help of paid ranking." (p.4)

In most of its provisions the P2B regulation only gives guidance to online platforms about how to be transparent in stating and describing main parameters they use to determine ranking. That stems from the Guidelines following the P2B Regulation. The objectives of the Guidelines (under 1.3) and their explanation about the nature and scope of the requirements of Article 5 (under 2., especially 2.1.2.: Describing ranking), followed by 3 (What are the main parameters and how to select them) say that the aim of the regulation is to obligate online platforms just to state what parameters they use to determine default ranking in search results. Information obligations, such as transparency information in P2B regulation and the Guidelines do not restrict the scope of action of the obligated digital platforms.

Therefore, transparency only, without obligations to act in regard to revealing how those parameters are set relative to other parameters, what their relative weight in algorithms and what their influence is (especially the level of fees) on ranking, does not create incentives to change particular behavior. The transparency requirement is, therefore, not sufficient. As some researchers noted (Cornils, 2020) transparency only is not an appropriate regulatory instrument. P2B regulation does not prohibit any practices nor prescribe any conduct. In spite of the fact that the Commission praises P2B regulation as the first of its kind anywhere in the world, the regulation lacks vision about how digital platforms operate. Digital platforms have a strong information asymmetry against their business users, which digital platforms can profile and exploit and discriminate among and against them (Di Porto and Zuppetta, 2020). On the other hand, these online platforms dominate large travel markets through powers produced by algorithmic decisions, generated by a large amount of data.

However, online platforms are not required to disclose the detailed functioning of their ranking mechanisms, including algorithms because, according to the regulation, a general description of

the main ranking parameters should provide business users with an adequate understanding of the functioning of ranking in the context of their use of specific online intermediation services. The Guidelines specifically say (under 1.3.3/22) that in relation to the Article 5(5) of the P2B Regulation, "the users should be enabled to obtain an 'adequate understanding' of whether and if so, how and to what extent three particular factors are taken into account. This means that the description to be provided has to go beyond a simple enumeration of the main parameters, and provide at least a 'second layer' of explanatory information. Providers could, for example, consider describing the company-internal 'thought process' that was used for identifying the 'main parameters', as a way to also derive the 'reasons for their relative importance'." (p.5)

It is highly unlikely that a general description of main ranking parameters, as envisaged in the Guidelines give sufficient understanding to business users about key ranking questions. In line with the findings in this research, looking at the Booking.com and Airbnb's website from their business users' perspective, although the most important ranking parameters are stated in platforms' terms and conditions, there is no explanation of the relative importance of individual parameters. There is also no exact explanation to what extent a fee influences the ranking nor how exactly guest reviews affect ranking. Just stating the most important parameters in platforms' terms and conditions, as envisaged by the P2B Regulation, does not provide any real value-added information critically relevant for a digital platform's business user who has his/her property listed on digital platforms.

The P2B Regulation with its transparency approach and limited ex-ante regulatory strength is not concerned whether the principles and criteria for ranking at online platforms are adequate or not and whether those criteria, parameters and similar are applied rightfully and in a non-discriminatory manner or not. The regulation only requires that the parameters and conditions are stated in plain and clear language. Therefore, the main regulatory "achievement" of the P2B Regulation is to obligate online platforms to state key parameters that determine ranking in the general terms and conditions. In this respect, the Regulation provides information obligations only, and although the Regulation envisages the possibility of internal complaints and mediation, there are no adequate ex-ante enforcement mechanisms.

For a business user, especially for small and medium companies, micro-entrepreneurs and individuals, for example, general explanation of key parameters does not reduce information asymmetry, as a typical business user would like to know how parameters, that are out of his/her reach and influence, impact the position of his/her accommodation in search results. Legal obligation to state the general criteria of the ranking mechanism, as well as conditions that allow business users to influence their position in ranking against payment, is not enough. Transparency in stating the most relevant parameters for ranking does not in any way prevent large digital platforms to manipulate algorithms in order to manage rankings. In that respect this EU Regulation does not significantly rebalance information asymmetry and unequal bargaining power of platforms vis-à-vis their business users, especially small and medium businesses, micro-entrepreneurs and individuals.

7.   CONCLUSION

The P2B Regulation seems too little, too late. A number of limitations undermine the aim and the effectiveness of the regulation. Most notably, it is not clear to what extent online platforms are required to provide detailed workings of their ranking mechanisms. Although the most

important ranking parameters in Airbnb's and Booking.com's terms and conditions are stated on their websites, there is nowhere an explaination of the relative importance and weighting of individual parameters. It is not clear how exactly digital platforms set fees and some other parameters in algorithms which determine ranking in search results. There are also intertwined and mutually reinforcing parameters related to dynamic prices and guests' reviews that determine algorithms' decisions and produce search results for travelers.

This research confirms that many issues around fairness in regard to the relationship between online platforms and business providers have not been made clearer by the P2B Regulation and its Guidelines.

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VIRTUAL ENTERPRISES AS FUTURE CORPORATION FORMS IN THE INDUSTRIAL ENVIRONMENT OR JUST OLD WINE IN NEW SKINS

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Abstract: *This article is examining and determining the phenomenon of virtual cooperation in the industrial environment. Its goal is to research and find insights into whether virtual corporations are a viable alternative to classical and more traditional cooperation forms such as alliances, joint ventures and others. Virtual Enterprises (VEs) are and could be therefore a new organizational business concept to cope with actual and future challenges for companies in the globalization phases. This approach is based on merging all core competencies of a company in a network like organization. This seems to be a necessary response to deal with fast growing economies, fast changing conditions of certain markets and to become an agile reacting company in this environment.*

Keywords: *Virtual organization, Virtual enterprises, Virtualization, Cooperation forms, Collaboration, Technology.*

1. INTRODUCTION

Increasing environmental complexity, globalization of the economy and the growing opportunities presented by information and communication technology are just a few of the ever-present factors that are forcing corporations to adapt to changing circumstances. If framework conditions in the economy change, as is currently the case due to the trade disputes and ensuing economic protectionism we are witnessing in the USA and China – the world's largest national economies – this more or less forces corporations to make changes in their business: they have to react to new circumstances and challenges if they wish to ensure their continued existence and competitiveness. Such tendencies are therefore a critical element in our society with a significant impact on the way the economy develops; they exercise enormous pressure on existing structures, traditional patterns and habits.

2. DEFINITION OF VIRTUAL CORPORATION

In the middle of the eighties, Mowshowitz (1986, p. 389) first used the term "virtual corporation" in the English-speaking world, thereby laying the foundation for this subject matter. However, it took a long time until this concept was picked up by Nagel and Dove (1991) and other economists and dealt with in various scientific papers. It was not until 1992 that the authors Davidow and Malone succeeded in bringing the topic to the attention of the scientific community in their bestseller "The Virtual Corporation", thus inspiring further discussion about this type of organization. In 1992, John Byrne's article (1993, p. 36) in Business Week impressively explained how corporations could indeed face up to the emerging risks by temporarily joining forces in a virtual corporation.

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In the meantime, many scientists and a number of corporations around the globe are examining the concept of the "virtual corporation". In the German speaking area, Scholz (1994) was the main contributing author, who described and defined the term in a more future organizational trend.

In this type of organization, legally and economically independent corporations join up in a short-term collaboration to exploit a market opportunity that has presented itself to them. This temporary network is based on an appropriate market opportunity with each company sticking strictly to its core competencies and making full use of information and communication technology. Each partner assumes responsibility for that part of the product and service creation process in which it excels. The virtual corporation is therefore a mission-specific "best of everything" organization. It combines the advantages of large organizations with the flexibility and clout of small units.

3.   OBJECTIVE AND RESEARCH QUESTION OF THE STUDY

Possible findings and resulting conclusions are difficult to analyze and deduce, with the consequence that those conclusions can only be validated with increased effort. A further aspect of the existence of virtual corporations in practice will be determined and presented based on an empirical study. This will involve analysis of the extent to which the concept of the virtual corporation has established itself in practice and is already being successfully implemented. However, this paper does not claim to be complete, as underlying assumptions such as a pronounced ability to cooperate with the aid of information and communication technology (ICT) are not to be presented as a result of this study. Based on economic significance, the questions posed in this paper are intended to explain how virtual corporations can arise and what distinguishes them from the characteristics of "conventional" corporate structures.

4.   ORGANIZATION AND RESEARCH DESIGN
INCLUDING LITERATURE RESEARCH OF VIRTUAL ORGANIZATIONS

As qualitative social research is not based on hypotheses derived from existing theories by means of deduction but begins with a more or less "open" collection of data and according to Kelle & Kluge (1999) this method then is described as "inductive". According to the opinion of Glaser & Strauss (1967) and later Strauss &Corbin (1998), who are considered the founders of Grounded Theory and various other supportive authors as Turner (1983), stated that it is neither necessary nor helpful to begin with prior theoretical knowledge in order to arrive at an "unbiased" portrayal of reality as the researcher already begins with biased data collection. According to Glaser and Strauss (1967, p.47), theoretical knowledge should develop more or less by itself in an emergence process during data collection. Whereas Wrona (2005, p.19) is the mind that without a subjective preconception, it is neither possible nor useful for theoretical concepts to be incorporated to begin or carry out a research project. Additionally, the "Grounded Theory" methodology according to Strauss & Corbin (1998) is suitable for achieving the aim of this study as it is based on neither a purely subjectivist nor a purely objectivist initial position, and therefore assumes a moderate initial position. In the view of Lamnek (1993, p III et. seq) the Grounded Theory attempts to ground the knowledge gained in empirical data and to support it by means of ongoing interpretations of the chronologically overlapping data collection and analysis. Beginning with data collection, this method is based on a continuous comparison of the data gained with the theory that develops from the interpretation process. The aim is to form categories at a higher level of abstraction, detect correlations and, if possible, to derive more

general correlations between laws that provide the basis for establishing medium-range theories. Its theory-building character, therefore, enables this paper to generate hypotheses based on the data collected with regard to the proliferation of virtual corporations as a future form of cooperation.

The dynamic analysis process, which enables simultaneous interpretation during data collection, underlines the process-oriented character of Grounded Theory. The openness and flexibility of this methodology are carried over into the selection of the comparative case studies as an additional research approach in this paper.

Even if one fails to find a widely recognized research design for case study work in the specialist literature, Yin (2003, p.20) believes it does not mean that such a design is neither appropriate nor helpful. It is rather the case that, when conducting an explorative study and based on his own conceptual ideals, the researcher will have a rough idea of the method he will employ before beginning his study. According to Miles & Huberman (1994, p.16 et seq.) it is not uncommon that plans made at the beginning of the process have to be modified or adapted during the subsequent course of the research. The research design depends on the extent to which the intentions and objectives of the research were defined in advance. In case study work, research designs are proposed that are based on narrow terms of reference.

As described by Miles & Huberman (1993, p.17) and Yin (1993, p.45), the research design essentially fulfills the following three functions in this study: First of all, the research design ensures the study's focus in terms of content. In order not to ultimately consider everything as potentially important as the result of more or less random data collection and not to suffocate in an impenetrable mass of data, Yin (2003, p.21 et seq.) thinks that it is necessary to set narrow terms of reference to structure the research process. Bortz & Doring (2002, p.203) have the opinion that in this procedure, the research design can be described as a logical plan for ensuring that the empirical findings supply answers to the research questions and form a logical unit together with the interpretation and the conclusions. Secondly, thanks to the narrow terms of reference, the research design actually enables a comparison of the case studies. Replication of the data as required for comparative case studies could not be carried out in a meaningful way without these terms of reference, as otherwise it would not be clear what the similarities and differences actually are. Thirdly, the strict research design enables the results obtained to be linked to the current state of research. According to Maurer (2003, p.82) the results can therefore contribute to advancing the development of theoretical concepts and supply starting points for subsequent empirical studies. The structure of the research design can refer to various aspects. This paper goes into greater detail regarding the aspects of selecting the cases to be examined as well as data analysis.

4.1. Findings of Typology of Virtual Corporations as Results of the Mixed Method

The available information and data allow the definition of and distinction between virtual corporations in relatively few typologies. The first and major type is that of one or more main corporations that merely add further skills to achieve the objective of the company or the project. A "virtual master cooperation" can be assumed here. A further form can be described as a "virtual network" as it reflects traditional network concepts. Finally, a mention should also be given to "virtual manufacturing" or "production", which consists of individual subsystems that join forces to manufacture and distribute the "product".

Type 1 - Virtual Master Cooperation

This type of virtual corporation is mainly characterized by the fact that it is controlled by one or more general contractors or a core contractor, a "key player". There is a vertical cooperation, as the main contractor transfers the creation of the product or service almost exclusively to its collaboration partners and often just concentrates on customer contact, collating the overall performance and marketing. The interdependencies between the general contractor and its subcontractors are mainly pooled and/or sequential interdependencies or, expressed in the terminology of coordination theory, "producer/consumer dependency".

In virtual corporations of this type, the collaboration partners' range of products or services can be described as relatively homogeneous as the collaboration partners frequently originate from the same sector and have similar core competencies. Focus on a specific area of performance combined with the involvement of collaboration partners from a specific sector and the relatively low number of mostly fixed collaboration partners enable the general contractor or core contractor to keep the effort involved in coordination to a manageable level by means of standardization measures and detailed planning. According to the definition of Wohlgemuth (2002, p. 21) relationships between network partners can be described as relatively stable as the majority of orders are handled by the collaboration network in a very similar or even identical configuration, i.e., by the same partners in the same sequence.

Type 2 - Virtual Distribution Network

In contrast to Type 1, with a "virtual distribution network" there is no general contractor or focal enterprise that takes charge of the operational business and brings about a hierarchical structure in the network due to its prominent position in the network. Instead, the collaboration partners participate in the projects on an equal footing with the result that the arrangement can be described as a horizontal collaboration. In creating the products or service, the interdependencies among the collaboration partners are mainly sequential or reciprocal in nature. They can also be described as producer/consumer and shared resource dependencies. As the collaboration partners frequently come from the same sector and their areas of competency frequently overlap from a moderate to a substantial extent, we can say they have a relatively homogeneous range of products or services. The objectives of Type 2 virtual corporations are joint development work, pooling know-how and the maximum utilization of each company's capacities.

Type 3 – Virtual Manufacturing

Type 3 virtual corporations are characterized by horizontal collaborations, a heterogeneous range of products and services among the collaboration partners and a relatively high level of formalization. Such virtual enterprises mainly have a regional orientation and usually boast a comparatively large latent network of potential collaboration partners frequently consisting of more than 20 partner enterprises. The large latent network mainly provides support functions when executing relatively complex projects and also enables enterprises to achieve economies of scale. Compared to the system environment, the hurdles to joining such a network are often very high, which becomes evident when one sees that new network partners are only able to join if they meet specified criteria in order to achieve or maintain a certain degree of conformity within the network.

5. FUTURE RESEARCH DIRECTIONS

This paper aims to discover what circumstances and developments make it possible to establish a virtual corporation as a future form of cooperation. Whether in the past, present or future, the general situation for enterprises with regard to the virtual corporation construct is always associated with major challenges. There are also challenges and problems for the enterprise's managers and employees that vary according to the phase in which the enterprise currently finds itself. At the same time, there is the juggling act involved in, also looking after and maintaining the existing network.

It is now more important than ever before to determine what role this network, and in particular the virtual corporation, actually plays and to specify what corporate advantages one wishes to achieve as a result. It is important not to forget that virtual corporations represent a relatively temporary joining of forces. However, virtualization still represent a challenge to the enterprise, and it can find sample support in the network to help overcome these obstacles. As already mentioned, in such project planning the focus should always be on the goals to be achieved and on the benefits the virtual network can provide for the enterprise. Before joining such a corporate network, the enterprise must have a clear idea of what markets it wants to access and what products or services it wants to offer to its customers.

Information and communication technologies (ICT) are certainly a major component in terms of achieving the predefined corporate strategy and goals, whereby, the enterprise frequently needs to take action and make necessary adjustments. ICT is subject to constant adaptations and advances in development, thus not only forcing enterprises to make financial investments but also to ensure trouble-free connection and operation within the virtual corporation.

Changes in enterprises' economic environment and current political influence necessitate constant adaptations to the future provision of products and services. Worthy of particular mention are current restrictions due to the Corona pandemic (Covid-19), the global economic and financial crises (current recession in key national economies), strategic alliances, and new technologies. These challenges and obstacles can be overcome, and new competitive advantages can be gained accordingly if cooperative, interdisciplinary and relatively independent enterprises join forces. The question posed by this research as to whether virtual corporations represent a future form of cooperation cannot be adequately answered.

However, it can be noted that virtualization has been finding its way into enterprises for some time now. As in the past, collaborations have been established and developed at certain levels and with different objectives. Currently, enterprises are focusing on the digitalization process within their own business and operational workflows. This "transformation of processes" with which enterprises are striving to remain competitive in the current environment is an effect of economic and technological challenges. Enterprises are employing the latest ICT and reaping the resulting benefits. The findings obtained from the empirical approach confirm and, in some cases, substantiate this aspect. Project planning for the virtual corporation therefore has a relatively low priority and could be understood as more of a next step as a consequence of digitalization. Therefore, the assumption and consequently the research question as to whether virtual enterprises could be a future form of cooperation has not been adequately answered. However, one may also assume that, for many enterprises, this "phenomenon" cannot be fully ruled out yet.

6.   CONCLUSION

This article has identified three major types of virtual companies and their beneficial use. It has shown that companies, according to their strategy, are able to join and set up the structure for being competitive on their market or possible entries into new markets. Part of the article was also the empiric study which encountered, that there was a time, that companies were quite interested in creating and joining virtual enterprise networks. Still, it is essential and the need to adapt and implement organizational changes are required. The virtual enterprise could be one of the next future steps of organizational structures. Actually, most of the plans are currently dealing with the digitalization efforts of company's structures and processes. Generally speaking, all actions are requiring most of the company resources and therefore the focus and goals are accomplishing the next level of digitalization. Once this process is finished and execution works on a stable condition, companies may proceed with the next step to make necessary adjustments for a virtual company. The basic next level for companies interested in developing a virtual company is to join any of the typologies of the virtual company. Additionally, this article shows, that there are still virtual companies in several branches and it is a proof that the idea can become more and more realistic. Besides the fact that these virtual corporations are creating obvious advantages, the decision of companies to join are still on hold or gone. Actual pandemic situations are forcing companies to react on current circumstances and most of smaller or midsize companies are struggling with survival on their market. Global lockdown of economies including special markets have also led to huge decreases of earnings and companies have suffered severe losses and damages. As a conclusion of all these influences, companies are currently not focusing on getting into a virtual enterprise network. This might be a step in the near future as soon as the healing process of companies' business goes back to normal.

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LSTM-BASED AUTOMATED LEARNING WITH SMART DATA TO IMPROVE MARKETING FRAUD DETECTION AND FINANCIAL FORECASTING

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Abstract: *This proposed model is based on a deep recurrent neural network trained with Long Short-Term Memory Network (LSTM), used because of its ability to learn long term dependencies, taking the concatenated function and Financial data as input, while integrating encapsulations, using Smart Data and retrieving information by combining multiple search results (all the Web). It combines representation training with financial data while integrating encapsulations from multiple sources and retrieving information by combining multiple search results. It provides some good ideas that we have extended to improve Corporate Marketing and Business Strategies. We show that the proposed model learns to localize and recognize different aspects of Corporate Marketing and Business Strategies. We evaluate it on the challenging task of detecting Fraud in Financial Services and Financial Time Series Forecasting and show that it is more accurate than the state-of-the-art of other neural networks and that it uses fewer parameters and less computation.*

Keywords: *Business, Marketing, Forecasting of financial times series, Fraud detection, LSTM, Smart Data.*

1. INTRODUCTION

The prime goal of a financial time series model is to provide reliable future forecasts which are crucial for investment planning, fiscal risk hedging, governmental policy making, etc. These time series often exhibit notoriously haphazard movements which make the task of modeling and forecasting extremely difficult. As per the research evidence, the random walk (RW) (Fama, 1995) is so far the best linear model for forecasting financial data. Artificial neural network (ANN) is another promising alternative with the unique capability of nonlinear self-adaptive modeling. Numerous comparisons of the performances of RW and ANN models have also been carried out in the literature with mixed conclusions (Adhikari, 2014).

We propose a new real-time automated learning model based on a recurrent neural network trained with Long Short-Term Memory Network (LSTM) that integrates encapsulations using Smart Data and thus retrieves information by combining multiple search results from multiple sources (all the Web). Thus, we provide not only a solution to this challenge, but also, propose better performances.

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In this paper, we try to identify relevant content dealing with financial time series. Once this information is retrieved (distinguished, of course, from large amounts of other content and also distinguished from abusive information), it can be used to improve Corporate Marketing, Business Strategies, Fraud Detection in Financial Services and Financial Time Series Forecasting. Our main contributions are listed below.

1. We develop a recurrent neural network-based model that uses low-level content learning capabilities to automatically separate relevant information from redundant or abusive.

2. We develop a recurrent neural network-based model that uses content learning capabilities of multiple sources (all online channels from social media to websites) to automatically and efficiently capture real-time dynamics of financial data. Using a set of knowledge related to the financial market, this model collects, using Smart data, according to their lexical similarity, accurate forecasting of volatility from financial time series.

3. We have adapted some algorithms to streaming to get Smart Data. Smart Data, a different concept of Big Data, even in opposition to it, is based primarily on real-time data analysis. This term refers to an approach to data analysis that directly analyzes the data at the source, without the need to transmit it to a centralized system. Big Data is the mass of information circulating via the web, connected objects or smartphones, while Smart Data can be defined as the intelligent and relevant way of processing data.

4. Keeping in mind the limitations of the previous work, we develop an event-independent model that can be used directly to filter content on multiple sources at a time in future events. Experiments on multiple financial market-related content flow with diverse characteristics show that our proposed model outperforms forecasting-based approaches. Our approach filters content issued from all online channels from social media to websites.

5. Once we have developed this real-time recurrent neural network-based model, and annotated manually the first information deducted by the recurrent neural network, using multi-source content learning capabilities to automatically and efficiently capture real-time accurate forecasting of volatility from financial time series, using a set of knowledge related to the financial market and a set of tagged contents we collected reliable future forecasts which are crucial for investment planning, fiscal risk hedging, governmental policy making, etc.

The rest of this paper is organized as follows: Section 2 presents the background and related works. In section 3, we describe our proposed model, we provide details on accurate forecasting of volatility from financial time series, and preliminary results, followed by a discussion of the results obtained. Finally, we conclude and give some future works.

2.   BACKGROUND & RELATED WORKS

2.1. Corporate Marketing, Fraud Detection in Financial Time Series Forecasting

With a wide variety of products and buying behaviors, the shelves on which products are presented are one of the most important resources in the retail environment. Retailers can not only increase profits but also reduce costs by properly managing shelf allocation and product display (Aloysius, 2013). Using learning models in the organization of shelves in supermarkets by grouping products that are usually bought together, we can extract the following relation: *customers who buy the product X at the end of the week, during the summer, generally also buy the product Y.*

Also, the credit institution, that permits to decide whether or not to grant credit based on the profile of the credit applicant, his / her request, and past loan experiences, is used in data mining. There are also the overbooking (optimization of the number of seats in planes, hotels, etc.), the targeting of offers (organization of advertising campaigns, promotions) and the analysis of business practices, strategies and their impact on sales in Data Mining. This knowledge, unknown at first, may be correlations, patterns, or general trends in that data. Experimental data are necessary to verify the correction of the system or the estimation of some difficult parameters to mathematical modeling. Data Mining is a field that has emerged with the explosion of the amount of information stored, with significant progress notably in processing speeds and storage media. The purpose of data mining is to discover, in large amounts of data, valuable information that can help understand the data or predict the behavior of future data. Since its inception, data mining has used several tools for statistics and artificial intelligence to achieve its objectives. It is an essential component of Big Data technologies, large data analysis techniques and recently data smart streaming. It is often defined as the process of discovering new knowledge by examining large amounts of data (stored in warehouses or streaming) using pattern recognition technologies as well as statistical and mathematical techniques.

Table 1. Comparative table of all economic tasks used

Economic Tasks	References	Our New Approach (ONA)
Detect novel frauds	(Pumsirirat, 2018), (Schreyer, 2017), (Wang, 2018), (Zheng, 2018), (Dong, 2018), (Gomez, 2018), (Ryman-Tubb, 2018), (Fiore, 2019)	ONA
Trading performance	(Sermpinis, 2019)	
Exchange rate prediction	(Calvez, 2018)	
Stock prediction	(Kodogiannis, 2002)	
Trade on the stock market	(Fischer, 2018)	
Company stock prices	(Pinheiro, 2017)	
Forecasting of financial time series	(Bodyanskiy, 2006), (Lai, 2006), (Ghazali, 2009), (Pradeepkumar, 2017), (Tk, 2016), (Lasfer, 2013), (Gudelek, 2017), (Mohammad, 2018)	

Source: Authors' research

Extraction of element set is the model where some sequence exploration problems lend themselves to the discovery of frequent item sets and their order. For example, we look for rules of the type "if a customer buys a car, it is likely to take out insurance within one week"}, or in the context of stock prices, "if A up and B up, it is likely that C up and D up within one week". Traditionally, the extraction of element sets is used in marketing applications to detect patterns among competing elements in large transactions, for example, by analyzing customer shopping basket transactions in a supermarket, according to Han et al. (Han, 2007).

The extraction of sequential models has many real applications because the data is encoded as sequences in many areas such as bio-informatics, genomics and Proteomics (Fournier-Viger, 2017). We also see the development of market basket analysis which consists of studying sales (Sales receipt analysis) (Masseglia, 2005).

Web Mining is the next model. Thanks to the huge amount of information available online, the World Wide Web is a fertile ground for research in data mining. Web mining research is at the crossroads of research conducted by several research communities, such as databases, information retrieval and within Artificial Intelligence (AI), particularly the sub-domains of learning and natural language processing (Kosala, 2000).

Text Mining is a branch of Data mining that specializes in the processing of text corpora to analyze the content and extract knowledge. The main tasks to be accomplished are the recognition of the information presented in the document and its interpretation. It refers to linguistic technologies that make it possible to switch from text (full text) to a digital vector (presence-absence or frequency).

String Mining is the next model that channel exploration usually deals with a limited alphabet of elements that appear in a sequence, but the sequence itself can usually be very long. Examples of alphabets may be those of the ASCII character set used in the natural language text, nucleotide bases "A", "G", "C" and "T" in DNA sequences or amino acids for protein sequences and examining gene and protein sequences to determine their properties (Abouelhoda, 2009).

The last model Sequential Pattern Mining consists of discovering unexpected and useful models in data sets. It consists of discovering interesting sub-sequences in a set of sequences, where the interest of a sub-sequence can be measured according to various criteria such as its frequency of appearance, its length and its profit.

Fraud detection is an interesting problem in that it can be formulated in unsupervised and/or supervised classification. In unsupervised learning category, class labels are either unknown or assumed to be unknown, and clustering techniques are employed to figure out (i) distinct clusters containing fraudulent samples or (ii) far off fraudulent samples that do not belong to any cluster, where all clusters contained genuine samples, in which case, it is treated as an outlier detection problem. In the supervised learning category, class labels are known and a binary classifier is built in order to classify fraudulent samples. Fraud (including cyber fraud) detection is increasingly becoming menacing and fraudsters always appear to be few notches ahead of organizations in terms of finding new loopholes in the system and circumventing them effortlessly. On the other hand, organizations make huge investments in money, time and resources to predict fraud in near real-time, if not real time and try to mitigate the consequences of fraud. Financial fraud manifests itself in various areas such as banking, insurance and investments (stock markets). It can be both offline as well as online. Online fraud includes credit/debit card fraud, transaction fraud, cyber fraud involving security, while offline fraud includes accounting fraud, forgeries, etc.

Advances in technology and breakthrough in deep learning models have seen an increase in intelligent automated trading and decision support systems in financial markets, especially in the stock and foreign exchange (FOREX) markets.

However, time series problems are difficult to predict especially financial time series (Cavalcante, 2016). On the other hand, Neural and Deep learning models have shown great success in forecasting financial time series (Li, 2009) despite the contradictory report by efficient market hypothesis (EMH) (Fama, 1995), that the FOREX and stock market follows a Random Walk (RW) and any profit made is by chance. This can be attributed to the ability of Neural Networks to self-adapt to any nonlinear data set without any static assumption and prior knowledge of the data set (Lu, 2009). Deep learning used both fundamental and technical analysis data, which is the two, most commonly, used techniques for financial time series forecasting, to train and build deep learning models (Cavalcante, 2016).

Fundamental analysis is the use or mining of textual information like financial news, company financial reports and other economic factors like government policies, to predict price movement.

2.2. Automated Learning

Learning is a set of mechanisms leading to the acquisition of know-how and knowledge. While Automated learning is a branch of Artificial Intelligence (AI) that deals with the development of algorithms that make capable of accomplishing complex tasks without having been explicitly programmed for that purpose, making extensive use of tools and concepts of AI, mathematics, other cognitive sciences and so on. It can rely on statistical approaches to give the ability to "learn" from data using two phases. The first one, namely Model Design Phase (Training) consists of estimating a model from data, called observations. The second one is the Production Phase where the model is being determined; new data can then be submitted to obtain the result corresponding to the desired task. Handwriting recognition is a good and complex example because two similar characters are never exactly equal. An automatic learning system can be designed to learn to recognize characters by observing "examples", that is, known characters.

Table 2. Comparative table of all AI Concepts used

AI Concepts	References	Our New Approach (ONA)
Elman ANN (EANN)	(Adhikari, 2014), (Bouzidi, 2018), (Bouzidi, 2019)	ONA
Multi-Layer Feed-forward (MFF)	(Adhikari, 2014), (Tk, 2016), (Pandey, 2018), (Bouzidi, 2020)	
ConvNets/Autoencoder	(Pinheiro, 2017), (Lai, 2006), (Lasfer, 2013), (Gudelek, 2017), (Bao, 2017)	
RNN	(Bouzidi, 2020b), (Ghazali, 2009), Mohammad2018)	
LSTM	(Adhikari, 2014), (Cavalcante, 2016), (Sermpinis, 2019), (Calvez, 2018), (Fischer, 2018), (Pradeepkumar, 2017), (Tk, 2016), (Gudelek, 2017), (Pandey, 2018)	
Memory Networks	(Adhikari, 2014), (Cavalcante, 2016), (Sermpinis, 2019), (Calvez, 2018), (Fischer, 2018), (Pradeepkumar, 2017), (Tk, 2016), (Gudelek, 2017), (Pandey, 2018)	
Social Media	(Adhikari, 2014), (Cavalcante, 2016), (Sermpinis, 2019), (Calvez, 2018), Fischer, 2018), (Ghazali, 2009), (Pradeepkumar, 2017), (Tk, 2016), (Gudelek, 2017), (Pandey, 2018)	
Analysis	(Sermpinis, 2019), (Pradeepkumar, 2017), (Tk, 2016), (Lasfer, 2013), (Mohammad, 2018), (Pandey, 2018)	

Source: Authors' research

According to the information available during the learning phase, it is qualified in different ways. If the data is tagged, it is supervised learning. We are talking about "classification" if the labels are discrete, or "regression" if they are continuous. If the model is learned incrementally based on a reward, it is called "reinforcement learning". When data (or "tags") are missing, the model must use untagged examples that can still provide information. In medicine, for example, it can be an aid to diagnosis. It is said that learning is "semi-supervised". While the labeling of data is partial when a model states that a data does not belong to a class A, but perhaps to a class B or C (A, B and C is 3 diseases for example evoked as part of a differential diagnosis). This is called *partially supervised learning*. In the most general, unlabeled case, we try to determine the underlying structure of the data: this is *unsupervised learning* (Abouelhoda, 2009).

Automated learning is used for a wide range of applications, such as diagnostic aid (Abouelhoda, 2009), outlier detection, missing data detection, relevant information retrieval from multiple sources (social media) (Bouzidi, 2018), (Bouzidi, 2019), (Bouzidi, 2020), & (Bouzidi, 2020b), fraud detection, financial market analysis (Bouzidi, 2020b) & (Masseglia, 2005) and so on.

It is not just about a set of algorithms, but a list of steps to take into account and execute in order to reach an optimal result. Data Acquisition is the first step of this list where the algorithm feeds on input data and where the success of the project is collecting relevant data and in sufficient quantity. Preparation and cleaning of the data is the second step. The third is the creation of the model. The fourth step is Evaluation which consists of evaluating the trained model on the other (second) set of data. The fifth is Deployment where the model will be deployed in production to make predictions, and potentially use new input data to re-train and improve its model.

However, care must be taken to use an adequate number of neurons and hidden layers, to detect and thus avoid over-learning. Thus, the data is divided into two subsets (LeCun, 2015): the learning set which allows changing the weight of the neural network. The validation set allows verifying the relevance of the network while avoiding over-learning.

2.3. Social Networks

Social networking forms an important part of the online activities of Web users. There are two types of social networks: Centralized social networks and Decentralized social networks. Current Online social networks (OSN) are Web services run on logically centralized infrastructure (Datta, 2010). They use content distribution networks and thus distribute some of the load by caching for performance reasons, while keeping a central repository for user and application data. This centralized nature of Online Social Networks has several drawbacks including scalability, privacy, dependence on a provider, and the need for being online for every transaction (Yeung, 2009). Web sites such as Facebook, MySpace and Orkut have millions of users using them every day. A decentralized online social network (DOSN) is a distributed system for social networking with no or limited dependency on any dedicated central infrastructure (Datta, 2010), while being a solution to the violation of privacy, especially thanks to p2p architecture (Qamar, 2016).

Recent trends in the use of social networking highlight the fact that there is not only an increasing number of users of social networking applications but also a significant increase in the number of such applications. In a short time, social networks have invaded the daily lives of Internet users and Web professionals. The social media giants Facebook and Twitter were seen establishing, growing and evolving. They have been followed by a multitude of other more specific networks: Instagram, LinkedIn, etc. The list is long. Among the existing research studies, a group of studies identifies useful social networking information, using machine learning, to successfully extract structured information from unstructured textual social media contents.

People use social networking to post situational updates in various forms (Imran, 2015) such as text messages, images and videos. Numerous studies (Imran, 2014) have shown that this online information is useful for a quick response to a particular situation. Communication via social networking is direct, easy and instant and can simplify quick responses. Custom sites like Facebook, Twitter, Instagram, YouTube and Xing can subjectively offload the first contact of authorities and service providers. These analyzes of the use of social networking in events have identified a distinct role for users, who are more likely to generate useful information to improve situational awareness. Social networking can be considered as a practical and reliable emergency communication tool. While the predominant function of social networking remains social interaction, social networking sites are also considered the fourth most popular source of information. Different social networks have different characteristics and are therefore more

or less suitable for use during a given situation. Social networking can support the exchange of information before, during and after an eventual event. With the proliferation of social media, knowledge is transformed from expert knowledge to everyday knowledge co-produced by various stakeholders thanks to Web 2.0. In recent years, a growing number of studies have examined the use of social networking data to gain knowledge of areas of human activities that are as diverse as detecting diseases such as epidemics or stock market forecasts. However, understanding these voluminous and high velocity data is a difficult task.

Table 3. Comparative table of all techniques and methods used in Models including our approach

References	Identification Methods	Used OSN
(Zaini, 2020)	Flood Disaster Game-based Learning	Twitter
(Vivakaran, 2018)	Educational Purposes among the Faculty of Higher Education with Special Reference	
(He, 2016)	Summarization with social-temporal context	
(Dussart, 2020)	Capitalizing on a TREC Track to Build a Tweet Summarization Dataset	
(Lamsal, 2020)	Semi-automated artificial intelligence-based classifier for Disaster Response	
(Rudra, 2019)	Summarizing situational tweets in crisis scenarios: An extractive-abstractive approach	
(Bouzidi, 2018), (Bouzidi, 2019)	Based on Artificial Neural Network (ANN)	Twitter & Facebook
(Bouzidi, 2020)	Based on FeedForward Neural Network (FFNN)	All the Web
(Bouzidi, 2020b)	Based on Recurrent Neural Network (RNN)	
Our New approach	Deep Learning from Social Media and Big Data to improve Marketing, Business Strategies, Fraud Detection and Financial Time Series Forecasting	

Source: Authors' research

This section presents the most relevant related works, namely information retrieval models, in general, and those from several sources, in particular.

Table 4. Comparative table of all techniques and methods used in Models including our approach

Models	Identification Usage of Big Data
(Ofli, 2016)	Human Computing and Machine Learning to Make Sense of Big Data
(Horita, 2017)	Decision-Making and emerging Big Data
(Immonen, 2015)	Quality of Social Media Data in Big Data
(Smith, 2012)	Big Data privacy in public Social Media
Our Previous approach (Bouzidi, 2020b)	Smart Data privacy in public Social Media
Our New approach	Automated Learning using Big Data to improve Marketing, Business Strategies, Fraud Detection and Financial Time Series Forecasting

Source: Authors' research

Contents were collected from all online channels tracked automatically by the Online Listening Tool, namely Radian6 (Ruggiero, 2014) & (Young, 2014) or any of its competitors, such as Awario, Brand24.com, Brandwatch, Mention, Keyhole, Socialert.net, SocialPilot.co, Simplify360, etc. from websites to social media, such as Twitter, Facebook, LinkedIn, Instagram, Google+, YouTube and so on. Many networking platforms allow access to their data via the Ap-

plication Programming Interface (API) (Imran, 2020). Online listening tools provide the model, which reasonably represents the essentials, namely, as shown in figure 1:

- Harvesting contents: (such as conversations at the social media, news or any information on the Web);
- Cleaning the data of duplication and replication content: eliminating, from the content, any dubbed information like a retweet, and any information harmful or redundant;
- Enabling relevance: thanks to neural learning, obtaining relevant information by using machine learning with the learning corpus obtained thanks to the tagged messages. These tagged messages are realized by volunteers;
- Analyzing the results: during this stage, the verification and analysis of the results are carried out in order to ensure adequacy so that it is obtained to build disaster information such as situational awareness, damage assessment and/or disaster education.
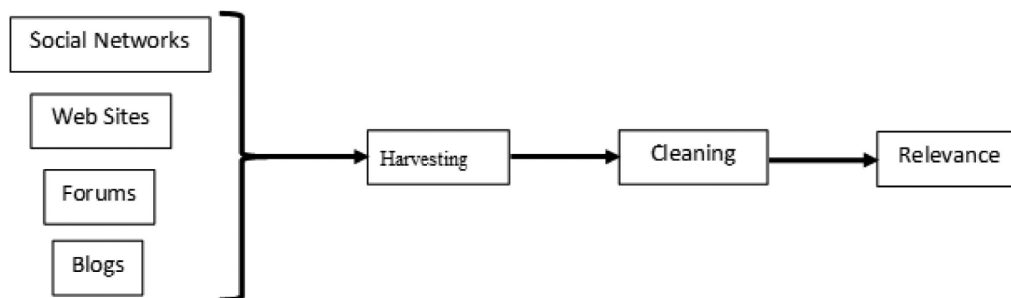
Figure 1. Online Methodology Reflecting our Listening and Monitoring Approach
Source: Authors' research

Some of the benefits of using the Twitter and Facebook APIs include:

- using the development space of the two social media;
- encouraging development environments;
- scientific recognition of development environments;
- encouraging other social media to involve themselves in research development;
- helping social media to feel imbued with this desire for development and scientific research in parallel with their commercial activity;
- contributing to the development of further improvements in networking services.

3. AUTOMATED LEARNING ENVIRONMENT FOR FRAUD & FINANCIAL TIME SERIES FORECASTING

3.1 Automated Learning Environment

Artificial intelligence (AI) is a combination of reinforcement learning (RL) and deep learning (DL) (Abiodun, 2018), represented mathematically, as:

$$\mathbf{AI = RL + DL} \tag{1}$$

where:

AI represents Artificial Intelligence, RL represents Reinforcement Learning, and
DL represents Deep Learning.
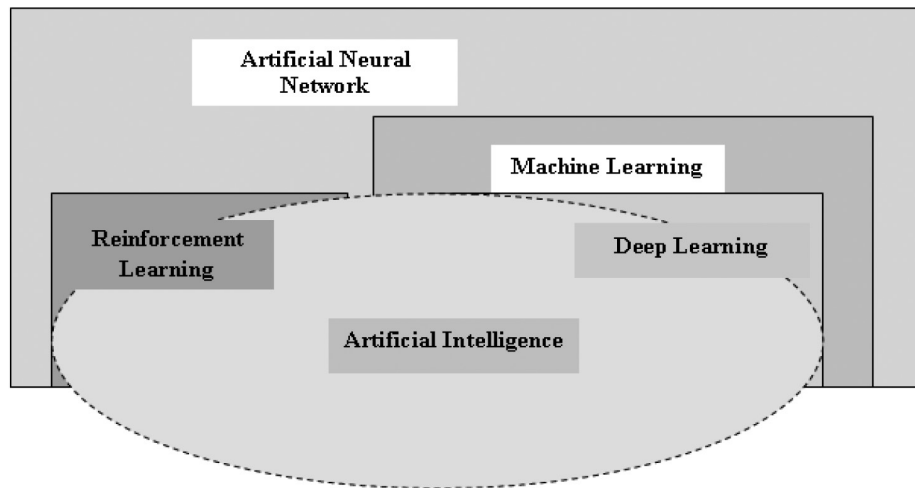
Figure 2. Fields of Artificial Intelligence
Source: Authors' research

A feedforward neural network (FFNN) is an automated learning classification algorithm that is made up of organized layers, similar to human neuron processing units. In FFNN, each unit in a layer (known as a node) relates to all other units in these layers. These layers' connections can have a different weight. These weights measure the potential amount of knowledge of the network. The information processing in the network involves data entry from the input units and passes through the network, flowing from one layer to another until the output units. When a neural network operates normally, that is when it acted as a classifier, then there will be no feedback between layers (Abiodun, 2018). FFNN can logically handle tasks according to "first come first serve" bases of inputs.

Unlike FFNN, the feed-backward neural network (FBNN) can use internal state "memory" to process a sequence of data inputs, such as Recurrent Neural Network (RNN).
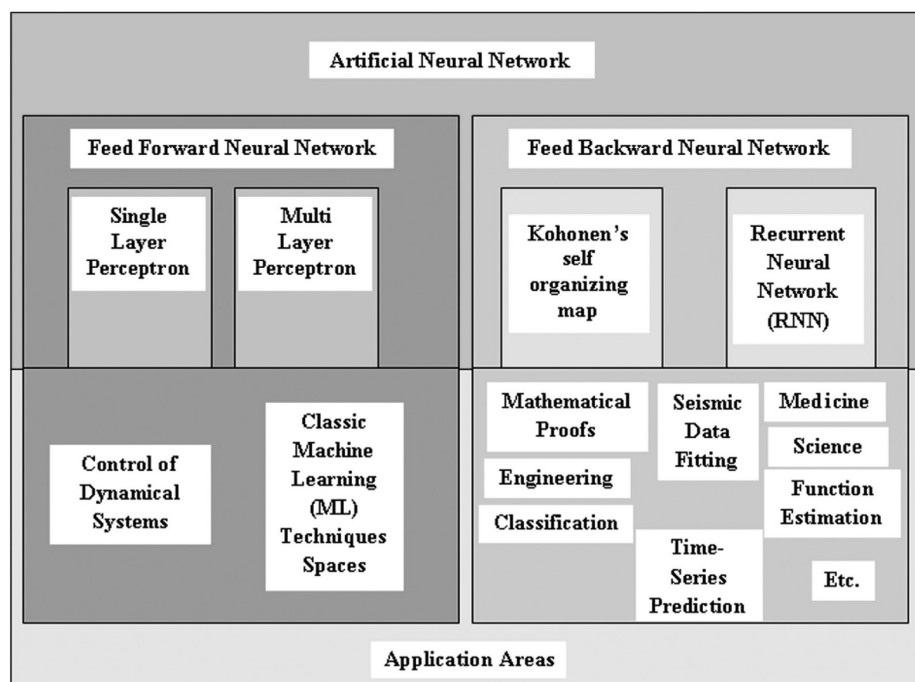
Figure 3. Artificial Neural Network Classification with their Application Areas
Source: Authors' research

3.2. Recurrent Neural Network (RNN)

As a class of feedforward neural networks, recurrent neural networks (RNNs) are augmented by the inclusion of recurrent edges connecting adjacent time steps. Figure 1 shows the well-known Elman, (1990) recurrent neural network (Elman, 1990) & (Wu, 2018).

We can use two equations to describe this type of RNN; all the calculations necessary for computation at each time step on the forward pass are:

$$h_t = \alpha \left(\sigma_{hx} \cdot x_t + \sigma_{hh} \cdot h_{t-1} + b_h \right) \tag{2}$$

$$y_t = \beta \left(\sigma_{yh} \cdot h_t + b_y \right) \tag{3}$$

where:

The σ terms denote weight matrices (e.g. σ_{hx} is the matrix of weights between the input and hidden layers);

The b terms denote bias vectors (e.g. b_h is hidden bias vector) which allows each node to learn an offset;

α denotes the hidden layer function h at the level t.

In general, α is usually an element-wise application of a sigmoid function and β is the output layer function.

A recurrent neural network (RNN) is referred to as a standard kind of neural network which extended over time, with edges, that feed into the next time step, rather than feeding into the next layer. RNN is constructed to sequences recognition, for instance, a text or a speech signal. It has cycles within that indicate the presence of short-memory in the net. RNN is like a hierarchical network in which the input needs processing hierarchically in the form of a tree because there is no time to the input sequence. Recurrent neural networks (RNNs) can be adapted to powerful sequence learning tasks. RNNs have proven to be an excellent pattern for recognition and prediction engines, especially in a task involving machine learning of sequences such as text or speech recognition. RNNs have feedback loops in their recurring layer. This helps them to keep information in "memory" for an extended period.

Although RNN is not deep in space, it is inherently deep in the time since each hidden state is a function of all previous hidden states (Wu, 2018). The problems of vanishing and exploding gradients will occur when propagating errors across many time steps. However, it can be difficult to train a standard RNN to solve problems that require learning over a long period of dependency. This is because the gradient of the loss function decays exponentially over time (this is called the gradient vanishing problem).

RNN is   Discriminative, Supervised, Gradient Descent, Backpropagation through Time, Natural Language Processing and Language Translation. However, it is difficult time series inference and unsupervised in negative time (Berglund, 2015).
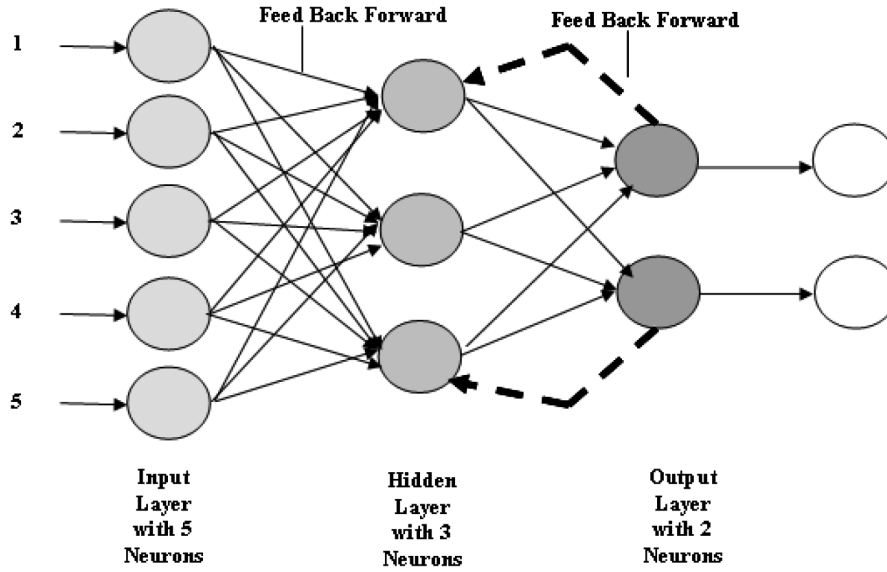
Figure 4. Recurrent Neural Network Architecture (Abiodun, 2019)
Source: Authors' research

3.3. Long Short-Term Memory (LSTM)

To overcome the deficiency of RNN, Hochreiter and Schmidhuber (1997) (Hochreiter, 1997) proposed Long Short-Term Memory, one of the most successful RNN architectures for sequence learning. Compared with the Elman RNN, LSTM introduces the memory cell, a computation unit replacing conventional artificial neurons in the hidden layer.

Long Term Memory Networks (LSTMs) is a kind of RNN that uses specific units with standard units. A "memory cell" is a component of LSTM units that can hold information in memory for a long time. LSTMs are often referred to as Sophisticated RNNs.

The mathematical definition of the computation of the LSTM model can be described as follows:

$$i_t = \gamma \left(\omega_{ix} \cdot x_t + \omega_{ih} \cdot h_{t-1} + b_i\right) \tag{4}$$

$$f_t = \gamma \left(\omega_{fx} \cdot x_t + \omega_{fh} \cdot h_{t-1} + b_f\right) \tag{5}$$

$$c_t = f_t \, O \, c_{t-1} + i_t \, O \, \tanh \omega_{cx} \cdot x_t + \omega_{ch} \cdot h_{t-1} + b_c) \tag{6}$$

$$\beta_t = \gamma \left(\omega_{\beta x} \cdot x_t + \omega_{\beta h} \cdot h_{t-1} + b_\beta\right） \tag{7}$$

$$h_t = \beta_t \, O \, \tanh(c_t) \tag{8}$$

where:
O denotes element-wise multiplication.
ω is the logistic sigmoid function.
i, f, β, and c are respectively the input gate, forget gate, output gate, and cell activation vectors, all of which are in the same size as the hidden vector h at the level t.

3.4. Recurrent Neural Network-based Automated Learning Environment

Artificial Neural Networks (ANN) are inspired by biological neural networks as the human brain. Such systems learn to perform tasks by considering examples, usually without being programmed, with task-specific rules. The neural network is based on connected units'/nodes' collection called neurons, which model biological brain neurons. Each connection, like the synapses of a biological brain, can transmit a signal from an artificial neuron to another.

It is not just about a set of algorithms, but the following steps list to take into account and execute in order to reach an optimal result:

- Data Acquisition where the algorithm feeds on input data and where the success of the project is collecting relevant data and in sufficient quantity;
- Preparation and cleaning of the data;
- Model Creation;
- Model evaluation: it consists of evaluating the trained model on the other (second) set of data.
- Validation/ Deployment: where the model will be deployed in production to make predictions, and potentially use new input data to re-train and improve its model.

However, care must be taken to use an adequate number of neurons and hidden layers and to detect over-learning. Thus, the data is divided into two subsets (Lagmay, 2017):

- Learning set: which allows changing the weight of the neural network, and
- Validation set: This allows verifying the relevance of the network.

We can reduce the size of the network and start learning again. To avoid over-learning, a form of regularization is used. The weight decay method is a regularization technique used to limit over-learning in a neural network.

As for online methodology reflecting, our listening and monitoring approach consists of Harvesting all the contents issued from conversations at the social media, news or any information on the Web; Cleaning the data of duplication and replication content; Enabling relevance thanks to the neural learning, with the learning corpus obtained thanks to the tagged messages. The verification and analysis of the relevant content are carried out by the emergency management model, in order to ensure adequacy and to alert the disaster managers.

The benefits are huge: such as finding some details of an ultimate discussion or predicting and preventing the outbreak of a disaster. Making certain decisions that could save lives, has no commercial value but a value of great morality.

Figure 5 shows the functional architecture of our proposed model. So, the disaster management model based on an artificial neural network works by extracting, from Social Media, messages that contain predefined keywords; once the message is properly cleaned: it is not redundant and is not replication (insult). The message cleaned up from duplicated and replication contents, retained according to keywords, must be checked by the content manually annotated by volunteers in our laboratory. The message, issued from these checks, is considered relevant. It will be rapidly addressed to disaster managers to make quick and efficient decisions that can save lives if not relieve them.

3.4.1. Recurrent Neural Network: Modeling

The entire ANN modeling procedure has been studied to introduce systematic methods leading to always efficient ANN models, namely the collection of learning data, preprocessing and post-processing of data, different types of activation functions, initialization of weights, learning algorithms and error functions. Although all of these factors affect ANN's performance, increased attention has been focused on finding the best architecture. There is no theoretical background on how this architecture will be found or on its appearance (Thawakar, 2019). The most typical method followed is a repetitive trial and error process, in which a large number of different architectures are examined and compared to each other. Therefore, this process is time-consuming and relies mainly on the experience and intuition of the human expert, which implies a high degree of uncertainty. Nevertheless, we cite different approaches, namely: the empirical or statistical methods used to study the effect of internal parameters of an ANN and choose appropriate values depending on the performance of the model, the hybrid methods such as fuzzy inference, the constructive and/or pruning algorithms, and finally the evolutionary strategies. The training data is created from the November 10th, 2001 (Algiers Floods) and the May 21st, 2003 (Boumerdes earthquake disasters). This information, easily obtained using the neural network, is manually annotated by volunteers.

A.   Foundation of neural learning

We use a neural network with a hidden layer that takes, as input to the network, a content e, as:

$$e = (w_1, \dots , w_i, \dots , w_n) \tag{9}$$

containing words w, each coming from a finite vocabulary Υ. C^n is the set of contents issued from social media.

Let:

$$e_i \in C_n = E \; \forall \; i \in [1, \mathbf{N}] \text{ with } e_i = (w_{i1}, w_{i2}, \dots , w_{in}) \tag{10}$$

containing words each coming from the set of words $\wedge\{\mathbf{W}\}$ where each word comes from a finite vocabulary Υ, the incorporation of the content of the source message is relevant for, at least, a keyword or a hashtag such as:

$$\exists \, j \in [1, \mathbf{M}] \; / \; h_j \in \mathbf{H} \tag{11}$$

We want the learning of a generic space with the neural network, as:

$$\mathbf{E_K} = \max_{1 < k < K} \{e_k\} = \max_{1 < k < K} \{e_k\} \tag{12}$$

which normalizes the differences:

$$\mathbf{E_K} = [\mathbf{E} - \mathbf{RDF}] \text{ where } \mathbf{RDF} = [\mathbf{R} + \mathbf{D} + \mathbf{F}] \tag{13}$$

Thanks to the neural network, the transformation of $\{e_i\}$ into $\{e_k\}$ can be explained by:

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$$\exists\, j \in [1, \mathbf{M}] \;/\; h_j \in \mathbf{H} \;\&\; \exists\, l \in [1, \mathbf{L}] \;/\; w_l \in \mathbf{W} \;/\; \{e_i \rightarrow e_k$$
$$= \{e_i \;/\; e_i \text{ is relevant for } h_j \text{ and } w_l\} \text{ with } i \in [1, \mathbf{N}]\} \;\&\; e_i \in [\mathbf{R} + \mathbf{D} + \mathbf{F}] \tag{14}$$

where

R, **D** and **F** denote respectively the set of duplicate re-tweets, duplicate contents and false alerts.

The objective is then to maximize the size **K** of the set $\mathbf{E_K}$. Figure 4 shows the Recurrent Neural Network-based Emergency Management Architecture.

Algorithm 1 determines, using a set of keywords, information that will be annotated manually to enrich the neural network in its possible learning. Algorithm 2 shows the functioning, during the following passages, of this emergency management model to learn the relevant information that will be used to inform managers so they can take quick and effective decisions.

Figure 5 shows the functioning of the Recurrent Neural Network-based Automated Learning Environment to retrieve relevant information.
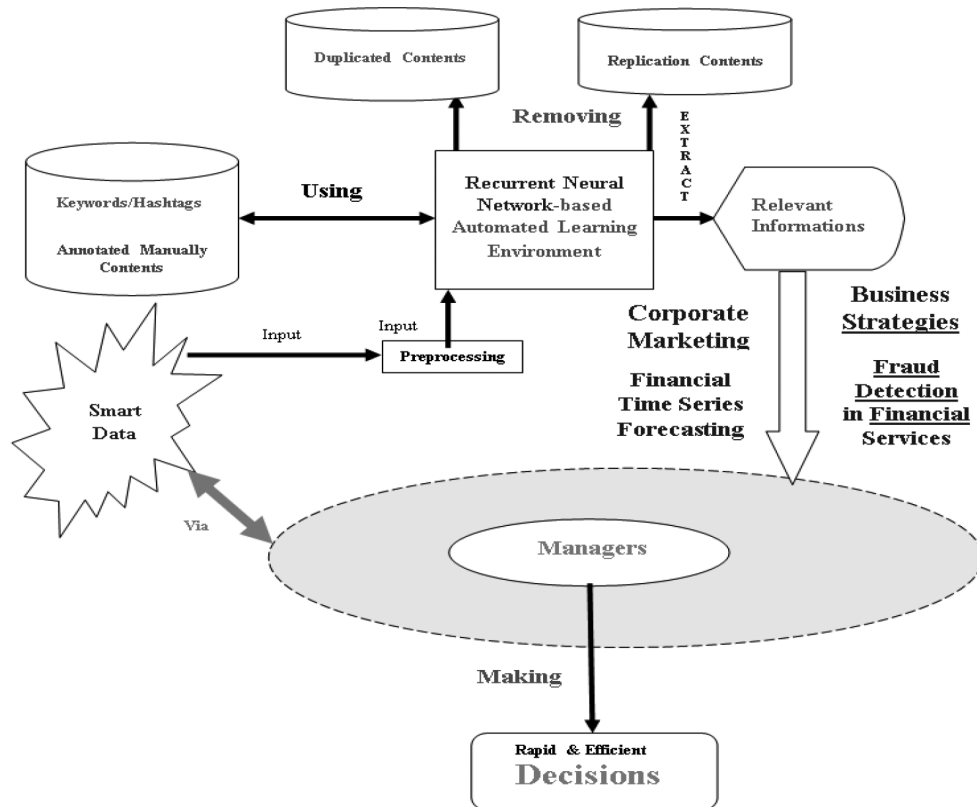
Figure 5. Recurrent Neural Network-based Automated Learning Environment
to retrieve relevant information
Source: Authors' research

3.4.2. Sequential Pattern Mining: Algorithms Implementation

A pattern of a formal Content Set (O; P; R) is a subset of P. The set of all the motives of a base is, therefore, the set of parts of P, denoted 2^P. We say that an object $x \in O$ has a pattern m if, $\forall\, p \in m$; x **Re** p. For the example of the content set, we have:

Size pattern 0 = ø; (C_5^0 = 0 reasons).

Size reasons 1 = {a}; {b}; {c}; {d} and {e}, which will be noted, for simplicity, a; b; c; d and e. (C_5^1 = 5 reasons)

Grounds of size 2 = ab; ac; ad; ae; bc; bd; be; cd; this; of (C_5^2 = 10 patterns)

Size reasons 3 = abc; abd; abe; acd; ace; ade; bcd; ecb; bde; cde ($\$C_5^3$ = 10 units)

Size reasons 4 = abcd; abce; abde; acde; bcde (C_5^4 = 5 patterns).

Size 5 = abcde (C_5^5 = 1 patterns). In the previous formal set, x1 has the patterns: at; c; d; ac; ad; cd and acd. Among the global set of 2^p patterns, it will look for those that appear frequently. Let m_1 and m_2 be two patterns. An association rule is an implication of the form:

$$m_1 \rightarrow m_2 \text{ where } m_1, m_2 \in 2^p; \& m_1 \cup m_2 = \varnothing \tag{15}$$

The rule $m_1 \rightarrow m_2$ is verified in data set E with a support s, where s is the percentage of objects in E containing $m_1 \cup m_2$. Let $m \in 2^p$ be a pattern. The support of m is the proportion of objects in O that have the pattern:

Support: $2^p \rightarrow [0; 1]$, $m \rightarrow$ Support (m) = (f (m)) / O)

For example, in the previous database, we have:

Support (a) = 3/6;

Support (b) = 5/6;

Support (ab) = 2/6;

Support (ø) = 1 and

Support (P) = 0. The support is decreasing by (2^p; subset) in ([0; 1]; ≤). In other words, if m is a sub-pattern of m' (m ⊂ m') then Support (m) ≤ Support (m'). The medium measures the frequency of a pattern: the higher it is, the more frequent the pattern. Frequent patterns of non-frequent patterns can be distinguished using a threshold ω (Masseglia, 2005). Streaming is a way of broadcasting and reading streaming content, which is widely used on the Internet. It is opposed to the {\textit file download} which requires recovering all the data of a file. However, playing streaming content involves being connected to an Internet server. Smart Data (https://www.lebigdata.fr/smart-data-definition-differences-big-data), a different concept of Big Data, is based primarily on real-time data analysis. This term refers to an approach to data analysis that directly analyzes the data at the source, without the need to transmit it to a centralized system.

3.4.3 Dynamic Counting Algorithm

The DIC algorithm, proposed by Brin et al. (1997) (Brin, 1997), to reduce the number of runs of the database, is suitable for streaming. Thus, DIC, which partitions the database into blocks of M

transactions, has adapted to work with blocks of M contents. During the computation of the k-item sets supports, after the search of a partition of size M of D, we verify the k-item sets candidates who have already reached the minimum support; DIC then uses them to generate candidates of size (k+1) and starts counting their supports. Thus, the supports of candidates of different sizes are calculated during the same course of D. As the number of scans in the database decreases, there is only one passage of the content, whereas DIC considers candidate item sets of different sizes simultaneously. This poses the problem of storing the candidate item sets processed simultaneously and the cost of calculating the candidates' media which is greater than for the Apriori algorithm (Agrawal, 1996).

3.4.4. The AprioriTlD Algorithm

The Apriori algorithm (Agrawal, 1996), requiring N passages on the database, a possible optimization consists in generating memory, during the first pass, the identifiers (TID) of the transactions for each 1-item set (together pattern size 1) frequent. This algorithm is also suitable for streaming. The TID lists corresponding to each k-item set of the K contents are kept. The calculation of a k-item set is always done from the two (k-1)-item sets containing one less element, but the counting is done simply by intersection of the two TID lists of the two (k-1)-item sets source. We build the list of TIDs after determining the frequent 1-item sets, which is more efficient in streaming (Smart data). When reading the first content, this eliminates the infrequent products and thus reduces the lists of TID in memory. TID lists in parallel memory should be generated as soon as the first content is more efficient. Here is the Apriori reference algorithm adapted to streaming (Smart data).

3.4.5 Apriori Algorithm

Algorithm 1 shows the AprioriTID algorithm (Agrawal, 1996) which is the algorithm adapted to streaming.

===
Algorithm 1. AprioriTlD algorithm
===
1: **begin**
2:     **Require:** Content of Social Networks D, Minimum Support Threshold σ;
3:     **Ensure:** Set of frequent items;
4:     **input** (a content $V(w_1, w_2, ..., w_i, ... , w_n)$) and σ
5:     **initialization** $i \leftarrow 1$;
6:     **initialization** $C_i \leftarrow 1$ set of size 1 patterns (one item);
7:     **while** ($C_i \neq \emptyset$) **do**
8:         Calculate the Support of each pattern $m \in C_i$ in the content set:
9:         $F_i \leftarrow \{m \in C_i \mid support (m) \geq \sigma\}$;
10:        $C_{i+1} \leftarrow \{all possible combinations of F_i patterns of size $i + 1$\}$;
11:        **incrementation** $i \leftarrow i + 1$;
12: **endwhile**

13:    **output** $\bigcup_{i \geq 1} Fi$
14: **end**
===
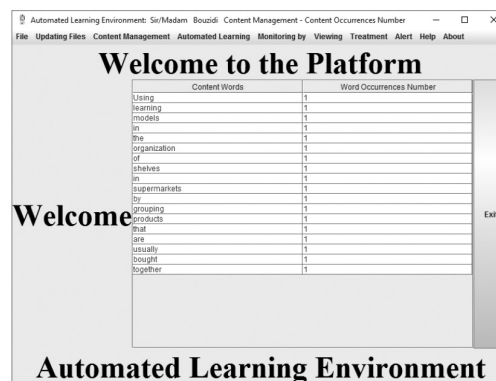
1. The application of the algorithm on the basis of the given contents read in the streaming given in the example with ω = 0.25 happens as follows. Supports: 3/6, 5/6, 5/6, 1/6 and 5/6. Hence, F_1 = {a; b; c; e} (no frequent reason will contain d).

2. Generation of size 2 candidates. Combine 2 to 2 F_1 size 1 candidate. So, C_2 = {ab; ac; ae; bc; be} and Supports are 3/6, 2/6, 4/6, 5/6 and 4/6. $F_2 = C_2$: all C_2 patterns are common.

3. Generation of size 3 candidates: Combine 2 to 2 F_2 size candidates (and consider only those who give size 3 patterns). So, C_3 = {abc; abe; ace; bc} and Supports are 2/6, 2/6, 2/6 and 4/6. $F_3 = C_3$: all C_3 motifs are common.

4. Generation of size 4 candidates. So, C_4 = {abce} and Support is 2/6.

5. Generation of size 5 candidates: $C_5 = ø$; So, $F_5 = ø$;

6. The algorithm then returns all of the common patterns, namely: $F_1 U F_2 U F_3 U F_4$.

Among the goals of the optimizations, this algorithm is to facilitate streaming playback with a single read with sufficient computation and storage. The threshold σ is set by the analyst. This can follow an iterative approach by setting a threshold at the start and, depending on the result, change the threshold value. The algorithm proposed by Savasere (Zaki, 1997) solves the memory space problem of the previous algorithm. The advantage of this algorithm is that it requires only one reading at most.

3.5. Discussion About Sequential Pattern Mining And Dynamic Counting Algorithm

Figures 6 and 8 show Examples of Content Occurrences Number in the Automated Learning Environment.

Figure 6. Example of Content Occurrences Number in the Automated Learning Environment
Source: Authors' research

Figure 9 shows the flow chart showing the functioning, during the first passages, of the Recurrent Neural Network-based Automated Learning Environment model to learn the first information that will be manually annotated by volunteers.

Figure 10 shows the flow chart showing the functioning, during the following passages, of this Recurrent Neural Network-based Automated Learning Environment model to learn relevant in-

formation that will be used to alert public opinion, and in particular disaster managers, so they can take quick and effective decisions that can save lives.

Figure 7. Example of Content Size in the Automated Learning Environment
Source: Authors' research
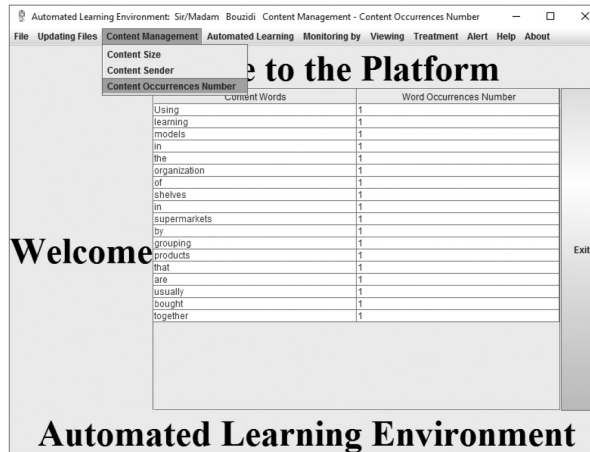
Figure 8. Example of Content Occurrences Number in the Automated Learning Environment
Source: Authors' research

===

Algorithm 2 Pseudo codes for one-step performance prediction.

===

Require: Input feature series $S = S^t$, $t = 1, 2,..., T_s$

1: **function** OneStepPrediction(S)
2:    **Initialize** $h_0 = 0$, $f = 0$, $(m_1, m_2) = (1, 0)$
3:    **Initialize** $S^0 = (f, m_1, m_2)$, $t = 0$
4:    **while** $t \leq T_s$ **do**
5:       Generate h_{t+1} and y_{t+1} by h_t & S^t
6:       Sample S^{t+1} using y_{t+1}
7:       $t = t + 1$
8:    **end while**
9:    **return** $S = \{S^t\}$, $t = 1, 2,..., T_s$
10: **end function**

===
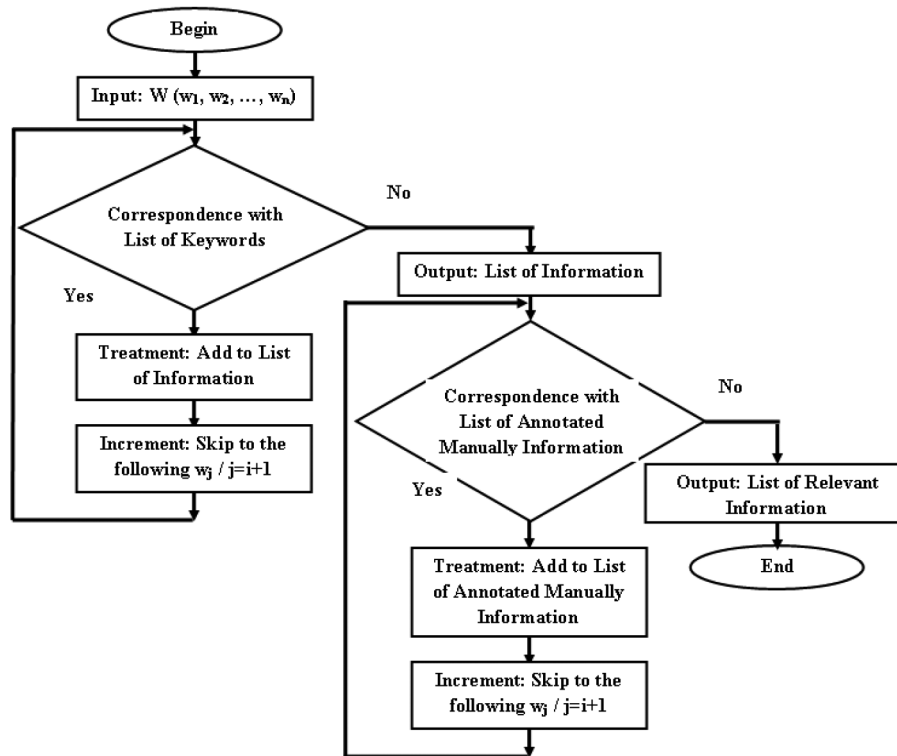
Figure 9. Flow chart for determining, using a set of keywords, information
that will be annotated manually to enrich the neural network in its possible learning

Source: Authors' research
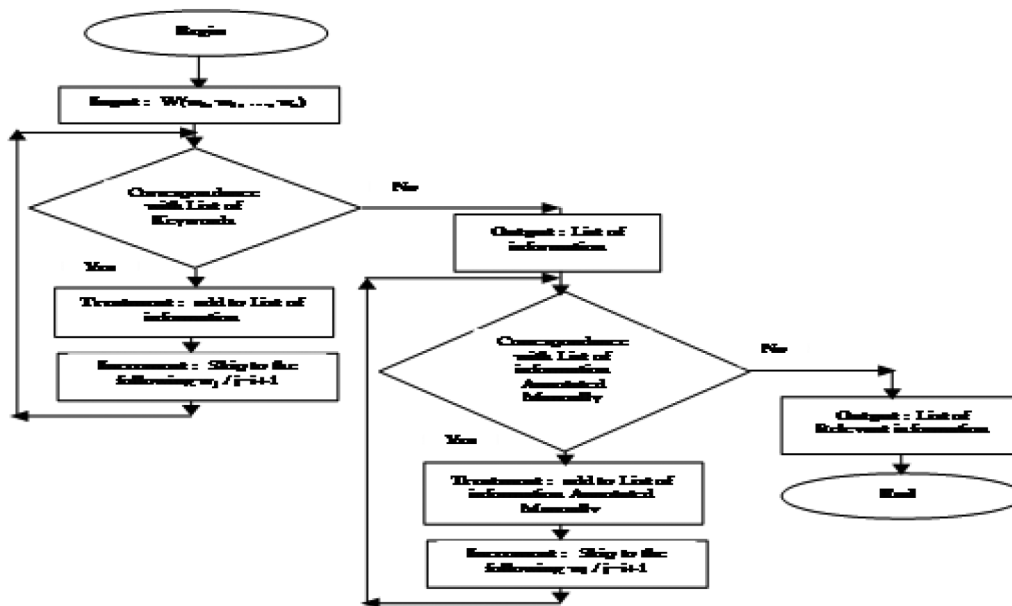
Figure 10. Flow chart for determining relevant information
using a set of manually annotated information

Source: Authors' research

4. CONCLUSION

A new ad hoc real-time automated learning environment with accurate forecasting of volatility
from financial time series is presented here, based on a new multi-view recovery model from

multiple sources using Smart data. Such an approach is really useful for paramount in financial decision making, but also for help to make strategic appropriate decisions. This work has some limitations as follows.

1. The contents are known to be written informally, the contents follow no syntax, no logic, are noisy, may contain spelling mistakes, abbreviations, etc.
2. There is only collected English content posted. As a result, domain-specific biases may exist in the dataset.
3. Side by side, content published in other languages may contain different types of reasons in relation to English content.
4. The features of the automated learning environment have been developed based on the analysis of specific content.

As for future works, this study can have many potential applications for the future. The proposed model can be completed with a series of new research questions and perspectives. Pure improvements can start from:

1. An improvement of the validation of the information before launching this update information in order to avoid errors inaccurate forecasting of volatility from financial time series, with abusive information.
2. The extension of the Real-Time automated learning environment to process images and videos of social media with the recurrent neural network trained with Long Term Memory Network.
3. The use of multiple languages, notably local languages.

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DISRUPTIVE TIMES AND HIGHER EDUCATION IN ECONOMICS AND MANAGEMENT: IMPORTANCE OF DUAL ASSESSMENT

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Abstract: *This paper examines quantitative methods of dual assessment of students' skills in higher education. Through dual assessment, it tests skills important to adapt to a volatile, uncertain, complex, and ambiguous environment (VUCA). It does so by comparing on the one side student-generated grades and on the other side grades generated by their lecturers. The study was done on the sample of the entire 3rd-year generation of Zagreb School of Economics and Management students (N=79). Lecturers (N=2) who were doing the assessment have multiple years of grading experience. Findings suggest that overall, there are differences between self-assessment of students and assessment made by lecturers. Furthermore, there are also gender differences in student's self-assessment. Whether for online or face-to-face courses, faculty and students may benefit using the dual assessment approach in developing more skilled students that are capable to adapt to working in ever changing and uncertain environments.*

Keywords: *VUCA Environment, Self-assessment, Presentation skills, Zagreb School of Economics and Management.*

1. INTRODUCTION

In education, the term assessment refers to the wide variety of methods and specific tools that educators use to evaluate, measure, and document the academic readiness, learning progress, skill acquisition, or educational needs of students (Bound, 2003). It represents an integral part of conducted lessons and determines whether or not the goals of education are being met. As stated by Sadler (2010), assessment inevitably shapes how students approach learning, including what they focus on and how they go about learning it. This research focused on disruptive times and higher education in economics and management. It looked at skills important to adapt to a volatile, uncertain, complex, and ambiguous environment (VUCA), as well as ways to measure these skills.

Assessment can be considered as the systematic process of documenting and using empirical data to measure skill and knowledge, as well as to measure beliefs and attitudes among students. To maximize the potential of pedagogical innovations, assessment is the lynchpin (Evans et. al., 2015). A key aspect of assessment is to determine how well the desired student learning goals and outcomes have been met. Assessment has increasingly become a requirement imposed by accrediting agencies and state legislatures. Most accreditation agencies address the need for establishing learning goals and objectives, measuring results, and using assessment results to

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guide curriculum improvement, especially focusing on the skills that students will need to work in the future VUCA work environment (Mitri, 2005). Through assessment, the accomplishment of the intended goals may be more easily quantified for review, validation, and reporting (Bayless and Wilson, 2010). Different assessment modalities can be used for evaluation, for example, the dual assessment provided either by two or several lecturers, business community representative(s), and/or students who can evaluate the qualities of their own learning processes or can evaluate their colleagues. This research used rubrics to compare on the one side student-generated grades and the other side grades generated by their lecturers.

2. THEORETICAL REVIEW

Assessment in higher education and its possible measurement, total performance, the concept of creativity as well as management of assessment in higher education are recently a frequent topic of interest among many practitioners and scientists in the academia (Yorke, 1998, Brown and Glasner, 2003; Bhamani et al. 2014., Lynam and Chachia, 2018; James et al. 2019). Together with the recent changes in learning and teaching pedagogies, alternative assessment methods, such as self-assessment, are becoming more and more appreciated in educational practice. Self-assessment is one form of alternative assessment and has been suggested as a reliable and valid method for assessing students' communicative competence (Thanh Tran, 2019).

In the disruptive times that the world is facing today, together with its unprecedented complexities, higher education is expected to educate and prepare students for dealing with complex issues in both scientific as well as professional environments (Hanžek, 2020). The education system, therefore, needs to adapt to the process of obtaining students with skills helping them in adapting to what companies term as a VUCA environment, meaning volatile, uncertain, complex and ambiguous (Davie, 2013). Therefore, higher education institutions should develop problem-solving skills so that students are able to solve problems that have no clear solutions (Delaney et al., 2017). Grasping challenges need to be supported with appropriate skills; Institute for the Future released report "The Future Work Skills 2020", where they have identified adaptive thinking and multidisciplinary skills important for the future work environment (Davies et al., 2011). More so, skills needed for the VUCA work environment have been identified and these are: communications skills, the ability to learn independently and in trans-disciplinary ways, teamwork in real and virtual ways, thinking skills, digital skills, ethics and responsibility, self-management, cross-cultural competency, social intelligence, and flexibility (Hogan et al., 2016).

During the process of learning, in order to get clear, more precise and complete picture of the total learning results quality, it is more than important to provide students with the ability to consider and to estimate their own level of performance during classes, as well as to identify the areas of their own possible further improvement, seen by their own eyes. This goes hand in hand with the level of their own self-perception and the image they have about themselves. The knowledge generated through the process of self-assessment can be further used in future student's professional life while directing their efforts in specific areas where they have recognized by themselves a possible need for further improvement, especially focusing on preparing students for the future VUCA work environment (Brown and Glasner, 2003).

The process of self-assessment can be considered as a serious learning and teaching exercise with the final purpose of providing a much better and clearer picture of the generated result dur-

ing the course and/or during the semester. On the other side, self-assessment requires students to reflect on their work and to judge how well they have performed in relation to the total set-up of assessment criteria. The focus is not necessarily on having students generate their grades, but rather providing opportunities for them to be able to identify what constitutes a good (or poor!) piece of work and to provide them with more detailed feedback. Some degree of student involvement in the development and comprehension of assessment criteria is, therefore, an important component of self-assessment (Boud, 2013). Self-assessment requires examination of work and determination of whether the work meets selected standards (Boud, 2013).

The concept of dual assessment in higher education, in contrast to assessment methods themselves as well as self-assessment conducted by students, has received surprisingly little attention in the literature, yet is of significant importance. The concept of dual assessment in higher education represents a challenge for the total outcome of learning quality in the field of higher education. The concept itself should be valuable for the betterment of the total educational process and quality of total student learning outcomes. As a result, there is an obvious place for improvement in the field of conducting dual assessment methodology in higher education, starting from a sharper focus on quality. It is to be considered as a possible source of competitiveness in higher education, as well as a potential source of satisfaction for the user. It belongs to the new teaching methodology in the era of global education competition where innovations are required.

Yet surprisingly, there is no significant number of authors such as Adachi et al. (2017) who have recently paid serious attention connected with strategic challenges of dual assessment process and concept in higher education, its relevance and possible further development within a highly competitive educational market, where competitive advantage can be gained based on total quality management. This can be applied to the total dual assessment concept, which, if properly conducted, can influence significantly on total satisfaction level among lecturers as well as among students (Xiao and Lucking, 2008; Beaumont et al., 2011; Maggs, 2014). The concept itself should be considered as a logical and needed innovation in the field of higher education.

The strategy of integration of assessment methods in higher education combined with student's self-assessment contribution can help in developing of effective grading strategy and effective course execution. Additionally, this practice represents a challenge of feedback in higher education which sets completely new standards for better-qualified learning and grading outcomes. Assessment feedback is one of the most important components of the learning process (Hendersson et al., 2019). Due to the competitive and turbulent nature of higher education, even the best organizations will start experiencing performance problems if they are not willing or able to innovate and introduce change (Warter, 2019).

By analyzing the important features of assessment and self-assessment and taking into account the fact that there are not enough papers dealing with the concept of applying dual assessment in higher education focusing on the future VUCA work environment and important skills that students need to have, the question arises of the untapped potential of applying dual assessment in terms of raising the level of satisfaction with the service provided and delivered, both on the part of the students and the lecturers. It also raises the question of the potential of creating a more concrete and comprehensive picture regarding the quality of the final grade. As such, there are significant assumptions that dual assessment as an innovative concept might also have an impact on competitiveness in today's highly competitive higher education segment.

3.   METHODOLOGY

3.1. Participants

The participants in this study were students enrolled in the course "Marketing Management" at the Zagreb School of Economics and Management (ZSEM). All students enrolled in the course were in their third year of study and had a previous self-assessment experience from some of the previous listened courses. This study is therefore done on the sample of the entire third generation of full-time students (N=79) during the academic year 2017/2018. Lecturers (N=2) who were doing the assessment have multiple years of grading experience.

3.2. Procedures and Analysis

This research focused on one of the quantitative methods of dual assessments of students' knowledge in higher education. It was done through comparing, on the one side, student-generated grades, and on the other side grades generated by their lecturers. As a formal part of the course, students were expected to deliver final presentations. The presentations given during the course lasted approximately 25 minutes. Before presentations, all students have been instructed about effective presentation skills by their lecturers. Also, in the second year of their study, they have three mandatory communication courses: Business Communication, Business communication in English, and Rhetoric. In all three it is mandatory to do a presentation or give a speech, as well as to analyze other speakers' and students' speeches and presentations.

Following each presentation, students were asked to individually complete presentation rubrics comprised of eight categories as follows: (1) organization of the presentation; (2) visual quality; (3) voice quality and speech tempo; (4) performance and non-verbal communication; (5) professionalism; (6) media usage; (7) knowledge of the subject and (8) ability to answer the questions. Students graded their presentations using the scoring matrix ranged from 0-5 (0 and 1 points for low performance, 2 and 3 for average performance and 4 and 5 for above average performance), yielding a maximum possible score of 40 points. These performance levels which differ from 0 to 5 were explained to students and were in detail explained in rubrics. The self-assessment and lecturers' assessments were carried out independently of each other, using the same rubrics and scoring matrix. After all presentation sessions finished the total score for each participant was calculated. The weighting of the assessment task was 15% of the overall course grade. Participants were informed about this percentage of weighting at early stage in the course semester. Final grades of students for presentation were made by calculating an average of lecturers' rubrics and self-assessments were used for the purpose of this research and for the calculation of the 15% mentioned previously.

The research answered the following questions: (1) did students over or underrated themselves in comparing to lecturers' assessments? (2) are there gender differences in self- assessment? (3) what are the categories in rubrics where grades overlap and what are the categories where they differ the most? and (4) how do results correlate with student's final grade? After all the rubrics were conducted, the analysis was made using excel tools. Results and discussion of the research are described below in detail.

4. RESULTS AND DISCUSSION

Results for lecturers' assessment and self-assessment are presented in Table 1, as well as the final grades that students got from lecturers at the end of the semester (second column).

Table 1. Overall results of rubrics evaluations

Gender	Final grade on the course	Overall results Lecturers	Overall results Students
M+F	3.67	32.85	33.39
M	3.22	31.3	33.28
F	4.38	35.19	33.57

The first set of research questions (1. and 2.) aimed to answer if there are differences between self-assessment and lecturers' assessment and if there are gender differences in self- assessment. For both questions, the answer is yes. The results show that overall students rate themselves with slightly higher grades than lecturers'. This goes in favor of what Bolívar-Cruz and Vera-no-Tacoronte (2018) discovered about self-assessment of oral presentations. Their results show that students give themselves higher scores when self-assessment has an impact on their grades.

Looking into gender differences among students, it can be seen that male students rate themselves with a slightly lower grade than lecturers' while female students rate themselves with a slightly higher grade than lecturers'. Overall self-assessment of both female and male students is the same, i.e., average score is the same for both groups (F=33.57, M=33.28). However, female students have higher final grades on the course (F=4.38, M=3.22) which are given at the end of the semester for overall success on the course by lecturers (Table 1). Since these presentations are held at the end of the semester it may be that the female students were already assessed better during the semester by lecturers so they were more encouraged to grade themselves better. Bolívar-Cruz and Verano-Tacoronte (2018: 98) calculated the effect of confidence on self-assessment and discovered that speaker's confidence significantly affects women's self-assessment. Meaning, that it may be that the notion of higher grade in case of female students in this study enhanced their confidence and influenced their self-assessment.

Table 2. Results of rubrics by category

	Organization of the presentation		Visual quality		Voice quality and speech tempo		Performance and non- verbal communication	
Gender	PROF	STU	PROF	STU	PROF	STU	PROF	STU
M + F	4.36	4.03	4.27	4.31	4.14	3.94	4.09	4.08
M	4.13	4.09	4.11	4.26	3.91	3.94	3.83	4.13
F	4.71	3.95	4.52	4.40	4.48	3.95	4.48	4.02
	Professionalism		Media usage		Knowledge of the subject		Ability to answer the questions	
Gender	PROF	STU	PROF	STU	PROF	STU	PROF	STU
M + F	4.01	4.2	4.01	3.96	4.08	4.60	3.92	4.35
M	3.85	4.17	3.87	4.02	3.94	4.55	3.7	4.4
F	4.26	4.24	4.23	3.85	4.29	4.66	4.26	4.27

Differences according to the categories in rubrics are illustrated in the table above. In the current study, students graded themselves with the lowest grade for Voice quality and speech tempo, while lecturers graded them with the lowest grade for Ability to answer the questions (Table 2).

On the other hand, they gave themselves the higher grade for the Knowledge of the subject, while lecturers thought they deserved the highest grade for the category Visual quality. Interestingly, the overall highest grade was given by the students for category Knowledge of the subject (4.60).

As can be seen from Table 2, there are some gender differences according to results for categories in rubrics. Closer inspection of the table shows that female students gave themselves lower grades for non-verbal communication and voice than that of lecturers', and male students graded themselves with a higher grade for professionalism and knowledge than that of lecturers'. These results can be linked to some stereotypes that exist in society and that are connected with gender roles. More precisely, that males are perceived as more confident in their knowledge and females as less confident in their non-verbal communication. As mentioned before, Bolívar-Cruz and Verano-Tacoronte (2018) found that women's self-assessment is conditioned by their confidence as a speaker, while male students' self-assessment is not. On the other hand, female students were closer to lecturers' grades while rating their knowledge (categories: Knowledge of the theme and Ability to answer the questions). This may be due to their higher final grade. Here it has to be pointed out, that when analyzing gender differences, one has to be careful and not only look at gender as biological sex, but rather as social construct (Wodak and Benke, 1998). For the category in the rubrics Organization of the presentation, both groups of students assessed themselves with a lower grade than that of lecturers'. This result may be explained with their knowledge of how a great presentation should look like that they learned in Business Communication courses in their second year of study that maybe made them more critical in assessing that category.

Since communication skills are among key skills that students need to develop for working in a volatile environment (Hogan et al., 2016), and one way of improving them is through assignments of self-assessment, these types of activities in higher education are very important. Furthermore, self-assessment assignments can help students to be more self-critical and that could lead to greater objectivity and better thinking skills – again skills needed in VUCA environment (Hogan et al., 2016). Of course, there are some setbacks too, namely, our results confirmed that summative evaluation (self-assessment affecting the final grade) also have an influence on self-assessment results, i.e., students tend to grade themselves with higher grade when they know that self-assessment influences their final grade on the course. This could be improved by changing the grading of self-assessment and its goal. More precisely, to instruct students that they will get a higher grade for self-assessment task, the more similar it is their self-assessment rubrics with that of the lecturer.

5. CONCLUSION

Findings suggest that communication skills are very important for today's ever-changing work environment, especially VUCA one (Hogan et al., 2016). One of the possible ways of their improvement is through assignments of self-assessment in higher education. This study confirmed that in general there are differences between self-assessment of the students and assessment made by the lecturer, and there are also gender differences in self-assessment. The results show that male students rate themselves with a slightly lower grade than lecturers' while female students rate themselves with a slightly higher grade than lecturers'. Overall self-assessment of both female and male students is the same. However, female students have higher final grades on the course. These findings confirmed that summative evaluation (self-assessment affecting the final grade) also influences self-assessment results.

Due to the positive reactions of students to self-assessment tasks, this strategy of integration of assessment methods in higher education combined with student's self-assessment contribution is believed to help in developing of effective grading strategy, better course execution and continuous improvement in general. Also, the ultimate goal is to produce graduates who are equipped to be successful in their chosen careers, and assessment plays an integral part in the process (Bayless and Wilson, 2010). Findings suggest that whether for online or face-to-face courses, faculty and students may benefit from using the dual assessment approach in developing more skilled students that are capable to adapt to working in ever changing and uncertain environments. It is therefore decided that dual assessment will also be introduced in other courses within the ZSEM program to set a new standard for better-qualified learning and grading outcomes. Self-assessment and other measures of learning can assure external constituents such as potential students, business community, trustees, supporters, and accreditors, that the organization better meets its goals.

Finally, this research was done on a limited number of third year students from higher institution in Croatia, so it would be interesting to expand the study on students from other study years and countries. Also, other skills important for the VUCA work environment proposed by Davies et al. (2011) should be measured in the same way through dual assessment and rubrics, especially because student perceptions of rubrics are generally positive (Reddy and Andrade, 2010). Suggestions for future research may include the use of more rigorous research methods, more attention to validity and reliability, and research in diverse educational contexts.

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EDUCATION MANAGEMENT AND INFORMATION AND COMMUNICATION TECHNOLOGIES

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Abstract: *The education system is facing the permanent challenge to adapt to the constantly changing states in science, technology, and economy, and it plays an important role in the overall society development and socio-economic progress. In order to establish a high-quality, efficient education system, it is necessary to develop the teaching staff competences in accordance with the innovations in the education field. The quality of the teaching process largely depends on the extent to which modern teaching methods are applied, which are, in the contemporary context, based on the use of the information and communication technologies in the teaching process (ICT). Following the technology advancement and the information channels transformation, the role of the teacher has changed, and in this new context the teacher is assigned with a new role of the "teaching manager", or the leader of the teaching process. This paper shows comparative analyses of the relations between the teaching stuff ICT training and the organisation of the teaching process, when observed in traditional and online teaching settings. The research was conducted in Serbia in January and February of 2021, during the Covid-19 pandemic, and included the sample of teachers who work in primary schools (N=609).*

Keywords: *Teaching staff training, Information and communication technologies (ICT), Teaching management, Online learning, Traditional learning.*

1. INTRODUCTION

Society development has always been affected by different factors inducing constant changes in all the spheres of society, including the education sector as well. The changes in this sector are mostly influenced by those in the fields of science, technology and economy, but the particular circumstances in the natural environment, like pandemics, for example, should also be taken into account. The prominent characteristic of the modern society is that the duration of knowledge is shorter than ever before, which, among other things, requires lifelong learning (Kirin, Jovanac, etc., 2014). In order to adjust to the contemporary societal context, empirical researches indicate the need for the continuous improvement of the education system (Kirin, Sedmak, etc., 2014), which, among others, implies the permanent training of the teaching staff in regard to the efficient implementation of the innovative teaching methods, the organisation of the teaching process, and the educational management. According to the literature, the term educational management refers to the process of planning, organisation, guidance and control of the financial, human and information resources of the educational institutions, in order to effectively achieve the education goals (Šormaz, 2017). Efficient educational management is based on the permanent specialisation and improvement of skills and expertise of the teaching staff (Šormaz, 2017). The effectiveness of the educational process and the quality of the edu-

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cational institutions performance are highly dependent on the efficient implementation of the modern teaching methods and educational management tools, which are nowadays based on the Information and Communications Technologies – ICT (Al-Ababneh & Alrhaimi, 2020). The education system is facing significant challenges due to the implementation of the new educational technologies, which have introduced new teaching models, demanding the improvement of the teaching staff competences, especially in the field of educational management. In order to achieve good management skills, it is necessary not only to expand the knowledge in theory but also to learn how to implement this knowledge in practice. The introduction of ICT in the teaching process has contributed to the major change of the teacher's function, putting an accent to the teaching process management. In this manner, the students are instigated to develop creative thinking and achieve knowledge as active participants in the learning process (Rizescu, Bucata & Herman, 2020).

Due to the Covid-19 pandemic, during certain periods the schools in Serbia were closed and the online learning model was introduced. Most of the teachers faced the application of the ICT in the teaching process for the first time, both in regard to the new didactic tools and the organisation of the teaching process. This research aimed to determine if, and to what extent, the previous training in ICT influenced the teachers' ability to adapt to the new circumstances, as well as their attitudes in regard to the introduction of the new online learning model.

2. TEACHERS' COMPETENCES

As well as in other fields, industry for example, managing the class also requires certain skills and expertise. The term *classroom-management* refers to every activity that takes place in the classroom with the main goal to provide the environment for effective learning practice, including teaching activities and teacher's engagement (Arsenijević, Andevski & Banić, 2018). Efficient classroom management includes teachers' competences for teaching, instructions giving and the organisation of the teaching process, meaning that the role of the teacher includes three different functions: a teacher, an instructor and a manager (Kulić & Despotović, 2004). The *instructor function* implies teachers' competences in regard to students' preparedness, the implementation of various teaching techniques and didactic tools in the teaching process, and connection of the new knowledge to the broader learning context and its application in practice. The *organisation function* implies teachers' problem-focusing skills, and competences in regard to the teaching material preparation and the selection of teaching forms and methods, as well as the time and space management (Ljujić, 2011b; according to Kulić and Despotović, 2004). Following the advancement of technology, the implementation of ICT in the teaching process and the development of the new teaching models, the teachers' competences have been changed. This change includes the development of the new teachers' competences concepts, or the modification and improvement of the existing ones, as it is the case with the competences for classroom management.

For Ljujić, the classroom management competences are equally relevant for both traditional and online teaching models, and they imply teaching activities design and schedule, time management and the teaching process coordination, teaching goals definition and realisation, decision making etc. (2011b). When it comes to the online educational model, some authors propose the specific teachers' competences categorisation, including 31 teaching competences divided into 4 groups: 1) general competences, 2) distributive competences, 3) presentational competences, and 4) managerial competences (Aragon & Johnson, 2002 in Ljujic, 2011b). According to these au-

thors, the teachers' management competences include the appropriate teaching technology selection, as well as the design, development, implementation, support and evaluation of the teaching technology in the online educational model (Ljuijć, 2011b). This approach highlights the importance of the basic managerial skills in regard to managing the implementation of technology in the teaching process of the online educational models. In order to implement the new teaching methods successfully, it is necessary to take into account both technological and pedagogical aspects of the process, meaning that teacher, as a manager, has to be in charge of the new teaching materials, as well as the organisation of the teaching process (Šain, 2017). The goal of educational management is to ensure the effective and high-quality training and education of individuals by optimizing the educational process itself, in regard to both personnel and technologies, among others. Some empirical studies showed that curricular support, as well as teacher updating, are of great importance for the successful education management practice. In this sense, the constant preparation of seminars and trainings enable the teachers to be up-to-date with the contemporary educational practices (Gorozabel-Quiñonez, Alcívar-Cedeño, etc., 2020). To ensure the effectiveness of the education management, it is necessary to create an effective organisational and methodological model of training, retraining, improving knowledge and experience of the educational institutions' personnel, in order to develop teachers' knowledge and skills and create work environment that supports teaching and learning (Al-Ababneh & Alrhaimi, 2020).

3. RESEARCH METHODOLOGY AND DATA SOURCES

The goal of this empirical research was to determine the effectiveness of the ICT training previously attended by teachers (before the pandemic and the transition to the online teaching model), in regard to the teachers' attitudes towards the online teaching model. The following hypotheses are specified:

H1: The choice of the online teaching model depends on the teachers' competences required for that teaching model.

H2: The teachers who have previously attended ICT training have more positive attitude towards the online teaching model compared to the teachers who have not.

H3: The teachers' competences for online teaching self-assessment do not depend on gender.

The specialised questionnaire was designed, consisting of 12 closed-ended questions regarding socio-economic factors, and 16 closed-ended questions regarding teachers' experiences and attitudes about the organisation of the teaching process in both traditional and online teaching models. All the regions of the Republic of Serbia were covered by the research, which qualifies this research sample as appropriate in regard to the aim of the research. The research sample included 609 subject teachers, of which 75.5% are female. This is in accordance with the current state of the gender structure in the teaching profession in Serbia. The respondents teach different subjects (47% of them in the field of natural sciences and mathematics), and the highest percentage of them works in a school situated in the narrow city centre (35%). With the respondents' work experience span from 1 to 30 years, the sample of maximum diversity was provided (Patton, 2001). In regard to the previous ICT training, 52.1% of the respondents claimed they had previously attended some form of the training course, as presented in Table 1.

4. RESEARCH RESULTS

Tre research results showed that the highest percentage of teachers (81%) prefer the traditional learning model, as presented in Table 1.

Table 1. The teaching model preferences

	Frequency	Percent	Valid Percent	Cumulative Percent
Traditional teaching is better	493	81,0	81,0	81,0
Online teaching is better	40	6,6	6,6	87,5
There is no difference	76	12,5	12,5	100,0
Total	609	100,0	100,0	

Following the preposition that the choice of the preferred teaching model depends on the teachers' competences, the self-assessment of the online teaching competences was observed, as presented in Figure 1. The results showed that the biggest percentage of teachers, 47%, rated their competence level as *medium*, while 50% of teachers rated their competence level as *high* or *very high*. Pearson Correlation (r) between the teaching model and teachers' competences self-assessment was proven weak (0.271), as presented in Table 2. This means that the self-assessed competences for online teaching and the preference for that teaching model are not significantly related.

Table 2. Correlation between the online competences and the preferred teaching model

		Competences for online teaching	Preferred teaching model
Competences for online teaching	r	1	.271**
Preferred teaching model	r	.271**	1
	N	609	609

Correlation is significant at the 0.01 level (2-tailed).

According to the research results, the first hypothesis, that the choice of the preferred teaching model depends on the teachers' competences, is not fully confirmed. The shortcomings of this conclusion related to the objectivity of self-assessment, should also be taken into consideration.

In order to verify the second hypothesis, the teachers' competences in relation to the previously attended ICT training were examined, as presented in Table 3 and Figure 1. It was stated that the number of teachers who had previously attended ICT training was almost equable to those who had not (317 and 292 respectively).

Table 3. Competence for online teaching in relation to previously attended ICT training

		Previously attended ICT training		Total
		Yes	No	
Competence for online	Very bad	0	3	3
	Low	3	13	16
	Medium	121	169	290
	High	137	80	217
	Very high	56	27	83
Total		317	292	609

The research results showed that a significantly higher percentage of teachers who had previously attended ICT training courses rated their competences as *high* or *very high*. In the group of teachers who had not previously attended ICT training courses considerable number of respondents rated their competences as *medium*. This calls into question the objectivity of self-assessment when it comes to rating one's preparedness to perform work assignments in new conditions, and the second hypothesis could only be partially accepted.
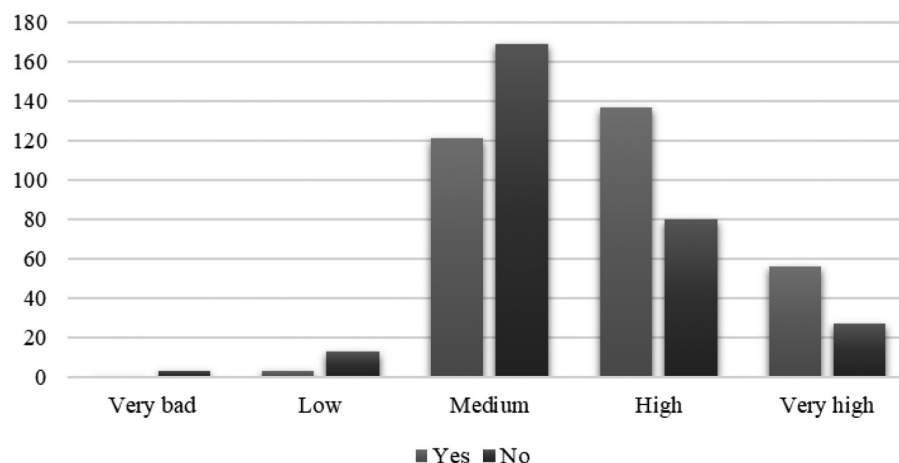
Figure 1. Competence for online teaching in relation to the previously attended ICT training

In order to determine if the previous ICT training influenced the increase of the competences for teaching and classroom management, only the group of teachers who had previously attended ICT training was observed, in relation to the preferred teaching model, as presented in Table 4. The highest percentage of respondents, 76.5%, still chose the traditional teaching model as preferred, while 23.5% of respondents stated that the online teaching model was better, or that there was no difference. Among the respondents who had not previously attended ICT training only 14.5% thought that the online teaching model was better, or that there was no difference, as presented in Table 5.

Table 4. Previously attended ICT training and the preferred teaching model

	Traditional teaching is better	Online teaching is better	There is no difference	Total
Frequency	243	25	49	317
Percent	76,7	7,9	15,5	100,0
Cumulative Percent	76,7	84,5	100,0	

Table 5. Previously not attended ICT training and the preferred teaching model

	Traditional teaching is better	Online teaching is better	There is no difference	Total
Frequency	250	15	27	292
Percent	85,6	5,1	9,2	100,0
Cumulative Percent	85,6	90,8	100,0	

It can be concluded that the previous ICT training does have an impact on the choice of the preferred teaching model, but that this impact is not significant. The question also emerges about the quality of ICT training courses, and the possibility of a successful application of online teaching methods in practice, after the course completion.

In the next phase, the respondents' self-assessment of the online teaching competences in relation to gender was observed. Since the sample was not equable in terms of gender, the results were given in percent, as presented in Table 6.

Table 6. Competence for online teaching in relation to gender (%)

	Very low	Low	Medium	High	Very high	Total
Male	0.00	0.67	38.93	35.57	24.83	100
Female	0.65	3.26	50.43	35.65	10.00	100

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It was shown that a higher percentage of female teachers rated their competences for online teaching as *low* or *very low*, compared to male teachers. The *medium* rate of the competences was more represented in female examinees, the *high* rate was equally represented in both groups, while the *very high* rate prevailed in male examinees, as presented in Table 6 and Figure 2. Taking into account the subjectivity of self-assessment, the third hypothesis cannot be accepted.
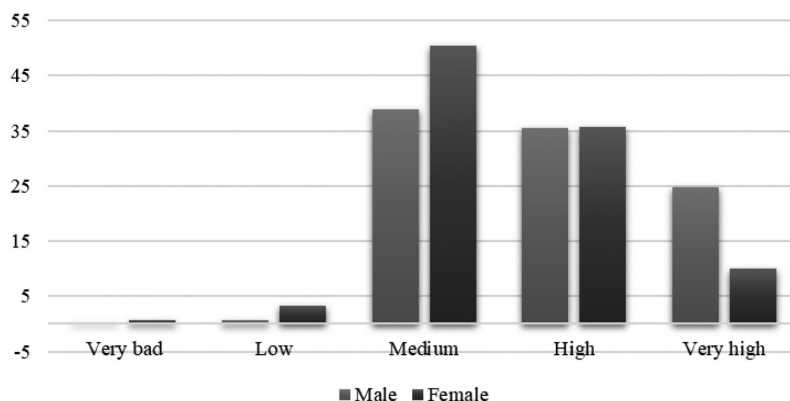
Figure 2. Competence for online teaching in relation to gender

The research results showed that approximately 97% of the respondents who had previously attended ICT training rated their competences for online teaching as *medium*, *high* and *very high*. On the other hand, significantly higher percentage of respondents who had not previously attended ICT training rated their competences for online teaching as *medium* (57.88%), while the percent of respondents who rated their competences as *high* and *very high* was significantly lower compared to the first respondents' group, 43.21% and 17.67%, respectively. In the interpretation of these research results, the question of self-assessment objectivity should be taken into consideration.

5. CONCLUSION

These research results showed that the previously attended ICT training proved useful in the emergency caused by the Covid-19 pandemic, which is in consent with some previous studies (Farah, 2021). Although the lack of objectivity of the teachers' self-assessment could be considered a weakness of this research, it could be mitigated by taking into account the high-school students' feedback on this matter, who recognised the poor student-teacher communication from the technical aspect, the volume of the teaching material, and the questionable objectivity of the knowledge evaluation as the biggest disadvantages of the online teaching model (Vasojević, Kirin, Vučetić, 2021).

In order to establish an efficient, high quality education system, it is necessary for the educational management to develop in the course of innovative educational practices, especially considering the innovations in science and technology. In this manner, the educational institutions are supposed to carry out continuous teaching staff training, which would provide the development of new didactic strategies, and contribute to better functional knowledge. This underlines the purpose of teachers to produce a strategic approach in which the abilities and skills of infants and adolescents are potentiated.

ACKNOWLEDGMENT

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THE IMPACT OF MOTIVATION OF PRIMARY STUDENTS ON THE IMPLEMENTATION OF DISTANCE LEARNING (SPORTS DAY EXAMPLE)

Mihaela Bernetič Perhavec[1]

Abstract: *The article contains the description of the bases and starting points of primary physical education and sports day in Slovenia and other European countries. It presents the motivational point of view of the students at the implementation of distance learning for a sports day. There is a graphic display of the results of an online survey that was carried out among teachers and students of Komen primary school, branch of Štanjel. Fifty students from the 1st to 6th grade and 7 teachers took part in the survey. The purpose of the article is the research about what influences the motivation of students in distance learning. From the collected data it was found out that the ICT and interdisciplinary connection have played the most important role in the implementation of the sports day. The answers of the teachers show that besides the ICT devices, the weather, the family and interdisciplinary connections are the main motivators for the children. The students were very motivated at the implementation of the distance sports day. The teachers, as well as students, have found advantages and disadvantages in the organization of a distance sports day.*

Keywords: *Sports day, Motivation, ICT, Interdisciplinary connection, Distance learning.*

1. INTRODUCTION

In the school year 2019/2020 the SARS-CoV-2 pandemic caused the "normal" way of life to come to a grinding halt and had a huge impact on the operation and activity of the school system. After the closure of schools, the pedagogical process was transferred online. Distance learning lasted from the beginning of March till the end of May 2020. A similar situation occurred in the school year 2020/21 with the emergence of the second wave of the coronavirus. All the primary schools in Slovenia shut their doors and the distance learning re-started. In the second wave, students have had online lessons since November 2020. Teachers, as well as students, have found themselves in a situation that requires excessive use of computers and other ICT devices, and a lack of time and motivation for physical activity.

2. PHYSICAL ACTIVITY AND NEED FOR ACTIVITY

Physical activity is a basic human need, walking is the most elementary form of natural movement. With the right support in the family and later in kindergarten and at school, we affect the child's later lifestyle and we equip him with all the independent and active master of experiences, burdens and stress that life has in store for him (Škof, 2007).

Physical activity is one of the most important areas in a child's development. With proper physical activities, a child develops not only physical and functional skills but also cognitive, social and emotional skills and features. With different activities a child gains confidence in his body and physical capabilities and thus builds a proper perception of himself, he proves himself and

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creates an emotional connection with the environment. With different activities he comes to know the environment that surrounds him and keeps and improves his health (Videmšek in Pišot, 2007).

3. THE IMPACT OF THE SARS-COV-2 PANDEMIC ON THE PHYSICAL DEVELOPMENT OF CHILDREN AND DISTANCE LEARNING

It's a fact that during distance learning students spend the majority of time in front of their computers. According to the results of the internal survey of Komen Primary School (April 2020) the majority of students spent on average 5 to 6 hours a day for school work. This means nearly a third of the day. Besides, today's children spend the majority of their free time in a sitting position, in front of the TV or smartphone. Sports is the most appropriate means and an alternative to such a way of life. With sport, we can successfully reduce the consequences of a sedentary way of life.

As early as a decade ago the research showed that the percentage of population that performs the majority of their daily tasks in a sitting position, was never higher (Brettschneider and Bunemann, 2005, v Šimunič, Volmut and Pišot, 2010). If we add a sedentary way of spending free time we can soon figure out that daily physical stimulation has decreased in such a way that physical inactivity as one of the factor of chronical non-infectious diseases has reached a dimension of a pandemic (Biddle, Gorely in Stensel, 2004, v Šimunič, Volmut in Pišot, 2010).

Even modern research shows preoccupying results of a sedentary way of life and consequently a drastic fall of physical skills in primary students. Here, distance learning plays an important role as it requires a sedentary way of work and learning. The actual state among the population of children and teenagers is alarming.

The SLOfit organization has done interesting research about the physical capacities of primary students. After the end of the pandemic in May and June 2020, the P.E. teachers at 100 primary schools performed measurements of the Sports Educational Chart including 20,000 thousand students. The collected data from all the students was compared to their data of the previous school year and a decline in all the physical capacities was big, the biggest at endurance and coordination of the whole body. Besides, more than half of the students experienced an increase of subcutaneous fat, which was shown also by the rapid increase of overweight children in the last year (https://www.slofit.org/aktualno/ID/216/Upad-gibalnih-sposobnosti-otrok-med-epidemijo).

The spread of the Covid-19 in almost all the countries of the European Union virus has contributed to the implementation of measures that led to a social distancing between us. Among those measures were also the closures of schools and consequently distance learning. This directly affects the basic physical activity of youngsters. The majority of international research in European countries that were dealing with the comparison of physical abilities of the students prior and after distance learning showed the decline of the basic motor abilities, mainly endurance and strength (https://www.mdpi.com/2071-1050/12/10/4072/htm).

4. DEFINITION OF THE SCHOOL SUBJECT PHYSICAL EDUCATION

The curriculum for physical education states that school physical education is a continuous process of enriching the knowledge, developing skills and characteristics and an important means for forming personality and relationships among individuals. With a regular and quality sports

activity, we contribute to a proportionate biopsychosocial development of a young person, re-laxation, neutralisation of negative impacts of a long-hour sitting and other unhealthy habits (https://www.gov.si/assets/ministrstva/MIZS/Dokumenti/Osnovna-sola/Ucni-nacrti/obvezni/UN_sportna_vzgoja.pdf).

The role of primary physical education is very important as its point is not only in the satis-faction of the child's need for movement. The purpose that physical education has is far-reach-ing: they comprise also the cognitive, moral and aesthetic side of pedagogical effectiveness. (Videmšek in Pišot, 2007).

The base for planning and implementing the school physical education in primary school is the syllabus. The syllabus is a national document that presents the professional base for work in primary school and defines the weekly number of hours that are dedicated to physical education.

The interesting fact is that in all the European countries they recognize the important role of physical education at school. The P.E. subject is part of all the major curricular frameworks and is mandatory in primary and lower secondary education throughout Europe. Everybody agrees that physical activity and sport are a useful way of spending one's free time (https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1467-3010.2012.01983.x   https://www.zrss.si/pdf/pos-pouka-os-sport.pdf).

Thus The European Commission has issued Recommendations to encourage physical education in schools including the instructions for the development of physical abilities in early childhood and creating useful connections with the sports sphere in schools, which was also accepted by the Council of Europe. The basic message is that school is the only institution that can pro-vide all the children to reach the recommendations about physical activities for young people through the formal (mandatory) curricular participation (physical education lessons and sports days in Slovenia as well) or additional (extracurricular) sports and corporal activities (Global recommendations about physical activity for health, 2010 https://www.europarl.europa.eu/Reg-Data/etudes/BRIE/2016/593559/EPRS_BRI(2016)593559_EN.pdf).

5.   COMPARISON OF THE NUMBER OF HOURS OF PHYSICAL EDUCATION IN THE COUNTRIES OF THE EUROPEAN UNION

The programme of physical education in Slovenia is performed in all the primary school grades. Physical education comprises 834 hours of regular lessons and five sports days in each school year.

Physical education is part of the school programme in the majority of the European countries, even if the approach and quantity of hours differ. The chart below represents the comparison of weekly hours of physical education and the percentage in the European countries.

From the chart, it is visible that among the European Union countries there are differences in the time that is dedicated to the physical education of the children at primary school (European Commission, 2013). France dedicates the most time to physical education, that's 108 hours, in Slovenia, Hungary and Croatia 15% of the total lesson time is dedicated to physical education. Approximately half of the European countries dedicate 10% of total lesson time to physical ed-ucation, only three countries 15%, whereas in Ireland only 4%. More preoccupying is the fact that approximately 40% of the EU countries dedicate 60 hours or less to physical education.
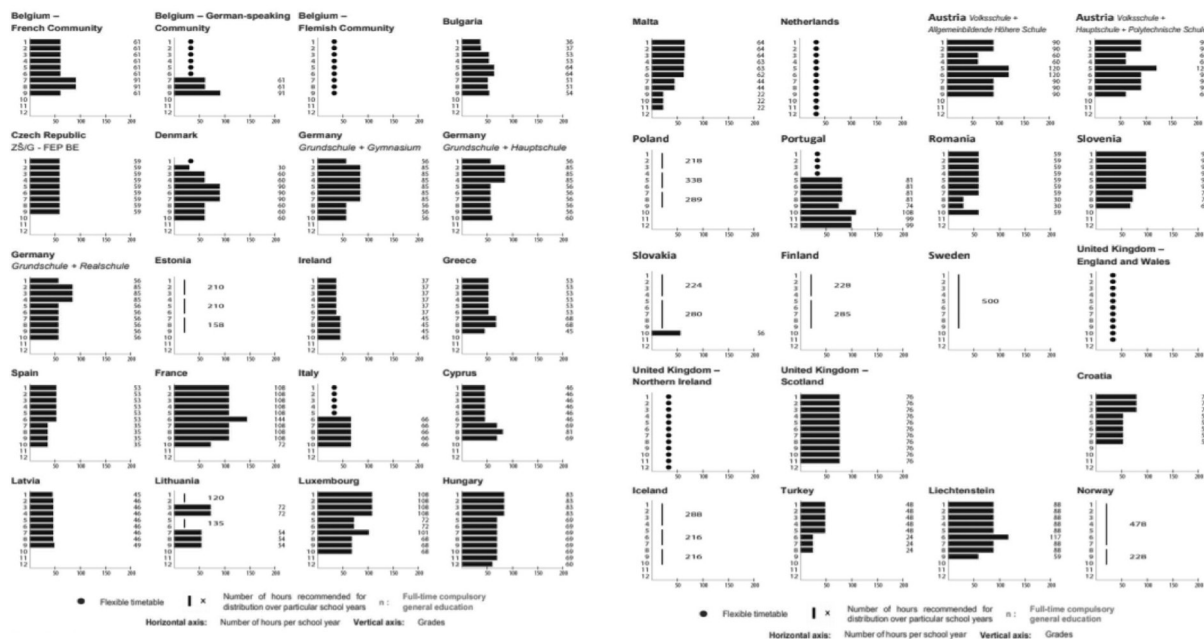
Chart 1. Recommended minimal number of hours (60 min) of physical education as mandatory programme and percentage (%) of the time of physical education lessons in the curriculum in primary education

Source: European Commission/EACEA/Eurydice, 2013. Physical Education and Sport at School in Europe Eurydice Report. Luxembourg: Publications Office of the European Union.

6. ACTIVITY DAYS AND SPORTS DAY

Activity days are that part of the primary school programme which connects different disciplines and subject areas included in the primary school syllabus. Activity days are performed in accordance with the school annual work plan that defines their content and organisational execution. Every single activity day lasts for 5 pedagogical hours.

Activity days can be organized separately for each class, collectively for a couple of classes or for the whole school. The planning and organisation of actual activity days are connected with the environment in which the school is situated and depend on the specificity of every individual school.

The goal of the sports day is that students satisfy the need for physical activity, physical expression and creativity, relax and amuse themselves. They get acquainted with different activities and sports in their free time, they practice for individual sports activities (https://www.gov.si/assets/ministrstva/MIZS/Dokumenti/Osnovna-sola/Ucni-nacrti/obvezni/UN_sportna_vzgoja.pdf).

7. SPORTS DAY AND INTERDISCIPLINARY CONNECTION

One of the important principles of modernizing syllabuses is also the connection and intertwining of knowledge. The connection of physical education with the content of other subjects contributes to the overall understanding of sports and its effects.

With such didactic approach teachers try to discuss the chosen topic in a most integral way or they try to look at the same problem from different points of view. Interdisciplinary connection is performed most effectively in activity days, project weeks and different forms of school

camps called school in nature. Physical education is a subject where it is possible to implement the goals of interdisciplinary curriculum content that do not have their own subject in the mandatory curriculum, but have an important role at overall formation.

8.   EUROPEAN SPORTS DAY

In recent years the international project European school sports day (ESSD) has taken place in Slovenia as well as in other European countries. The European school sports day represents a network of school sports days the main purpose of which is the promotion of physical activity and sport among youngsters. Thus we can simplify the whole thing and say that the European school sports day is dedicated to entertainment, collective games and supporting physical activity and health for everyone (https://www.edubuzz.org/innerwick/2017/09/29/european-school-sports-day/). The European school sports day gives schools the opportunity to:
- Promote physical education and school sport,
- Create entertainment and enjoyment with the help of the initiative for physical activity of youngsters,
- Encourage health and well-being for life-long learning,
- Encourage social exclusion,
- Develop social competences among peers and influence motivation.

9.   MOTIVATION

In professional literature we can read that motivation is one of the most important psychological processes. It's a process of challenge, guidance and regulation of human activity towards a goal or satisfaction of demands that was the source of motivation. Needs and instincts stimulate us, values, ideals and other motivational goals are those motivational elements that attract us. If a properly motivated behaviour or internal state that induces, directs and supports behaviour doesn't emerge, the motives cannot be realized (https://www.parentsinsport.co.uk/2019/03/10/how-can-you-help-motivate-your-children-when-it-comes-to-their-sport/).

We know many species/kinds of motivation. As two most important ones are intrinsic and extrinsic. Intrinsic motivation is innate and natural inclination for the development of our inner capabilities through learning for which an external stimulus isn't needed. This means that an intrinsically motivated man doesn't cling to external goals such as a reward, a good mark, acknowledgment and enforcement in public as intrinsic motivation stimuli are characteristic of him (curiosity, interests, excitement, enthusiasm and positive self-esteem.)

For extrinsic motivation are typical extrinsic motivation stimuli that originate from the environment, are direct and used by someone from the outside (parents, teachers, schoolmates, peers) in order to trigger the motivational process with them. Extrinsically motivated man functions because of external consequences (praise, reprimand, reward, punishment, evaluation and assessment), he isn't interested in the activity itself, work is just a means for reaching good and avoiding bad (http://www.solski-razgledi.com/e-sr-prispevek.asp?ID=177).

10.   MOTIVATION OF PUPILS

The main goal of each school is to motivate its students so that they can broaden their needs, change the consciousness, improve and enrich their behaviour. There isn't learning without mo-

tives and only the motivated students and the motivated teachers are successful. They are aware that it is exactly the motivation that changes the process of teaching into the process of learning.

Recently P.E. lessons teachers have had problems with the motivation of students. This is particularly visible with students that have bad motor skills. Sometimes a different approach is all that is takes to increase the student's performance for movement. One of the most frequently used ideas is the use of ICT at P.E. lessons as well as at implementation of the sports day. Students want novelties, dynamics and possibility of choice, which means what they like and what they dislike. The teacher has to help the student so that he realizes by himself that P.E. has a lot of positive effects. Here the pleasure at doing sport that the student learns through the game is of crucial importance.

Even the organisation of a sports day must base on the idea that develops motivational levers at students. This is triggered primarily by interest and curiosity, which are increased by the inclusion and use of ICT. The teacher must include them in the lesson and give an opportunity to the students to use them. In this way, he gives meaning and enriches the course of the activity day. Frequently he includes the contents of other subjects in such a way that he gives to students' other tasks that they carry out during the activity itself (interdisciplinary connection).

Numerous strategies and ways exist how we can motivate students with the purpose of reaching a goal and productivity increase. It's a fact that there isn't a unique rule that productivity increase will increase a student's bigger motivation and consequently productivity. Praise and encouragement are among the most widely used and effective means of motivation that have a positive impact on students' productivity especially in lower classes of primary school. It's important to pay attention that the teacher values the success and achievement of every single individual student. The quantity of the passed information mustn't be too big. The students like the feedback very much. It must include specific information that refers directly to the task. The teachers must give clear instructions and encouraging address. Thus the approach is very important. (https://childmind.org/article/how-to-help-your-child-get-motivated-in-school/).

11. RESEARCH, METHODS OF WORK, SAMPLE

After three months of distance learning, students and teachers were asked about the impact of motivation on distance learning. At the end of January 2021, an on-line survey was carried out among students and teachers at Komen Primary School about the impact of motivation of students on implementing a distance sports day. The survey was sent on 25 January 2021 to all the students from grade 1 to grade 6 (total 75 students) and teachers (7). Till 29 January 2021 50 students and 7 teachers answered the survey, which means 66% of students and 100% of teachers. Among teachers, which are all women, are 5 classroom teachers and 2 are P.E. teachers. Among the polled students there were 24 male students (48%) and 26 female students (52%). The average age of male and female students was 9.4 years, whereas the average age of teachers was 49.8 years.

12. FINDINGS OF RESEARCH AND ANSWERS
ON THE RESEARCHED QUESTIONS

Below you will find the results of the survey of primary students and teachers at the implementation of a distance sports day. Four research questions were answered in the survey.

The first research question is as follows: Were you motivated at the implementation of a distance sports day?

From chart 2 it is visible that 45 students or 90% of all the students that took part in the survey were motivated at the implementation of a distance sports day. Only 5 students or 10% of all the students that took part in the survey weren't motivated at the implementation of a distance sports day.
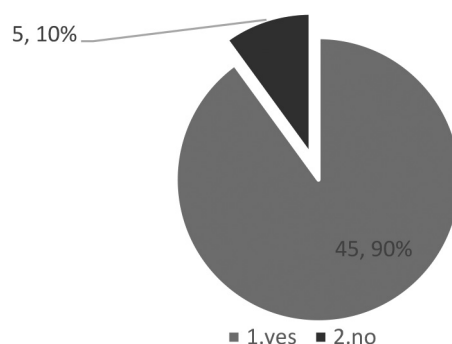
Chart 2. Were you motivated at the implementation of a distance sports day?

The second research question goes as follows: Was your motivation influenced by additional exercises (interdisciplinary connection with other subjects) and the use of smartphone, smartwatch (ICT)?
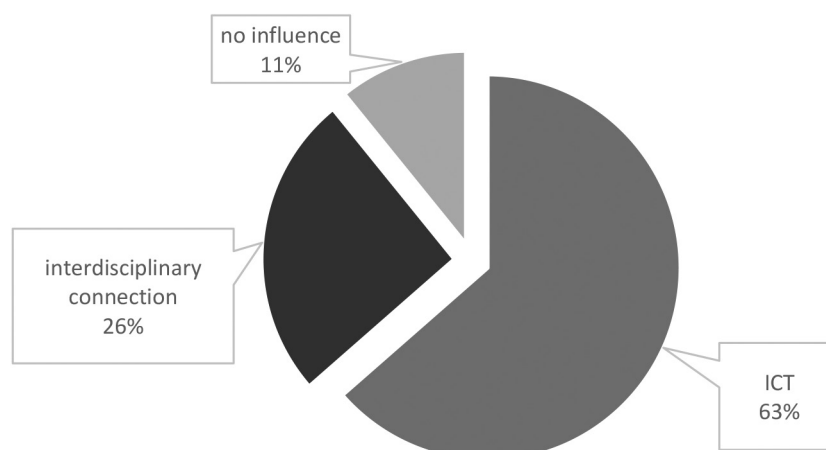
Chart 3. Was your motivation influenced by additional exercises (interdisciplinary connection with other subjects) and the use of smartphone, smartwatch (ICT)?

The question whether additional exercises and the use of ICT influenced the motivation of students was asked in this way: 13 or 26% of male and female students answered that their motivation is influenced by the additional exercises (interdisciplinary connection), 32 or 64% by the use of ICT and only 5 or 11% answered that their motivation is influenced by neither of the two.

The third research question goes as follows: What, in your opinion, most influences the motivation of students at organizing a distance sports day?

From the Chart 4 it can be seen that 4 teachers (57%) answered that motivation is influenced by the weather and family, 2 teachers (28%) by the intermediate tasks, interdisciplinary connection and the use of ICT.
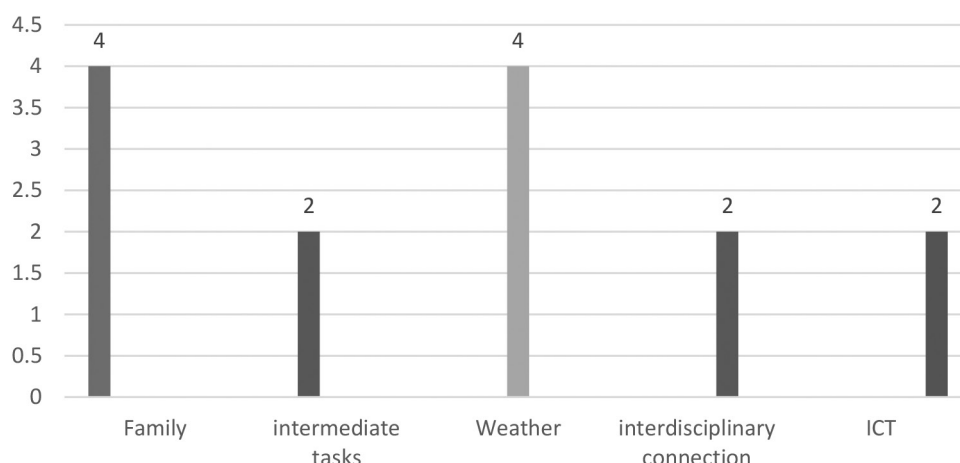
Chart 4. What, in your opinion, most influences the motivation of students at organizing a distance sports day? (teachers)

The fourth research question goes as follows: Do you think that additional tasks (interdisciplinary connection) and the use of ICT influence the motivation and performance of students at the implementation of the distance sports day?
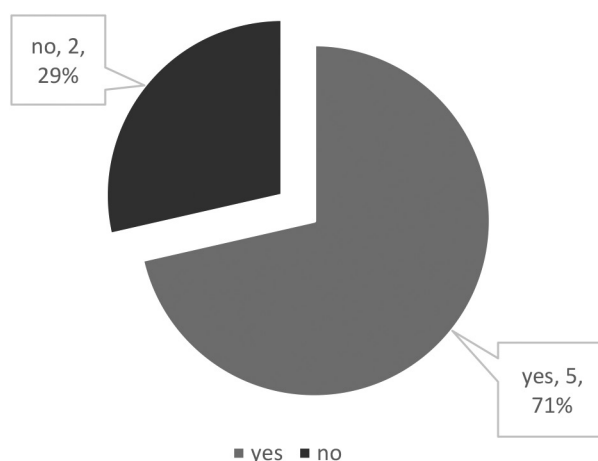
Chart 5. Do you think that additional tasks (interdisciplinary connection) and the use of ICT influence the motivation and performance of students at the implementation of the distance sports day?

Chart number 5 shows that the use of ICT and additional tasks (interdisciplinary connection) influence the motivation and consequently the productivity of students at the implementation of the distance sport day, as 5 teachers gave an affirmative answer to this question, which means 71%, only 2, that's 29% think that ICT and interdisciplinary connection don't have any influence.

13. CONCLUSION

According to the processed data of the survey questionnaire we can deduce that teachers will have to include ICT in sports lessons in the future and pass additional tasks to students in the form of interdisciplinary connection, as those are two main motivational levers of "modern" children. But teachers must take this with a huge amount of caution so that students don't become addicted to applications od smart devices.

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MANAGEMENT AND ECONOMICS STUDENTS' EMOTIONAL PROFILE

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Abstract: *Although emotionally resonant leadership is widely known, higher education doesn't focus on the development of emotional-social competencies of students. In this paper, the author presents the positive psychological profile of management and economics students and suggests renewing higher education. Data came from the 1st semester of economics and management students (n=826). Students in each year have a homogenous profile. They are extroverted, with an interesting positive psychological profile. Based on their emotional profile, students are good in many intrapersonal emotional intelligence factors, interpersonal skills, or mood. But, they have lower scores in stress-related emotional competencies. Their relatively low Grit score shows that they are likely to lose focus, although this is one key to work-flow and longtime perseverance.*

Based *on this study, universities can provide better facilities that focus near the hard competencies on soft skills as well – the labor market needs managers with high social and emotional competencies.*

Keywords: *Emotional intelligence, Higher education, Positive psychology.*

1. INTRODUCTION

The emotional competencies of university students are related to academic success (Parker et al, 2004; Séllei et al, 2021) and professional performance (Pertegal-Felices et al., 2017). This paper investigates whether students of management and economics have an emotional profile. In the business world nowadays it is clear that emotional intelligence and personality play important role in companies by effective working and handling work-related stress and better colleagueship or teamwork (Goleman, 1998; Goleman, 2001; Salovey, Mayer, 1990, Mayer, Salovey, 1997; Caruso, Salovey, 2004; Keltner, Haidt, 2001; Vernon et al, 2008). Emotional intelligence itself is even important in personal life as a basis of the workplace (Lopes et al., 2006) or academic success. Theoretically, the Bologna Declaration (EU, 1999) emphasizes the importance of the development of social competencies and emotional-related skills in higher education. The development of emotional skills is not directly related to the curriculum in most of the universities just in terms of competencies (Boddy et al, 1995; Jaeger, 2003) and there is only a little research evidence on how exactly the emotional profile of students enhance the academic performance (Low and Nelson, 2006; Séllei et al, 2021). It is already known that there are differences between different faculties and gender (Sánchez-Ruiz et al, 2010; Kafetsios et al, 2009; Pertegal-Felices et al., 2014) or depending on culture (Min et al, 2018), for example, social sciences students are better in emotional skills as technical students, and gender has a different effect depending on faculty (Larson et al, 2007; Sánchez-Ruiz et al, 2010) but the clear emotional profile of different students is not available yet (Ganotice, et al. 2016). Based on students' emotional profile an interesting question emerges from the literature and it focuses on a person-centered approach regarding the variable (academic outcomes) one and this would be useful for interventions (Ganotice et al, 2016).

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On the other hand, workplace success is a good combination of theoretical knowledge, and practically the right attitude, personality, and behavior (John, 2009; Rao, 2011; Rao, 2014). Even the successful transition from higher education to the labor market is an aspect where emotions play a key role, in most of the cases the human, soft or employability skills have 85% by job-seeking success (John, 2009; Rao, 2014; Caruso, Wolfe, 2001; Pertegal-Felices et al., 2014).

When it comes to people skills there are attitudes, behaviors (Tobin, 2006), which make people good leaders, listeners, and mediators (John, 2009). By describing the profile, we use a kind definition close to emotional competence which includes emotional experiences, the identification of emotions, the understanding and expression of emotions, emotional regulation, and the ability to use own and others' emotions (Mikolajczak, 2009), and this construct can be developed (Kotsou et al, 2011; Nelis et al 2011). In the case of soft skills optimism, personality traits, or social skills also play a role. These skills help people to bloom and develop even in an organizational context (John, 2009).

In the case of management students, their future role as leaders, emotional competencies are even more important, and it increases in disruptive times. When organizations struggle to reduce cost, increase productivity or change their working environment radically, it became important to have a leader who can identify employees' strengths to foster organizational success and human well-being (Dutton et al, 2006) and who has or able to learn emotional competencies as well (Fineman, 1997). There are several aspects of how for example empathy and positive organizational ethics are related to creating as fair workplaces as possible with responsible leaders (Arnaoud, Sekerka, 2010; Cameron, 2011; Dietz, Kleinlogel, 2013).

Future managers can understand economics and social situation fast, are good in interpersonal skills, can connect to others and can seek and give support, and can deal with a lot of stress (John, 2009) and this is a bigger part of their work beyond technical know-how (George, 2000; Carmeli, 2003; Goleman et al., 2002). To find the best market opportunities, managers have to have good emotional regulation skills as part of their human and social capital (Huy, Zott, 2019) beyond their cognitive capabilities in terms of dynamic managerial capabilities which emphasize the managers' impact on change and it's a success (Adner, Helfat, 2003; Helfat, Martin, 2015). During changes or disturbing times, emotional competencies help to maintain stability and to gather new resources with the help of managerial human capital on the self-level and even in social context behaviors; their traits and emotions are related to firms' success dynamically and adaptively of using existing resources (Huy, 1999; Huy, Zott, 2019), and even this personal emotions affect the outcomes (Ashkanasy et al, 2017) because managers help their employers to regulate their own emotions (Kaplan et al, 2014). Managers passion, goal-orientation have some research evidence (Stenholm, Renko, 2016; Cardon et al, 2009; Collewaert et al. 2016, Gielnik et al, 2015).

Nowadays it is not more questionable that emotions have a place in business also (Sekerka, Bagozzi, 2007) and well-functioning organizations take members' and managers' emotions into account as well (Pavlovich, Krahnke, 2012; Elfbein, 2007). The usefulness of it can be seen in an organizational performance like business profit (Boyatzis, 2008; Koman, Wolff, 2008; Stein et al, 2009).

To summarize positive psychology, its' constructs and phenomena enhance workplace success in terms of productivity and well-being in many ways (like motivation, engagement, persistence, self-efficacy, resilience, workplace climate, values, relationships, interpersonal support, decision making or coping), and positive organizational context with an appropriate leadership style is

worth to establish and even so in an educational context (Martin, 2004; Malott, 2003, Martin, 2003; Wiegand, Geller, 2004) because they can be seen as parallel in this research question. The learning process of management involves many emotional aspects and emotions can generate new learning outcomes (Fineman, 1997).

Based on this the research question is how management and economics students' unique emotional profile sees and how can this profile assign specific psychological interventions for universities to give the best qualification.

2. METHODOLOGY

This study is based on the data collected among first-year students of management and economics at the Budapest University of Technology and Economics in the academic years of 2018 (n=176), 2019 (n=258), and 2020 (n=392). Participants were recruited from a large psychology class and asked if they would volunteer to participate in this study by filling out a set of surveys. 61 % of the data set come from women and 39% from men; the average age at the time of completing the questionnaire was 19,48 years with an SD of 1,193.

All the data were collected and stored cautiously, and personal data was anonymized.

As the 1st part of the omnibus test, we used a short sociodemographic questionnaire about their age, gender, family, and other living circumstances.

The 2nd part was the Eysenck Personality Questionnaire's (Eyenck, Eysenck, 1964, 1975, 1991) Hungarian version. Personality is divided into 3 dimensions: extraversion-introversion (the tendency to seek peers, activity, and relationships), neuroticism-emotional stability (the tendency that how much people are influenced by environmental emotional cues), and rigidity (associated with more masculine behavior and conformity). To measure the conformity and lying tendency there is a fourth subscale. The Hungarian version of the questionnaire contains 58 questions and the student's task was to decide whether the item applies to them or not. The psychometric properties of the test are acceptable based on a meta-analysis (Miles, J., Hempel, 2003).

The 3rd part was the Emotional Intelligence Inventory, developed by Bar-On (1997a, 1997b, 2004). The test contains 121 items and asks the students for a self-report scaling how much the items describe them with a 5-point Likert scale. The scales and subscales of emotional intelligence are divided into 5 main scales with subscales: intrapersonal scale which assessed the self-awareness and self-expression (subscales are self-regard, emotional self-awareness, assertiveness, independence, and self-actualization); interpersonal scales which measure social awareness and interpersonal relationship (subscales are empathy, social responsibility, and interpersonal relationship); stress management subscales assess emotional management and regulation (subscales are stress tolerance and impulse control); the adaptability scale measures change management (subscales are reality-testing, flexibility and problem-solving) and general Mood scale to measure competencies of self-motivation (subscales are optimism and happiness) (Bar-On, 2004, 2006 p. 21).

We measured the positive source competencies with the holistic well-being questionnaire, the PERMA Profiler (Butler, Kern, 2016). It contains 23 items in 7 subscales, five from the original PERMA structure: positive emotion, engagement, positive relationship, meaning or purpose in life, accomplishment, and two new factors of the refined model: negative emotion, physical

health. The authors suggest using these factors separately and not as a general PERMA score because it seems to be an umbrella term (Butler, Kern, 2016).

We also used the GRIT-S questionnaire which is dedicated to measuring trait-level perseverance and the passion for long-term goals. It contains 8 items, in each case students have to decide on a Likert scale how much each item describes them (Duckworth, Quinn, 2009).

Table 1. Descriptive statistics of management
and economics students' personality (n=826)

Factor Group	Factor	Mean	Std	Min	Max	Skewness	Kurtosis
Eysenck Personality Inventory	extraversion and introversion	19,995	8,103	0	32	-0,402	-0,731
	emotional stability	23,489	8,386	0	38	-0,203	-0,787
	rigidity	18,817	5,287	2	30	-0,315	-0,366
	honesty	5,436	3	0	14	0,279	-0,369

The profile doesn't differ significantly between the 3 samples based on the ANOVA analysis. This result strengthens our hypothesis that management and economics students have a specific psychological profile and this profile is stable in time, there aren't bigger differences than the usual human heterogeneity. Under nowadays circumstances, after the first year of pandemic, the profile is the same as the ages before. Based on this, in the further analysis, we merge the 3 samples, in a total of 826 students.

Results of personality tell that management and economics students are extroverted, they are seeking peers, relationships and are open for new inspiration. The average point is 19,99 and above 16 people tend to extraversion. So they are not extraordinarily extroverted, but they like to be in social relationships. In the case of their emotional attributes, the average point is 23,48 and it means that above 19 points they are more emotionally unstable, are open to emotionally contagious cues, and their mood changes often. Their rigidity point shows that they tend toward conformity because their average is 18,81 and above 15 we can say that people are not so flexible. The low average point of honesty tells that students answered honestly.

Table 2. Descriptive statistics of management
and economics students' emotional intelligence (n=826)

Factor Group	Factor	Mean	Std	Min	Max	Skewness	Kurtosis
Emotional intelligence Quotient (EQ) intrapersonal	general score	68,662	10,975	29	94	-0,336	-0,220
	assertiveness	69,377	13,077	30	100	-0,175	-0,334
	self-awareness	69,236	16,463	19	100	-0,469	-0,102
	self-regard	67,686	18,515	19	100	-0,486	-0,410
	independence	58,105	11,756	57,65	88	-0,381	0,045
	self-actualization	78,972	14,044	38	100	-0,581	-0,259
EQ interpersonal	general score	76,773	10,412	39	99	-0,676	0,429
	empathy	76,069	13,667	32	100	-0,581	0,168
	social responsibility	78,346	11,659	36	100	-0,616	0,344
	interpersonal relationship	76,314	12,185	37	100	-0,438	-0,245
EQ adaptation	general score	68,046	9,226	28	92	-0,122	0,202
	reality testing	64,734	11,750	20	98	-0,324	0,396
	flexibility	64,845	13,386	23	98	-0,207	-0,195
	problem-solving	74,824	12,108	38	100	-0,305	0,001

EQ stress management	general score	64,032	10,359	35	89	-0,120	0,500
	stress tolerance	63,688	8,653	30	91	-0,155	0,100
	impulse control	64,453	16,476	24	100	-0,132	-0,543
EQ mood and motivation	general score	76,840	12,409	34	100	-0,537	-0,192
	optimism	76,746	14,233	27	100	-0,627	0,060
	happiness	76,964	13,522	30	100	-0,464	-0,209

Table 2 shows that students' best emotional competency is their interpersonal emotional intelligence. They are good in social relationships, responsibility, and empathy which are, near the extraverted personality the basic of leading and coordinating people. Their 2nd best emotional skill is mood and motivation, in which optimism and the high level of felt positive emotions can help them to go along with people and motivate themselves and others for goals. Among the intrapersonal competencies, self-actualization has the highest score and this is even the 2nd highest point between all the emotional competencies. Self-actualization is the tendency to self-fulfillment, to reach the highest level of our knowledge and personality development. This factor can strengthen managerial motivation.

On the other side, parallel with the emotional instability personality trait, students have the lowest score in emotional independence, which means that they need the support of emotionally important "others", they want to measure up to others. This point can be the 1st focus point of intervention.

The other weaker point is the stress management skills, the flexibility (as seen from personality as well), and reality testing. Managing emotions, stress and stress-related emotions is one of the main tasks of a manager. Points between 63-64 on a 100 scale are not really weak but neither too high in the turbulent and challenging work of leaders. Among these skills problem solving has the highest level, and it is good because it means that in case of not emotional problems or after solving emotional related issues, students are good at changing the situation and handle stress. It means that stress management skills can be the 2nd focus of development.

Table 3. Descriptive statistics of management
and economics students' well-being profile (n=826)

Factor Group	Factor	Mean	Std	Min	Max	Skewness	Kurtosis
PERMA	positivity (P)	21,182	5,519	3	30	-0,987	0,764
	engagement (E)	22,010	4,169	3	30	-0,812	1,467
	relationship (R)	23,346	5,550	3	30	-1,216	1,656
	meaning (M)	22,277	5,633	3	30	-1,182	1,440
	accomplishment (A)	22,416	4,515	3	30	-1,097	1,592
	health	21,701	5,730	3	30	-0,784	0,324
	negativity	16,426	3,795	3	30	0,159	
	loneliness	4,641	2,638	1	10	0,282	
	happiness	7,350	2,083	1	10	-1,131	

Based on the well-being profile (see Table 3), students are in the upper tierce. To strengthen their mood EQ score, they tend to feel more positive emotions against negative ones. They are the best in relationships, and they feel supported and have a valuable social life.

Table 4. Descriptive statistics of management
and economics students' well-being profile (n=826)

Factor Group	Factor	Mean	Std	Min	Max	Skewness	Kurtosis
Grit score	-	3,301	0,512	2	5	-0,032	-0,327

As an interesting point, students Grit score (see Table 4) is relatively low and that means they are not really good in long-term perseverance. University could be a place to develop this competency as a 3rd focus point of intervention. Students have a good basis of this with their self-awareness, problem-solving and positive emotional attributes. Grit might be the gap in handling failure, stress, and other troubles.

3.   FUTURE RESEARCH DIRECTIONS

Research also suggests that targeted development training or programs can enhance management students' soft skill level and through this intervention students' employability and workplace success can reach a higher level (John, 2009). The applications of positive psychological theory and practice bloom in higher education (Parks, 2011).

The development of such skills can be held in two main directions: specific seminars dedicated to emotional competencies' development or teaching integrated interventions (Pertegal-Felices et al, 2017) and as another approach in institutional development (Parks, 2011). The interventions can focus on a specific set of skills like stress management (Short et al, 2010) or entitled a specific focus as Tomorrow's Leader (Shek et al, 2012) and many have shown evidence-based development in academic performance (Pertegal-Felices et al, 2017; Marcos-Jorgera, Pertegal-Felices, 2017). This time is worth and led to renewing universities to customer-oriented suppliers. It is important to ask for students and labor market needs from time to time and evolve teaching methodology and curricula because companies seek managers with the best emotional competencies (Rao, 2014).

It is clear that positive focuses, as strengths, performance, or positive emotions are useful and motivating in students' development in short-term (like university success) and long-term (like career) goals (Marks, Wade, 2015) and this is a new, and different approach from preventing drop-out.

4.   CONCLUSION

Based on three years' data we can see that management and economics students have a special positive psychological profile. They strength are in their interpersonal skills, social relationships and positive mood, and the extroverted personality.

Based on future research directions, the evidence-based use of positive psychology on campus (Chodkiewitz, Boyle, 2016; Martin, 2009), it would be worth developing a training curriculum special for management and economics students, with three main focuses: (1) emotional independence, (2) stress management, and (3) grit. As can be seen from the literature, stress management itself is important for university success (Séllei et al, 2021) but the others could be as important in the level of personnel well-being. These together foster optimal performances.

With the development of emotional autonomy and emotion management, students learn important skills that they can use in an organizational context, as well to manage changes and change related stress and emotions (Gunnarsdottír, 2016; Humphrey et al., 2008; Hochschild, 2003) and can use in their effective leadership (Ashkanashy, Humphrey, 2011). The development of emotional work, emotional labor, and emotional balancing have a research-based effect on managers' performance (Gardner et al, 2009; Gunnarsdottír, 2016). Felt autonomy in the case

of managers may consist of ambivalent emotions, emotional dissonance, attitudes, and expectations (Gunnarsdottír, 2016) that have to be managed to reach the best individual and organizational performance.

Stress management skills are important in university success as well as future managerial performance. There is growing research-based evidence that, with the help of positive psychological interventions, such as developing coping strategies and self-determination (Ryan, Deci, 2000; 2008; Horn et al, 2011; Becker, Mareck, 2008), students' autonomy and well-being, can be maintained and this has to be involved into curriculum design. This is a shared responsibility for how students learn more self-management and self-regulation (Field et al, 2014; 2015).

Partly related to stress management, the overcoming with withdrawals, failures resilience, and grit is about passion for long term goals, and these goals have to be set in a positive environment to foster performance and reduce stress with the help of the internal resources of a student (Duckworth, Quinn, 2009.; Grant, Kinman, 2014). Universities can teach not only knowledge but also the way of such independent and positive goal setting and facilitate the joy of being on the way to reach these goals. With these positive experiences, students will perform better even in the workplace (Gallup, 2014). Developing grit and resilience as an aspect of perseverance has effects on academic and individual success (Stoffel et al, 2018). Many studies found that resilience is a key concept of students' well-being and it is related to their engagement and motivation as well (Kotera et al, 2021; Datu, 2018). Resilience can be enhanced even in the university context and is related to motivation and growing experiences (Bryan et al, 2019).

Positive psychology could be an umbrella in each faculty, in the case of management and economics students in the subjective and personal level, and institutional level as well (Seligman et al, 2005; Field et al, 2015). On the other hand, according to literature (for example Kotera et al. 2021; Kashdan, Ciarrochi, 2013; Forsman et al, 2015; Martin, 2009; Chodkiewitz, Boyle, 2016; Horn et al. 2011) positive psychological interventions seem to be not so direct as therapeutic interventions and in this way students feel more comfortable to use them for strengthening their life skills and values. Positive psychological approach-based interventions are important by facing challenges of the everyday life in the personnel, university, and work context for a better quality of life (Vella-Broderick, 2011; Ng, 2015; Chodkiewitz, Boyle, 2016).

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ORGANIZATIONAL RESILIENCE – PARADIGM FOR CORPORATE SUSTAINABILITY DURING COVID-19 IN THE PRIVATE SECTOR OF NORTH MACEDONIA

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Abstract: *The archetype for optimal functionality of modern organizations in unstable and disruptive conditions, known as the new normality, since the outbreak of Covid-19 has become one of the latest paradigms for contemporary management. The challenge arises in the process of creating organizational competences for effective responses to the influences of Covid-19 and securing sustainability reflected as organizational resilience.*

This paper aims to present the theoretical contours and conceptualization of organizational resilience. The analysis of the theoretical background describes affective, cognitive, relational, and structural mechanisms which are distinct constitutive dimensions of the concept. The research agenda provides answers to the questions regarding the strength of the antecedents through a frame that covers three dimensions: Situational awareness, Adaptive Capability, Individual participation and Engagement.

Methods: *based on the structural dimensions, for the purposes of this paper, quantitative research was conducted, with a questionnaire on a sample of 138 respondents from companies with domestic and foreign capital located in North Macedonia. The statistical analysis of the data is presented through a resilience analysis grid (RAG).*

Results: *The paper displays an approach to defining the corporative resilient capacities; a framework for identification of a resilient profile in different levels of conceptualization (RAG); an identification of the strength of the potential determinants.*

Conclusion: *The appliance of the determinant model provides answers to the research questions for the potential strengths of resilience capacity determinants in the companies in North Macedonia. The resilience analysis grid (RAG) visualizes the strength of the potential determinants and secures directions for safety management, especially in continuous conditions of long lasting economic shocks.*

Keywords: *organizational resilience; resilience dimensions; adaptive capacity; resilience analysis grid (RAG);*

1. INTRODUCTION

Until the emergence of the Covid-19 virus, the business world operated in dynamically changing circumstances that emphasized the competitive power of companies. After one year of the functioning of humanity in conditions of the so-called new normal, for the business world it means operating in extremely turbulent conditions and fighting for its own sustainability in the market. Hence, the interest of researchers and practitioners in the resilience of com-

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panies is becoming more relevant (Baggio, Brown, & Hellebrandt, 2015; Carmeli & Markman, 2011; Everly, 2011; Mamouni Limnios, Mazzarol, Ghadouani, & Schilizzi, 2014; Woods, 2015; Conz & Magnani, 2020)

Resilience is required for businesses to respond to disruptions as well as positively adapt in the face of challenging conditions, leveraging opportunities and delivering sustainable performance improvement (Deneyer, 2017). Having in mind the mechanism by which the individual develops his adaptability, the organizations learn and develop their resilience in facing and overcoming the challenges. According to Everly (2011) organizational resilience can be thought of as "a 'culture of resilience', which manifests itself as a form of 'psychological immunity' to incremental and transformational changes.

2. CONCEPT AND DEFINITION OF ORGANIZATIONAL RESILIENCE

Series of retrospective studies in the literature (Weick and Sutcliffe, 2001; Sutcliffe and Vogus, 2003; Rudolph and Repenning, 2002; Vogus and Sutcliffe, 2007) try to explain the sustainability of organizations, especially when faced with internal or external interactive complexity, unexpected change, crisis, barrier, risk or "challenging conditions" (mistakes, stressful situations, scandals, accumulated small changes/interruptions and changes in the established operating system). In this regard, they identify resilience as a component of organizational immunity.

In the literature review for the conceptualization of the construct, according to Conz & Magnani, (2020), three research lines are identified that define resilience as: i) a firm attribute that evolves in time, ii) a dynamic process consisting of two resilience paths i.e. adaptive and absorptive; iii) the identification of a set of firm-based capabilities required to be successfully resilient at the different stages of the two resilience paths.

In addition to the organizational attribute are the studies of Yao Hu et al., 2008; Lengnick-Hall et al., 2011; Sheffi & Rice Jr., 2005; Hollnagel, 2010; Linnenluecke & Griffiths, 2010; Mamouni Limnios et al., 2014; Tillement et al., 2009; Bhamidipaty et al., 2007; Dewald & Bowen, 2010, that consider organizational resilience as survival or adaptation to disruptions, disturbances, disasters or catastrophic events; threats or changes; response to opportunities for survival, arising from the change (Ates & Bititci, 2011; Bhamidipaty et al., 2007; Dewald & Bowen, 2010); organizational capacity to "bounce back" to a prior point of stability (Freeman et al., 2003; Sheffi, 2007); ability to return to the same point or achieve another state of stability (i.e., it changes, while minimizing the effects due to changes and hazards) (Acquaah et al., 2011; Burnard & Bhamra, 2011; Demmer et al., 2011); bounce forward, grow or become stronger (Bell, 2002; Fiksel, 2006; Vogus & Sutcliffe, 2007).

Based on the perspectives of positive organizational psychology, resilience is a stable trajectory of healthy functioning after a highly adverse event (Bonanno et al., 2004; Bonanno et al., 2011) or "…the capacity of a dynamic system to adapt successfully" (Masten, 2014; Southwick, 2014).

Vagus and Sutcliffe (2007) defined resilience as the maintenance of positive adjustment under challenging conditions such that the organization emerges from those conditions strengthened and more resourceful. In other words, for them, resilience is the ability to activate, combine or recombine latent resources in newly created circumstances. In that direction is the proposed concept of McManus et al. (2008; p. 82) as "...a function of an organization's overall situation

awareness, management of keystone vulnerabilities and adaptive capacity in a complex, dynamic and interconnected environment."

From the perspective of resilience engineering, resilience means anticipation of unforeseen events and changes and leads to the four skills for achieving resilient performance such as: responding, monitoring, learning and anticipating (Patricia et al., 2017).

The contemporary framework proposed by Weick & Sutcliff (2007) and Hollnagel (2011) determined resilience as a dynamic process made of absorption- and adaptation-related capabilities.

According to the Critical Infrastructure (CI) concept and ISO standards (2018), Rehak (2020) lists resilience as a critical factor for risk management and critical infrastructure, a cyclical process that enables restoration and continuous strengthening of the critical infrastructure element's resilience through prevention, absorption, recovery and adaptation. Therefore, based on the previous studies of Seville et al. (2008); Gonçalves et al. (2019); Denyer (2017), he pointed out that resilience may be perceived as a management process leading to the increased adaptability of critical infrastructure elements to the recurring impact of past, disruptive events.

Scientific thought in that direction leaves scientific space to understand organizational resilience as a multidimensional, sociotechnical phenomenon that allows positive adaptation to challenging conditions by stretching the adaptive capacity of the organization or by the ability to create an appropriate response to change, activation, recombination of resources to take advantage of opportunities arising from change and sustainable performance improvement.

3. FACTORS DETERMINING ORGANIZATIONAL RESILIENCE

Academic interest in organizational resilience has been growing in recent years. Despite the interest in the concept and its nature, is steadily expanding interest in models for the identification of potential framework of antecedents. The heterogeneity of theorists indicates a different set of determinants depending on how the concept is viewed, as an attribute or process, as offensive response to unexpected events (adaptation) (e.g., Weick et al. 1999; Lengnick-Hall et al. 2011; Limnios et al.2014) instead of a defensive response (resistance and/or recovery). Thereby, it is important to note the categorization of the infrastructure elements proposed by Kalowski, 2015; Boylanand Turner, 2017; NIAC, 2009; McManus et al., 2008) that refers to the following three basic processes: risk management, innovation and employees.

Hence, McManus (2008) in his study of relative overall resilience (ROR) model proposes three dominant determinants: situation awareness, management of keystone vulnerabilities, and adaptive capacity. Duchek (2020) considers organizational resilience as a process that develops in three successive stages as reaction to past events (reactive actions), to current problems (concurrent actions) and future events (anticipatory action), takes proactive capabilities (resilience potential) and reactive capabilities (resilience realization) as key determinants for organizational resilience. In this sense, he also pointed out as determinants the possession of cognitive as well as behavioral resilience capabilities, a firm's prior knowledge base, resource availability, social resources, power and responsibility. According to Ismail et al. (2011) resilience is the result of equal development of operational and strategic capabilities. Resilient capacities contain cognitive, behavioral, and contextual elements and results from using different organizational routines in dealing with uncertainty and complexity (Lengnick-Hall and Beck 2005;

Lengnick-Hall et al., 2011). Xiao & Cao (2017) highlighted cognitive resilience in terms of a conceptual orientation that enables an organization to notice, interpret, analyze, and formulate responses in ways that go beyond simply surviving an ordeal. Behavioral resilience is the engine that moves an organization forward. In direction of organizational settings, this property enables a firm to learn more about the situation and to fully use its own resources and capabilities through collaborative actions. Contextual resilience provides the setting for integrating and using cognitive resilience and behavioral resilience. Contextual resilience is composed of connections and resources.

4. RESILIENCE AND RELATED CONCEPTS: FRAGILE, ROBUST AND ANTIFRAGILE

There are many concepts related to resilience that require to be analyzed when it comes to understanding divergences. Those concepts are fragility, robustness, and antifragility.

When it comes to fragility, it is the reflection of unexpected occurrences in systems in cases of variations (Taleb, 2012; Taleb & Douady, 2013) which are weaknesses that arise from problems.

Robustness as a characteristic is the ability of systems to absorb disturbances, or in other words the ability to undergo such changes while adaptation is not required, meaning that it does not always recover from those disruptions. (Woods, 2015)

Antifragility is a characteristic of a system that enables it to improve during situations of failures or volatilities.

According to Taleb (2012), all these concepts are represented as separate entities but sees robustness and resilience as two distinct concepts. Alike, Woods (2015), shares the same ideals, that there are differences between robust and resilient, but this separation commonly causes confusion when it comes to studying resilience.

A great way to understand these concepts and their differences is Read's (2005) tree example. As an example, he takes the palm tree and the sycamore, explaining that in cases of wind both trees will move, but the difference is that if both trees are blown by the same power of wind, the sycamore tree movements are much smaller. This means that the sycamore tree is more robust, and the palm tree is more resilient due to the fact that it is able to recover a lot easier after such disturbances due to its elasticity, meaning that the sycamore could break if the wind has a higher intensity. The goal of survivability of resilient organizations should be based both on known and unknown variables. Robust organizations tend to rely mostly on known variables, making resilient organizations more prepared when it comes to surviving when compared to robust organizations.

Resilience is a characteristic of an organization that is not only able to recover to stability after disruptions, but also a characteristic of achieving a better, more desirable point of stability. If an organization reaches this new desirable point of stability and it is stronger than it previously was, it is said that it is both resilient and antifragile. This distinction between the two concepts clarifies the questions about the response towards opportunities and threats of resilient organizations. If the organization can only survive it is resilient. But, if the same organization can take an advantage of such situations, considering the threats and opportunities in order to achieve a better point of stability, it is stronger and both resilient and antifragile.

5. METHODOLOGY

The study was conducted in the Republic of North Macedonia, in 3 manufacturing companies, with foreign capital investments. Companies exist in the Macedonian business market since 2012. According to the numbers of employees (over 100 employees), those are considered as large corporate entities. The research was conducted on a purposeful sample of respondents, 85% employees and 15% managers.

The instrument contains three dimensions measured on a 5 point Likert-type scale (strongly disagree; disagree; agree; and strongly agree). The dimensions consist sub-dimensions such as: Situational awareness (understanding and analysis of dangers and consequences, awareness of safety, informed and reactive decision making), Adaptive capacity (Silo mentality, Capabilities and capacities, Strategic vision and expected outcome, innovation and creativity, robustness of operational processes) and Individual participation and engagement (Work enthusiasm and participation and engagement). These dimensions and sub-dimension are appraised by using a set of questions. In order to avoid a set response, some of the questions are reverse coded. The dimensions have been developed through literature review and analysis and synthesis of various other instruments.

Questions from the questionnaire were combined from the poll of questions from previous research studies – McManus's Relative Overall Resilience Model (2008) and Rehak`s critical infrastructure system (2020).

The internal consistency of the measuring instrument is determined by Cronbach's alpha coefficient, which for each dimension of the test (Situation awareness, N of items 5, α=.597; Adaptive capacities, N of items 10, α=.601; Participation and engagement, N of items 7, α=.691) shift around the range of acceptable internal consistency.

6. RESULTS AND DISCUSSION

To gain an optimal insight relating to the determinant potential of 3 proposed determinants in the model, the scores for each dimension of the organizational resilience were first calculated. The descriptive statistics are presented as mean and standard deviation for each dimension: Situation awareness (Mean= 12.2826, Std. Deviation= 2.43451); Adaptive capacities (Mean= 35.1667, Std. Deviation= 4.46982) and Participation and engagement (Mean= 24.1014, Std. Deviation= 4.74502) (Graph 1).

Based on the values of means, it is easy to determine that there is an uneven distribution among the three determinants; in other words, there is an intense influence on the adaptive capacities and participation and engagement among the employees contrary to their situational awareness. This clearly confirms Limnios et al. (2014) in theory of "strategic offense" or "strategic resilience" (Vealikangas and Romme, 2013).

Based on the definition for situational awareness given by Endsley et al. (2003; p. 13) as "… being aware of what is happening around you and understanding what that information means to you now and in the future", applicable on the operational level and distributed evenly among the organization, it acts as an essential requirement for competent performance in dynamic environments, as a vital skill for the determination of the classification of the new situation.

However, low values of the means during the pandemic can be explained by the way of the organization of the processes. This limited, informal cooperative strategy by Roth et al. (2006), which occurs within the organization's culture, is the mechanism through which the organization shares or communicates their situation awareness. The analysis regarding the new situation has a limited reflexive potential, which according to Duchek (200); is connected with the appliance of the already known skills and experiences with the new ones during a crisis situation such as the pandemic caused by Covid-19, supported by highly reactive decision making.

Regarding adaptive capacities, an organization's ability to adapt is at the heart of its ability to display resilient characteristics, and adaptive capacity is also linked to an organization's competitiveness. The acceptance of the changes is one of the key capabilities that can help organizations to avoid or reduce negative consequences from unexpected events, the same as the organizational ability to continuously design and develop solutions to match or exceed the needs of their environment as changes in that environment emerge. With the help of these capabilities, organizations adapt to critical situations and use the change for their own purpose, which is in the direction of their personal future growth and development. In that direction, the optimal intensity of the dimensions owns up to the complementary interactions between the broad frame of determinants such as: silo mentality, internal knowledge and capacities, strategic approach and vision, innovation and creativity, robust organizational processes, according to the activity of the organizations and their infrastructure.

Employee engagement is a positive organizational outcome that has been associated with resilience (King, Newmans, & Luthans, 2015; Mache et al., 2014; Shin, Taylor, & Seo, 2012). Organizations rely on resilient individuals with the goal to easily get through the increasing difficulties, uncertainties, and constant changes. With this, it is expected from employees to have expectations regarding the extent to which the organization cares about their wellbeing and appreciates their contribution in achieving the business goals. The participation of the employees and their engagement are the outcomes of corporative and managerial support. Various studies indicate that there is a relationship between resilience and engagement (Bakker, Albrecht, & Leiter, 2011; Bande et al., 2015; King et al., 2015; Mache et al., 2014; Shin et al., 2012). "Perceived organizational support as a construct is positively associated with employee engagement" (Kurtessis et al., 2015; Mathumbu & Dodd, 2013) clearly states the complementary influence of both sides.
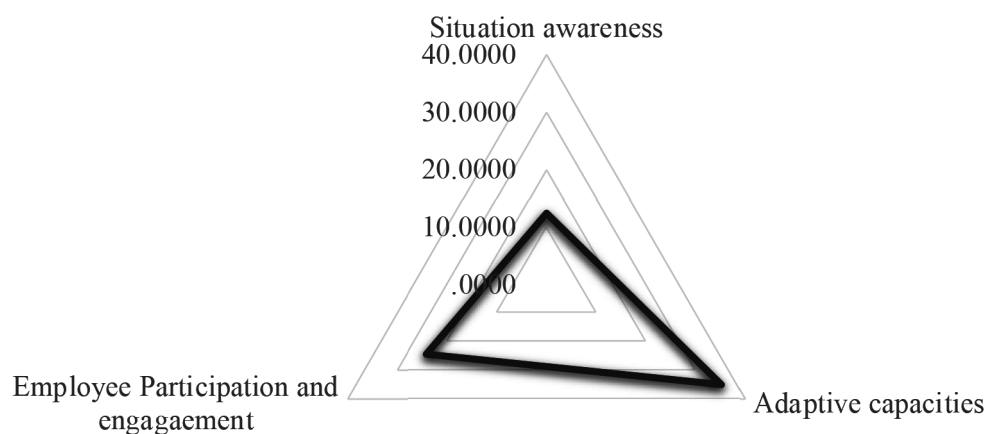
Graph 1. Potential effects of three determinants of organizational resilience

Negative parameters acquired with Pearson's coefficient of correlation, regarding the relation between the situational awareness and adaptive capacities ($r=-.482$, $p\leq.001$), and also between the situational awareness and participation and engagement of the employees as determinants ($r=-.395$, $p\leq.001$) points out an un-proportionate increasing tendency among the dimensions.

The results from the analysis of the statistically significant differences among the dimensions with the application of t-test are presented in Table 1; it shows statistically significant difference among the arithmetic means among the three determinants at a level of significance .001 ($p\leq0.01$).

Table 1. T Test for statistical differences among means of three determinants

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Situation awareness & Adaptive capacities	-22.88	6.03	.51355	-23.899	-21.868	-44.561	137	.000
	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Situation awareness & Participation and engagement	-11.81	6.13	.52174	-12.850	-10.787	-22.653	137	.000
	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Adaptive capacities & Participation and engagement	11.06	3.66	.31132	10.449	11.680	35.543	137	.000

The resilience analysis grid (RAG) visualizes the strength of the potential determinants of the resilient capacity.
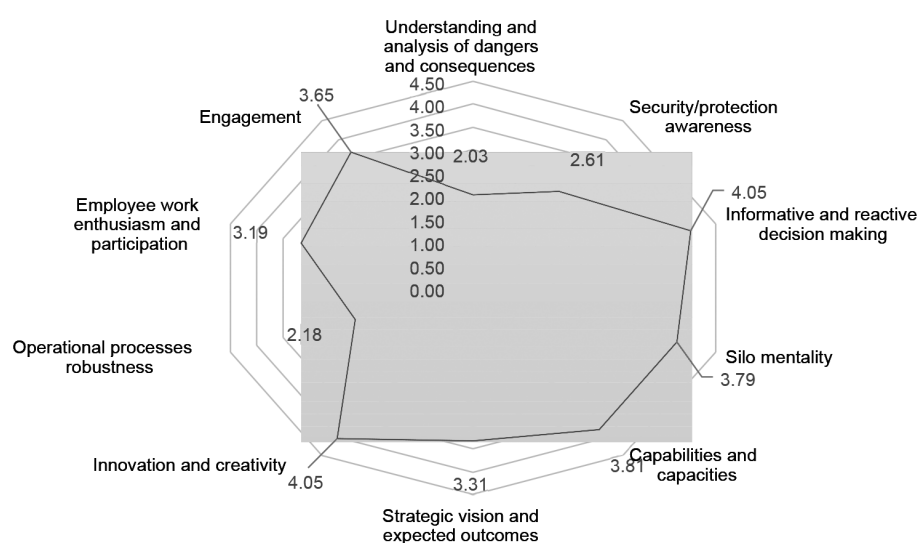
Graph 2. Resilience analysis grid (RAG)

7. CONCLUSION

With the goal of securing optimal sustainability, survivability, adaptation, and generalization of an answer to the conditions of the Covid-19 pandemic, which are now being considered the new normal based on the time period of their appliance, communicate their personal resilient capacity. Considering resilience as a capability, process and/or an attribute based on potential skills in different phases of facing problems and difficulties which affect the vulnerability of the organization, it is essential to have an estimation of the resilient capabilities. With this study, an analysis on the resilience of companies from a sample has been made, securing them with information with a wide spectrum of organizational processes and practices which are in function regarding the resilient capability, divided into three distinct dimensions such as Situational awareness, Adaptive capacities, Participation, and engagement of the employees. With the application of the questionnaire and the RAG the companies had assistance in assessing their resilience, to work with continuous updating to the employees regarding the impact of risks and the application of informative vs reactive decision making; strengthening their strong sides (adaptive capacities), taking advantage of possibilities, and nourishment of the relation with the employees including the care for their wellbeing and engagement which proves to be a significant influencing factor on the antifragility of the companies.

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THE IMPACT OF COVID-19 IN THE AGRI-FOOD COMPANIES IN EXTREMADURA (SPAIN)

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Abstract: *The coronavirus pandemic is having an economic impact, previously non-existent, on the world economy. The objective of this study is to analyze the impact of COVID-19 on agri-food companies in the Autonomous Community of Extremadura (Spain). A qualitative methodology is used through interviews with 15 managers of agri-food companies and a technology center for the period February 2020 - January 2021. The results reveal the existence of differentiated impacts, both financial and operational, depending, principally, on the nature of the products, the changes generated in consumer behavior, and mobility problems. Likewise, changes were observed in the processes and procedures in the companies to overcome the obstacles imposed by the new situation. In conclusion, the change in environmental conditions, as well as the characteristics of the spread of the pandemic, has impacted the strategies, behavior, processes, dynamics and results of organizations regardless of their size and the nature of their work product or service.*

Keywords: *Agri-food companies, COVID-19, Case study, Impact, Actions.*

1. INTRODUCTION

The coronavirus pandemic is having an economic impact, previously non-existent, on the world economy. According to Gjaja et al. (2020), it is a crisis of a historical scale and complexity that is putting to the test health care systems, the fiscal capacity of governments, and the ability of many organizations to cope with and respond to the changes caused by the virus.

In the case of Spain, the strict confinement measures in force from mid-March to early May 2020, as well as restrictions on international tourism, have led to a historic drop in the gross domestic product (GDP) in the second quarter of the year 2020 of 17.8% quarter-on-quarter (21.5% inter-annual), the largest decrease observed since 1995 (National Institute of Statistics).

The agri-food sector groups together a very heterogeneous set of activities that range from the first transformation of raw materials of animal and vegetable origin to the production of sophisticated products such as functional foods. A whole series of variables interact in the sector that has a very direct influence on the well-being of society as a whole. One of its functions is to respond to the needs of obtaining enough food to meet the demand of citizens. In this sense, at present, the agri-food sector, worldwide, faces a challenge not previously contemplated of new consumption patterns and consumer perceptions and concerns. In Spain, the agri-food sector has been one of the least affected by the crisis caused by the pandemic. However, there has been a decline

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in production and sales. Likewise, the change in consumption patterns during confinement and commercial restrictions have also affected the sector (CaixaBank, 2020). The agri-food sector is also one of the main economic activities in the Extremadura region. The weight of the agricultural sector and its associated industries are substantially higher than the national average.

In this framework, the objective of this study is to analyze the impact of COVID-19 on agri-food companies in Extremadura. The following questions are posed: What has been the impact of the pandemic? And what are the performances that it has brought with it? The analysis is carried out through the assessments of managers of 15 agri-food companies belonging to different branches of activity and size, as well as the director of an agri-food technology center. This study aims to contribute to the still scarce literature on the impact of the pandemic in the agri-food sector (Barcaccia et al., 2020; Patterson et al., 2020; Montanari et al., 2020; Scorza et al., 2020) in this case referring to a specific region.

2.   METHODOLOGY

A qualitative methodology is used from a multiple cases study. An exploratory approach is used, according to the phases established by Yin (1989). This methodology is appropriate to the objectives of the study. In Tell et al. (2016) a literature review was carried out analyzing 505 articles and they obtained that the studies of the agri-food sector are mainly empirical and qualitative studies focused on one or a few companies (case studies).

For this, a previous activity was the preparation of a report/directory of the agri-food companies of Extremadura obtained through the crossing and analysis of different databases (National Institute of Statistics, Extremaduran Agri-food Cooperatives, and SABI). The report contains data from a total of 734 agri-food companies of various legal forms and sizes.

Based on this information, the companies contacted to carry out the study were selected. In-depth interviews were conducted with the managers of 15 Extremaduran agri-food companies and an agri-food technological center with an important weight in the region. Among the issues raised, those related to the impact of COVID-19 on their activities are analyzed in this study. Specifically, they were asked: What are the consequences of the pandemic? What actions are being carried out? Subsequently, the responses provided by the interviewees were analyzed.

Table 1 shows the characteristics of the organizations interviewed (activity, number of employees, turnover, whether it is an exporter or not), as well as information about the person interviewed and the date of the interview. The numbering of the companies corresponds to the order in which the interviews were carried out.

Table 1. Characteristics of the organizations interviewed

Companies	NCEA 2009[1]	Number of employees	Turnover	Export	Interviewed	Date
Company 1	103	600	> 10,000,000€	Yes	CFO	28/02/2020
Company 2	104	3	1,000,001-2,000,000€	Yes	CEO	13/03/2020
Company 3	110	3	0-500,000€	Yes	Commercial Director	08/06/2020
Company 4	110	10	1,000,001-2,000,000€	Yes	CEO	18/06/2020

Company 5	108	1	0-500,000€	No	CEO	25/06/2020
Company 6	109	70	>10,000,000€	Yes	CEO	06/07/2020
Company 7	103	60	>10,000,000€	Yes	Operations Director	07/07/2020
Company 8	104	35	>10,000,000€	Yes	CEO	08/07/2020
Company 9	101	9	500,001-1,000,000€	Yes	CEO	18/07/2020
Company 10	109	10	6,000,001-10,000,000€	Yes	Department manager	20/07/2020
Company 11	101	66	>10,000,000€	Yes	Operations Director	28/09/2020
					CEO	06/10/2020
Company 12	101	<200	>10,000,000€	Yes	Department manager	05/10/2020
Company 13	103	110	>10,000,000€	Yes	CEO	15/10/2020
Company 14	103	55	>10,000,000€	Yes	CEO	30/10/2020
Company 15	103	6	6,000,001-10,000,000€	Yes	CEO	12/01/2021
Technological center	721	49	>2,000,000€	Yes	CEO	07/10/2020

Source: Own elaboration, 2020.

Notes: (1) National Classification of Economic Activities (NCEA) 2009: 101: Processing and preserving of meat and elaboration of meat products; 103: Processing and preserving of fruits and vegetables; 104: Manufacture of vegetable and animal oils and fats; 108: Manufacture of other food products; 109: Manufacture of products for animal feed; 110: Manufacture of beverages; 721: Research and experimental development in natural and technical sciences.

The first two interviews (Company 1 and Company 2) were conducted at the company's headquarters. The lockdown situation from mid-March to early May 2020 paralyzed the interviews that were resumed at the beginning of June. Since then, the interviews have been carried out by videoconference using the Zoom tool.

By size, only one of the companies has more than 200 workers. 33% of the companies are micro-companies (they have less than 10 workers). Four of the companies interviewed are agri-food cooperatives (companies 4, 6, 13 and 15). Except for one company, all the organizations declared to be exporters. Regarding activities (according to NCEA-2009), 33.3% correspond to "Processing and preservation of fruits and vegetables", 20% to "Processing and preservation of meat and meat products", 13.3% to groups of activity "Manufacture of vegetable oils and other animal fats", "Manufacture of beverages" and "Manufacture of products for animal feed", and 6.7% to "Manufacture of other food products".

3. RESULTS

Once the transcripts of the interviews were made and the responses analyzed, the impact that COVID-19 is having on the activity of companies, as well as the actions carried out in this period due to the pandemic, were analyzed.

In general, the following negative consequences were observed: decrease in turnover and sales; reduction/displacement in the demand for products; difficulties in marketing activities; slowdown in the development of R&D&I projects; lack of staff (quarantine); decrease in activities carried out; and supply problems by suppliers. The agri-food industries that have suffered the most and that have decreased the turnover the most are those that direct the commercialization

of their products to the Horeca channel, which has remained closed during the months of lockdown and which has been conditioned by the successive restrictive measures adopted by the regional government during the new normal. On the contrary, the companies that have been least affected are those that have diversified sales channels. In the case of products associated with celebrations, such as sparkling wines, they have suffered a sharp decline in demand since March 2020. Likewise, the economic instability experienced by consumers caused by the pandemic has caused the consumption of those products of higher value and demand shifts towards those with a similar positioning and lower price, as is the case in companies that process and manufacture Iberian meat products. Marketing activities, development of R&D&I projects, and the supply by suppliers have also been affected.

However, in some activity groups, such as that of companies dedicated to the processing and preservation of fruit and vegetables, there was an increase in demand for their products that led the management of the companies to adopt measures to increase the production of the same. Likewise, it has occurred in other branches where there has been a shift in demand towards other products, produced mainly by the change in consumption patterns.

Based on the consequences caused since the state of alarm was decreed in Spain, the companies interviewed have accelerated and carried out a series of actions to alleviate its effects. The analysis of the responses allowed us to know these actions, such as the search and diversification of customers and suppliers in other markets, as well as an increase in the range of products. Likewise, the reorganization of activities, personnel, and the introduction of additional hygienic protocols in work centers to guarantee the safety of their workers and avoid contagion. In addition, the majority of those interviewed highlighted that, since March 2020, they increased the use of technology in their activities both in marketing activities through the creation or remodeling of web pages and online stores, as well as in the development of activities. communication through videoconferences.

4. FUTURE RESEARCH DIRECTIONS

Future research is seeking to expand the sample of companies interviewed to complete the research. It is also proposed to combine the qualitative methodology with quantitative methods.

5. CONCLUSION

The health crisis produced by COVID-19 is having important consequences on the economy as a whole and the sectors and branches of global economic activity. The agri-food industry belongs to an essential and strategic sector in the Extremadura economy, and although the pandemic has had negative consequences in some aspects, a series of actions are being developed that means that the impact has not manifested itself with the same magnitude as in other sectors.

In general, the change in environmental conditions, as well as the characteristics of the spread of the pandemic have impacted the strategies, behavior, processes, dynamics and results of organizations regardless of their size and the nature of their work. product or service.

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ICT IN A SOCIAL ORGANIZATION IN PANDEMIC TIMES

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Abstract: *Social organizations are faced with financial problems, but also in the areas of Information Systems and Information and Communication Technologies given their support for activities in providing services to citizens. The article presents the problem in the field of the design of a multidisciplinary prototype and information aggregator to support the management of the provision of services of a Social Organization. The research methodology adopted is Design Science Research, given the specificity of the problem. Requirements models, data models, system architecture, and finally the prototype are presented. The proposed prototype aims to contribute to the reduction of regional inequalities, enhancing sustainability in the environmental, social, and human fields, as well as the inclusion of information that optimizes the reuse of non-perishable goods.*

Keywords: *Information systems; Information and communication technologies; Prototype; Requirements analysis.*

1. INTRODUCTION

Today, most organizations have been confronted with the need to detain more and more information underlying their operation. In this sense, they are defined as a strategy to reinforce Information Systems (IS) more and more and support them in Information and Communication Technologies (ICT).

Social organizations play a key role in the national and regional context in providing fundamental services to the community in which they are located. It is considered that ICT may play a fundamental and disruptive role in enhancing the aggregation of crucial information to this type of organization to optimize the provision of social services to the population where they are inserted.

The main results are the literature review in the field of the theme under study, as well as the various diagrams that allow modeling the IS of the organization. Another aspect that the prototype highlights focus on the fact that it aggregates information about each dwelling. Thus, it is recommended to increase the quality of life, improving the conditions of habitability. In this sense, it is considered that the door-to-door diagnostic strategy analyzing the real conditions of each community housing enhances the creation of intervention plans.

2. BACKGROUND

The review of the literature in the field of the theme is briefly exposed to address the various valences, namely sustainability, digital transformation, and low code platforms.

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It is considered that the Sustainable Development Goals present a set of concerns in the domain of sustainability, (UNDP, 2015) to foster the definition of strategies. Sustainability is fundamental to our society (Silveira & Reis, 2021). The dimensions human/individual, technical, economic, social, and environmental are interrelated. In this sense, a multidisciplinary solution was presented considering the five perspectives of sustainability and the technologies to be used for building systems to improve the overall satisfaction of people (Reis, Cagica, Silveira, Russo, & Marques, 2021). It is also considered, (Reis, Cagica, Silveira, Russo, & Marques, 2021) that ICT enhances the implementation of more sustainable solutions in order to enhance the provision of better and more services to citizens.

Digital transformation is of particular interest as it enhances the development of citizens' living conditions (Wong, Baker & Driver, 2017). In this sense, it is urgent to evaluate how to create value for institutions, driving the creation of innovative business models (Zott & Amit 2017). The definition of digital business strategy is very important (Bharadwaj, Sawy, Pavlou, & Venkatraman, 2013). However, it is considered crucial to define strategies to improve this digital transformation (Charan, 2016; Schwertner, 2017).

The Low Code development approach, given the specific context of social organizations, is an important concept that enhances approaches to the current software development challenges. Rapid development tools have been presented as an alternative to traditional development environments (Wong, 2019). However, its popularity was low due to the growing importance of digital transformation (Hecht, 2019; Outsystems, 2019; Bloomberg, 2017). In this sense, it is considered that in view of the specificity of the organization under study, the development of low code may be adequate because of its characteristics and rapid development and consequently cost reduction (Ploder, Bernsteiner, Schlögl, & Gschliesser, 2019). The low-code development approach is supported by a variety of available platforms on which excel is based (Rymer & Koplowitz, 2019).

3. PROPOSAL SOLUTION

The creation of an application that enhances the recording of the living conditions of the community's residents can constitute an instrument capable of generating statistics to enable them to compete in public tenders and to fill in the housing gaps in the community. An example of this strategy is the social cuisine they obtained because of a contest to which they applied. This new valence of the social center allows serving meals to the needy of the community against COVID.

The research methodology adopted is Design Science Research (DSR), given the specificity of the problem and because it is a research methodology indicated for ICT research projects. The DSR is a method that fits in the area of IS in which it contributes to the resolution of specific and complex problems (Bianchi & Sousa, 2015; Peffers, Tuunanen, & Rothenberger, 2007), allowing one to interact in order to create the artifact.

3.1. Requirements Models

To develop the practical solution, the process of developing the analysis of requirements such as methodology was initiated to represent the characteristics that the software or system to be developed must meet. Subsequently, the data model and architecture of the solution were designed. In this article, the multidisciplinary prototype is presented, which includes aspects in the scope of citizens' housing.

3.2. Data Models

Given the specificity of the organization under study and aiming to add the various aspects in which the set of information of each citizen of the community that considers itself pressing to provide a better and more integrated service is presented in Figure 1 - the data model.
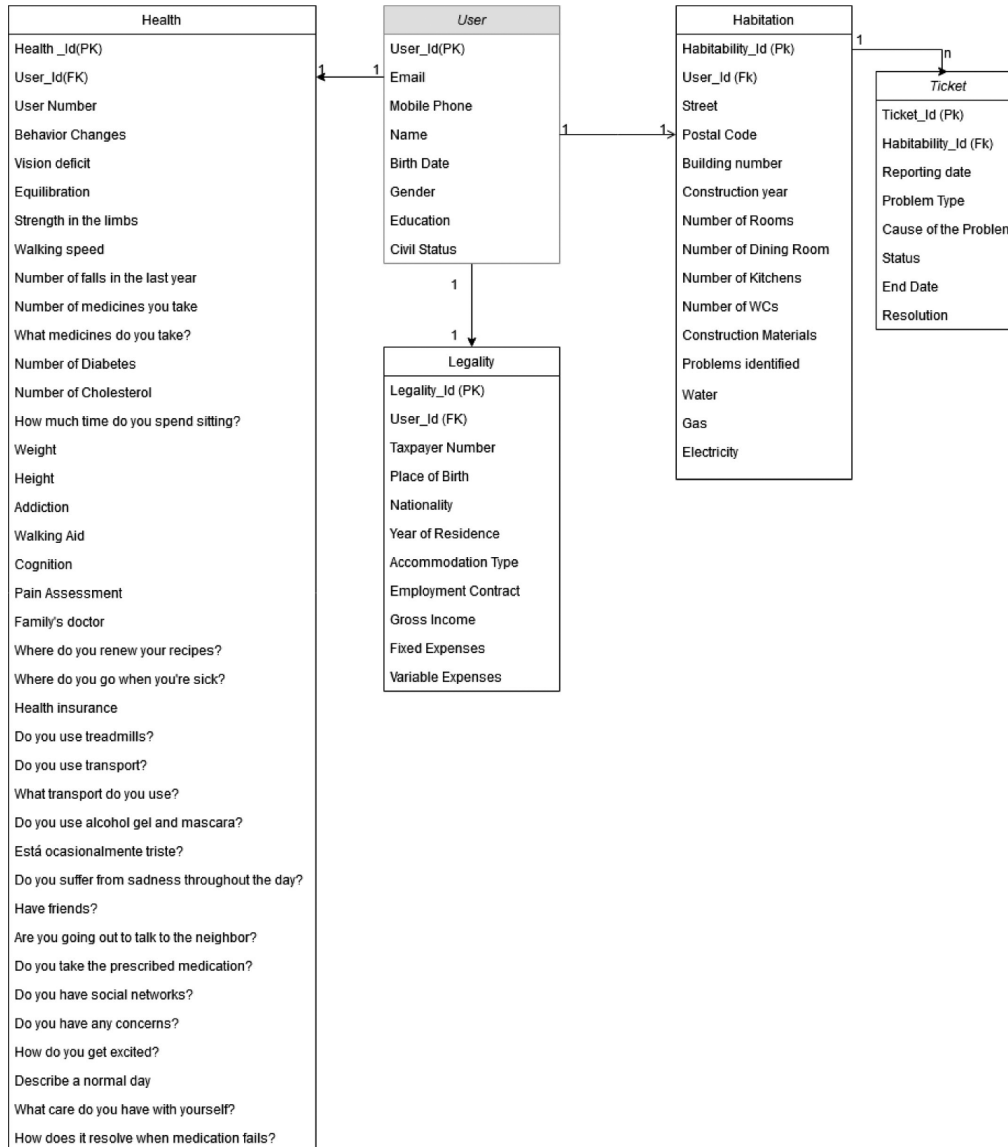
Figure 1. Data Model
Source: Lidon, (2021)

The data model presented allows to relation the information of the citizen in the areas of health and the situation of legality in the country. It also allows the registration in detail of the conditions of habitability to allow interventions with the objective of increasing the quality of life.

3.3. System Architecture

The architecture presents an overview of the system given the specificity of the problem. The model presented in Figure 2 implies the form of iteration between the various actors, describing how the system is organized and emphasizing the communication components.
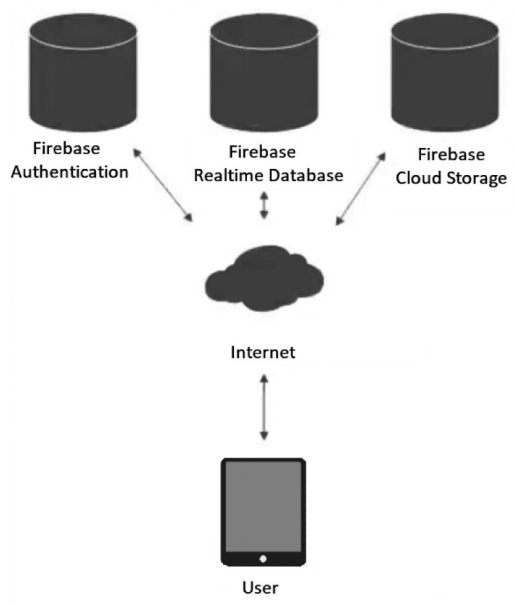
Figure 2. System Architecture
Source: Lidon, (2021)

Figure 2 presents the system architecture emphasizing the authentication process and the storage of information in the cloud.

3.4. Prototype

The data model and system architecture allowed defining the prototype of the application. It should be noted that the multidisciplinary prototype and information aggregator have implied a diversity of screens. This article only presents the habitability and ticket management components.

Figure 3. Habitability conditions
Source: Lidon, (2021)

Figure 3 presents the information that was considered pertinent to characterize each community housing.

The management of tickets is interesting because the civil engineer and the citizen will have the opportunity to interact with the system.

Figure 4. Ticketing System
Source: Lidon, (2021)

The Ticket component of the system will allow the civil engineer to rotate the process over time to update the system and the progress of interventions in the homes of citizens. On the other hand, the citizen interacts with the system by recording the problems he is experiencing in his dwelling. One also can consult the progress of its request for intervention.

4. FUTURE RESEARCH DIRECTIONS

Future work needs validation in real context to select a sample of dwellings to measure the feasibility and usability of the application.

It is also considered to be pressing to increase the level of functionality of the application after its full evaluation in the community. It is therefore intended to optimize implementation and assess the feasibility including further measures to increase the level of implementation of sustainability.

5. CONCLUSION

Social organizations are confronted in their daily lives with a set of constraints not only in their implicit operation but also, concerning deter free applications that meet their specific needs.

The study allowed the creation of an application for the management of living conditions in a community located in a city. The community under study is in an old neighborhood with economic needs and century-old houses where an aging population resides.

The literature review in the field of the theme and emphasizing the analysis of the pertinence of the inclusion of contributions in the field of sustainability was of particular interest. It should

also be noted that the DSR methodology proved to be adequate for the development of the work allowing the iterations necessary for the construction of the artifact.

The prototype created is multidisciplinary and aggregator of the various valences implicit in the management of citizens. Thus, enabling more effective and efficient management, enhancing the provision of better services, and resulting in the increase in the quality of life of citizens essentially in the face of the constraints in times of pandemic.

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MANAGING AND ORGANISING THE COVID-19 EFFECT
ON ONLINE SHOPPING BEHAVIOR

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Abstract: *These days, we are all exposed to unusual conditions due to the Coronavirus pandemic COVID-19, which exposes to unpleasant circumstances our families, friends, and also our business activities. According to this fact, it will probably increase the online shopping, because the people are spinning to the e-commerce to buy the things which in normal conditions would buy personally. The paper aims to find out how the COVID-19 pandemic has influenced on the growth of online shopping and electronic commerce, such as managing the new way of living. The authors in this paper use the methods of synthesis, comparison, time series analysis and use data from the Association of e-commerce of the Republic of North Macedonia. The authors concluded that the COVID-19 pandemic has changed the habits of the domestic buyers, who redirected the big part of the online shopping from foreign countries to domestic e-shops.*

Keywords: *Association of e-commerce of the Republic of North Macedonia, Electronic commerce, Influence.*

1. INTRODUCTION

After one year, the pandemic of COVID-19 has pointed out the value of digital shopping and the relationships with the consumers. There are many questions about the changes in consumers' behavior, the predictions of their requirements and finally about the competitive advantage over the other companies. Some countries with a growing economy like Germany, France, Great Britain and the United States have success, although there is economic decrease all over the world. But, the question is how they do it? Different countries use different methods of maintenance in terms of their economic position, but they have one thing in common when they succeed during a pandemic. Those who listen to the requirements and wishes of their consumers are usually growing during a downcycle like this one we are living in.

The most important thing to carry on with loyalty from the consumers is to have a previous positive experience from the collaboration with some company.

Companies should focus more on managing the promotional activities on the Internet. Each of them should enhance websites and online applications with options for consumers, so they can find out something more about the products and services, and be encouraged to buy the products from their homes.

This article aims to show the real happenings during the pandemic, and to define that it is impossible for online shopping to be the same as it was before the coronavirus; it is now better organized, and the companies invest more finances in managing it.

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2. ADVANTAGES OF THE ONLINE SHOPPING THROUGH VIRTUAL SHOPS

The main advantage of online shopping is the convenience for the consumer. The majority of the people have a dynamic life, full of activities and when they should buy something, they often decide to do it through the Internet. This way of buying saves time, effort, and even money. Simply said, it is more comfortable to do it from home than to go in some shop. It is also important to mention that online shops are available 24/7, and it is possible to purchase anytime from anywhere.

The products that are available for online purchases almost always have better prices than in the shops. Online shops usually use to offer promotion packages and excellent collaborations. All this saves money and offers great value.

During online shopping we have complete control of the process, customers have unlimited time for viewing, checking, thinking and deciding for the offered options, without having to waste the time of the employees.

In the increase of e-commerce, there is a phenomenon called the virtual shop, which is more popular day by day. It is high technological, digital response of the personal experience that enjoy the consumers of physical retail locations.

The present situation ordered the presentation of the most modern electronic devices for adult smokers, IQOS, in the Republic of North Macedonia, to be directly and in the first moment, exclusively online. During online shopping, besides the advantages, disadvantages could be the deficiency of consulting possibilities, making questions or user support.

Luckily, this is not a case in mk.iqos.com, where besides the option to order from the e-shop, there is a virtual IQOS zone, available through one click, through which the experts will take care personally for every user to give a recommendation in the choice of IQOS or right additional information, and to make the order for the user.

The online order is just the start of the user's experience with the IQOS brand. The delivery is made by an IQOS consultant, who is not here just for the logistics, but to devote time and attention to the new user, to get to know the device, explain the way of using IQOS, from basic to more advanced tips.

3. IMPACT OF COVID-19 ON CONSUMER BUYING BEHAVIOR

COVID-19 has caused widespread damage to the global economy, with some countries shutting down their stock markets, closing corporate offices, retiring small businesses, and canceling major social events. The additional effects of reduced consumption and investment have impacted many other areas dependent upon healthy economies (Bayad Ali, 2020).

Empty shelves during COVID 19 have generated severe problems for the consumers. COVID-19 has forced consumers to change the way they preferred to shop. There is an increased shift in consumer buying behavior from traditional shopping to online shopping (Sharma, Jhamb, 2020). Apart from the augmented number of customers indulging in online shopping shift has been observed in the choice of products being ordered by customers through these online tools.

The majority of the customers have started ordering more personal care and medical kits, rather than ordering fashion products. National Retail Federation (NRF) has surveyed on consumer's online shopping behavior in this epidemic situation, and has briefed certain consumer buying behavioral changes as follows (Sharma, Jhamb, 2020):

1. As per the survey results, 9 out of 10 customers have changed their shopping practices.
2. The results support the fact that more than 50% of customers have changed their traditional shopping habits by ordering products online.
3. About 6 out of 10 customers stated that they avoid going to the store due to the fear of being infected and that they order necessary goods online (Sharma, Jhamb, 2020).

All these behavioral changes are not permanent but few are going to last permanently. As society will recover from this survival mode, this digital – online shopping adoption is likely to become permanent. So, in the end, this pandemic situation has been classified into two aspects: one is a shift in customer behavior that avoids public crowded gatherings, and the second is more inclination towards digital adoption (Sharma, Jhamb, 2020).

The results of many studies show that normative determinants such as media reports on the economic situation are related to consumers' purchase intentions, whereas the normative influence of close social networks is not related (Koch, Frommeyer, Schewe, 2020). Koch, Frommeyer and Schewe state that, they find out that hedonic motivation is a better predictor of purchase intentions than utilitarian motives, and that individuals practicing social distancing, generation Z, and women show higher levels of hedonic motivation. They provide recommendations for e-commerce companies on ways to address consumers' purchase motives and strategically harness normative influences (Koch, Frommeyer, Schewe, 2020).

4. THE ROLE OF THE E-COMMERCE FOR PROTECTION OF THE CITIZENS DURING A COVID-19 PANDEMIC IN THE REPUBLIC OF NORTH MACEDONIA

During the pandemic, the Association of e-commerce of Macedonia notices expansion and maximizing of the facilities of the e-merchants, which is proof of the benefits that have both the citizens and the companies which have implemented e-commerce in their business activities or are planning to do it soon.

This Association gives some advice for the consumers. They say that people should buy from the comfort of their home, without having to face the virus personally. Almost all the products can be bought online.

Some of the places where they can order and buy food, clothes and shoes are paket.mk, Reptil Kliknijadi, e-Tinex, Fashion Group, Sport M, Grouper, e-Kupi, Market Konekt. Halk insurance, Sava Insurance and Eurolink Insurance, which offer an opportunity for protection through online shopping, and many other companies that offer different products.

Filip Cizbanovski, the Acting President of the Association of the e-commerce of Macedonia considers that, even though the present situation with the pandemic is terrible for the economy, the domestic quarantine and the self – isolation motivate the e-commerce and the online orders, and habits that will stay even after the end of the crisis. According to him, all the world faces challenges from the aspect of setting appropriate security measures, the way of managing the

delivery of products and the increased demand of products in some companies. He also considers that e-commerce is one of the best opportunities that we have for supplying products and maintaining a physical distance.

The attitude of the Association of e-commerce is that people should pay attention when shopping online, and not buy in illegal stores that work only on social networks because they have to protect themselves.

5. THE WAY THE PANDEMIC INCREASES ONLINE TRADE IN THE REPUBLIC OF NORTH MACEDONIA

The change in the habits of the citizens, in conditions of limited movement due to the pandemic, contributed to the impressive annual growth of their payments with online payment cards in the country by 141%, as well as the credit transfers initiated electronically by 28%, during all three quarters in 2020, as the data from the National Bank show. However, the low level of digital skills slows down the further growth and development of e-commerce, according to the analysis of the Association for Electronic Commerce.

Table 1. The influence of COVID-19 on the consumer habits in North Macedonia

18%	Started to pay online
17%	Started to use government e-services
37%	Buy more online
76%	Will continue to buy the same way after the pandemic

Source: Analysis of the progress of e-commerce, AECM, 2020

6. GROWTH IN THE NUMBER OF ONLINE PAYMENTS

The change in the habits of the citizens in conditions of limited movement due to the pandemic contributed to the impressive annual growth of their payments with online payment cards in the country by 141%, as well as the credit transfers initiated electronically by 28%, during all three quarters in 2020 (National Bank of the Republic of North Macedonia).

To make payments, citizens, in particular, used mobile applications, which indicates a further change in payment habits, in addition to the use of digital payment channels.

Table 2. The opinion of the Macedonian e-buyers through messages on the social media

47%	Order through messages
78%	Because it is faster and easier
48%	Never get receipt
27%	Rarely get receipt
73%	Know that are part of the gray economy, but they accept the risk

Source: Analysis of the progress of e-commerce, AECM, 2020

The recommendation to businesses is that the digital communication strategy of brands must be adapted in times of crisis, just as it is important to adapt the way of working, selling, producing; e-retailers need to adapt the way of communication, and to adapt the tone and messages to the public in accordance with the stages of the crisis.

Table 3. The growth of e-commerce in Macedonia in the period of COVID-19

Total value of card transactions is almost equal, but the structure has changed	
Decline in the value of ATM withdrawals and transactions at physical points of sale	
114%	Growth of domestic card transactions to domestic e-merchants
36%	Fewer transactions to foreign e-traders by Macedonian citizens
37%	Fewer transactions at POS terminals in the country by foreigners

Source: Analysis of the progress of e-commerce, AECM, 2020

6.   FUTURE RESEARCH DIRECTIONS

Consumer behavior had to adapt very quickly to the new conditions. Planning (for larger and less frequent purchases) and limited time (spent in line in front of and in the store) have become especially important. Planning and timing will become much more important than they were before the Covid-19 crisis, so we expect both consumers and the economy to use more technology as a part of the new package solutions.

After the pandemic, it will be especially important for the movement of customers through the store to take place in the right way. Overcrowded crossings will create "bottlenecks" and retailers will think about how to change the look of stores and flow.

In addition to some retailers advising consumers through apps or online platforms on what is the best time to shop, we expect to see more use of other digital tools.

Virtual queues will probably be needed to manage the flow of consumers at a time when stores are heavily visited. Store entry controls, with the help of digital screens, could become a common option.

Tools that help shoppers complete their in-house purchases, such as an interactive application that shows the consumer where to find a product in the store, could be useful. It can be a valuable way to alleviate congestion in stores, and it would be more beneficial if combined with data on the availability of that product.

7.   CONCLUSION

Based on the conducted research, we concluded that, with product availability challenges, which are greater than ever, consumers are more likely than usual to reach out for e-purchases to get everything they need. Whether it is a direct supply of coffee, beer, or wine from the manufacturer, ordering package meals or direct ordering from wholesalers, restaurants and delivery companies, many consumers are trying out new ways to shop online.

The COVID-19 pandemic provided an opportunity for e-commerce that had never existed before. There is a growth, globally; some more developed countries with an adequate level of digital skills have managed to achieve three- and five-year growth in a few months. Countries with lower levels of digital skills needed to participate in online shopping, such as North Macedonia, cannot catch up so quickly because these perennial weaknesses are not addressed in a few months. That is why it is important to set a clear goal and digital strategy for our country as soon as possible.

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CREATING LOYAL CUSTOMERS IN DISRUPTIVE TIMES

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Abstract: *Nowadays, the dynamic market, where customer loyalty is created and maintained, is far more complex than it was in the last couple of years. The market surrounding becomes more and more complex as well so that the good old marketing techniques are no longer effective. It underlines the need for implementing new digital techniques and methods.*

Building loyalty requires from organizations to create value for their own products and services, in order to show that they are interested to fulfill the requests to create strong bonds with the customers.

The goal of this paper is to show how the transformation of working models and activities, disruptive technology, regulatory policies, globalization as well as fast digitalization, prevent many organizations from creating loyal customers.

The paper includes primary manager concerns, finds the reasons for the company's success or failure, and creates ways to reach the customers and to produce loyalty.

Keywords: *Marketing, Loyal customers, Digital techniques.*

1. INTRODUCTION

One of the greatest marketing challenges is creating loyal customers. "Loyalty" is more profitable. Expenses for getting new customers are much higher than keeping the old ones. Disruptive technology, regulatory policies, globalization as well as fast digitalization, prevent many organizations from creating loyal customers.

Satisfied customers are not always loyal customers, but there is a correlation between pleasure and loyalty. Sometimes, even the unsatisfied customers are also loyal customers because of their attachment and commitment towards the brand or company. Pleasure has a positive effect on the customer's trust and trust has a significant role in loyalty.

Customer loyalty is considered a key factor when it comes to gaining market share and creating a sustainable competitive advantage. The banking sector is not an exception, since the sector itself conducts interaction with the customers, and that's the reason we have to consider the factors that influence loyalty in disruptive times.

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2. CREATING LOYAL CUSTOMERS IN DISRUPTIVE TIMES IN THE BANKING SECTOR

The customer is the key to business success, and that's why customer loyalty is essential in creating long-term marketing goals. Companies not only want to satisfy the customers' needs but also to impress them.

Loyalty stimulates the strong feeling of trust between the brand and the customer – when customers have the opportunity to choose, they often choose the same brand. Customers are loyal to the brand because they connect the brand to positive experiences such as great service, feeling of being connected with the values and ideals of the brand, or constant high quality of a product or service.

Disruptive times affect customer loyalty and the banking sector. This period marks the practitioners' concern about the global pandemic and the extended customer expectations. One way to improve customer loyalty in the banking sector is focusing on good service offers and satisfying the customers' needs. The banks need to have a good understanding of their customers' behavior in order to develop good marketing strategies focused on building relationships and their maintenance.

Increasing safety, introducing managing customer account system with privileges, conducting double verification of the customer identity, loyalty programs, maintaining and improving the quality, as well as effective and efficient working - is another way of strengthening the customer's loyalty.

3. CONDUCTED RESEARCH

To conduct the research, the inquiry method was used, i.e. conducting a questionnaire with structured questions as a technique. The inquiry involved service users of the banking sector in North Macedonia to establish the usage of banking services in this disruptive period of life.

The analysis of the acquired data of the questionnaire is conducted in the statistic software package SPSS Statistic.

This research can be analyzed from different perspectives. In order to be more successful and realize the goals of the banking sector in disruptive times, it is necessary to carefully follow all the macroeconomic parameters and internal indicators, as well as to adjust the work to the business climate and market dynamics.

The questions include a wide range of problems such as identifying pleasure, types of loans, types of services, reasons for usage, etc (Table 1-6).

Table 1. Satisfaction with the service

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Satisfied customers	95	95.0	95.0	95.0
	Unsatisfied customers	5	5.0	5.0	100.0
	Total	100	100.0	100.0	

Source: authors research

According to the research, the largest number of users of banking services are satisfied users (Table 1), and there is a smaller number are users of other sources of funds in comparison to service users (Table 2).

Table 2. Users of banking services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Service users	73	73.0	100.0	100.0
	Other sources of income	22	22.0		
Missing	Non-users	5	5.0		
	Total	27	27.0		
Total		100	100.0		

Source: authors research

Factors that affect the use of banking services are reputation, trust, service digitalization, and low-interest loans (Table 3).

Table 3. Loyalty factors

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Reputation	13	13.0	17.8	17.8
	Trust	36	36.0	49.3	67.1
	Service digitalization	12	12.0	16.4	83.6
	Low- interest loans	12	12.0	16.4	100.0
	Total	73	73.0	100.0	
Missing	Other sources	22	22.0		
	Non-users	5	5.0		
	Total	27	27.0		
Total		100	100.0		

Source: authors research

The imposed challenges demand a quick reaction and response in short-term deadlines to adapt the work activities and keep the customers. According to the research, there is a decline in loans demanded by customers and firms, despite the fact that lately the credit terms regarding interest are improved. Customers show the biggest interest in consumer loans and the slightest in car loans (Table 4).

Table 4. Types of loans

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Consumer loan	40	40.0	40.0	40.0
	Housing loan	20	20.0	20.0	60.0
	Credit card	18	18.0	18.0	78.0
	Car loan	12	12.0	12.0	90.0
	Other	5	5.0	5.0	95.0
	Non-users	5	5.0	5.0	100.0
	Total	100	100.0	100.0	

Source: authors research

The number of users of services in the banking sector is reduced, thus the number of loyal customers is also reduced.

Table 5. Crosstabs, Satisfied / Unsatisfied customers – Types of loans

	Types of loans						Total
	Consumer loan	Housing loan	Credit cards	Car loan	Other	Non-users	Total
Satisfied customers	40	20	18	12	5	0	95
Unsatisfied customers	0	0	0	0	0	5	5
Total	40	20	18	12	5	5	100

Source: authors research

Table 6. Crosstabs, Users of banking services – loyalty factors

	Loyalty factors				Total
	Reputation	Trust	Digitalization	Low-interest loans	Total
Users of banking services	13	36	12	12	73
Total	13	36	12	12	73

Source: authors research

The acquired data from the conducted research gives an opportunity to point out certain recommendations for the banking sector:

- To continue creating policies focused on maintaining liquidity and long-term stability;
- To put the accent on the offer of financial products and services adapted to the needs of the customers that are mostly affected by the crisis;
- To offer low-interest loans to overcome the difficulties in payment;
- Application of new software solutions;
- Digitalization of products and services;
- Financial work demonstrated through efficient and economic working;
- Stimulating management for developing loyalty programs.

The degree of digitalization, the digital techniques and the extended usage of efficient and safe instruments for conducting cashless payment will have a positive impact on decreasing the financial transactional expenses in the economy, on the one hand, and increasing the customer loyalty to the services, on the other.

The process of decision making, establishing the priorities, operationally conducting the goals and tasks through strengthening the organizational culture, expanding work effectiveness, developing responsibility and consciousness towards work obligations - are just a few values in the banking sector that will increase customer loyalty.

With profound commitment, while maintaining a high level of quality in delivering banking and other financial services, the banking sector will increase the number of loyal customers in the near future.

4. CONCLUSION

Disruptive times affect customer loyalty and the banking sector. This period marks the practitioners' concern about the global pandemic and the extended customer expectations. Customers are loyal to the brand because they connect the brand to positive experiences such as great service, feeling of being connected with the values and ideals of the brand, or constant high quality of a product or service.

Digital platforms, mobile banking, and payment apps are now crucial mechanisms for engaging with customers in the banking sector. In order to be more successful and realize the goals of the banking sector in disruptive times, it is necessary to carefully follow all the macroeconomic parameters and internal indicators, as well as to adjust the work to the business climate and market dynamics.

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APPLICATION OF DIFFERENT MANAGEMENT MODELS IN PRIVATE AND PUBLIC ENTERPRISES THROUGH THE PROCESS OF PROFESSIONALIZATION AT THE LEVEL OF LOCAL SELF-GOVERNMENT

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Abstract: *City economic structures on the territory of the Republic of Serbia should adapt and accelerate the process of balanced development between the urban and rural parts of the city on modern principles of management. On the other hand, the role of the process of professionalization of company management, as a factor of modernization at the level of local private and public companies should be explored, starting from the position that management is not only an economic category dominated by rational, financial, market principles and activities but also a sociological category, primarily reflected in the professionalization and democratization of labor relations. For the purpose of analysis, the forms of changes of the following should be considered: a) development strategies, b) production/property relations, c) changes in existing management models.*

Keywords: *Professionalization, Management, Development strategy, Property relations, democratization.*

1.   INTRODUCTION

Professionalization is a very complex process that takes place simultaneously at several levels of social and economic development. From a systemic point of view, it is a fundamental process of the social division of labor, and from an institutional point of view, it is the legitimization of the privileges of the profession; from a social point of view, it is a source of social stratification. Sociological theories of professions treat professionalization in most cases from the institutional point of view, equating the process of professionalization with the institutionalization of social position, status and privileges of certain groups of professions.

Consideration of the degree of professionalization of management structures at the local government level aims to encourage the development and implementation of new functional management models that should include a specific angle of observation and modeling of the development strategy concept on the concept of management professionalization as a form of management system modernization in public and private sector on the local level in Serbia.

The paper starts from the assumption that a different approach to changes and development in terms of recomposing the structure of relations in the field of management and executive work, provides an opportunity to identify or encourage the needs for new potential, functional, institutional and non-institutional solutions in the management process of socio-economic development on the local level.

The analysis included the area of a local self-government of southern Serbia, an area that represents a true representative of the Serbian average, suitable for measuring potential functional management models in companies, both for selected underdeveloped area of Serbia and for

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other Serbian companies, which are more developed than the Serbian average, and they can use easily visible research experiences to select their strategic development goals, especially since similar research for the territory of Serbia has not been undertaken so far.

2. PROFESSIONALISM – CONCEPTUAL DEFINITION

The definitions of professional activity that we find today in sociology, mostly follow Parsons' basic understanding of the profession as a normatively universal and functionally specific activity. The most frequently mentioned and most criticized is Greenwood's definition of the profession. In his opinion, professional activity is *an extremely complex phenomenon in society, which contains the following elements: 1. systemically grounded theory, 2. professional authority, 3. social sanctions, 4. code of ethics and 5. specific subculture (E. Greenwood, according to Rus and Arzensek, 1984).*

Barber's definition differs from Greenwood's in that it is somewhat more selective and also in that it emphasizes less the autonomy or authority of professional activity. Different definitions of professions, which we come across in the professional literature, for example, in E. A. Krause (*Krause, 1971*), are quite similar to Greenwoods. They differ from it in that they place less emphasis on professional autonomy and a monopoly on expertise.

Sociologically speaking, the difference between craft and professional activity is that the former is focused on continuity and professional activity on innovation and creativity. Social changes as an environment are not inherent in craft activities, while professional activities take place and are maintained on constant changes, criticism and introduction of innovations. Theory cannot be replaced by experience, but only methodologically-empirically supplemented and refined. Any compensation of experience with theory is non-functional and methodologically wrong and thus poses a danger to the quality of the professional activity.

3. PREREQUISITES AND LIMITATIONS ON THE PROFESSIONALIZATION OF MANAGEMENT IN LOCAL PRIVATE AND PUBLIC ENTERPRISES

The focus of the paper is the role of the process of professionalization of management in enterprises as a factor of modernization and development. The relations that are analyzed are monitored through the analysis of the forms of changes of a) development strategy, b) production/property relations and c) management models.

The starting point is the assumption that the speed of transitional changes in post-socialist societies, which have found themselves in the process of restoration of the socio-economic capitalist system of various historical forms, from neoconservative to neoliberal, will depend on the degree and form of professionalization of management in the management process at the levels of work organizations.

In order to discover the preconditions, basic obstacles and limitations of professionalization of management in local private and public enterprises, the theoretical starting point are two criteria that define the professional activity and they are professional activities and type of knowledge of the professional occupation. There are different needs and consequences that arise from the ownership relationship in the process of professionalization at work, so a different degree of importance is attached to certain professional activities and the type of knowledge of professional occu-

pations. The results of research[2] conducted in the area of local self-government[3] which represents the Serbian average showed that in the private sector, professionalism in work, above all, is seen in adherence to the professional code of ethics and the first place in the public sector, professional approach has as an effect rationalization of work, productivity and democracy and, to a much lesser extent, that it is a professional activity that should adhere to a professional code of ethics.

Confirmation of the different priorities in understanding professionalization at work in the public and private sectors is in declaring the type of knowledge of professional occupations. In the private sector, the development of new professional insights is in the first place and the second place is shared by: non-routine approach in the application of knowledge in solving professional problems and a professional approach as an effect of rationalization of work, productivity and democracy. In the public sector, when it comes to the type of knowledge of professional occupations, the answer is in the first place: professional approach has the effect of work rationalization, productivity and democracy; secondly, non-routine approach in applying knowledge in solving professional problems, and thirdly, what is in the first place in the private sector – developing new professional insights.

From a comparative analysis of the answers obtained by both groups can be concluded that they reflect the level of priority of business activities in order to achieve business goals or successful business. In the private sector, new, fresh ideas and new products are important and a more innovative and creative approach to the work process is sought, which will enable a better market position and competitiveness. Unlike the organization and business in the public sector, which suffers from problems related to non-rationality, inefficiency, inability to make independent decisions by directors and chiefs, non-market orientation because the policy maker in public and public utility companies and their financier, is a local government unit or city which manages public companies through its executive and legislative bodies.

4. RELATIONSHIP BETWEEN PUBLIC AND PRIVATE SECTOR REPRESENTATIVES TO THE FOUR APPROACHES TO THE STRATEGIC CONCEPT

Starting from the position that different strategic approaches differently emphasize the advantages and disadvantages of the offered alternatives for problems solving, the theoretical starting point in the paper are four approaches, which start from the fact that we should first hear the pros and cons arguments, from several offered alternatives, and then approach the problem and tension solving.

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[2]   Vukosavljević Pavlović, V., (2020). „Socio-ekonomski aspekti profesionalizacije menadžmenta kao oblik modernizacije sistema upravljanja u preduzećima na primeru grada Leskovca" (doktorska disertacija), Filozofski fakultet, Univerzitet u Prištini sa privremenim sedištem u Kosovskoj Mitrovici), str. 220.

[3]   The number of 21 enterprises were taken into consideration (the research was realized in the second half of 2018) from the territory of the city of Leskovac, with over 50 employees with a dominant processing activity and one small number of enterprises with trade and service activities, which were relevant for the research, employing 5664 of the total employees in enterprises (10401) on the territory of the city of Leskovac, in entrepreneurial agencies 2239 and in public and public utility enterprises 770 persons, based on official data in the Report on the Final Account for 2017, from SBRA (Serbian Business Registers Agency), and about 2000 employees in the company that was included in the survey and was not stratified from the SBRA list. Private enterprises covered by the survey are in the legal status of a limited liability company. Some analyzes show that 90% of companies in the Republic of Serbia are registered as LLCs. The research covered five public and public utility enterprises in the area of the city of Leskovac (JKP Komunalac, JP Vodovod, JP Pijaca, JP Toplana, JP Dom). In the category of economic activity, with an absolute share (100%), the service is the only and basic activity.

There are four general approaches to identifying and interpreting strategic tensions or dilemmas. It is viewed: *1. As a riddle. A riddle is a challenging problem with one optimal solution (a "riddle answer"); 2. As a dilemma. The dilemma is a troubling problem with two possible solutions. 3. As a compensatory relation. Compensatory relation (or trade-off) is a problem situation in which there are many possible solutions, each of which represents a different balance of conflicting pressures, where more than one always means the same amount less than the other, i.e. what is again for one player is a loss for another; 4. As a paradox. A paradox is a situation in which two, seemingly contradictory or even mutually exclusive factors (A and B) appear at the same time as true and valid. The paradox has no real solution because there is no way for the two opposites to logically integrate into a consistent understanding of the problem (Ocić, 2014).*

Based on the stated theoretical starting point, the research results[*4] show that the strategy is mostly understood in both the private and public sectors as a dilemma, i.e. as a disturbing problem with two possible solutions, where each option has its advantages and disadvantages but is not unequivocally superior to the other. It should be emphasized that the results showed a high percentage of public sector representatives trying to give their views on the understanding of the strategy, i.e. that it is: an instrument for successful implementation of strategic goals and activities almost equal to the choice of good business decisions that contribute to market competitiveness, profitability and financial gain.

The positive attitude of private sector representatives towards the strategic approach is seen primarily in the attitude that it is very important as a condition for development, because it provides an instrument for a rational approach to business, defining clear goals, through setting a clear vision of enterprise development. The importance of the strategy in the private sector is also recognized in the sustainability of the family business due to the medium-term, good planning of material and all other resources as in encouraging greater motivation of employees in the work process.

The new paradigm points several objections to the neoclassical analysis of economic development: *a) the absence of historical specification, b) the absence of social analysis, c) disregard for the importance of the structure space in the development process (Ocić, 2014).* For the thematic framework of the paper, the objection related to the absence of social analysis is especially important. Analysis of the mentioned shortcoming, the neoclassical paradigm starts from the assumption *that the development and organization of the economy take place in an implicitly harmonious social order, in which there are no internal structural contradictions. (Mitrović, 2014).*

5. THE NEED FOR CHANGES IN MANAGEMENT AND DECISION MAKING

The need for change in management and decision-making is the result of both the imposed practical needs in the business of modern enterprises and the scientific actualization of the form and degree of participation of employees in management processes, starting from the assumption that they are one of the partners in the working process. An integral part of the consideration of people management is the very concept of management. Management, according to American social worker and management consultant Mary Parker Follett, is: "The ability to get things done through people[*5]." Management, as a process, consists, according to the vast majority of authors, of four phases: *planning, organizing, leading and control* (*Janićijević, 2008*). Based

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[4]   Vukosavljević Pavlović, V. (2020), „Socio-ekonomski aspekti profesionalizacije menadžmenta kao oblik modernizacije sistema upravljanja u preduzećima na primeru grada Leskovca", str. 201 - 205

[5]   https://www.business.com/articles/management-theory-of-mary-parker-follett/, accessed on 03.04.2021.

on the results of the already mentioned research, the management process is not only an economic category dominated by rational, financial and market principles and activities but also a sociological one, which is primarily reflected in the professionalization and democratization of work relations. To understand the essence of management and its different forms, different management models are taken into account and at first glance, it is noticeable that an essential difference is made between individual models and the attitude about acceptability or unacceptability in doing business in Serbian enterprises at the local government level.

The analysis of research results related to attitudes and opinions towards different models of management shows that the liberal-democratic model of management is, for the most part, characterized as positive. The advantage of this concept is seen in the clearly defined responsibility, the ability of employees to participate in the decision-making process; it emphasizes its adaptation to change and respect for expertise and knowledge.

A strong view of the democratic model of management is that it has been more acceptable in the past than in modern business conditions. The assumption is that it arises from the ideological identification with the former socio-economic concept of real-socialism during the SFR Yugoslavia and the model of workers' self-government, which proved to be not so successful and scientific and social controversies are still going on about the reasons for failure.

The socio-democratic model is positively characterized because it respects the interests and needs of all employees, develops a sense of teamwork, provides the opportunity for employees to make decisions according to the position in the company, cares about people in a social sense. The only limitation of this model is that it is inapplicable in small firms (there is little room for greater employee participation in management because technical issues are mostly addressed).

The fourth management model that is the subject of analysis is authoritarian. Its positive characteristics are recognized in the greater discipline in running the company and negative in the wrong management of the company, causing conflicts, in the blind execution of work orders by subordinates (the consequences are lack of new ideas, a characteristic model in small firms' management where the owners are managers at the same time).

The attitude towards the authoritarian model of management in the public sector, in the largest percentage (80%) is positive, primarily because the decision is made by one person on behalf of all. A positive attitude towards the authoritarian model of management by respondents from the public sector can be understood if it is analyzed from the angle of socio-economic and political conditions in which public companies operate in Serbia. Directors, managers of public and public utility companies, do not have sufficient independence in management, so they may see a solution in the authoritarian model of management.

The reasons for this positive attitude of public sector representatives, according to the authoritarian model of management can be found in the results of the survey, which aimed to examine, among other things, the characteristics of corporate governance in public enterprises in the Republic of Serbia and the business results showed to be *non-efficient or insufficiently efficient in relation to the available resources of public enterprises; the work of public enterprises is very often politicized and there is no professional management that is socially responsible (Jokić, 2015).*

6. CONCLUSION

In finding optimal solutions for a successful business, for private and public enterprises operating on the territory of local governments through efficient management models in transitional market economic conditions, first, further economic development should be harmonized with the needs of post-socialist society in transition which requires a different concept of development and management model for development, both at the level of society and at the level of work organizations.

In encouraging and developing the professionalization of managers through the democratization of relations by involving employees in management processes, one should start with separate management modalities in private and public companies, taking into account various parameters, such as: ownership and management model regardless of the formal-legal, the management framework is the same for both private and public companies in Serbian legislation. There are differences in business policy makers and sources and methods of financing.

Second: in finding a successful management model in companies through the professionalization of management and democratization of labor relations must be taken into account, in addition to ownership, applied management model and differences in priorities in understanding the concept of professionalization should not be an obstacle, but on the contrary, the ability to find the best management models.

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THE STRUCTURE OF SUPPORTED BUSINESS R&D INITIATIVES BY SUPER-DEDUCTION IN SLOVAKIA

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Abstract: *The super-deduction of research and development allows any company based in Slovakia, which implements innovative or development projects, to deduct from the tax base for the second time the expenses it has incurred for these projects. The savings that each innovative company would receive in 2018 by using a super-deduction for R&D after meeting the legislative requirements in Slovakia was an extra €21,000 for every €100,000 invested in development and innovation projects. Compared to 2017, the level of super- deduction in 2018 has increased fourfold from 25% to 100% of relevant expenses. The research aims to analyse the projects implemented by the companies in 2018 in Slovakia in the framework of R&D in the content of the projects and the related amount of the deduction which were supported. The research shows that not every business subject carried out R&D only within its focus of the main business.*

Keywords: *Research, Development, Super-deduction.*

1. INTRODUCTION

Determining the criteria and applying them when determining research and development is involved and when not is not at all straight forward and unambiguous. In order to precisely define R&D at the international level, the Frascati manual has been developed and published by the OECD, the Organization for Economic Co-operation and Development. The Frascati Manual defines research and development as *"creative work carried out on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and of using this pool of knowledge to design new applications."* (OECD Frascati Manual, 2015)

The competitiveness and sustainability of a modern organisation depends on its ability to innovate successfully. Innovation is the combined activity of generating new knowledge and the subsequent successful exploitation of this for benefit (von Stamm, 2008; O'Sullivan and Dooley, 2008). The current perspective of the innovation process views it as an interactive and networked system, spanning independent organisational boundaries to draw on complementary knowledge, experience and capabilities from increasingly diverse sources (Tidd and Bessant, 2009; Philpott et al., 2011).

Until 2015, companies in the Slovak Republic could use support only in the form of subsidies or tax relief. The tax super-deduction of costs/expenses has been applied in the conditions of the Slovak Republic since 2015, when it was introduced into legislation. Deduction of costs incurred for R&D projects is a government tool to support private R&D investments. It takes the form of a tax credit for taxpayers of all legal forms of business and all branches of activity (ASB, 2021). This is an indirect form of support, where it is possible for tax subjects to deduct from

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the tax base a set percentage of the value of tax-recognized costs of R&D projects incurred in the tax period. The supercomputing aims to motivate the private sector to spend its own funds on R&D and thus reduce the gap between Slovakia and the European Union average in the level of spending on research and development.

The savings that each innovative company would receive in 2018 by using a super-deduction for R&D after meeting the legislative requirements in Slovakia was extra €21,000 for every €100,000 invested in development and innovation projects. Compared to 2017, the level of super deduction in 2018 has increased fourfold from 25% to 100% of relevant expenses.

The paper aims to identify the conditions that must be met in order for the R&D project to serve as a basis for the application of the super-deduction in the entrepreneur's income tax return in the Slovak Republic. First of all, it is necessary to theoretically analyse the requirements for the R&D project according to the valid legislation in Slovakia and then within the quantitative research we statistically evaluate the focus of R&D projects for 2018 in comparison with the main business of individual companies. The basic research question of the research presented in this paper is: Do business entities focus on R&D only within the scope of their stated SK NACE? SK NACE expresses information on the classification of its economic activities.

2. SUPER-DEDUCTION FOR R&D ENTREPRENEURS IN SLOVAKIA

In recent years, European regions are experiencing industrial restructuring, provoking a shift from traditional manufacturing towards more modern and complex industries, e.g. information, computing, and technology (ICT), biotechnology, and Big Pharma (Aldridge, T.T. And Audretsch, D., 2017, Thurik, R. et. al., 2012). The need to achieve competitiveness through innovation created from incorporating knowledge and new ideas converted into economic activities will be the "front-end of innovation" (Poskela, J. Mantinsuo, M., 2009) This increased knowledge endowment, in turn, improves the entrepreneurial activity profitability by enabling recognition and engagement in new business opportunities (Acs Z.J. et. al., 2009, Wersching, K., 2010). Economics of innovations introduces new approaches for the development of business models in the process of organisational evolution (Boons, F., Lüdeke-Freund, F., 2013). Innovative economics theory, contrary to neoclassical one, is arising from the thesis that capital accumulation is the main vehicle for economic growth in knowledge-based economy of the 21st century. This new business logic assumes that the rate of economic growth in the innovative economy depends on the products or services, as a result of knowledge (Roblek, V., Meško, M., Pejic Bach, M., Bertoncelj, A., 2014).

As of 1 January 2015, a new type of tax advantage has been introduced for taxpayers in Slovakia who carry out research and development, which should motivate them to spend more resources for this purpose, create jobs for professionals (especially graduates), increase their own competitiveness and sing to the development of the knowledge economy. Support for business entities consists of deducting expenditures (costs) for R&D from the tax base. The deduction can be used by the taxpayer who implements the R&D project, in connection with which he incurs expenses (costs), which he can deduct from the tax base under the established conditions (Financial Directorate of the Slovak Republic, 2016).

From 2015 to 2017, business entities were able to claim 25% of the total expenditure (costs) on R&D in the form of super-deduction. From 2018, the super-deduction rate increased to 100%

and increased in the following years (Financial Administration, 2021). Only those expenses can be deducted from the tax base, which are recorded separately from other expenses (costs) and corresponds to costs/expenses expediently spent on research and development specified in the project, which is mandatory documentation to control from income.

3. ELABORATION OF R&D PROJECT

Research and development (R&D) are activities that centre around the innovation of new products or services in a company. Primary purposes of R&D activities for a company include keeping competitiveness as it produces products that advance and elevate its current product line. Since R&D typically operates on a longer-term horizon, its activities are not anticipated to generate immediate returns. However, in time, R&D projects may lead to patents, trademarks, or breakthrough discoveries with lasting benefits to the company (Investopedia, 2021).

Among other things, Act no. 595/2003 on income tax (2021) in the Slovak Republic also regulates the instruments of tax policy to support R&D from the resources of business entities. The condition for applying the deduction of expenses is the elaboration of the R&D project, which means a written document defining the subject of R&D, the time of the project, the objectives of the project achievable during its implementation and measurable after its completion, the total estimated expenditure (costs) for the implementation of the project (Baštincová, 2015).

Organisations that are successful in harnessing the potential of external knowledge collaboration for R&D projects have greater scope to undertake complex innovation activity and are likely to realise competitive advantage over organisations relying solely on internal capabilities (Rothwell, 1994; Gratton, 2000; Chesbrough, 2003; de Faria et al., 2010). The success of innovative ideas developed based on the inter-organisational collaboration depends as much on the process of open innovation (OI) than on the idea itself (Chesbrough, 2004). OI needs to be wisely managed to execute an R&D project effectively and deliver proposed project benefits. According to the Frascati Manual (OECD, 2015), for activities to be classified as R&D, they must meet five central criteria:
1) Novel;
2) Creative to advance existing knowledge;
3) Degree of uncertain regarding the outcome, cost and time allocation;
4) Systematic in management, and
5) Transferable or reproducible.

The management of the innovation process, especially in collaborative contexts, requires mastering the capabilities of goal setting, problem-solving, design thinking, project, programme and portfolio management, team building, collaboration and knowledge management (O'Sullivan and Dooley, 2008).

Since 2015, an R&D project, in which a deduction of expenses (costs) can be applied, means a written document in which the taxpayer defines its subject and its research and development activities before the start of the solution of this project. The project had to be signed before the start of its implementation in 2018, which we examine in this paper. The project must contain (Financial Directorate of the Slovak Republic, 2016):
- basic data on the taxpayer, which are the name and the registered office of the company, the tax identification number, for the taxpayer who is a natural person, name and surname, address of permanent residence and place of business;

- date of commencement and expected completion of the research and development project;
- project objectives that are achievable during its implementation and measurable after its completion;
- total estimated expenses (costs) for project implementation and estimated expenses (costs) in individual years of project implementation.

A short description of the project is also a part of the income tax return, in which the entrepreneur applied the super-deduction of R&D when reducing the tax base by the super-deduction. This part of the project characteristics is published in the Slovak Republic on the Financial Administration website and is freely available for our research.

The year 2021 brings changes in the field of R&D. According to the Methodological Instruction (2021), a project is a written document in which the taxpayer defines the subject of research and development. The project must be prepared and signed by the deadline for filing the tax return, which represents a change compared to previous periods when the project had to be prepared and signed before the start of its implementation. One part was added to the mandatory requirements of the project, namely: the signature of the person authorized to act on behalf of the taxpayer pursuant to Section 13 of the Commercial Code (Financial Directorate of the Slovak Republic, 2021). It can be assumed that this change may have a positive effect on the application of supercomputing by entrepreneurs and its real impact will be the subject of future research.

4. DATA AND METHODOLOGY

We conducted the research with complete data for 2018, which were published by the Financial Administration of the Slovak Republic on its website. We chose 2018 for analysis because it is currently the last year for which we have complete data and can analyse it. Business entities in tax returns, which must be filed by March 31 of the year following the year for which the tax return is filed, or in the event of a delay of up to 3 months, respectively. by 30 June of the following year and by 6 months until 30 September of the following year, if it taxes income from abroad. In income tax returns, business entities state the total amount of the applied super-deduction for the given accounting period together with the number of projects they implemented in the given accounting period together with the objectives of individual projects. This information, together with the identification of the accounting unit, is published by the Financial Administration after processing into a tabular form in the following periods. For 2018, the information was published in four parts at quarterly intervals, with the publication of the last part in 2020. This information is freely available on the Financial Administration page for a limited time until it is overwritten by the further publication of data from the following period.

In 2018, 264 entities applied the super-deduction for R&D, which is the highest number of business entities during 2015-2018. In the analysis of projects, we found that not all business entities stated the number of elaborated projects in the tax return, nor what the individual projects deal with. As many as 11 business entities did not state the number nor purpose of the projects they applied the R&D for in 2018. Our analysis shows that in 2018, according to published data, 810 projects were implemented, but we could find published information only in 762 projects. Therefore, 253 business entities and 762 super imputed projects applied by them were included in the detailed research.

5. NUMBER OF PROJECTS APPLIED BY BUSINESS ENTITIES IN 2018

From the available data, we found that in 2018, 1 project was applied for in the case of 133 business entities; on the other hand, the most implemented projects were applied for one business entity, i.e. up to 100 projects in 2018. In the following Figure 1, we present the basic statistics of 253 business entities, which published the number of projects applied during the reference period.
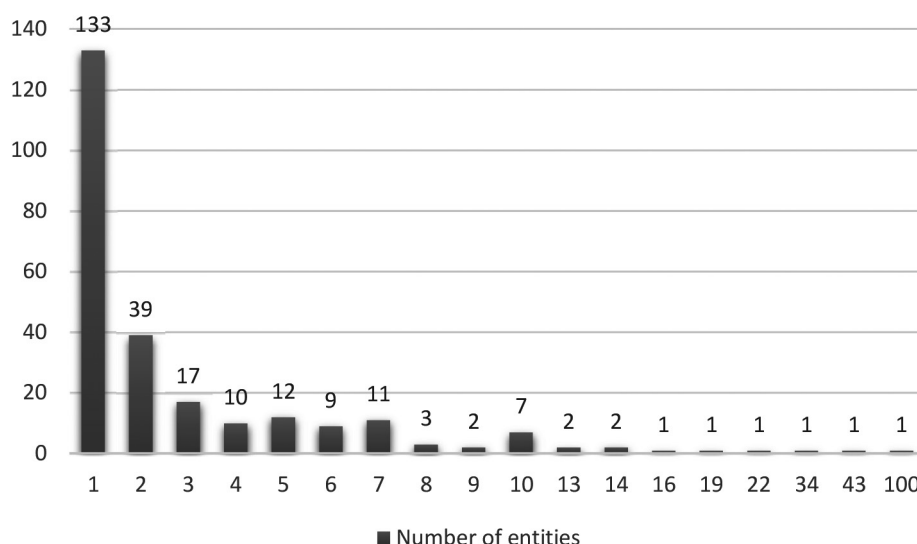
Figure 1. Application of projects by business entities (2018)
Source: own processing according to Financial Administration, 2021

Figure 1 shows that most business entities applied for 1 project, but in total 120 entities applied for more than 1 project for R&D. On average in 2018, one company applies 3 projects for supercomputing. As a company can carry out a project for several years, the average number of projects can grow.

Table 1. Focus of projects in R&D enterprises according to SK NACE and keywords in projects (2018)

Focus according to SK NACE	Number of entities	Number of projects	Focus of projects according to tax returns (2018) – recurring keywords
Accounting, bookkeeping and auditing activities; tax consultancy	1	1	Software
Activities of hospital	1	7	Health
Advertising	2	2	Information technology, Production and production equipment
Agriculture and forestry	1	1	Agriculture
Automobile industry	6	63	Automotive, Software, Production and production equipment, Technology and equipment
Clothing and footwear	2	5	Clothing, Production and production equipment
Construction	9	15	Development, Environment, Hazard, Health, Production and production equipment, Software
Development and civil engineering	7	10	Electrical engineering, Production and equipment, Software, Technology and equipment
Education	2	1	Health
Electrical engineering	27	138	Automotive, Constructing, Electrical engineering, Food processing industry, Health, Information technology, Production and production equipment, Software, Technology and equipment

Focus according to SK NACE	Number of entities	Number of projects	Focus of projects according to tax returns (2018) – recurring keywords
Energy and mining	1	2	Research
Engineering	34	158	Automotive, Electrical engineering, Information technology, Production and production equipment, Robotization, Software, Technology and equipment
Food processing industry	7	18	Agriculture, Food processing industry, Information technology
Health care	2	9	Electrical engineering, Automotive, Health
Chemistry and plastics	6	18	Automotive, Production and production equipment, Research, Software, Technology and equipment
Information technology	62	174	Automotive, Development, Electrical engineering, Food processing industry, Information technology, Production and equipment, Retail, Robotization, Software
Intermediary activity	4	1	Software
Law, consulting and accounting	3	4	Information technology, Technology and equipment, Software
Metalworking and metallurgy	20	40	Automotive, Electrical engineering, Food processing industry, Information technology, Production and production equipment, Robotization, Technology and equipment, Software
Other cash	2	4	Information technology, Production and production equipment, Robotization
Other research and experimental development on natural sciences and engineering	18	32	Development, Electrical engineering, Information technology, Production and production equipment, Software, Technology and equipment
Production – other	4	5	Production and production equipment, Technology and equipment
Retail	6	17	Construction, Information technology, Production and production equipment, Software, Technology equipment
Sales and maintenance of vehicles	2	3	Production and production equipment, Technology and equipment, Software
Self-employment	14	7	Technology and equipment, Software
Service	2	2	Information technology, Robotization
Telecommunications	1	1	Software
Tourism and gastronomy	1	1	Production and production equipment
Waste management	1	1	Software
Wholesale	15	21	Automotive, Health, Information technology, Production and production equipment, Software
Wood and paper	1	1	Construction

Source: own processing according to Financial Administration, 2021

Table 1 shows the focus of business entities in 2018 according to their subject of business and the focus of projects in their activities. Our goal was to analyse and verify the hypothesis whether companies carry out R&D only within their scope of business. To simplify the following table, we have selected all the main activities of business entities in 2018 (according to SK NACE) and we have assigned individual project orientations to them. We've chosen the following keywords to identify their focus: Agriculture, Automotive, Clothing, Construction, Development, Electrical engineering, Environment, Food processing industry, Hazard, Health, Information technology, Production and production equipment, Research, Robotization, Software, Technology and equipment, whose presence we observed in the description of the project in the income tax return.

At the beginning of the article, we asked ourselves the research question of whether business entities focus on R&D projects only within their main subject of business. From Table 1, we observe that business entities do not focus only on their main business, but also carry out R&D in other sectors, but to a much lesser extent. For example, in the Advertising sector, business entities carry out R&D in the field of Information technology and Production and production equipment. An interesting curiosity is the Education project, which was implemented within the Health focus. Business entities are not prescribed by law to describe the implemented projects in their tax returns, and therefore in some cases, we can only assume what these projects are specifically about. We found that not every business entity carried out R&D only within its main business focus.

6. FUTURE RESEARCH DIRECTIONS

Future research in this area needs to focus on the analysis for the whole period and especially on the possible impact of Covid-19 on the content of the implemented R&D. Another possible approach is the analysis of the amount of supercomputing in relation to the industry or the focus of the project.

7. CONCLUSION

The paper aimed to identify the conditions that must be met in order for the R&D project/projects to serve as a basis for the application of the super-deduction in the tax return. First of all, it is necessary to theoretically analyse the requirements for the R&D project according to the valid legislation in Slovakia and then within the quantitative research, we evaluate the focus of R&D projects for 2018 in comparison with the main business of individual companies.

R&D includes activities that companies undertake to innovate and introduce new products and services. It is often the first stage in the development process. The goal is typically to take new products and services to market and add to the company's bottom line (Investopedia, 2021). This paper analysed projects that are part of the application of the super-calculation of R&D costs, which business entities applied in 2018. Our findings show that in the observed period most business entities applied costs from 1 project and one subject applied the highest number of projects, a total of up to 100 projects in a single tax period (2018).

Following the main research question of whether business entities focus only on R&D projects within their main subject of business, the research was confirmed in most cases. Some business entities do not focus only on their main subject of business, but also carry out R&D in other sectors, which confirms the identification of keywords in the project description.

We conducted the research with complete data for 2018, which were published by the Financial Administration of the Slovak Republic on its website. The methodological instruction on R&D has undergone several amendments. In 2015, the R&D project had to be developed before its implementation began, but from 2021 onwards, it is sufficient for the project to be signed before the tax return is filed, which may have a positive effect on the number of super-deducting entities.

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EVALUATION OF INNOVATIVE ACTIVITIES OF SMES
IN THE SLOVAK REPUBLIC

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Abstract: *Innovation is currently an important source of economic growth. They are an integral part of modern economies. They contribute not only to the growth of the country's competitiveness but also the creation of new jobs, the improvement of the quality of life, or the protection of the environment and sustainable development. Therefore, the aim of the paper is through selected indicators, e.g. the share of expenditures on development and research in GDP, expenditures on research and development per capita in the regions, the share of enterprises with innovation activity, the structure of expenditures on innovations, etc. to evaluate the current innovation activity of SMEs in individual regions of the Slovak Republic. Based on the results of the analysis, will also outline further possibilities for increasing and especially support from the state of this innovative potential of SMEs at the national but especially regional level. And because the Slovak Republic has long been one of the below-average countries in the field of innovation within the EU, possible barriers to the development of innovative activities of small and medium-sized enterprises in the Slovak Republic will also be identified.*

Keywords: *Expenditure on research and development, Innovation, Innovation potential, Innovation barriers.*

1. INTRODUCTION

In recent years, we can say that innovation is a key driver of economic growth and development in all countries, as well as a key element in increasing the competitiveness of businesses, especially small and medium-sized businesses. Small and medium-sized enterprises have several advantages over large enterprises in terms of innovation, which results from their size. Compared to large companies, they are more flexible. They have a closer relationship with customers and are therefore able to respond more quickly to various technological changes as well as to changes in the market. There are stronger links and more flexible information flows between company employees than in large companies. Some SMEs have dynamic leadership and a higher risk aversion associated with entrepreneurship and innovation. Today's small and medium-sized enterprises, if they want to stay on the market and exist for more than just a few years, must constantly improve their internal and external environment. This process of continuous improvement is an innovation. We consider the Austrian economist and professor Josef Alois Schumpeter to be the founder of a direction focused on innovation in the economy, who originally considered every positive change in the production organism to be an innovation. The very word innovation is of Latin origin. Hudec states that the term innovation means the introduction

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of a new or significantly improved product or service on the market, respectively. introduction of a new or significant improvement of the process within the company (HUDEC, 2007). The Organization for Economic Co-operation and Development (OECD) defines innovation as follows: innovation consists of those scientific, technical, commercial or financial steps necessary for the successful development and marketing of a new or improved product, new or improved processes or for a new approach within social services. Research and development are just one of those steps. However, it should be noted here that R&D is not the only source of innovation. It is clear from a business practice that innovations often start with customers, users, suppliers or cooperation partners. Based on a manual issued by the OECD, we can also define innovation as a set of scientific, technological, organizational, financial and commercial practices that have or should result in the realization of new or improved technological products or devices. According to this document, we can classify innovations into four basic types (the same breakdown is also used by the Statistical Office of the Slovak Republic): product, process, organizational and marketing. However, there are several types of innovation. Paul Wright defined three levels of innovation: gradual, substantial and radical. Satell (2017) divides types of innovations according to the applied innovation strategy into breakthrough, maintenance, disruptive and basic research.
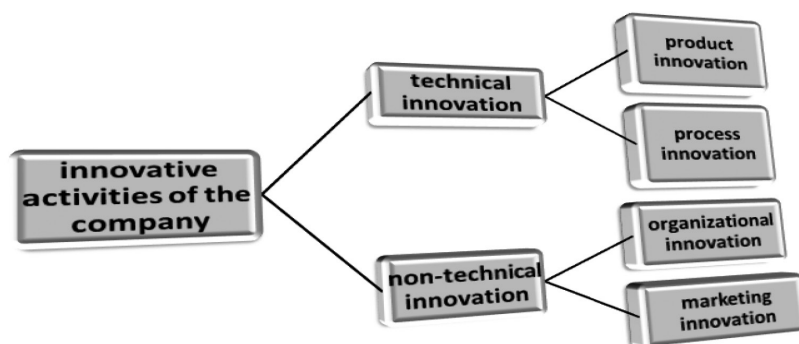
Figure 1. Types of innovations according to the Oslo manual
Source: Adapted from the Oslo manual

In any case, it is important to be aware of the fact that innovation can also result from the modification of existing ideas. The concepts of idea and creativity are therefore closely linked to innovation. Each innovation begins with an idea, a search for creative and interesting ideas and solutions, which after various stages of development result in the implementation itself and thus leads to the introduction of new products, their improvement and development, increased work efficiency, reduced costs or increased quality. At present, companies cannot focus only on the constant increase of capacity, but mainly on the delivery of a quality product or quality customer service. This means that today the goal of innovation has shifted from quantity to quality.

2. INNOVATION PERFORMANCE OF THE SLOVAK REPUBLIC

When evaluating the innovation performance of the Slovak Republic, we must, unfortunately, state that it is low in comparison with other countries of the European Union. Although innovation performance is growing slightly, it is still below the level of most EU countries. In the overall ranking of innovation, which is compiled annually by the European Commission (European Innovation Scoreboard), the Slovak Republic is placed in the last third and thus belongs among the so-called moderate innovators. According to the results of the statistical survey of the Statistical Office of the Slovak Republic, the share of innovative enterprises in Slovakia is 35.6% of the total number of enterprises, while the average in the European Union is up to

51.6%. This unfavorable situation is, among other things, the result of the action of innovation barriers that hinder the development of innovative activities of companies. Science, technology, research, development and innovation currently play a key role in the process of economic and social development to maintain and increase the competitiveness of the economy. The level of expenditure on research and development varies from one EU country to another. Expenditures on research and development in the Slovak Republic amount to 0.83% of GDP (Table 1), which is well below the EU average where expenditures on research and development are at the level of 2.13% of GDP. The Slovak Republic lags behind the EU average in other monitored indicators evaluating the level of research and development in the conditions of the Slovak Republic (number of patents, scientific publications, number of employees in science and research, etc.). All these facts negatively affect the overall innovation performance of our economy.

Table 1. Expenditures on research and development in the SR in thousands of euros

Year	Expenditure on research and development			Expenditure on research and development per capita (EUR)	Share of research and development expenditure in GDP (in %)
	together	capital expenditures	current expenses		
2010	416 369	63 073	353 296	77,2	0,62
2011	468 439	94 799	373 641	86,9	0,66
2012	585 225	109 337	475 889	108,3	0,80
2013	610 876	97 300	513 576	112,9	0,82
2014	669 632	115 698	553 934	123,6	0,88
2015	927 272	374 186	553 086	171,0	1,18
2016	640 835	45 814	595 021	117,9	0,79
2017	748 955	72 776	676 179	137,6	0,88
2018	750 947	53 918	697 029	138,0	0,84
2019	776 590	36 117	740 472	142,50	0,83
index	1,87	0,57	2,10	1,85	-

Source: processed on the basis of data from the Statistical Office of the Slovak Republic

This negative development in the field of innovation is also confirmed by the development of the Global Innovation Index indicator, which has been compiled jointly by Cornell University, the prestigious INSEAD Business Academy and the World Intellectual Property Organization in cooperation with other organizations since 2007. The Global Innovation Index ranks world economies according to their innovative capabilities, from the most innovative economies to the least innovative economies. The index consists of approximately 80 indicators, divided into innovative inputs and outputs. The index is based on the assumption that innovative inputs (highly qualified workforce, educational and research workplaces, services for entrepreneurs, a sufficient number of suppliers, a sophisticated market, infrastructure and access to capital) are very important in creating innovations. Innovation output is a broad concept. If we want to measure it, it means quantifying the extent to which ideas for new products and services from innovative industries represent economic added value and affect the ability to penetrate the market.

In the GII evaluation, the Slovak Republic has long been in the top fifty most innovative countries (Table 2).

Slovakia has currently fallen from 37th to 39th ranks among moderate innovators whose innovation performance is at the level of expectations. The cause of such a development can be e.g. poorly set legislation, whether the lack of support infrastructure, insufficient investment, lack

of skilled labor, etc. This is also proved by the partial results of the GII evaluation, which show that the Slovak Republic achieves better results in innovation outputs than inputs.

Table 2. Development of the Global Innovation Index of the Slovak Republic
in the years 2011 to 2020

Year (number of countries)	2011 (125)	2012 (141)	2013 (142)	2014 (143)	2015 (141)	2016 (128)	2017 (127)	2018 (126)	2019 (129)	2020 (131)
Global Innovation Index ranking	37	40	36	37	36	37	34	36	37	39

Source: Global Innovation Index, https://www.wipo.int/portal/en

3. INNOVATIONS IN SMALL AND MEDIUM ENTERPRISES IN THE SLOVAK REPUBLIC

Small and medium-sized enterprises form the basis of added value creation in the economy, employment and also have a significant impact on the creation of public resources through the tax system. Innovative activities of small and medium-sized enterprises represent one of the main preconditions for their competitiveness in the markets. In the current conditions, only business entities that can constantly innovate their products and services and thus adapt to the new competitive conditions of the business environment can withstand tough competition. Peter F. Drucker also considers innovation to be one of the two basic functions of a business organization. The innovative potential and innovative performance of small and medium-sized enterprises significantly determines the future direction of development of the entire national economy and decides on the orientation of the whole economy.

Table 3. Innovation intensity in % (share of innovation expenditure from revenues
in innovative enterprises)

	2018		2016		2014		2012		2010	
	Industry	Services	Industry	Services	Industry	Services	Industry	Services	Industry	Services
Businesses together	2,2	2,4	1,7	1,5	1,3	1,4	2,0	1,2	1,4	0,8
Small businesses	3,1	3,7	5,9	2,8	1,6	0,8	4,3	0,9	6,1	0,5
Medium-sized enterprises	2,0	2,5	2,9	0,9	4,5	1,1	2,8	0,8	2,4	1,8
Large companies	2,2	1,8	1,3	1,4	0,9	1,9	1,8	1,6	1,1	0,6

Source: processed on the basis of data from the Statistical Office of the Slovak Republic

The intensity of innovation of small and medium-sized enterprises and the involvement of business entities in the process of innovation can be assessed through the volume of funds that SMEs invest in innovation from the total volume of their revenues (Table 3). When analyzing the intensity of SME innovation, we see that the share of funds in the volume of revenues received during the period under review increased the most for small enterprises in the field of services by 3.2 percentage points. Table 4 shows the development of the share of sales in small and medium-sized enterprises with innovative activity in the total sales of all companies, where we can see that this value is close to 50 percent in companies operating in the industry, in service companies this share is relatively low.

In order to develop the innovation potential of SMEs and thus the consequent expected increase in the innovation performance of these business entities, SMEs must make more intensive use of existing domestic innovation capacity, consisting of domestic R&D, skilled workforce, information and communication technologies.

Table 4. Share of revenues in enterprises with innovation activity
from total revenues of all enterprises in%

	2018		2016		2014		2012		2010	
	Industry	Services	Industry	Services	Industry	Services	Industry	Services	Industry	Services
Businesses together	62,9	46,2	72,7	53,9	71,8	48,4	76,0	50,4	78,0	56,8
Small businesses	45,3	26,3	25,8	29,7	33,5	44,0	33,4	36,5	27,5	37,1
Medium-sized enterprises	45,6	38,3	53,6	57,6	47,2	30,5	52,2	47,6	59,4	35,4
Large companies	68,5	72,4	82,9	72,8	82,1	66,4	85,4	66,3	86,8	85,4

Source: processed on the basis of data from the Statistical Office of the Slovak Republic

Table 5. Expenditures on research and development in individual regions
of the Slovak Republic in thousands of EUR

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	Index
Bratislava region	374848	360835	383071	319931	384880	311168	346919	317112	242739	208159	1,8
Trnava region	51325	43918	40098	41492	97749	48742	29187	25293	33565	27996	1,83
Trenčín region	94105	80615	95894	57001	52150	55638	31337	30805	26742	47520	1,98
Nitra region	36578	66239	37349	36876	88226	52768	20186	25209	21298	18776	1,95
Žilina region	77943	65422	59719	59592	134196	77971	61884	60787	42190	31043	2,51
Banská Bystrica region	43724	41406	37334	37743	44540	34814	33126	29938	26320	18775	2,33
Prešov region	26705	26804	20202	25353	23061	23744	19813	17440	13344	11588	2,30
Košice region	71358	65704	75285	62843	102467	64782	68419	78637	62238	52507	1,36

Source: processed on the basis of data from the Statistical Office of the Slovak Republic

Table 5 shows us the development of expenditures on research and development according to individual regions of the Slovak Republic, where we can observe an increase in expenditures on research and development in all regions of the Slovak Republic. The largest increase of more than 100 percent was recorded in the Banská Bystrica region, the Prešov region and the Žilina region. The share of employees in research and development also increased, which is documented in Table 6. However, despite these positive figures, the innovative performance of SMEs is not sufficient. It must be borne in mind that there is a close link between the entrepreneurial activities of small and medium-sized enterprises, economic growth and job creation. Thus, innovative SMEs and startups are a source of economic growth and the growth of the competitiveness of the whole economy.

Table 6. Share of employees in research and development

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	index
Bratislava region	14 291	13 892	12 983	13 671	12 538	12 925	13 402	14 357	14 494	13 839	1,03
Trnava region	1 927	1 821	1 901	1 846	1 892	1 774	1 668	1 764	1 707	1 578	1,22
Trenčín region	2 385	2 347	2 396	1 471	1 217	1 489	971	1 048	1 037	1 535	1,55
Nitra region	2 260	2 415	2 310	2 318	2 934	2 602	2 130	1 889	1 851	1 865	1,21

Žilina region	3 321	3 295	2 942	3 088	2 934	2 612	2 482	2 718	2 506	2 482	1,34
Banská Bystrica region	2 127	2 094	2 080	2 143	2 216	2 287	2 047	2 051	2 076	2 018	1,05
Prešov region	1 276	1 302	1 224	1 305	1 244	1 261	1 196	1 220	1 046	1 090	1,17
Košice region	4 202	4 099	3 948	3 829	3 777	3 875	3 927	3 833	3 879	3 721	1,13

Source: processed on the basis of data from the Statistical Office of the Slovak Republic

Small and medium-sized enterprises have many advantages that make them successful innovators. However, many small and medium-sized enterprises are not yet ready for such activities for various reasons and, despite their positives, do not participate in innovation activities, which is then reflected in the overall indicators of evaluation of innovation performance of the whole economy.

4. CAUSES OF INSUFFICIENT INNOVATION PERFORMANCE IN SMALL AND MEDIUM-SIZED ENTERPRISES IN SLOVAKIA

The Slovak economy has small and medium-sized enterprises that have demonstrable innovation potential. However, its growth needs to be constantly stimulated and supported. There are several small and medium-sized enterprises in which many innovative ideas emerge. On the other hand, we also have companies that are not aware of the need for innovation and, despite their many advantages over large companies, do not innovate at all or very little. There can be many reasons. In essence, we can state that the relatively low level of innovation performance of Slovak SMEs lies in the presence of several problems, but especially structural problems of the Slovak economy, politics or legislation. Among the basic causes from the macroeconomic point of view we can mention the following:
- insufficient support for small and medium-sized enterprises in the Slovak Republic,
- the significant bureaucratic burden on SMEs,
- missing regional innovation centers,
- the lack of a skilled workforce whose education would reflect the needs of the market,
- weak support for applied research and development,
- absent cooperation of SMEs and public research and educational institutions (eg universities, vocational schools, etc.),
- complicated, non-transparent, bureaucratic access to EU funding for science, research and innovation.

From a microeconomic point of view, the causes of insufficient innovation activities in SMEs may be the following:
- lack of financial resources, both investment and current,
- inadequate business management,
- inadequate or non-functional marketing of the company,
- small number of experts among employees,
- inefficient exchange of information with the environment,
- more difficult availability of a sufficient amount of relevant information, etc.

5. CONCLUSION

In conclusion, we can state that the Slovak Republic, despite its possibilities, is constantly considered a moderate innovator both globally and in Europe. In order for a business, but also the economy itself, to compete today, it must respond flexibly to the changes that global society brings. And if the economy does not support, initiate and create the right conditions for innovation, other economies will overtake it. Recent activity in some sectors has been slowed and curtailed by the COVID-19 pandemic. At the same time, however, it has created a new space and brought new challenges for the development of innovation. It is essential not to stop in the innovation process and to create, especially on the part of the state, suitable conditions for the use of the innovation potential, which the Slovak Republic undoubtedly has at its disposal.

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LEADERSHIP COMPETENCIES OF FLEXIBLE TEAMS
OF INNOVATIVE PROJECTS OF ENTERPRISES

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Abstract: *Management of innovative projects of enterprises is carried out in conditions of high uncertainty and dynamism of environmental factors. Flexible management methodologies, which have been gaining popularity in recent years, are most suitable for such conditions. To ensure the flexibility of all project management, flexible teams are required, able to quickly adapt to changing situations and develop their competencies under new conditions. For flexible teams, new forms of leadership are particularly important, such as transformational, shared, team-based, and inspirational. However, there is a scientific and practical problem, which is the lack of scientifically based technologies of these forms of leadership and evidence of their impact on the quality of project activities. The purpose of the proposed study: to analyze the state and potential for the introduction of new forms of leadership in flexible teams, to show the relationship between the forms of leadership and the success of innovative projects of enterprises. The study was conducted using sociological and statistical methods, in particular, using a questionnaire and establishing the influence of leadership forms on the success indicators of the project. At the same time, the forms of leadership are studied as a set of different leadership competencies of project managers and project team members. Leadership competencies include: the ability to generate ideas and convince others of their usefulness, skills of involvement in teamwork, motivation to emotionally influence team members, and other competencies. The study proved that modern forms of leadership determine the success of innovative projects. They affect such indicators as effective use of project resources, the satisfaction of different groups of stakeholders, team development, achievement of project goals, and others. This conclusion, as well as the research methodology, can be attributed to the provisions that have scientific novelty and develop project management. The materials are of interest to researchers and specialists who study and develop issues of project team management in practice.*

Keywords: *Leadership, Project teams, Flexible project management, Competencies.*

1. INTRODUCTION

Modern conditions are characterized by increased rates of changes in the internal and external environment of organizations, uncertainty and frequent situations of crisis, chaos and instability. In these conditions, flexible forms of management are of particular importance. Flexibility is especially in demand in project innovation activities. The innovation of projects is an additional factor of large-scale uncertainty and changes in the project itself, in the project team and the project environment.

Flexible forms of management require a special kind of project team. It should also become flexible, which implies the ability of the entire team and its individual participants to quickly and efficiently adapt to changing circumstances, to have signs of preadaptation, that is, to be ready to change even before the events that provoke any changes. A significant requirement is

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the ability of a flexible team to update its competencies, learn, integrate into innovations and changes, become their source and initiator, and act as agents of change.

Leadership plays a significant role in a flexible innovation project team. Not any leadership is required, but only specific forms of leadership that are as adequate as possible to the tasks of the flexible project team. For example, in such teams, individual leadership of a charismatic project manager or leadership based on authoritarian and bureaucratic methods of work will not give the necessary results. The most appropriate forms of leadership in innovative project teams are divided, team-based, transformational, and engaging. This is recognized by organizations that implement innovative projects with a flexible approach to their management. At the same time, organizations are experiencing a shortage of specific tools for implementing these forms of leadership, without answering the question of what competencies and what behaviors should be demonstrated by the carriers of these forms of leadership. It also requires proof that the use of these forms of leadership leads to indicators of the success of innovative projects. Our research is aimed at solving this urgent problem.

2.   ANALYSIS OF AVAILABLE RESEARCH

The basis for our research were publications that set out the approaches of different authors to the issues raised. Thus, the issues of leadership and its modern forms are the subject of study by many authors, for example, Redeker, de Vries and Rouckhout (2014), Teoman and Ulengin (2018).

Transformational leadership or leadership aimed at innovation and change is reflected in the works of Liu (2018), Srithongrung (2011), Yang and Yang (2019), Hawkes, Biggs and Hegerty (2017), Lodders and Meijers (2017). These authors write about the importance of leaders who initiate and support innovation, change people, their consciousness and thinking, for the most effective participation in innovation (Hawkes, Biggs and Hegerty (2017) and also Lodders and Meijers (2017)). Team and shared leadership is the subject of study by authors such as Wang, Jiang, Liu and Ma (2017), Ong, Koh and Lim W.S. (2020), Storm and Scheepers (2019). In the works of these authors, you can see ideas about the need to transfer part of the leadership functions from the head to subordinates, about the formation of leadership not of individual people, but entire teams. Many works are devoted to engaging and inspiring leadership, which is especially relevant in the context of crises, uncertainty and unpredictability, and increased stress factors. For example, in the works of the authors Rahmadani and Schaufeli (2020), one can see positions on the need for leadership, the tools of which are the involvement of employees in innovative processes.

The authors whose works are devoted to project management write about leadership as a significant competence of the project manager and the project team as a whole. For example, Böhm (2013) mentions leadership as a significant factor in the success of the project team.

The works of researchers Lee and Xia (2005), Van Den Eeckhout, Maenhout and Vanhoucke M. (2020) are devoted to flexible management and team work in conditions of flexibility. In these works, one can also find indirect evidence of the importance of team competencies, including those in the field of leadership and communication.

Thus, there is a lot of research on leadership and its role in project activities, in flexible teams. However, there are not enough studies that would reveal in detail such aspects as the implementation of modern forms of leadership in the context of flexible management of innovative pro-

jects, the required competencies for various forms of leadership, the relationship between forms of leadership and indicators of project success. Therefore, the scientific problem is relevant, which consists in the absence of detailed and well-founded answers on the indicated aspects with the help of empirical studies.

3. PURPOSE AND METHODS OF THE STUDY

The purpose of the proposed study is to analyze the state and potential for the introduction of new forms of leadership in flexible teams, to establish a link between the forms of leadership and the success of innovative projects of enterprises.

Research objectives:
- to identify the extent to which various forms of leadership are widespread in innovative projects with flexible management of companies;
- to establish the relevance and potential for the introduction of various forms of leadership in flexible teams of innovative projects of companies;
- to determine the list and significance of the required competencies for the implementation of new forms of leadership;
- to assess the links between different forms of leadership and indicators of success of innovative projects of enterprises.

The following forms of leadership were subject of the research.
- Team leadership – leadership not of individuals, but the entire project team, the ability of this team to lead other teams.
- Shared leadership – the performance of leadership functions by team members as a result of the delegation of some of these functions from the leader-leader to the leader-followers. There may be no obvious main leader in the team, and the leadership functions are performed by the core of the team.
- Transformational or transformative leadership – leadership aimed at developing followers in the process of innovation, organizational and project changes. A transformational leader is an innovator, a transformer, and his goal is not to change the world but to change the world through the development of his team.
- Engaging leadership – involving followers in the decision-making process that affects them, consulting subordinates on the implementation of project tasks. This leadership manifests itself in expressing confidence in the ability of followers to achieve difficult and interesting goals.
- Authoritarian-bureaucratic leadership – the leadership of the project manager, based on bureaucratic and one-man methods of work. This form of leadership was identified in our study and compared with other forms.

The first four forms of leadership are considered new, as the experience of their use in innovative projects of Russian companies is still insignificant. Authoritarian-bureaucratic leadership is a classic.

Forms of leadership are studied as a set of different leadership competencies of project managers and project team members. Leadership competencies include: the ability to generate ideas and convince others of their usefulness, skills of involvement in team work, motivation to emotionally influence team members, and other competencies.

To assess the relationship between the presence of certain forms of leadership and the success of flexible innovative projects, the following indicators of success were used: compliance with the project deadlines, implementation of the project budget plan, effective use of project resources, satisfaction of different groups of stakeholders, team development, and achievement of project goals.

The study was conducted using sociological and statistical methods, in particular, using a questionnaire survey and establishing the influence of leadership forms on the success indicators of the project.

The object of observation and data collection was project teams with flexible management of innovative projects, that is, using the Agile methodology to varying degrees. In total, 78 teams of 16 organizations from 4 regions of Russia were studied. The project teams consisted of an average of 10-22 people. Teams implement innovative projects. Organizations work in the areas of IT business, advertising, trade, and consulting.

Team members and their managers were asked questions about the forms of leadership used, the most preferred forms of leadership, and the competencies required for them. Indicators of the success of innovative projects were also taken from the reports and the analysis of the links between the forms of leadership and the indicators of the success of projects was carried out. To establish dependencies, the teams were divided into two groups – those who completed projects in 2020 with mostly high indicators and mostly low indicators. The implemented forms of leadership in these two groups of teams were recorded and conclusions were drawn about the presence of links between leadership and team success.

4. THE RESULTS OF THE STUDY

4.1. Justification of the flexibility of project teams.

First of all, it has been proven that the teams under study are flexible and use flexible project management methods. A question was asked about the presence or absence of certain characteristics of team flexibility and project management in this team. The following set of command characteristics is obtained:
- the team uses flexible project management tools – 94 % of respondents noted this characteristic as characteristic of the team;
- the team is involved in constant changes in the project (in content, terms, budget) – 87 % of respondents;
- the team is constantly involved in the processes of innovation and change-82 % of respondents;
- the team adapts to changing conditions, updates its competencies – 78 % of respondents;
- the team proactively develops the competencies that may be needed in different situations of changes in projects – 64 % of respondents.

4.2. The degree of distribution and demand for various forms of leadership in innovative projects with flexible management.

Respondents were asked to evaluate which forms of leadership are currently used in teams and which forms they consider preferable from the point of view of the project tasks performed by the teams. The responses of the respondents are presented in Table 1. As can be seen, at the

moment, mainly modern forms of leadership are used. Engaging and shared leadership are particularly common. Respondents consider it important to develop new forms of leadership in the future, and preference is given to engaging and transformational leadership. Administrative and bureaucratic leadership is used, according to respondents, in about every third team, but its development in the future is considered by respondents to be impractical.

Table 1. Applied and preferred forms of leadership in flexible project teams of innovative projects (in % of the number of respondents).

Forms of leadership	Applicable forms	Preferred forms
Team leadership	42	58
Shared leadership	56	77
Transformational leadership	52	94
Engaging leadership	66	100
Administrative and bureaucratic leadership	28	14

Source: Compiled by the author.

In many project teams, new forms of leadership overlap and are applied simultaneously. For example, transformative leaders are also engaging leaders. They perform the following actions: increase the followers ' understanding of the importance of the tasks they solve and the need to perform them at a high level; ensure that the followers strive for personal growth, professional improvement and achievements; motivate their followers to work for the benefit of the project and the organization, and not just solely for their own benefit; delegate some of the leadership functions in order to develop followers.

4.3. Required competencies for implementing new forms of leadership.

To assess the demand for various competencies and behaviors characteristic of new forms of leadership, a rating scale was used. Respondents were asked to rank each of the competencies presented in the list and the corresponding behavioral indicators: from 1 – the most significant characteristic of leadership competence, to 12 – the least significant characteristic. The results are presented in Table 2.

Table 2. Necessary competencies and behavioral indicators for the implementation of leadership forms

Forms of leadership	Competencies	Behavioral indicators	Rating value
Command	The ability of a team to convince other teams of new ideas	The team demonstrates effective argumentation and involvement of others in innovative ideas	11
	The ability to lead other teams in innovation processes	The team has a controlling influence on other teams in the implementation of innovative processes	10
	Skills of team decisions and defending them at different levels in the context of team interaction	The team makes collective decisions and successfully translates them to the external environment	8
Divided	Engaging followers in team work	Leaders support collaborative actions and follower initiatives	5
	Ability to be part of a team	Leaders act as part of a team	4
	Effective leadership communication skills	Leaders conduct effective negotiations and agree among themselves on significant issues of the project	12

Transformational	Creative skills in non-standard situations	Leaders creatively solve problems in a crisis situation, in conditions of uncertainty	7
	Innovative thinking and ability to engage in innovation	Leaders generate new ideas and convince others of their usefulness	2
	Ability to self-develop and change others	Leaders transform their competencies and change the thinking and values of their followers	3
Engaging	Participative management skills	Leaders attract followers to management	6
	Emotional intelligence	Leaders have an emotional impact on team members	9
	Ability to manage engagement	Leaders create an engaging environment and increase the level of engagement of team members	1

Source: Compiled by the author.

Table 2 shows that competencies and their behavioral indicators from different forms of leadership were important for the respondents, which once again confirms our conclusion about the importance of all forms of leadership and the need for their joint use.

4.4. Links between forms of leadership and indicators of success of innovative projects of enterprises.

To establish the relationship, two groups of project teams were identified: the first group of teams consistently demonstrated high project success rates in 2020, and the second group of teams consistently lagged behind in project success rates. Next, the diagnostics of the forms of leadership used in these teams was carried out. The following results were obtained, as presented in table 3.

Table 3. Relationship between leadership forms and project success indicators

Project success indicators	Number of project teams with a form of leadership (%):				
	command	divided	transformational	engaging	administrative
Meeting project deadlines	91	91	95	96	96
Implementation of the budget plan	91	86	95	94	100
Achieving project goals	88	91	95	92	72
Efficient use of project resources	100	73	90	90	63
Stakeholder satisfaction	82	84	85	98	54
Team development	94	99	87	100	28
Achieving individual KPIs by team members	76	95	78	100	46

Source: Compiled by the author.

The data in Table 3 clearly demonstrates that with new forms of leadership, the success of the project is higher by many indicators. This applies to such indicators as effective use of project resources, satisfaction of different groups of stakeholders, team development, achievement of individual KPIs by team members. Particularly high success rates are demonstrated by teams with an engaging form of leadership. In the administrative-bureaucratic form of leadership, high success rates are also achieved, but they relate only to meeting the budget, deadlines, and partially achieving the project goals.

5.   DISCUSSION OF THE RESEARCH RESULTS

The results obtained develop such scientific directions and concepts as flexible project management and flexible project teams, leadership in the system of competencies of the project manager, forms of leadership in terms of the features and tasks of flexible project teams. In such logical relationships, the questions raised are investigated for the first time.

For example, the authors Teoman and Ulengin (2018), Liu (2018), Yang and Yang (2019) study different forms of leadership, but they do not analyze these forms in the context of the project activities of flexible teams. Our research shows the importance and relevance of shared, transformational, engaging, and team leadership for flexible teams of innovative projects. As a result, our research shows a new context for the implementation of these forms of leadership.

The authors' Lee and Xia (2005), Van Den Eeckhout, Maenhout and Vanhoucke (2020) write about flexible project management methodologies and emphasize the importance of team communication. Our research complements the existing research of scientists and shows the leadership in the communication system of flexible teams. In particular, we identified significant competencies for different forms of leadership. Such competencies as innovative thinking, emotional intelligence, follower engagement skills, leadership communication, and others help answer the question of what exactly to develop in team leaders, what behaviors should be formed in leaders of flexible teams of innovative projects. This aspect complements the existing developments in project management competencies.

A significant result of the study was the establishment of links between the forms of leadership and the indicators of project success. This expands the understanding of the factors that determine the success of the project. Leadership can also be considered as such a factor. We have proved with the help of data that, provided that new forms of leadership are used, project teams can achieve much higher stable project results.

6.   CONCLUSION

Summing up the results of the research, it should be noted that in modern teams of innovative projects, new forms of leadership are of high importance. These include team leadership, shared leadership, transformational leadership, and engaging leadership. These forms of leadership have a high potential; they are able to lead the team to success. In particular, our analysis showed that teams with these forms of leadership consistently achieve higher project success rates in comparison with teams that have developed authoritarian and bureaucratic leadership. This is especially true for such indicators as team development, achievement of established key performance indicators by each team member, and satisfaction of project stakeholders.

In the future, significant aspects for future research are the search for relevant technologies and methods for implementing new forms of leadership. These forms should be implemented in such a way that leadership is highly consistent with the tasks of innovative projects, the requirements of flexible project management in a dynamic and difficult to predict environment.

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THE IMPACT OF INTELLECTUAL CAPITAL
ON THE MARKET VALUE AND PERFORMANCE OF THE COMPANY

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Abstract: *Intellectual capital as a driver of growth and development of technically and technologically intensive companies in the era of knowledge economy is the basic generator of creating superior company performance. The conditions of the "new economy" influenced the change of the business model of modern companies, whereby the identification, measurement, reporting, control and exploitation of the intellectual capital of the company became important in order to maximize the value of owners and other stakeholders of the company. The subject of this paper is to examine the impact of intellectual capital components on the financial and market performance of enterprises. This paper aims to show the degree of connection and direction of movement of financial and market performance of companies in relation to the concentration of intellectual capital in companies.*

Keywords: *Financial performance, Market performance, Expenditure R&D.*

1. INTRODUCTION

One of the decisive factors for the success of companies in the era of the "knowledge economy" is the degree of concentration of intellectual capital within the organization itself. Technical-technological progress, development and improvement of communication systems and expansion and networking of knowledge bases have contributed to the change of modern companies' system and business philosophy. The so-called "Knowledge companies" in which the fundamental business element is represented by people with their specific knowledge, skills and abilities from which innovations arise, thus switching from a capital-intensive business system to a knowledge-based business concept. The dominance of individuals' particular expertise as part of companies' intellectual capital over the means of work, land and capital is particularly pronounced in the IT sector and the pharmaceutical industry, so according to the needs of the research, companies from these sectors are included.

In order to survive in a modern, dynamic and highly turbulent environment, companies must identify their current positions, clarify their goals and act most effectively and efficiently possible. Performance measurement systems make this possible. Neely et al. (1995, 81) define a performance measurement system as "a set of metrics that allows the quantification of both efficiency and effectiveness of actions." An effective performance measurement system allows a company to assess whether goals have been achieved and whether progress has been made as a whole (Lebas, 1995), identifying position, clarifying goals, and illuminating areas for improvement while enabling reliable predictions (Neely et al., 1995). An effective performance measurement system allows a company to measure and control performance following a defined strategy. Accordingly, measures of intellectual capital performance have been developed over time. There is a consistent view of a large number of theoreticians and practitioners such

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as Sveiby (1997), Edvinsson (1997), Steward (2001), Roos (2005), who have been dealing with the subject of intellectual capital since the 1990s, that intellectual capital can be divided into three groups: human, structural and relational capital. The differences among theoreticians are fundamentally terminological, but most agree that intellectual capital can be classified into the three categories mentioned above.

2. THE IMPACT OF INTELLECTUAL CAPITAL ON COMPANY PERFORMANCE IN THE MODERN ENVIRONMENT

There are numerous definitions of intellectual capital. One of them describes intellectual capital as a set of knowledge owned by the organization and has a decisive influence on creating higher value for owners and increasing competitive advantage (Marr, Schiuma, 2001). Common to all definitions is that intellectual capital is primarily associated with the knowledge of highly educated professionals who use it to increase the efficiency of business processes in the company. The above definition highlights the category of human capital that is the "source of innovation" of the company. In the era of the knowledge economy, the "innovation wars" among companies is not foreign, and the primary weapon in the fight for the market are employed highly specialized individuals in relevant fields. Due to the increasingly sophisticated requirements of consumers and the desire and efforts of companies to constantly increase the coefficient of customer loyalty, one of the critical functions in the company is Research and Development (R&D). Only innovation (radical and incremental) can achieve this goal in the modern business environment.

The difference between the market and book value of a company is considered to arise through investment in R&D, creating intellectual capital that is not included in the balance sheet. In an effort to fully capture intellectual capital, Joia (2000) based his research on the confirmed hypotheses of several intellectual capital experts (Edvinsson and Malone (1997); Roos et al., (1997); Sveiby (1997); and Stewart (1997) and as a final product of his study derives the following formula:

$$BV + IC = MV$$

Where:
    MV = Market Value
    BV = Book Value = (MC + PC)
    MC = Monetary Capital
    PC = Physical Capital
    IC = Intellectual Capital = (HC+IVC+RC+SC)
    HC = Human Capital
    IVC = Innovation Capital
    RC = Relationship Capital/Customer Capital
    SC = Structural Capital/Process Capital

Numerous studies testify to the positive impact of IC on the market and the companies' financial performance. A study by Erickson and Rothberg (2009) that included companies in the field of IT concluded that adequate and efficient knowledge management in the organization has an impact on increasing the market performance of companies.

Market capitalization as one of the performance indicators represents the total market value of the company, which is obtained by multiplying the total issued shares of the company and the

stock price on the stock exchange. One of the indicators of companies' investment in intellectual capital is the cost of investing in R&D.

Accordingly, in this paper, we will show the impact of investing in R&D on the market value of world-leading companies in the pharmaceutical industry and IT sector.

3. STATISTICAL ANALYSIS OF THE IMPACT OF RESEARCH AND DEVELOPMENT COSTS ON THE MARKET VALUE OF COMPANIES

Statistical analysis of the interdependence of the costs of R&D as part of the intellectual capital and market capitalization of 7 world-famous listed companies were conducted in the statistical program (IBM SPSS) based on variables that the authors consider relevant for a given evaluation of interdependence. Before interpreting the analysis, it is necessary to note that intellectual capital is presented in the light of investing in R&D based on various professional training and sub-specializations of highly educated staff that can improve company performance through numerous achievements and innovations.

It should also be said here that the analysis was conducted in the five-year period from 2016-2020. Examination of interdependence tr. R&D and market capitalization of the company was conducted based on correlation analysis – Pearson's coefficient.

The statistical model and the conducted analysis are based on the previously set hypotheses of the model on the interdependence of two variables:
    H0 – There is a statistically significant correlation of tr. R&D and market capitalization as indicators of a company's market performance
    H1 – There is no statistically significant correlation of tr. R&D and market capitalization as indicators of a company's market performance

The coefficient of simple linear correlation, as a relative measure, takes values from -1 to +1. If it takes positive values, the correlation between the phenomena is direct or positive (both phenomena show DC variations). In the case when $r < 0$, the relationship is inverse or negative (when one phenomenon increases, the other decreases, and vice versa). If there is a functional connection between the observed phenomena (all empirical points are exactly on the straight line), we are talking about a perfect (perfect) correlation. Then the correlation coefficient takes the value -1 (if the connection is inverse) or +1 (if the connection is direct). The closer the absolute correlation coefficient is to the unit, the stronger the correlation between the phenomena. In contrast, the closer to zero, the weaker the linear relationship. In the following tables (Tables 1 and 2), the degree of connection between tr. R&D and market capitalization of companies.

Table 1. The normality of the data distribution

Test of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
R&D costs (mil. $)	.194	35	.002	.821	35	.000
Market capitalization (mil. $)	.174	35	.009	.840	35	.000

a.   Lilliefors Significance Correlation

Source: The result of the author's research

If the number of observations in the sample is greater than 30, then each empirical distribution, according to the central boundary theorem, tends to be normal, so each empirical distribution, for n> 30, can be approximated by normal (Jovetić, 2015).

Table 2. Correlation analysis

		R&D costs (mil. $)	Market capitalization (mil. $)
R&D costs (mil. $)	Pearson Correlation	1	.609**
	Sig. (2-tailed)		.000
	N	35	35
Market capitalization (mil. $)	Pearson Correlation	.609**	1
	Sig. (2-tailed)	.000	
	N	35	35

** Correlation is significant at the 0.01 level (2-tailed)

Source: The result of the author's research

From this example, based on the significance levels (Sig. = 0.000), the null hypothesis is accepted, i.e., the assumption that there is a strong correlation between the given variables. There is a statistically significant link between companies' investment in R&D and their market capitalization. Given that the correlation coefficient is 0.609, we conclude a strong positive correlation between the movement of investment in R&D and the market capitalization of companies.

Especially during this research, a trend of significant investment in R&D in pharmaceutical companies since 2019, which are now producers of vaccines against COVID 19 and the dizzying growth of their stock prices in the last 2 years, was noticed.

4. CONCLUSION

The growth of intellectual capital affects the creation of added value, i.e., finding new ways to create added value, which in the modern world is possible only through innovation. This increases the company's competitiveness and the ability to create superior market and financial performance. As we have seen, based on the previously performed analysis, investing in R&D enables the growth of market performance of companies and increases the value of companies for a part of intellectual resources that were not included in the balance sheet but are very well-identified on stock exchanges. Given that innovation is the path to success of modern companies, leading macroeconomists see the development of an economy based on knowledge and innovation as a priority, investing heavily in the scientific funds of the world's leading powers. In this way, innovation and intellectual capital contribute to the creation of new competitive advantages and the development of hitherto undiscovered potentials. A stable base of intellectual resources that produces high-quality personnel with their proper selection enables smooth economic and economic endeavours.

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MEMBERS AND CULTURE,
AN INTERWOVEN DICHOTOMY IN ORGANIZATIONS

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Abstract: *This thematic review discusses how Organizational Culture can develop and improve Human Resource Management strategies, procedures and tools to support and motivate new staff to meet organization, management and stakeholder expectations in a changing and competitive environment. Organizations are made by people; their value is created by the staff. Strategies involving human resources should have not only a supportive function, but definitely a central one. Organizational culture represents a phenomenon that manifests itself in the fundamental assumptions that guide an organization. It finds fulfilment in the behaviours, values and relationships that characterize the organization itself, both internally and with the external environment. In the modern organization culture represents a topical issue; it is considered an essential ingredient for the success of companies and organizations. It was in the 1980s that definitions of this concept, one of the most complex and articulated in organizational theory, were proposed as a coherent set of fundamental assumptions that a certain group has invented, discovered, or developed within an organization.*

This research aims to demonstrate how culture could influence the members of organization and, in the same way, that the latter influences culture. Particular attention will therefore be paid to the success of organizations that is also based on this fundamental cultural assumption. Organizational culture, in fact, has to be considered as a real phenomenon, cannot be taken out of context, but must always be related to the internal environment of the organization. The new human resources are in fact involved in the cultural process of the organization, which, even if not desired, develops anyway. For this reason, attention to new resources must include a continuous approach to organizational culture and the promotion and support of the one which is best suited to organizational objectives.

Keywords: *Organizational behaviour, Cultural change, Organizations, Inclusion.*

1. INTRODUCTION

Engaging and motivating employees is essential for creating an inclusive working environment and fostering business productivity and innovation. Increasingly, organisations find themselves leading teams composed of diverse individuals. Each generation grows up in a context characterised by historical events, technological advances and social behaviours that contribute to determining their specificities, preferences and expectations, which are reflected in different working styles and ways of communicating.

Understanding the differences in attitudes and behaviours of team members is a fundamental tool to stimulate their involvement in the workplace and capitalise on their strengths. Organisational behaviour and organisational culture play a fundamental role for the benefit, given the set of individual expressions that people put into place in the organisational environments where they carry out their activities and in which they work. The study of such behaviour has

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become of great help in activities involving the Human Resource Manager, in particular in motivation, selection, development and training of organization members, conflict management, decision-making processes and teamwork.

The Human Resource Manager has to navigate in this complex environment, knowing how to translate into practical solutions the main dynamics of organisational behaviour, i.e. the environment, the person and the behaviour. Aspects of how to involve new members become of primary importance for the success of the organization and come close to the field of psychological atmosphere that was first treated by Kurt Lewin; he included this concept in his field theory with which he intended to give a scientific/statistical basis to social psychology, explaining human behaviour as resulting from the interaction between internal factors (person) and external factors (environment).

In the approaches to organizational climates we find, first of all, theories defined as structural, in which the weight of external factors (environment, structure, reward systems, organization chart) prevails over internal ones in determining human behaviour. In other theories, however, the relationship is reversed and the factors linked to the person are seen as more incisive than those linked to the environment (perceptual theories). What is therefore crucial for organizations to understand is that this environment and culture are variables, as demonstrated below, that are fundamental to the success of groups and organizations.

2. INTERDEPENDENCE AND CULTURE

The majority of today's organizations are defined as complex organizations and represent deliberately constructed and/or reconstructed social units with a structure, functional roles in to achieve certain objectives, and behaviours that allow these objectives to be reached. Complex systems are dynamic and permanently evolving societies, with a capability for self-organisation. Thus, they are composed of a large number of parts/individuals interacting with each other in non-linear ways that result in a global behaviour that cannot be explained by simple models. In these systems, the human factor and the relationships that are created play a predominant role, as does teamwork, a tool that – when operating in conditions of uncertainty – becomes useful in risk prevention and management.

The human element and the dynamics between individuals are of fundamental importance in organizational contexts for smooth operation and goals achievement. When individuals are linked by social dynamics within an organization they then constitute a group, since they become aware that, in some way, their destiny is linked to that of the group and they consider themselves members of it. It is important to point out, however, that physical proximity alone does not constitute a group, it is necessary within organizations; indeed, if we want to define it as a team, it must usually have defined tasks and activities, determined roles and a high level of commitment on the part of its members.

The team becomes effective when objectives and methods are clear and shared and when it is possible to manage time, define and respect roles, procedures and rules. Working effectively in a team is very important for the outputs (i.e. results), quality, morale, sense of responsibility and ultimately for the retention of the team, and thus of the organization. In the study of organizations, teams, and the culture of the same, presuppose the role of an important object of investigation, since they are composed of groups (understood as teams) which represent the expression of the life of relationships and which may be formalized, therefore established or created, or informal, that is, born spontaneously within an organized space.

Having said this, we can then give a further definition of organization, this time linked to social relations, and identify it as a set of relationships between individuals who, in order to make the organization efficient and effective, benefit from teamwork, i.e. an activity aimed at achieving a given objective that is achieved through the performance of a task and organized in ways such as time, resources, methods, and subject to a given climate and communication. Within organizations, and therefore within the teams composing the organization, it is fundamental to consider the bond of interdependence that is created between members, because it constitutes the perception of individuals of being connected with others, in such a way that the individual cannot succeed without being part of the team and likewise the team cannot succeed without the contribution of the individual member.

This connection with others, given by interdependence, takes on a positive value when the relationship, the link and the relationship between individuals become a fundamental condition for the achievement of a result, a goal, or a reward. Therefore, being in a condition of positive interdependence with someone means that, in order to achieve something or reach a goal, it is not possible to act alone and that others are therefore necessary and indispensable.

We can state that in the organizations, it would always be desirable to be in a condition of positive interdependence that encourages individuals to communicate, to inform each other, to ask for and give each other help, to exchange points of view and to manage conflicts in a positive way, thus determining an immediate and direct effect on the team's motivation, commitment, effort and productivity. In addition to this, interdependence promotes a greater commitment to the objective, since working with others increases the sense of responsibility towards the objective to be achieved, provided that there is an attitude of mutual esteem and care among the members.

All these conditions linked to interdependence, and therefore to the culture of respect for this bond, make it easy to understand how, from the point of view of success and objectives in organizations, both become fundamental elements. The management of group dynamics in fact assumes a fundamental role also with regard to decision-making processes, precisely because human resources represent the most critical factor. In this respect, the organizational structure is based on the principle that shared commitment to a common goal promotes positive relationships among team members, as they try to listen to each other's point of view, appreciate or criticize a position, sharing a collective experience.

3.   HOW TO PERCEIVE TEAM AND CULTURE?

In the cognitive processes, which are at the basis of the decision-making process, the way the group operates must be considered very carefully, analysing all the decision-making phases and the underlying dynamics. Thus, through the culture and the collaboration with others, which must be considered as resources useful for achieving a purpose within organizations, it is possible to increase the level of this organizational belonging, so as to be able – not only as individuals but as a group – to think ahead, i.e. to project the current situations into the future, for the benefit of the organization.

The message that the organization must transmit to the members is that everyone's contribution is of equal importance and that this avoids those disagreements that would make cooperation and communication more difficult when needed. The organizational team must be subjectively

perceived to require the contribution of each team member. This can only be achieved through the organizational culture. In many work situations, in fact, the members of a group, despite having common goals, do not experience interdependent behaviour and therefore we speak of a group and not a team, causing an obstacle to organizational success.

In addition, we can state that the team must be accepted or shared by all members. The team member who does not accept the objective becomes, from being a valuable and indispensable resource for the group itself, an obstacle that can undermine the common effort. Another aspect to be promoted by the organizational culture is that the team must be complex and challenging. It must be, in fact, perceived as necessary in relation to the objective to be achieved. It should be formed around a goal for which individual strengths are deemed insufficient., because team and objective must therefore be closely related. The same is true for the organizational tasks that culture promotes, i.e. that they must not only be complex but also challenging, i.e. 'attractive and meaningful'.

4.   ORGANIZATIONAL CULTURE, FORMAL AND INFORMAL GROUPS

After the previous considerations, it is necessary to understand that the organizational culture represents a complex framework of national, organizational and professional attitudes and values within which groups and individuals and functions operate. But how does the culture of the group and the organization affect the success of the organizational system itself? Every organization is made of human resources who tend to be part of a group that in general terms can be divided into two broad categories: primary groups and secondary groups. Every individual joins one or more primary groups at birth, such as the family, relatives, neighbours and a group of friends.

Primary, groups are therefore the first and therefore most important socialization experiences, influencing the future ways in which individuals relate to each other. These determine the most relevant aspects of the individual's personality, such as values, attitudes and beliefs, and influence behaviour.

Secondary groups, on the other hand, are groups of people with clear objectives to achieve, which determine their roles and interpersonal relations. These involve a choice of membership, have a more rigid normative structure and are mainly implemented in adulthood, with the awareness of having to integrate them within particular cultural and social models.

From an organizational point of view, this research is interested in these, even if individuals are influenced by primary groups. Groups can be distinguished by their degree of formalization into formal and informal groups. A group is defined as formal if it is set up to organize and carry out an activity with a specific purpose and pre-established time and method. It therefore arises to fulfil organizational and individual functions, such as:
-    carrying out interdependent and even complex results;
-    generating new and original ideas;
-    coordinating activities;
-    solving problems and making decisions by means of appropriate mechanisms;
-    taking care of the socialization and training of new members.

Formal groups are generally divided into working groups, project teams, committees, commissions or task forces and are characterized by visibility and recognition within the organization.

It is precisely these that can be worked on at the level of organizational culture. They can also be classified according to different criteria.

With respect to the level of integration, they are:
- structural, which includes aggregations of individuals forming organizational units;
- integrated which includes aggregations of individuals forming organizational units and integration, which includes the various forms of aggregation between individuals which, for coordination purposes, overlap the basic organizational structure.

Depending on their duration, however, they are divided into temporary and permanent.

However, within the organization many informal groups influence members' behaviour and culture, to which the members themselves unwillingly adhere. The informal group, in fact, is formed in response to the individual's need to belong and the natural mutual attraction that involves two or more people. For this reason, aggregation is voluntary and spontaneous and arises from the sharing of interests and bonds of esteem and friendship. This type of group may arise independently of the organization, such as culture, or in response to its internal pressures, responding to the primary needs of members to forge strong bonds and be autonomous in their work, often also having more control over their own tasks and duties, but still influencing the organization.

Despite the irregular nature of this type of group, informal groups have been classified into:
- horizontal groups, in which the members present the same hierarchical level within the organization, or otherwise hold homogeneous professional roles;
- vertical groups, in which members come from different hierarchical levels;
- mixed groups, in which members work in different departments or sectors within the organization, even if very far apart, but despite this they have established a link, often outside the work context, on the basis of a common interest.

It is difficult to draw clear boundaries between these three types of groups, but it is important to understand how much the human need to belong to a group influences the culture of individuals. With that said, let's go to the heart of culture. We can define corporate culture as a set of values, principles and norms, shared at all levels and aimed at creating active involvement; it is an effective mechanism for achieving objectives. Defining a solid corporate organizational culture is not insignificant; a series of variables must be set in motion that entirely condition the organizational set-up.

Therefore, addressing the subject more specifically, we can state that the culture of an organization encompasses the beliefs, norms, values and attitudes that govern all its parts, habits and written and unwritten rules that have been developed over time and are considered valid. It also has the capacity to shape organizational and decision-making processes and guide the actions and behaviour of all employees. It includes expectations, experiences, philosophy and is expressed in members' self-image, inner workings, interactions with the outside world and future expectations.

It manifests itself in the fundamental assumptions that guide an organization and is embodied in the behaviours and values that characterize the organization, both internally and externally. Models that provide stability to an organization, at the same time, may lead to the creation of a very strong culture that may build walls that are difficult to overcome and hinder competitiveness.

5. SCHEIN'S STUDIES AND SAFELY INCLUSION OF INDIVIDUALS IN THE ORGANIZATIONS

But how does corporate identity come about and how important is it for new members to be involved in it?

A culture that has been consolidated in the course of a group's experience will be regarded by that group as so valid that it will be passed on to new members who join the organization. The organizational culture becomes, therefore, an object of learning for new members. Moreover, Schein's definition shows that culture has a dual function: on the one hand, it is the glue that allows the organization to achieve internal stability, while on the other hand, it allows it to adapt to the external environment, differentiate itself and gain legitimacy with the various stakeholders.

Organizational culture is, therefore, the essence of the company's identity, as it is the set of characteristics that make the company distinctive, in which its members recognize themselves and which they express in a shared symbolic language. Schein has developed a model in which he stratifies organizational culture into three levels. At the superficial level we find the artefacts: various objects, furnishings, spaces, tools, languages, behaviours and rituals, which constitute the manifest and tangible element of the culture, but which are not immediately accessible at the level of comprehension and which must be decoded to grasp their deeper meaning.

At the intermediate level are the declared values and objectives, which are less visible than the artefacts, but which are nevertheless easily verifiable and of which the members can be aware. Finally, the deepest and most intangible level is made up of basic assumptions: deep-seated beliefs that are so ingrained and taken for granted that they are unconscious. Assumptions determine the way we perceive, think, feel and act; they constitute the fundamental core of a culture and, although not directly observable, are expressed in values and actions.

They can therefore be inferred by careful analysis from the interpretation of their outward manifestations. As we have seen, culture is the basis for the functioning of the organization, as it shapes a vision and strategic choices that enable effective solutions. However, today's scenario forces organizations to undergo structural change in order to adapt, which implies a review of their culture. The promotion of organizational change therefore requires an analysis of culture.

Awareness of the culture is necessary in order to orient it towards more adaptive solutions. It is possible to promote culture inclusion throughout the lessons learnt from mistakes, studies on the matter, webinar and sharing information and opinion about it. Indeed, culture and inclusion represent a dichotomy that rarely can be divided, referred to organizational success. However, it is necessary to define what we all mean by the necessity of avoiding not inclusive strategies. It is possible to interpret these risk terms as a threat that might harm someone or something, such as members or organizations.

Indeed, a safely inclusion of new members in teams and organizations is an ideal situation; however, it is possible to realize only in hypothetical scenarios, in the real life it is potentially unrealizable. Nonetheless, applying norms and procedures, can help in curbing and avoiding potential risks of marginalization or non-inclusivity. What organization should avoid is precisely marginalization of new people among members. To really approach inclusion and involvement – that from now on we will call it "Safe Mix" for inclusion of new members – it must be

implemented by well-planned and structured processes that can allow the protection of human resources, enterprises' capital by the use of a total quality management composed by a safe mix in terms of logical, organizational, physical activities that can all together achieve a solid governance model. Thus, building an organizational culture of the safe mix is crucial when it comes to managing an organization.

It is the same for the safe mix culture that plays a key role in making an organization reliable. Within an organization there are many forces which act on the actors; these actors must be reached successfully by a shared set of values that are part of the organizational culture, and this culture concerns the safety that Reason defined as "the capability of individuals or organization to handle small risks, in order to avoid damages, achieving their goals". This leads people to have those values that make valuable a sub-culture, so named inclusivity and embracement of values that foster inclusion.

In order to have successful organization, the inclusivity culture must be taken as the standard approach to the reduction risk; within an organization there are the above-mentioned forces that play a crucial role, and these forces reach out all the components in the organization. For this reason, if the culture within the organization is improved, then performances in terms of security will be more effective, increasing the efficiency and overall mood of the enterprise.

6. WHAT IS INCLUSION?

Inclusion involves the possibility to lead to the achievement of successful goal by the organization. Embracing concepts such as equal opportunity to participation, acceptance, respect and open to understanding and other culture, leads us to the real meaning of inclusion. It is the equal opportunity, for everyone, to participate in social life. Within an organization, fostering an inclusive environment means that it allows people with different cultural backgrounds, experiences and capabilities to interact and have a real impact on society. Within an organization this means that the achievement of inclusive culture can effectively boost the organization's potential.

Inclusion is led by leaders that must challenge biases and unawareness of the employees. A safe space where to work is crucial and an atmosphere that eases and espouses the supportive mood and commitment that individuals put while working, is even more important. Changes within the organization can make the inclusion fluctuate and vice versa. These two realities can influence each other. For this reason, it is important to constantly improve inclusion. Inclusion, in fact, often, entails continuous research of value and aspects to fulfil, real value to unlock is to attract positive outcomes, using the lever that leaders can exploit. New members joining an organization, are by definition different from the already present workforce. However, diversity can be seen as something constantly changing. Its core involves valuing everyone in the organization as individuals.

Diversity only recognizes that everyone is unique and each individual has different needs from another. Diversity in an organization that wants to include new members must distinguish one individual from another, as well as being specific to each of them, putting it in a wider context, involving respect and appreciation. Understanding people's diversities has to entail a broader concept, instead of race, gender and ethnicity. Organizational culture must be changed and diversity strategy have to be put in practice. Strategies that must be both consistently fair but also

flexible and inclusive, as well as supporting the economics and business goals that the organization has set. Decisions about inclusion should be based on real actions in order to step up, on a higher level in terms of inclusivity.

7. POTENTIALS FOR FUTURE RESEARCH

Understood what are the constraints of this research, it is important to note that the potential of an inclusive organisation, mixed with a change in the organisational culture is very high. Therefore, understanding what type of organisation can unlock the highest value, in terms of higher gain, is important. It is widely known that any organisation can gain from cultural changes and valorisation of diversities, nonetheless, some type of organisations can have a higher return than others. Moreover, a further suggestion for researchers is the analysis of the level in which there might be more difficulties to apply the change, and at what level there is the real value unlocked.

8. CONCLUSION

Organizational culture is now a trend topic among managers, among consultants and among academics.

An inclusive organizational behaviour is absolutely needed if we want a change in culture and make easier the inclusion process.

The most important changes that may support organizations at any level, towards a more inclusive organizational culture are needed in all areas of the organization.

New resources must be included in a continuous approach to organizational culture and the promotion and support of the one which is best suited to organizational objectives.

The introduction of a safe space and a "safe inclusion", understanding the differences and the diversity that characterize different individuals, must make easier the development of an advanced organizational culture throughout the appliance of behavioural changes.

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SHORT-TERM RENTAL PLATFORMS: AIRBNB IN V4 COUNTRIES

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Abstract: *The concept of sharing economy, is naturally a source of new challenges. These challenges and potential problems must be solved by the regulator in cooperation with the platform to the satisfaction of all stakeholders involved. To do so an overview of the presence of short-term rental platform Airbnb in V4 is necessary. According to the latest data from 2019, the total number of individual short-term rental offers through Airbnb in V4 countries reached 104 400 in 2019. Approximately 4.63 million visitors made use of accommodation offered in V4 countries. In countries of V4 in 2019, guests spent on accommodation and services in the neighborhood of the accommodation space itself 1.202 billion euros.*

Keywords: *Sharing economy, Short-term rental, Tourism.*

1. INTRODUCTION

A phenomenon of such importance as Airbnb, or the whole concept of sharing economy, is naturally a source of new challenges. These challenges and potential problems must be solved by the regulator in cooperation with the platform to the satisfaction of all stakeholders involved. To do so an overview of the presence of short-term rental platform Airbnb in V4 is necessary. Overview of Airbnb activities in V4 and comparison of individual V4 countries supported by unique data is included in this manuscript.

Short-term rental platform Airbnb has a significant presence in many countries all over the world. Visegrád 4 countries that include Czechia, Poland, Hungary and Slovakia are not an exception. According to the latest data from 2019, the total number of individual short-term rental offers through Airbnb in V4 countries reached 104 400 in 2019. Approximately 4.63 million visitors made use of accommodation offered in V4 countries. About 0.81 million of these visitors were staying in accommodation in their country of residence. In countries of V4 in 2019, guests spent on accommodation and services in the neighborhood of the accommodation space itself 1.202 billion euros. From this sum, around 0.308 billion euros was spent on the accommodation from local providers and 0.894 billion euros for services in the neighborhood of the accommodation facility.

Such a fast-growing phenomenon with significant impacts in various areas naturally attracts attention. This paper offers a summary of Airbnb's presence in V4 along with a description of identified challenges that go in hand with sharing economy and short-term rentals platforms boom. Analysis of available data from 2019 in this paper offers a perspective on this phenomenon in the pre-covid-19 era, which could be used as a starting point in future research on the development of such platforms during and after the covid pandemic.

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2.   MAIN CHALLENGES

A phenomenon as important as Airbnb, or the whole concept of sharing economy, naturally brings many new challenges for all stakeholders including various regulators, tax bureaus, institutions active in city zoning, tourism agencies, consumer and employee protection institutions, housing developers, tenants, land owner, citizens, workers and many more. These may not be only challenges with impact on the platform but also on other subjects and stakeholders. With the growing phenomenon of the sharing economy, the challenges started being apparent not only in big cities but also in medium and small cities. (DiNatale, Lewis, & Parker, 2018).The challenges spread across various areas which are further described in this chapter.

Challenges in the area of tax code and tax liability were among the first challenges identified and addressed. Various research aimed at possible tax evasion of sharing-economy platforms including Airbnb and its extent. (Ključnikov, Krajcik & Vincúrová 2018). Especially in Europe, where international businesses including some of the sharing economy platforms encounter EU tax legislation and different tax systems in EU member states. Member states can be seen taking different roads in terms of taxation of sharing economy and similar digital platforms. Some member states already adopted a new set of rules for sharing economic platforms, while other member states apply the existing legal framework. (Pantazatou, 2018) Diverse tax systems in the EU and its member states cause difficulties in addressing possible issues with tax liability. Comprehensive data analysis of sharing economy presence is crucial in finding a successful solution, where all stakeholders are satisfied.

Early after an expansion of sharing economy questions arisen about maintaining a standardized level of consumer and employee protection in exchange conducted through sharing economy platforms. Questions regarding consumer and employee protection revolved mainly around platforms providing transportation services, which were similar to taxi services in various countries and around a gig economy, where one-time gigs were offered through platforms. (Koopman, Mitchell & Thierer, 2015) Some researchers go further and claim that sharing economy has created new forms of employment and new labor practices, where workers are operating as entrepreneurs or independent contractors especially when it comes to labor and tax code. That is because labor codes and tax codes in various countries especially in the EU set more flexible rules and tax rates for contractors and entrepreneurs. This is seen by some as a welcome change that helps flexibility in labor markets, employment, sustainability and decentralization. (Munger, 2019) Others see it as a threat to both employee and consumer protection. (Ahsan, 2020) Changes that come with sharing economy and other digital platforms challenge the current legislative framework, which could be seen as a welcomed impulse for often rigid regulatory frameworks designed for traditional businesses. (Tura & Vaskelainen 2018) A looser legislative framework for some parts of digital platform businesses could endanger equal market conditions for digital platforms and standard businesses before changes on markets are properly addressed and agreed upon rules enforced. (Codagnone & Martens, 2016) The natural professionalization of the services especially short-term rentals provided through digital platforms in several countries already addresses these problems and gradually levels the market conditions. Along with the professionalization of the services a definition of sharing economy is under pressure. (Li & Srinivasan, 2018).

Other areas where challenges arise were discovered by current research include urban development and the economy of cities. Short-term rental platforms including Airbnb have expe-

rienced a rise in popularity in most parts of the world and especially in big and capital cities. And because a significant portion of listings offered on short-term rental platforms is part of the housing stocks of those cities many research questions have arisen. One of the questions is the impact of Airbnb listings on the house and rental prices, where the growing number of short-term rentals especially in inner city centers pushes prices of both long-term rentals and housing stock higher. (Todd, Musah, & Cheshire, 2021) Another topic addressed by researchers regarding short-term rentals is the faster gentrification of desirable and internationally recognizable neighborhoods. (Wachsmuth & Weisler, 2018) The introduction of a new potential revenue flow into housing markets and the promotion of tourism through short-term rental platforms has both positive and negative impacts. On the positive side, we can find boosting of GDP, higher flexibility on the labor market, new sources of revenues, the attraction of tourism outside of the inner-city center, increased economic value of a neighborhood, etc. as gentrification is a natural process that has both positive and negative impacts. (Morisson & Bevilacqua, 2019) On the negative side, the gentrification could lead to the loss of affordable housing due to new living and economic standards, where the main problem is that the gentrification connected to short-term rentals is more disproportional and causes an increase in the rent gap in specific parts of cities. (Wachsmuth & Weisler, 2018).

3.   AIRBNB IN V4 COUNTRIES

This chapter contains data analysis of Airbnb presence in V4 countries, which are important for future research and debates regarding short-term rental platforms. Unique and verified data provided directly by Airbnb describe the situation in V4 countries with special attention to Prague, Budapest, Warsaw, Krakow and Bratislava.
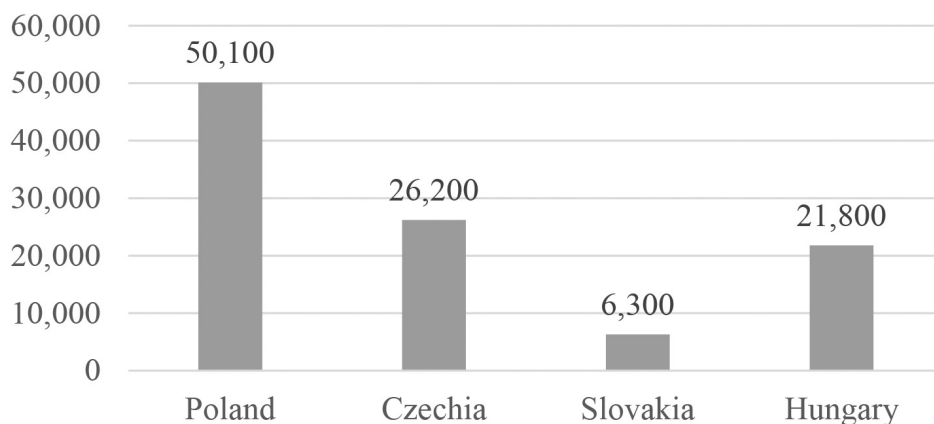
Figure 1. Number of active listings of Airbnb in V4 countries in 2019
Source: (CETA & GKI & INESS & Liberté, 2021)

Figure 1 shows the number of listings offered through the Airbnb platform in V4 cities. These listings consist of dwellings or their parts such as one room or a couch. The total number of Airbnb listings in V4 countries was 104 400 in 2019. The highest amount 51 200 listings were offered in Poland. There were 26 200 listings offered in Czechia, 21 800 listings in Hungary and 6 300 listings in Slovakia. These offers were accepted by approximately 4.63 million visitors. Approximately 809 900 of these visitors used accommodation opportunities in their own country of residence. For these services tourists paid approximately 308 million euros. Additional 894 million euros were spent on local services during their travels. (CETA & GKI & INESS & Liberté, 2021) Not all these listings are offered throughout the year. Some listings are offered

seasonally, some are offered for weekends and some only for a couple of days. The occupancy rate of the abovementioned listings also varies greatly, with Hungary having the highest average occupancy rate of 15,9 %. Czechia has an average 12,3 % occupancy rate of approximately 45 nights per year. In Slovakia, the average occupancy rate was 7,1 % and in Poland 6,8 %.
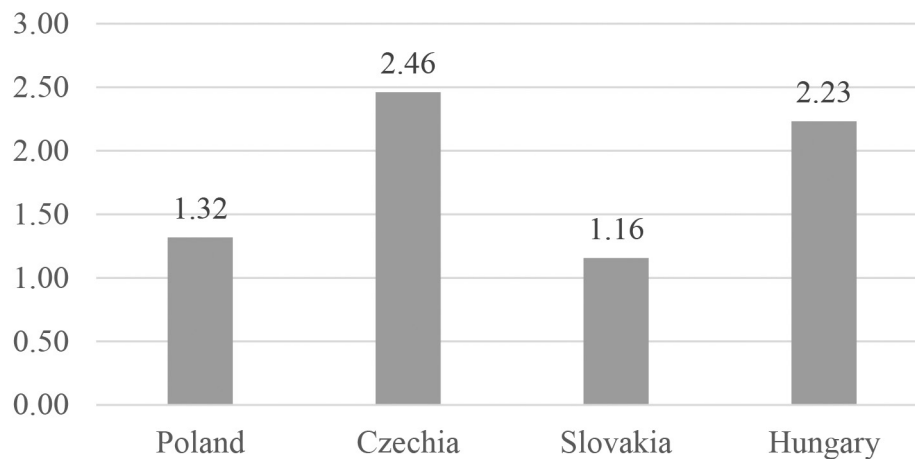
Figure 2. Number of active listings of Airbnb in V4 countries per 1000 inhabitants in 2019

Source: (CETA & GKI & INESS & Liberté, 2021)

Figure 2 shows the number of listings adjusted by the population level in V4 countries. Number of listings was calculated by individual population size in 2019. Czechia had the highest adjusted number of offers with 2,46 listings per 1 000 inhabitants. Hungary had the second-highest number of offers with 2,23 listings per 1 000 inhabitants followed by Poland with 1,32 and Slovakia with 1,16.

■ Layout of guests in V4 cities in 2019 Traditional accommodation services

■ Layout of guests in V4 cities in 2019 Airbnb
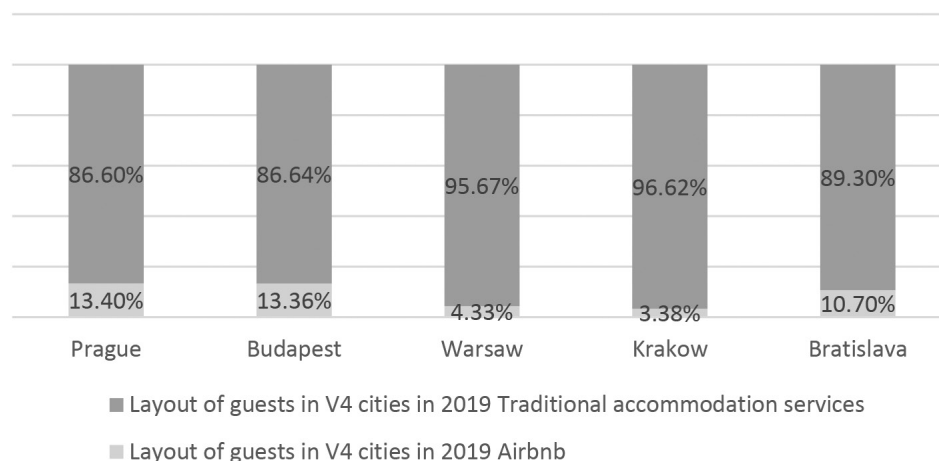
Figure 3. Layout of guests in V4 cities in 2019

Source: Local statistical offices

To put the number of listings into perspective Figure 3 depicts the distribution of tourists in two types of accommodation: Airbnb and traditional hotels. In Warsaw and Krakow, less than 5 % of tourist chose Airbnb and more than 95 % of tourists chose traditional. The situation is different in Bratislava where about 10 % of tourists chose Airbnb as their accommodation type and 90 % of tourists chose hotels. Airbnb's share in V4 is highest in Prague and Budapest. Its share of accommodation of tourists is approximately 13.4 % in both cities. Almost 87 % of tourists still use traditional accommodation services.
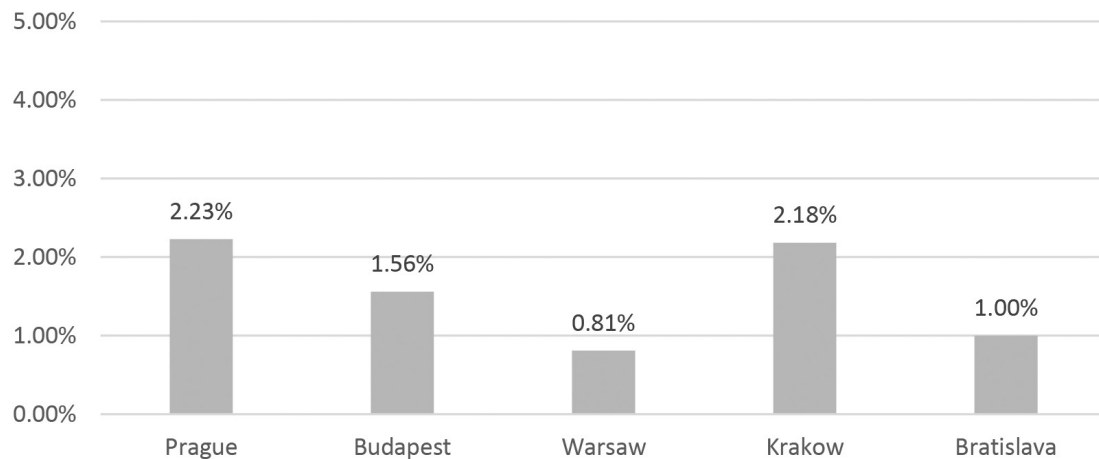
Figure 4. Share of Airbnb listings on total housing stock in selected V4 cities

Source: Local statistical offices

Figure 4 addresses the share of Airbnb listings on total housing stock in V4 cities – capital cities of Czech Republic, Hungary, Poland, Slovakia and Krakow. The share of listings, where a significant part is not active for the whole year, on housing stock is the highest in Prague, on housing stock, reached 2,23 % in 2019. The lowest share is in Warsaw with 0,81 % leaving Budapest with 1,56 %, Krakow with 2,18 % and Bratislava with 1 % in between.

4. FUTURE RESEARCH DIRECTION

Further research in all listed challenges connected to the rise of the digital and sharing economy is welcome as both the topic and research targets are complex and require thorough and complex work. The COVID-19 pandemic situation caused a deep crisis in tourism forcing it to restart under strict hygienic rules. (Nguyen & Van Hong, 2021) This restart offers a huge research opportunity that can be focused on the impact of digital and sharing economy platforms on all the stakeholders before, during and after the pandemic. A comparison of short-term rental activities in those periods and during the restart of tourism could offer many of the answers that current research is looking for. (Bresciani et al., 2021).

The restart of tourism will affect short-term rental platforms. Some cities and states already changed the legal framework regarding sharing economy and short-term rental platforms. Other cities chose to maintain the current regulatory framework. Effects of various regulatory frameworks and quality of institutions and their analysis and comparison could prove to be beneficial for this field of research. The quality of research outcomes would be increased by reliable data about urban situations and the use of housing stock in cities. Thorough and detailed data about other active short-term rental platforms, unused parts of housing stocks, available brownfields, number of offices set up in residential premises and about the efficiency of urban planning and construction permits processes would significantly help future research in this area.

5. CONCLUSION

The relatively new phenomenon of sharing economy short-term rental platforms such as Airbnb grew in importance in past years. The sharing economy business model based on modern technologies and digital platforms comes with new opportunities and challenges that initially impacted mainly big cities but now they are also apparent in medium and small towns. The

main challenges connected to short-term rental platforms such as Airbnb cover a wide area: the tax liability, consumer and employee protection, equality of market conditions, housing and rental prices, possible loss of affordable housing, housing stock occupancy, disproportionate gentrification, the economic value of neighborhood, living and economic standards, increase in tourism, increase in GDP, higher flexibility on labor markets and the emergence of new markets.

To be able to verify and potentially measure individual impacts of Airbnb and other short-term rental platforms it is necessary to use reliable data. This is why this paper contains a quantification of Airbnb presence in V4 countries and its analysis. In countries of V4 in 2019, guests spent on accommodation and services in the neighborhood of the accommodation space itself 1.202 billion euros. In 2019 the total number of listings offered in Poland, Czechia, Hungary and Slovakia through the Airbnb platform was 104 400. In Poland, there were 50 100 different listings, in Czechia 26 200, in Hungary 21 800 and Slovakia 6 300 listings. This paper includes a calculation per 1000 inhabitants to adjust individual values to different population levels in V4 countries. In 2019 there were 2,46 listings per 1 000 inhabitants in Czechia, which was the highest value. The second highest value belongs to Hungary, where 2,23 listings per 1 000 inhabitants were offered. Poland had 1,32 and Slovakia 1,16 listings per 1 000 inhabitants. The share of Airbnb listings on total housing stock in selected V4 cities varies from 0,81 % in Warsaw to 2,23 % in Prague.

The impact of short-term rental platforms is not black and white, which is only natural given the number of stakeholders and their wide variety. On one hand, we can see a significant positive influence of Airbnb and other sharing economy platforms on the economy, labor markets, living standards and overall wellbeing of society. On the other hand, it is necessary to properly address the main challenges and concerns that come with them in both regulatory and urban areas. To accomplish that it is necessary to continue research in this field.

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STRATEGIC MANAGEMENT AND MANAGEMENT TOOLS FOR NATIONAL PARKS IN SERBIA

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Abstract: *The management of the national parks Tara, Fruška Gora, Djerdap and Kopaonik and the activities of the managers in Serbia are affairs of the public interest. The manner of their strategic management is defined by the legal framework in the field of nature protection and it implies the adoption and the implementation of documents, such as the nature protection strategy, management plans and spatial plans for the special purpose areas. The paper particularly emphasizes the importance of adopting management plans for national parks, as basic documents for their management, as well as their harmonization with the spatial plans for the special purpose areas, as specific instruments for the management of these areas. It points out the importance of establishing governing bodies, such as a professional alliance and a council of users of national parks, which would improve their management and incorporate the interests of local people and users of space. In accordance with the above, this paper aims to point out the importance of strategic management and strategic documents in the field of protection and management of national parks in Serbia and give suggestions for their improvement.*

Keywords: *National park, Strategic management, Management plan, Spatial plan for the special purpose area, Serbia.*

1. INTRODUCTION

In theoretical terms, strategic management is a continuous process that analyses the characteristics of the current situation, identifies strategic goals, visions, missions, application of appropriate strategies, etc. (Hijji, 2014). It is an interactive process between its individual phases such as: planning, implementation, evaluation and control. Therefore, it is necessary to distinguish concepts, such as strategy, planning, strategic planning and strategic management. Thus, strategic management is a broader concept than strategic planning, and strategic planning is a broader concept than strategy (Mosurović Ružičić, 2018). When it comes to strategy, there are several definitions, and one of them is the most important for this paper, that strategy is like a plan and it represents the initial phase in strategic planning (Mintzberg, 1994).

Strategic management of the national parks in Serbia is implemented based on the Nature Protection Strategy of the Republic of Serbia, which determines long-term goals and measures for the conservation of biological and geological diversity and the manner of their implementation. The strategy is adopted by the Government for a period of at least ten years (Zakon o zaštiti prirode, 2009-2018). This strategy has not been adopted so far. The national park is proclaimed by the Law on National Parks (2015-2018), and protection and sustainable use are implemented according to the management plan for ten years. Thus, the management plan is another document and management tool of importance for the strategic management of national parks, and it contains measures, prohibitions and restrictions of works and activities in accordance with the prescribed protection

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regimes. The Government of the Republic of Serbia gives the consent on the national park management plan. National parks are managed by public companies, determined by the Law on National Parks, taking into account the needs of local residents and other users of these areas. The national park expert council is an expert and consultative body that monitors and analyses programs and projects in the field of nature protection and sustainable use of natural resources, including the national park management plan. The members of the expert council are designated persons who, through their professional and scientific work, monitor and analyze the field of nature protection and sustainable use of natural resources, and one member is a representative of the manager.

According to the Law on Nature Protection (2009-2018), the organization, use, arrangement of space and construction of facilities in the protected area is performed based on the spatial plan for the special purpose area, which is the third document and management tool important for strategic management of these areas. More precisely, this planning document is a specific instrument for the management of national parks, adopted by the Government of the Republic of Serbia, respectively the Assembly of the Autonomous Province for the territory of the Autonomous Province. The spatial plan for the special purpose area, with the national park protection regimes of I, II and III degree and the management plan must not be in conflict (Zakon o nacionalnim parkovima, 2015-2018). In accordance with the above, the aim of this paper is to point out the importance of strategic management and strategic documents adopted in the field of protection and management of national parks in Serbia and give suggestions for their improvement.

2. METHODOLOGY

The national parks Tara, Djerdap, Fruška Gora and Kopaonik are analyzed in this paper. The management plans for these parks for the next ten years (draft versions) were made in 2020, and the spatial plans for these special purpose areas are adopted or are being developed. Specifically, for the Tara and Fruška Gora national parks, spatial plans for the national park special purpose areas have been adopted (for the Tara national park in 2020 and for the Fruška Gora national park in 2019), while for the Kopaonik and Djerdap national parks these planning documents are under development. This research is based on the analysis of strategic documents and management tools, such as management plans and spatial plans of the special purpose areas for these parks, given that the Nature Protection Strategy has not been adopted so far. The paper analyzes their mutual harmonization in terms of adjustment of protection measures and regimes, the existence of appropriate governing bodies such as professional association and council of users, as well as forms of cooperation of managers with the local population and other users of space, in order to sustainably manage these areas. Based on the results of the analysis, proposals for further improvement of strategic management of national parks in Serbia are given in the paper.

3. STUDY AREA

Tara National Park is one of five national parks in Serbia, which is under protection by the Law on National Parks (2015-2018). It is located in the far west of the Republic of Serbia on the border with Bosnia and Herzegovina, with a total area of 24.991,82 ha. It acquired the status of a national park in 1981 and is managed by the "Public Company Tara National Park" from Bajina Bašta. Djerdap National Park is the largest national park under protection by law in Serbia, with a total area of 63.786,48 ha, located in the northeastern part of the Republic of Serbia, on the border with Romania. It acquired the status of a national park in 1974 and was declared as a UNESCO Geopark and Ramsar site in 2020. It is managed by the "Public Company Djerdap National Park"

from Donji Milanovac. Fruška Gora National Park is located in the north of the Republic of Serbia in the Autonomous Province of Vojvodina with a total area of 26.672 ha. It acquired the status in 1960 as first national park in Serbia. It is managed by the "Public Company National Park Fruška Gora" from Sremska Kamenica. The Kopaonik National Park is located in the southern part of the Republic of Serbia with a total area of 11.969,04 ha. It acquired the status of a national park in 1981. It is managed by the "Public Company Kopaonik National Park" based in Kopaonik. All four national parks are part of the ecological network of the Republic of Serbia (Dobričić et al, 2017).

4.   RESULTS AND DISCUSSIONS

4.1. Harmonization of strategic documents

The harmonization of the national park management plan and the spatial plan for the special purpose area of the national park implies, among other things, that the zones and protection regimes are harmonized in both documents. This is primarily due to the fact that the Law on National Parks from 2015 stipulates that measures and regimes for the protection of the national park are determined by the management plan, and the management plan and the spatial plan for the special purpose area cannot be in conflict. These facts indicate certain disagreements in the dynamics of preparing strategic documents, which need to be overcome in different ways (Dobričić & Maksić, 2017).

Thus, in the case of the Tara National Park, the management plan and the spatial plan for the special purpose area were harmonized in terms of protection measures and regimes during the procedure of preparation of the Spatial Plan for the Special Purpose Area of the Tara National Park (2020). The Spatial Plan for the Fruška Gora Special Purpose Area (2019) was adopted for the Fruška Gora National Park, based on the protection measures of the national park defined in 2011 by the Proposal for establishing protection of natural values. This proposal was formulated in the process of preparation of the Law on Fruška Gora National Park, which was not adopted. The adoption of the national park management plan is planned after the adoption of the Spatial Plan of the Special Purpose Area of Fruška Gora (2019).

The preparation of the Spatial Plan for the Special Purpose Area of the Djerdap National Park has only just begun in 2020 (Odluka o izradi Prostornog plana područja posebne namene Nacionalnog parka Djerdap, 2020), with the same problem of the lack of strategic documents, that is a management plan, for defining protection measures and regimes. This spatial plan for the special purpose area requires the parallel development of the management plan for this area and the definition of measures and protection regimes necessary for the management of this area. Regarding the Kopaonik National Park, amendments are currently being made to the Spatial Plan for the Special Purpose Area of the Kopaonik National Park (Odluka o izradi izmena i dopuna Prostornog plana područja posebne namene Nacionalnog parka Kopaonik, 2019). The development of a management plan and changes to the spatial plan for the special purpose area will be harmonized in parallel, during the procedure of developing the spatial plan for the special purpose area.

4.2. Management bodies

The analysis of the management plans for the Djerdap, Fruška Gora, Kopaonik and Tara national parks, all four done for the period 2020-2029 (draft versions), has shown that all plans emphasized the importance of forming councils of users in order to improve the management

of these areas. However, as stated in the management plans, the Fruška Gora and Kopaonik national parks are still planning the formation of these bodies, while the Tara and Djerdap national parks formed their councils of users in 2018.

Thus, in order to ensure the interests of the local population and users of Djerdap National Park, a Council of users with 11 members was formed. Each is a representative of the following: the municipalities of Majdanpek and Kladovo; local communities of Donji Milanovac; TOO Majdanpek; Preschool "Marija Munćan" Majdanpek; tourist areas "Fortress Golubac City" Golubac and "Museum Lepenski Vir" Donji Milanovac; economy from the area of the National Park, hunting association "Djerdap" Donji Milanovac; NGO "Lazarus" Donji Milanovac; and the institution " Library Center for Culture" Kladovo.

In the Tara National Park, a Council of users with 14 members was formed. Each is a representative of the following: the municipality of Bajina Bašta; local communities from the area of the national park - president of MZ Rastište; hunting association "Soko" Bajina Bašta; farmers, economy, local crafts and tourist organizations from the area of the National Park; citizens' associations in the field of improving the goals and tasks of the National Park - Mountaineering Club "Tara"; Ministry of Defense and the Serbian Army - VU "Tara"; institutions for tourism and sports - STC "Bajina Bašta"; Institution "Culture" Bajina Bašta; Serbian Orthodox Church, Rača Monastery; public company "EPS Branch of Drina-Lim Hydroelectric Power Plant", Bajina Bašta; and the local population, organic food producers. Both councils of users were formed in order to ensure the interests of the local population and the users of the national park. As stated in their management plans, the formation of councils of users is expected for the Fruška Gora and Kopaonik national parks in the following period.

4.3. Forms of cooperation

According to the Management Plan of the Tara National Park (Javno preduzeće "Nacionalni park Tara", 2020), in addition to activities on education, awareness raising and promotion of the national park, following activities with the local population are planned: possibilities of organic production through educational programs, ecotourism and other development projects in the national park; development of projects for the protection of the geographical origin of products and the branding of products such as honey, dairy products, etc., as well as products of traditional crafts (carpets, flasks, etc.). Support to non-governmental organizations in organizing recreational events, as well as support of the project "Friendship on Drina" is planned, through cooperation with travel agencies which deal in recreational tourism. Cooperation and exchange of experiences will take place directly between the national parks and other protected assets, as well as through the activities of the Association of National Parks and Protected Areas of Serbia. Cooperation between national parks and protected assets will be performed within the "Dinarida Parks Association". Activities on the project "Protected Areas for Nature and People" implemented by WWF - World Wide Fund for Nature will be continued. Good example of cooperation and exchange of experiences with other national parks is the sister park between Tara National Park and Black Canyon National Park, Colorado, USA.

The cooperation of the Fruška Gora national park with the local community will take place through various projects, aimed at the sustainable development of the area, the development of ecotourism, branding of local products and educational programs. It is planned to open a store of branded local products at the Information Center. Due to the large area of forests under the

linden tree, beekeeping and the recognized brand "Fruška Gora linden honey" is of particular importance in the Fruška Gora national park. Further cooperation is needed with the World Wide Fund for Nature - WWF, International Union for Conservation of Nature - IUCN, Regional Environmental Center for Central and Eastern Europe - REC. International cooperation with other European national parks takes place through the EUROPARC Federation, and at the regional level through the Dinarides Parks Association (Public company "Nacionalni park Fruška Gora", 2020).

A special activity of the Djerdap National Park will take place with the local population through educational programs on the possibilities of ecotourism and other development projects in the park, the development of projects to protect the geographical origin of products and branding products from this area, such as cheese, dairy products, fruit and more (Public company "Djerdap National Park", 2020). In the past period, honey was branded from the area of Djerdap. Cooperation with Young Researchers of Serbia, WWF and voluntary fire brigades from the territory of the national park will continue. Cooperation and exchange of experiences will take place directly between the national parks and other protected assets, as well as through the activities of the Association of National Parks and Protected Areas of Serbia. Cooperation between parks and protected assets will also be carried out within the Dinarides Parks Association. The projects from international cooperation, ConnectGREEN and DaRe to Connect will be implemented. The partnership in these two projects will implement GIS in the Djerdap National Park.

The directions of development and sustainable use of the Kopaonik National Park, in cooperation with the local population can be based on organized collection, plantation cultivation, processing of medicinal, edible and spicy indigenous plants, collection and processing of mushrooms, export of unique local handicrafts and products, quality mountain honey, brook trout farming, with the proposed Kopaonik lamb being the top brand in the area. (Public company "Kopaonik National Park", 2020). It is planned to encourage agricultural production, especially healthy and organic food. Cooperation with other national parks and protected areas within the Association of National Parks and Protected Areas of Serbia will continue.

5.   FUTURE RESEARCH DIRECTIONS

In order to improve strategic management and management tools for national park management in Serbia, the subject of future research may be examples of good management practice in the world. Thus a good example of honey branding and production practice is Przemkowskie Heathland in Poland. Local beekeepers have actively been involved in preserving this area by preventing its healing, while honey production, certified by the European Union, received the label of a regional product. This example shows that products in the protected areas can guarantee their high quality and therefore higher prices (Biereznoj & Tripolszky, 2007). Therefore, further identification of traditional activities and crafts, encouragement of local production and ensuring placement of these products is of special importance (Dobričić & Josimović, 2018). Further research should be focused on the analysis of the possibility of applying the results obtained by assessment values of protected areas of Serbia conducted by the World Wide Fund for Nature-WWF Adria (Sekulić et al, 2018), including Tara, Fruška Gora, Djerdap and Kopaonik national parks, all in order to improve management of these areas and the development of management plans and spatial plans for national parks special purpose areas in Serbia.

6. CONCLUSION

Strategic management of the Tara, Fruška Gora, Djerdap and Kopaonik national parks in Serbia is implemented based on management plans and spatial plans for the special purpose areas that are adopted for ten years. These documents (management tools) are also the most important for these areas, bearing in mind that the Nature Protection Strategy has not yet been adopted. The mutual harmonization of these documents is especially important. By the analysis of the documents for national parks which have been prepared so far, it can be concluded that no national park has adopted a management plan for the next ten years. Regarding the spatial plans for the special purpose areas, which are also made as long-term planning documents, the spatial plans for the special purpose areas for the Tara and Fruška Gora national parks have been adopted so far (2020 and 2019), while for the Djerdap and Kopaonik national parks are still being developed. The lack of adopted strategic documents makes it difficult to manage national parks, as well as the development of spatial plans for the special purpose areas, given that they must be mutually harmonized in terms of protection measures and regimes. A special problem is the fact that, according to the Law on National Parks from 2015, it is envisaged that national park management plans define protection measures and regimes. Therefore, it is necessary to adopt the missing documents required for strategic management of national parks in the forthcoming period, and above all the Nature Protection Strategy, management plans for all national parks and spatial plans for the special purpose areas for Djerdap and Kopaonik national parks.

The establishment of the council of users is an obligation provided by the Law on National Parks from 2015 and it is concluded that, in the previous period, they were established only for the Tara and Djerdap national parks. Given that these bodies are key for including the interests of the local population and other users of space, it is necessary to continue with the formation of the council of users for the Fruška Gora and Kopaonik national parks in the forthcoming period. In addition, there is a need for greater use of examples of good world practice, cooperation with other national parks, as well as improving strategic management through the use of the obtained results of valuation of protected areas in Serbia conducted by the World Wide Fund for Nature-WWF (Sekulić et al, 2018). In accordance with the above, the conclusion is that the legal framework in the field of nature protection provides a good basis for sustainable management of national parks in Serbia. The activities implemented so far have given good results in improving this area and should be continued in the future.

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TRUST IN A STRATEGIC PROJECT:
CASE FROM GRAND PARK HOTEL ROVINJ, CROATIA

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Abstract: *Trust is a highly recommended component in the project equation management process. According to Rousseau (1984), there are three types of trust: calculus-based trust, relational-based trust, and institutional-based trust, which are adopted to justify the importance of the existence of trust in a strategic project: Grand Park Hotel Rovinj in Rovinj and ACI Marine, Rovinj. Trust is an imperative condition in the project process, which can secure the achievement of the project. If there is an atmosphere of trust in the process environment, the project is successful. All parties involved in this project had a common vision and acted together, so it was assumed that there were no differences between the groups, corresponding to the trust concept proposed in the main hypothesis.*

A descriptive analysis (cross tabulation and Chi-square) was adopted to investigate the concept of the importance of trust and satisfaction with the working relationship in a strategic project between investors and local government in terms of project outcomes. The project was huge, but we choose to examine only those representatives who matter, with decision-making power and operational chiefs, 20 respondents in total. The sample size was small, but it covered the most important representatives of two groups, and, according to Sandelowski (1995), it could be a covered requirement for validation, despite its size. The project budget was €750 million and the project duration time was two years.

The study results demonstrate that the perception of trust based on relationships and trust on an institutional basis is different between investors and local government, but they share a mutual agreement on the perception of trust based on calculations. In terms of satisfaction with the working relationship and project outcome, their perceptions are likewise distinctive. The study results supported the main hypothesis, but solely in relationship to calculus-based trust construct. The other results revealed a considerable degree of disagreement between two actors' groups, corresponding to the relational-based and institutional-based trust, and to the satisfaction with a work relationship. These results are truly obvious and symptomatic indicators of the complexity which every project process brings with it.

The concept of trust challenges researchers even now, although there are very many studies referring to it. This concept covers many scientific fields, revealing its complex and challenging nature, and opening a space for deeper exploration. The relationship between the parties in any network includes this concept as a conditio sine qua non. Strategic projects are a yet unknown area asking for further scientific debate with the principal objective: successful outcome. This analysis is a limited addition to the strategic project area research offering ample area to investigate a liaison between public and private sector in a specific scheme.

Keywords: *Calculus-based trust, Relational-based trust, Satisfaction with a work relationship, Project success, Project failure.*

1. INTRODUCTION

Managing a difficult process of reaching the objectives, anticipated in a strategy for the progress of the city in accordance to a sustainable agenda can be a long-term battle that calls for more players to be engaged. The local government owns a constitutional force to manage actions, but

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sometimes it needs capital. Investors have a better financial position, but they lack force of the law to reach their targets in the business agenda or influence outcomes of law. When it comes to tourism in a sustainable paradigm, it is required to secure a significant level of partnership between private and public sector, local government and community. That partnership implies that both parties have a high level of trust with each other. More trust produces better results, easing the process of governing, planning and implementing policies, dealing with issues, solving the problems, etc.

Many scientific researches have been carried out about the concept of trust in local government and its implication on the stakeholder satisfaction in particular destinations with the accent on resident's attitudes and their satisfaction level (Della Corte, Aria, & Del Gaudio, 2018; McComb, Boyd, & Boluk, 2017; Mihalič, Šegota, Knežević Cvelbar, & Kuščer, 2016; Nunkoo, 2015, 2017; Nunkoo & Gursoy, 2017; Nunkoo & Ramkissoon, 2011; Nunkoo, Ramkissoon, & Gursoy, 2012; Nunkoo & So, 2016; Pechlaner, Franch, Martini, & Buffa, 2017; Soulard, Knollenberg, Boley, Perdue, & McGehee2018; Yodsuwan, & Butcher, 2012) but few have tried to examine the specific relationship between the large tourism enterprises and local government, particularly in a collaboration context. The collaboration between those two important stakeholders is highly recommended as a crucial element in the sustainable development of destination. This research is based on the trust concept (Rousseau et al., 1998) consisted of three different types of trust. Calculus-based trust is motivated by self-interest or economic incentives. Relational trust emerges over time and is related to repeated direct interactions which lead to a greater comfort zone or level of understanding between the parties. An institutional-based trust is the role played by legal institutions, cultural and societal norms in promoting trust within a culture or country.

2. TRUST

Trust is a psychological state comprising the intention to accept vulnerability-based positive expectation of the intentions or behaviors of another (Rousseau, 1998). In the earliest works (Blau, 1964; Butler, 1991; Deutsch, 1962; Gambetta, 1988; Mayer et al., 1995), trust was understood as fundamental to collaborative relationships as well as to the claim that interpersonal trust had significant relationships with organizational variables such as quality of communication, performance, problem solving, collaboration and civic behavior. Rousseau et al. (1998) suggested that the concept of trust consisted of three different types of trust: calculus-based trust, relational-based trust and institutional trust. **Calculus-based trust** is a type of trust which is motivated by self-interest or possible benefits achieved by the parties in a process. **Relational-based trust** emerges over time and is related to repeated direct interactions which lead to a greater comfort zone or level of understanding between the parties. It can be measured by a RELQUAL scale (Lages et al., 2005) which is comprised of four dimensions: amount of information sharing in the relationship, communication quality of the relationship, long-term relationship orientation and satisfaction with the relationship. **Institutional-based trust** is the role played by legal institutions, cultural and societal norms in promoting trust within a culture or country. According to Rothstein and Stolle (2001), actors base their expectations regarding the behavior of others on reliability, impartiality and efficiency of the institutional system. Institutional trust persuades actors to cooperate, participate and communicate in a respectful way even if they are entering in a transaction process for the first time (Rus & Iglič, 2005).

3. LOCAL GOVERNMENT

Tourism development is well-managed by the principal actor in the political process of it (Bramwell, 2011; Nunkoo et al., 2012). The role of government in tourism development planning has been

the subject of academic interest for decades (Bramwell, 2011; Ruhanen, 2013). Bramwell (2011) stated that politics affect choices in society. Local government, presumably but not yet proven, has more influence over other stakeholders based on power through the four attributes of power (legitimate authority, knowledge, power process area and resource power) (Beritelli & Laesser, 2011; Bramwell, 2011; Nunkoo et al.,2012) and planning (Ruhanen, 2013), but this influence, of course, depends on the degree of trust that other stakeholders hold in them. Confidence is what seems to be the most important element of any social network. Local authorities have the mandate to represent the interests of the local community impartially (Ruhanen, 2013). In other instances, governments have been found to engage in corrupt practices in tourism development and planning (Bramwell, 1999; Morah, 1996). This is probably why some researchers note that public trust in government in the context of tourism development is declining (Bramwell, 2011).

4. STRATEGIC PROJECT – GRAND PARK HOTEL ROVINJ, ROVINJ, CROATIA

This project is a strategic project of interest to the Republic of Croatia which is located in Rovinj, the County of Istria. Reconstruction and extension of the ACI marina Rovinj began in 2017 as a strategic project of the Republic of Croatia with the aim of renovating both the sea and land part of the marina. The total amount of the investment was 154,677,817.22 Croatian Kuna. Following the reconstruction and extension, ACI marina Rovinj has expanded its capacities and raised the quality of its service. During the same period, the hotel company "Maistra" d.d. started the construction of the "Grand Hotel Park Rovinj". A valuable strategic partnership project was completed through the joint action of the local government under the expert supervision and guidance of state institutions and the hotel company. The result of this association was rated high performance and placed the city of Rovinj on the list of one of the most desirable destinations in the Mediterranean. The hotel project cost was around €95 million, which covered preparation process, land, different types of fees and charges, building, equipment, promenade adaptation and wider surroundings.

5. CONCEPTUAL FRAMEWORK

In this research, a focus was on a two main players group in a particular strategic project with the focus on the relationship between the investors and local government, and Rousseau (1994), with his model, was a perfect pitch. It was assumed that representatives of both parties know each other for a long time because Rovinj is a small city, and this was not the first project where those parties have been cooperating. Despite the fact that both parties may have different goals, community development and success call for a strategic agenda which demands mutual understanding and inter-acceptance about project outcomes. This presumption leads to the following hypothesis:

H1: *There are no differences in the perception of trust importance (calculus-based, relational-based and institutional-based trust) in a project between investors and local government.*

H2: *There are no differences in the perception of satisfaction with the working relationship importance in a project between investors and local government.*

H3: *There are no differences in the perception of cooperation importance between investors and local government*

6. METHODS

The sample for this study was selected from a set of investors and local government representatives included in the particular project (Hotel Park, Rovinj); representatives who matter, with a decision-making power and operational chiefs, 20 respondents in total. The sample size was small but covered the most important representatives of two groups, and, according to Sandelowski (1995), it could be a covered requirement for validation, despite its size. The project budget was €750 million and project duration time was two years. Trust was measured with a 4-item scale, satisfaction with working relationship a 7-item scale, and project outcomes with a 7-item scale

7. FINDINGS AND DISCUSSION

The sample for this study was selected from a small set of local government representatives and investors involved in an important strategic project: Grand Hotel Park Rovinj, in total 20 respondents. All of them were defined as important stakeholders in a project. The breakdown by local government representatives and investors was: 12 investors and 8 local government representatives, 5 of them were females and 15 males. The average respondent reported more than 25 years of work experience, over 15 projects completed, and declared himself as High Management level, 40% of respondents reported middle range income level, 60% reported high range income level, education level showed that 9 respondents held a university degree, 9 of them Master degrees, and 2 of them a Ph.D.

A cross tabulation analysis[3] discovered that local government and investors share 100% positive agreement about the importance of individual rights (IBT), respect, communication (RBT), working relationship (SATWR), successful joint venture (SATWR), and long-term objectives (SATWR). There was a lower positive agreement rate ranged from 80% to 100% between local government and investors about the importance of gaining new knowledge, significance of long-term relationship, clear and concise goals and objectives, formal and informal meeting, competence, educated, organized, effective, profitability other than financial, enjoyment in project process, positive effect on users, and project management quality. According to the results of analysis, significant difference between local government and investors was about social status change (CBT), effort (RBT), confidential information (RBT), corruption and bribe (IBT), project on a budget (POUT), and alternative solution (POUT). Chi-square results showed that there exists significant difference between local government and investors regarding confidential information (RBT), strategic question (SATWR), effort (SATWR), corruption and bribe (IBT), project on time (POUT), and project on budget (POUT) (See Table 1). Regarding calculus-based trust, both groups shared a mutual agreement about its importance. Analysis results discovered no differences in the perception of calculus-based trust importance between investors and local government respondents, but differences in the perception of relational-based and institutional-based trust between them. Regarding perception of satisfaction with the working relationship and project outcome, an analysis discovered differences between respondents. The study results supported the main hypothesis, but only in relation to calculus-based trust construct. The rest of the results showed significant level of disagreement between the two players' groups as regard the relational-based and institutional-based trust, and to the satisfaction with a work relationship. These results are very clear and symptomatic indicators of complexity which every project process carries with it.

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[3]   Because of 100% agreement rate between respondents these items were excluded from further analisys.

Table 1. Chi-square results

CHI SQUARE TEST				ASYMPTOTIC	
CONSTRUCT	ITEM	Value	df	SIGNIFICANCE	(2-sided)
RELATIONAL-BASED TRUST	BELONGING*CONFIDENTIAL INFORMATION	9.377	1	0.002	
PROJECT OUTCOME	BELONGING*PROJECT ON TIME	11.111	2	0.004	
PROJECT OUTCOME	BELONGING*PROJECT ON BUDGET	9.762	2	0.008	
INSTITUTIONAL-BASED TRUST	BELONGING*CORUPTION AND BRIBE	6.932	2	0.031	
SATISFACTION WITH	BELONGING*STRATEGIC QUESTION	4.432	1	0.035	
WORK RELATIONSHIP	BELONGING*EFFORT	4.201	1	0.040	

Source: Authors, SPSS Software

8.   FUTURE IMPLICATIONS AND LIMITS

The concept of trust is exceedingly complex and delicate to interpret and demands further analysis to clarify the role of the concept of trust in the relations between various players in diverse projects. This research was conducted for merely one specific strategic project with a few respondents, the survey was executed through a questionnaire, running a structured questionnaire, so descriptive analysis alone could be employed, and results could be interpreted very narrowly. Prospective authors should review the elements of analysis used in this research, and the assumption of this study in a comparable environment: strategic project. For prospective research, a greater sample volume, a greater number of distinctive groups within the sample, generalizing project process with no specific one, and the use of different types of data collection and analysis in order to obtain more accurate research results are recommended.

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THE CHAOTIC RECEIPTS GROWTH MODEL: INTERNATIONAL TOURISM

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Abstract: *International tourism receipts are expenditures by international inbound visitors. These receipts include payments to national carriers for international transport. The basic aims of this paper are: firstly, to create a relatively simple chaotic receipts growth model that is capable of generating stable equilibria, cycles, or chaos, and secondly, to analyze the world receipts growth stability in the period 1995-2018. This paper confirms the existence of the stable growth path of the world receipts in the observed period.*

Keywords: *Receipts, International tourism, Growth, Stability, Chaos.*

1. INTRODUCTION

Global tourism suffered its worst year in 2020. According to the World Tourism Organization (UNWTO), the collapse in international travel shows an estimated loss of USD 1.3 trillion in export revenues. Also, the pandemic has put between 100 and 120 million direct tourism jobs at risk. The negative impact of the COVID-19 pandemic on global tourism has carried on into 2021 (UNCTAD, 2020).

This paper uses the elements of chaos theory. Namely, chaos theory started with Lorenz's (1963) discovery of complex dynamics arising from three nonlinear differential equations leading to turbulence in the weather system. Li and Yorke (1975) discovered that the simple logistic curve can exhibit very complex behavior. Further, May (1976) described chaos in population biology. Chaos theory has been applied in economics by Benhabib and Day (1981,1982), Day (1982, 1983,1992,1997.), Grandmont (1985), Goodwin (1990), Medio (1993,1996), Lorenz (1993), Jablanovic (2016, 2018, 2019), among many others.

International tourism receipts are expenditures by international inbound visitors, including payments to national carriers for international transport and any other prepayment made for goods or services received in the destination country.

2. THE CHAOTIC RECEIPTS GROWTH MODEL

The chaotic international tourism receipts growth model is presented by the following equations:

$$Y_t = C_t + I_t + G_t + Nx_t \tag{1}$$

$$C_t = \alpha\, Y_{t-1}{}^2 \qquad\qquad 0 < \alpha < 1 \tag{2}$$

$$I_t = \beta\, Y_{t-1} \qquad\qquad 0 < \beta < 1 \tag{3}$$

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$$G_t = \gamma\, Y_t \qquad\qquad\qquad 0 < \gamma < 1 \qquad\qquad (4)$$

$$Nx_t = \lambda\, Y_t \qquad\qquad\qquad 0 < \lambda < 1 \qquad\qquad (5)$$

$$R_t = \chi\, Y_t \qquad\qquad\qquad 0 < \chi < 1 \qquad\qquad (6)$$

with Y – the gross domestic product (GDP), I – investment, C– consumption, Nx – net exports, G – government spending, R – the international tourism receipts, α – the marginal propensity to consume, β – the investment rate, γ- the government expenditure rate, λ – the net exports rate, χ – the international tourism receipts rate.

Now, putting (1), (2), (3), (4), (5), and (6) together we immediately get:

$$R_t = \left[\frac{\beta}{(1-\gamma-\lambda)}\right] R_{t-1} - \left[\frac{\alpha}{\chi\,(\gamma+\lambda-1)}\right] R_{t-1}{}^2 \qquad\qquad (7)$$

Further, it is assumed that the current value of the international tourism receipts is restricted by its maximal value in its time series. This premise requires a modification of the growth law. Now, the international tourism receipts growth rate depends on the actual value of the international tourism receipts, R, relative to its maximal size in its time-series R^m. We introduce r as r = R/R^m. Thus e range between 0 and 1. Again we index e by t, i.e., write r_t to refer to the size at time steps t = 0,1,2,3,... Now the international tourism receipts growth rate is measured as

$$r_t = \left[\frac{\beta}{(1-\gamma-\lambda)}\right] r_{t-1} - \left[\frac{\alpha}{\chi\,(\gamma+\lambda-1)}\right] r_{t-1}{}^2 \qquad\qquad (8)$$

This model given by equation (8) is called the logistic model. For most choices of α , β , γ , λ, and χ there is no explicit solution for (8). Namely, knowing α , β , γ , λ, and χ and measuring r_0 would not suffice to predict r_t for any point in time, as was previously possible. This is at the heart of the presence of chaos in deterministic feedback processes. Lorenz (1963) discovered this effect – the lack of predictability in deterministic systems. Sensitive dependence on initial conditions is one of the central ingredients of what is called deterministic chaos.

3. THE LOGISTIC EQUATION

It is possible to show that iteration process for the logistic equation

$$z_{t+1} = \pi\, z_t\,(1 - z_t)\,,\ \pi \in [0, 4],\ z_t \in [0,1] \qquad\qquad (9)$$

is equivalent to the iteration of growth model (8) when we use the identification

$$z_t = \left[\frac{\alpha\,(1-\gamma-\lambda)}{\chi\,\beta\,(\gamma+\lambda-1)}\right] r_t \quad \text{and}\quad \pi = \left[\frac{\beta}{(1-\gamma-\lambda)}\right] \qquad\qquad (10)$$

Using (8) and (10) we obtain:

$$z_t = \left[\frac{\alpha\,(1-\gamma-\lambda)}{\chi\,\beta\,(\gamma+\lambda-1)}\right]\left\{\left[\frac{\beta}{(1-\gamma-\lambda)}\right] r_{t-1} - \left[\frac{\alpha}{\chi\,(\gamma+\lambda-1)}\right] r_{t-1}{}^2\right\} =$$

$$= \left[\frac{\alpha}{\chi\,(\gamma+\lambda-1)}\right] r_{t-1} - \left\{\frac{\alpha^2\,(1-\gamma-\lambda)}{\chi^2\,\beta\,(\gamma+\lambda-1)^2}\right\} r_{t-1}{}^2$$

On the other hand, using (9) and (10) we obtain:

$$z_t = \pi\, z_{t-1}\, (1 - z_{t-1}) =$$

$$= \left[\frac{\beta}{(1 - \gamma - \lambda)}\right] \left[\frac{\alpha\,(1 - \gamma - \lambda)}{\chi\,\beta\,(\gamma + \lambda - 1)}\right] r_{t-1} \left\{1 - \left[\frac{\alpha\,(1 - \gamma - \lambda)}{\chi\,\beta\,(\gamma + \lambda - 1)}\right] r_{t-1}\right\} =$$

$$= \left[\frac{\alpha}{\chi\,(\gamma + \lambda - 1)}\right] r_{t-1} - \left\{\frac{\alpha^2\,(1 - \gamma - \lambda)}{\chi^2\,\beta\,(\gamma + \lambda - 1)^2}\right\} r_{t-1}^{\,2}$$

It is obtained that:
- For parameter values $0 < \pi < 1$ all solutions will converge to $z = 0$;
- (ii) For $1 < \pi < 3{,}57$ there exist fixed points the number of which depends on π;
- (iii) For $1 < \pi < 2$ all solutions monotnically increase to $z = (\pi - 1) / \pi$;
- (iv) For $2 < \pi < 3$ fluctuations will converge to $z = (\pi - 1) / \pi$;
- (v) For $3 < \pi < 4$ all solutions will continously fluctuate;
- (vi) For $3{,}57 < \pi < 4$ the solution become „chaotic" wich means that there exist totally aperiodic solution or periodic solutions with a very large, complicated period. This means that the path of z_t fluctuates in an apparently random fashion over time, not settling down into any regular pattern whatsoever.

4. EMPIRICAL EVIDENCE

The main aim of this paper is to analyze the international tourism receipts' growth stability in the period 1995-2018. In this sense, it is important to use the logistic model (11):

$$r_t = \pi\, r_{t-1} - \omega\, r_{t-1}^{\,2} \tag{11}$$

where r– the international tourism receipts, $\pi = [\beta / (1 - \gamma - \lambda)]$, $\omega = [\alpha / \chi\,(\gamma + \lambda - 1)]$.

Now, model (11) is estimated (see Table 1).

Figure 1. International tourism, world, Receipts (trillion current US$)

Source: https://data.worldbank.org/indicator/ST.INT.RCPT.CD?view=chart

Table 1. The estimated model (11): World International tourism receipts, 1995-2018

	R=0.82063 Variance explained: 67.34%		
		π	ω
World	**Estimate**	1.319674	0.401628
	Std.Err.	0.192264	0.255931
	t(21)	6.863870	1.569281
	p-level	0.00000	0.131528

Source: Authors research.

The international tourism receipts monotonically increased from 0.509 trillion current US $ to 1.766 trillion current US $ in the observed period. Namely, according to the logistic equation, for $1 < \pi < 2$ all solutions monotonically increase to $z = (\pi - 1) / \pi$.

5. CONCLUSION

This paper creates the international tourism receipts chaotic growth model. For most choices of α, β, γ, λ, and χ there is no explicit solution for the growth model (11). Namely, knowing α, β, γ, λ, and χ and measuring r_0 would not suffice to predict r_t for any point in time, as was previously possible.

A key hypothesis of this work is based on the idea that the coefficient $\pi = [\, \beta / (1-\gamma-\lambda)]$ plays a crucial role in explaining the local growth stability of the international tourism receipts, where, β – the investment rate, γ- the government expenditure rate, λ – the net exports rate.

An estimated value of the coefficient π confirms stable growth of the international tourism receipts in the observed period.

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LAND OF FĂGĂRAȘ
– A TOP ROMANIAN TOURIST DESTINATION IN 2020

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Abstract: *The Land of Făgăraș is a unique location at the heart of Romania, which distinguishes itself through its historical and cultural richness, being declared the tourist destination of 2020. The Land of Făgăraș has this important distinction because its geographical position attracted a population with the vision of forming a community. The growing attractiveness for tourists is reflected in the positive trend of tourist traffic and revenue from tourism and various activities. This study will use some of the results obtained through a project called "Mapping the intangible cultural heritage in the Land of Făgăraș" which started in 2018 and ended in 2019. This study aims to present, on the one hand, the results of this project, such as intangible cultural heritage resources of strategic interest in Land of Făgăraș and thematic cultural routes in this region and, on the other hand, to give proof that this region deserved to be one of the top destinations as regards the Romanian tourism.*

Keywords: *Cultural heritage, Community identity, Tourism.*

1. INTRODUCTION

Numerous current global issues do not respect borders, for example, global warming, changing power relations and implicitly international relations, crises, wars and terrorist attacks in countries that represent tourist destinations references. We can think of places such as Tunisia, Egypt, France, and others. All those issues have forced tourism management and marketing organizations to rethink their strategies by focusing on different tourist destinations. According to Bolborici (2020), since 2020 we have started to face a new reality: the current outbreak of the new coronavirus (SARS-CoV-2) which has affected every person, personally and professionally (p.71).

In this context without any doubt, tourism is one of the most affected fields all over the world and the state of uncertainty will continue to persist for a long time from now.

For many European Member States, regions and cities, tourism has an important contribution to economic and social structures; tourism provides jobs and vital income, often concentrated in regions that have very little other sources of employment, and employment that involves low-skilled workers, according to European Commission (2020, p. 2). As we can see, today's economic ecosystem has been severely affected.

Tourism is present in different types of areas and regions: urban centres, islands, coasts, rural areas, remote and outermost regions of the EU. Tourism is considered the backbone of the econ-

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omy for many states and the regions of Europe differ in their dependence on tourism activities. The impact is strong in the case of islands, coastal and wilderness regions, given their dependence on tourism activities or dependence on international air transport. Rural areas with limited connectivity and which are dependent on tourism have also felt a strong impact, according to European Commission (2020, p. 9).

Since the beginning of the pandemic, all Member States have implemented restrictions on non-essential travel, which are often accompanied by the obligation for cross-border travellers to remain in quarantine. The EU's external borders have been closed for non-essential travel and many Member States have temporarily reintroduced internal border controls, according to European Commission (2020, p. 3). This meant that suddenly, millions of European citizens, and others, could no longer travel for business, study or leisure.

Under these circumstances, Pop stated (2021), Romania seems to be a country with strong touristic potential, due to the variety, beauty and originality of the natural and anthropic resources (p. 44). In the light of this context, the Land of Făgăraș, which is a unique spot at the heart of Romania was declared the tourist destination of 2020.

This paper is a part of a broader project named Strategic mapping of the intangible cultural heritage of the Land of Făgăraș, developed between 2018-2019; the project is based on the theme of Culture. The theme is the cultural identity of the Romanian village: the ethnographic basin of the Land of Făgăraș. Strategic directions are focused on safeguarding the intangible cultural heritage. This project was initiated and conducted by Dana Sorea, Ph.D. Senior Lecturer at the Faculty of Sociology and Communication at the University of Brașov and was implied by an interdisciplinary team, with 16th members, specialized in the following fields: sociology, social work, economics, music, alimentation and tourism.

The project covered all six areas of intangible cultural heritage as set out in the Convention for the Safeguarding of the Intangible Cultural Heritage — ratified in 2003 at the UNESCO General Conference. According to the UNESCO (2003), Convention for the Safeguarding of the Intangible Cultural Heritage, from Paris 2003, the "intangible cultural heritage" means the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity.

In the same UNESCO (2003) convention it is mentioned that the "intangible cultural heritage" is manifested, among other things, in the following domains: 1) oral traditions and expressions, including language as a "vehicle" of the intangible cultural heritage; 2) the performing arts; 3) social practices, such as rituals and festive events; 4) knowledge and practices concerning nature and the universe; and 5) traditional craftsmanship. Also, the UNESCO (2003) conventions text describes "safeguarding" measures. These safeguarding measures are aimed at ensuring the viability of the intangible cultural heritage, including: the identification, documentation, research, preservation, protection, promotion, enhancement, and transmission, particularly through formal and non-formal education, as well as the revitalization of the various aspects of such heritage.

To safeguard and capitalize on the intangible cultural heritage of the Land of Făgăraș, the objectives of this project were: mapping the intangible cultural heritage of the Land of Făgăraș-Brașov; identification of intangible cultural heritage resources of strategic interest for the Land of Făgăraș-Brașov; highlighting the priority directions for safeguarding and capitalizing on the intangible cultural heritage of the Land of Făgăraș-Brașov; and setting up a network of thematic cultural routes in the Land of Făgăraș-Brașov.

Members of this project have done research in this direction on the communities in the Land of Făgăraș. As an ethnographic area, the Land of Făgăraș is within Brașov and Sibiu counties and the project targets the central and eastern parts of this ethnographic area, primarily located in Brașov county, and respectively including the villages of Hoghiz, Comăna, Părău, Șercaia, Mândra, Hârseni, Beclean, Voila, Drăguș, Viștea, Ucea, Recea, Lisa, Sinca, Șinca Nouă.

As it is well known, according to Duxbury, Garrett-Petts & MacLennan (2015) the mapping of intangible cultural heritage is part of cultural mapping, which is defined as a systematic tool for involving communities in the identification and registration of local cultural assets, with the intention that this knowledge will then be used as a source of information for collective strategies, planning processes or other initiatives (p. 2). According to Sorea (2009), mapping highlights local cultural differences, considered a resource for strengthening community identity.

The research carried out in the project was of a qualitative type, being made through direct observations, semi-structured face-to-face interviews, and a series of social documents were also collected. The project team had the first meeting to know each other and discuss project objectives in April 2018. Then, the villages of the Land of Făgăraș were assigned to different teams and members, to prepare and carry out the field research. Thus, the field research strategy was outlined and its calendar was elaborated, and the documentation tasks were distributed. In the first stage of the project, the documentation stage, seven semi-structured interviews were conducted with local specialists in heritage issues: at the Brașov Ethnographic Museum: The "Valer Literat" Country Museum of Făgăraș; County Centre for Preservation and Promotion of Traditional Culture: The Negru Vodă Făgăraș Foundation; and at the ASTRA Sibiu Museum of Transylvanian Civilization.

During June/July 2018, the sociologist's members of the team travelled to the Land of Făgăraș conducting sixteen in-depth interviews on the topic of intangible heritage resources with representatives of communal town halls, including tourist information and promotion centres. These interviews used information obtained in the previous documentation stage. As well, an inventory with regard to the dimensions of different heritage resources and contacts had been established in order to conduct the next step in field research. This stage of the research took place in September 2018, continuing in October 2018 and in the first half of February 2019, when the researchers returned to the field to complete and deepen the information obtained.

During the research internships, direct observations were made on specific cultural events and practices, interviews with well-informed persons/locals, which were collected through audio and video recordings, and social documents (such as photographs). Based on the information obtained in the field research, mapping sheets were drawn up for each of the villages. In these sheets, each corresponding to the dimensions of the intangible cultural heritage, the results of the processing of the interviews were recorded (the interviews were partially transcribed or summarized). Where appropriate, the information obtained in the field was supplemented with

information from initial interviews, documentation, and studies "etno.brașov.ro", mentioning their source. These documents make up the Map of intangible cultural heritage resources of the Land of Făgăraș.

As mentioned above, the overall objectives of the project were focused on mapping the intangible cultural heritage and identifying the intangible cultural heritage resources of strategic interest, identifying the directions for safeguarding and capitalizing on the intangible cultural heritage and setting up a network of thematic cultural routes in the Land of Făgăraș.

This paper will present a part of our results and will try to justify why the Land of Făgăraș has been designated one of the top destinations of 2020 in Romania.

2. MOTIVATION TO CHOOSE – THE LAND OF FĂGĂRAȘ AS A TOURIST DESTINATION

A simple internet search about the Land of Făgăraș instantly brings forth a multitude of information all centred around the idea that it is one of the most popular tourist regions to visit, as declared by Romanian tourism bloggers as the 'Tourist Destination of 2020' (according to Tourist destination, 2020).

Why is a tourist destination preferred? In order to understand and predict the travel decisions and consumption behaviour of tourists, tourism researchers have recognized the importance of understanding the reasons for travel, motivations and attitudes of people towards tourist destinations. Many authors see motivation as a major determinant in the behaviour of tourists. The concept of need underlies most theories of motivation. According to Pizam, Mansfeld, Chon (1999), needs are seen as the driving force behind motivating behaviour and it is assumed that in order to understand human motivation, it is necessary to discover what needs people have and how they can be achieved. Mill, Morrison (1985) considered travelling as a need or a desire to be fulfilled and showed how the theory proposed by Maslow about the hierarchy of needs related to the motivations for travel.

Similarly, the motivational factors for travel proposed by Graham (1977) may be related to Maslow's hierarchy of needs; he argued that there were, in principle, two factors influencing the decision to travel: impulse factors (push) and pull factors (the push factors and the pull factors). Push factors are those that stimulate people to travel (internal factors as an escape, nostalgia) and pull factors (external factors) which are those that influence the decision on the destination of the trip. Crompton (1979) continued Graham's research and identified a few reasons why people travel, seven socio-psychological reasons, which are the push factors: escape from a commonplace, self-exploration and evaluation, relaxation, consideration, retreat, improving family relationships, and facilitating social interaction. He also identified two cultural reasons, pull type, which were related to novelty and education (p. 416).

Mannel, Iso-Ahola (1987) identified two main types of push and pull factors, related to personal and interpersonal levels. They suggest that people are motivated to travel to leave behind personal and interpersonal issues in their environment to gain compensatory, personal and interpersonal benefits from their chosen destination. Krippendorf (1987) argues that, while on the one hand, people travel with the motivation to "move away from" rather than "move" towards something; Bertrand (2016) argues that, on the second hand, the motives and behaviour of tourists are signif-

icantly self-oriented (p. 24). According to Mannel, Iso-Ahola (1987), the reasons for the decision to travel are: recovery and regeneration, compensation and social integration, escape, communication, freedom and self-determination, happiness and stress relief.

According to Solomon, Bamossy, Askegaard & Hogg (2006), the decision-making process of an individual is influenced by both internal and external factors such as culture, subculture, social class, reference groups and situational factors. Culture is the broadest and most abstract factor among the external factors that influence consumer behaviour. The importance of culture in studying consumer behaviour is that it creates people's sense of identity and what is acceptable behaviour in a society. Each country has certain cultural traditions, customs and values that marketers need to understand as they develop marketing programs, they need to know that changes in a particular culture have an impact on how companies market their services and products (p. 498, 499).

Subcultures are groups or smaller segments of people whose beliefs, values, norms and patterns of behaviour differ from the larger, dominant culture. These subcultures can be based on age, geographical, religious, racial or ethnic differences and are also important for marketers due to their purchasing power and marketing patterns distinct purchase. Social class is an important factor in terms of consumer behaviour and decision-making and according to Solomon et al. (2006), provides a natural basis for market segmentation; social class refers to groups of people who share similar lifestyles, values, norms, interests and behaviours and are classified according to occupational status, level of education and income; a reference group is a group whose presumed perspectives or values are used by a person as a basis for his or her judgments, opinions, and actions (p. 350-355).

According to Solomon et al. (2006), consumers use three types of reference groups (associative, aspirational, and dissociative) as a guide for specific behaviours, even when groups are not present; aspirational groups are groups that people want to belong to and dissociative groups are groups that people do not want to belong to (p. 350-355). Within a group, people socialize and express their opinions about certain aspects of life, so individuals can be influenced by the dominant vision of a group and conform to the values, beliefs and behaviours of the majority of the desire to be accepted. With time individuals take over and internalize the rules of that group. The family can also be an example of a reference group that can influence the decision-making process, and according to Omodafe (2015) family members can have a variety of roles in the decision-making process.

According to Stremțan, Bolog (2008) situational factors are made up of elements specific to the moment and place in which the behaviour of the service consumer is manifested; they are the basis for the need and the purchasing decisions; situational factors refer to all those factors specific to a well-defined situation in time and space, factors that do not result from knowledge of personal attributes (intra-individual) and those that characterize the stimulus (chosen variant), but which have a demonstrable and systematic effect on current behaviour (p. 3).

Coming back to our case study, the Land of Făgăraș has been designated The Tourist Destination of 2020 in Romania. Of course, we take into account the multitude of specific elements in the area.

Located in the centre of the country, 200 km from Bucharest, the Land of Făgăraș area is a historical land in Transylvania composed of mountains and valleys. The Land of Făgăraș is located along the middle course of the Olt River, with its centre being the medieval fortress of Făgăraș. The region stands out for its leisure activities, cultural and historical attributes, thus being an ideal destination for an active mini-holiday.

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On July 15ᵗʰ, 2020, there was an official promotional video of the Land of Făgăraș released in which tourists were informed via the internet that they could use a website for booking accommodation in the region. The platform "www.tarafagarasului.com" belongs to an inter-community development association, which was established by several localities from Brașov and Sibiu counties. The aim is to promote the beauties of the area, the customs, traditions, objectives and history of the Land of Făgăraș. The Land of Făgăraș is a wonderful tourist destination, being one of the most diverse areas in Romania, ranging from physical attractions to gastronomy, from history to geology. Being such a good territory from a geographical point of view, the settlement has developed its own customs and traditions. The villages of Făgăraș still preserve that form of settlement from the time of the ancestors: in the centre of the village, the church followed by the town hall, the school, the cultural centre, and finally the pub. The Land of Făgăraș is endowed with a diversity of elements of cultural-historical heritage.

From the research conducted in villages in the Land of Făgăraș we discovered that indeed there are present each of the plurality of elements that attract tourists. We refer especially to those related to the beautiful landscape, the architecture of the houses, the specifics of the gastronomies, the particularities of the local music, and so on, all of which reflect the history of the area. The field research revealed many intangible cultural heritage resources of strategic interest. As is well known, strategic resources have great potential to create community attachment, strengthening the sense of belonging and the sense of local pride, but at the same time, they can be used effectively in the direction of tourism.

Thus, the most valuable resource of intangible heritage that the locals specified in the field interviews was the tradition related to the Lads group; this group is active from St. Nicholas to St. John (between December 6th until January 7th). The practices of the group are linked to the specific traditions of the winter holidays in which they carol for the inhabitants of the communes accompanied by a group of musicians. Another element of the intangible heritage of the Land of Făgăraș is related to folk costumes. This type of specificity is only demonstrated in this example of the Lads group, however, the popular costumes from this area are unitary from the point to an outsider, but with ornamental and chromatic particularizations found within each village.

Regarding women's costumes (which are different for girls and married women) there are two typologies: on the one hand, the old costume of the area and includes the blouse named "ie" with fabric ornaments, dress and colourful apron, woven or (more recently) printed with flowers; and on the other hand, the black and white suit, the specific Romanian blouse "ie" with ornaments sewn in black, the black vest and black apron over the white skirt. Ia – this specific Romanian blouse, is a women's blouse characteristic of the Romanian national dress, made of white cotton, linen or borangic fabric and adorned at the neck, chest, and sleeves with stitches usually in geometric motifs, with butterflies and beads. In 2020, Romania has started the official steps for the introduction of the Romanian blouse "ia" as a heritage element on the UNESCO Patrimony Representative List.

The field research has also shown that the Land of Făgăraș reveals a consistent foundation of stories, legends and beliefs, information about fairies ("iele" is the Romanian word), undead, giants, devils disguised as boys, all of those may be reasons to attract tourists interested to come in the area and find all these spectacular legends and beliefs directly from the locals. Fairies (ielele) are imaginary beings in Romanian folk mythology, portrayed like pretty girls, dressed in white, appearing only at night, enchanted by singing and playing of their men, which have negative powers.

In the Land of Făgăraș, a lot of romantic songs are sung at parties, for example, from Crihalma we obtained recordings for 28 romances. Besides folk songs themselves, romance constitutes a significant part of the collective repertoire. In this area there are a lot of young singers of popular music. In interviews from almost every village there is the mention of two to three singers with local repertoire of pieces. At Șinca Nouă village, with the support of the City Hall, there is a choral ensemble, founded in 2003 and having, as members, villagers of various ages and occupations. The ensemble is the laureate of several editions of the "Buna Vestire" Festival from Viștea de Sus; it has been present in various folklore shows on local television and at religious services in the village or other localities in the Land of Făgăraș. At Șinca Nouă there is also an ensemble of popular games, established in 2007 which mainly promotes the popular games and costumes specific to Făgăraș Country. In the repertoire of the ensemble, which has participated and is a laureate in various international folklore festivals (from China, Chile, Turkey, Belgium, Germany, Greece, Poland, Austria, Portugal, and Italy), there are also games from other folk areas of Romania. Șinca Nouă also has a fanfare, founded in 2012 and has 22 members, children and young people. The marching band has in its repertoire pieces of folk music, patriotic songs and specific marching band music.

Regarding the local gastronomy, the housewives from the Land of Făgăraș prepare a lot of pies, savory or sweet, on a tray or baked individually, in oil and cooked on a hob or on a stone. They are a constant of the local gastronomy. Eating habits are structured according to the seasons, to the fasts over the year and the great Orthodox holidays such as Christmas Eve or Easter. There is a specificity in terms of local cuisine, for example, during Christmas holidays sausages, drum, smoked meats, smoked ribs, roast meat kept in earthen pots, cabbage ("sarmale") and homemade pita or bread are eaten. On Epiphany day, locals eat pork dishes and indispensable noodle soup. On the Easter Holiday lamb dishes, for example, lamb steak, lamb stew, lamb soup, sweet bread (simple and with various fillings, named "cozonac"), cheese pies, eggs painted with leaves, onion and fish are eaten. In this area during the spring nettles prepared in soup and as the main dish are served, accompanied by salad, other soups and various cheeses. In summer the food is more consistent, to ensure the energy of the fieldwork. Chicken soup, chicken stew, pork *pate*, omelettes with polenta and sour milk, bulz (polenta with cheese, a local speciality), urda and telemea which are both local cheese specialities are served. Autumn is predominated by sheep meat and cheeses, such as burduf, a strong cheese wrapped in sheep intestine and telemea, both delicacies.

Many of the villages in the Land of Făgăraș have local museums that contain art collections. For example, the "Gheorghe Radocea" Museum in Bucium village has icons on glass, old pottery, old peasant furniture, pieces of fleece from all ethnographic areas of the country, and various fabrics such as towels, clothes, carpets, barks, tap, clay pots for cooking, "hearth with cujbă" (vatra cu cujbă) for the kettle, pita (bread) ovens, and so on. Some villages have grain mills, for example the mill from Bucium and the watermill found in Ohaba.

Our research has shown that a series of tourist attractions can be introduced in the circuit of already established ones, such as Brâncoveanu Castle from Sâmbăta de Sus, which was built at the end of the 18th century and was renovated, but is not yet open to the public; the Orthodox Monastery from Sâmbăta de Sus, in which one can also visit the Fountain of Father Arsenie Boca; the Sâmbăta Chalet in which one can find the prison cell of Father Arsenie Boca; and on Sâmbăta de Jos where one can visit the Brâncovenească Orthodox Church, which also includes the horse farm with the famous Lipizzan horses. In Recea village, tourists can visit the place where the border guard regiment from Orlat was housed, founded by Queen Maria Theresa at the end of the 18th century from Năsăud to Orlat to defend the Austro-Hungarians, the Romanians, the Turks, and the

Russians from beyond the mountain border. These barracks were exactly where the school later operated. Another place of attraction in Recea could be the brandy boiler from the Breneș family, where besides the fact that tourists would see how "țuica" (which is a traditional Romanian brandy) was produced. Tasting and sale events can be organized. Also here you can see the collection from the house of the sports teachers, such as Ioan (Nelu) Avram, who collected traditional objects, clothes and made a small museum in his house. Another tourist attraction of the area is represented by Vâltorile de la Lisa (http://www.lavaltori.ro/). From 1850 until now Lisa is proud to be the oldest system of traditional installations through which wool is processed, in the place called La Vâltori, which has been inherited from generation to generation.

In Dejani village tourists can visit the Dejani Orthodox Monastery, the Dejan Valley, the mill and the old fountain from the 18th century that are there. In Berivoi, there is also another Orthodox Monastery, which was burned and rebuilt, the Berivoi Valley and the Radului Valley offering picturesque natural landscapes. In Săsciori you can visit a beautiful old church with walls of 70 cm, with small windows and a wooden tower. In Veneția de Jos you can visit the village museum coordinated by the village priest where you can see spinning and weaving utensils, folk costumes, as well as some old icons on glass, but also a collection of old photos with the local traditions and the people dressed in old costumes. At the village museum from Veneția de Jos, you can see handicrafts, folk costumes, icons and objects of worship discovered in the attic of the parish house during its renovation. A less known aspect but also interesting is that from the discussions we had in the field, locals say that the name of the village comes from the Venetian colonists settled in the Land of Făgăraș to facilitate trade of salt to Italy, Venice.

From the field interviews, the locals stressed that the area deserves to be intensely promoted as tourist routes and the following traditional landmarks, such as: The Orthodox Monastery of Breaza; Colții Brezii (is a mountain with an elevation of 1534 metres and prominence of 41 metres in the Făgăraș Mountains); the Ruins of the Black Water Fortress; Urlea Chalet; the Lisa and Breaza Holiday Villages; the Urlea Lake. One can also can visit an old wooden house from 1870, the Church from Pojorta built in 1904 (which was a Greek-Catholic Church), and the hermitage site of Breaza.

The Land of Făgăraș attracts tourists due to the beauty and peculiarity of social practices, rituals and numerous festive events in which they can take part either as mere observers or directly involved. The performances are outlined starting from the religious practices, those being related to the marking of the Christian holidays such as carol performances, folk dances and balls organized at the local cultural centres. Given the history of the area, craft traditions can be organized sitting, as a workshop for learning traditional stitches, but also for learning various craft arts. For example, in the village Grid there is an old blacksmith's shop, the workshop has old tools, the blacksmith (his name is Iepure Ion) in the interview told us that he is willing to teach someone younger to work with this old art. Tourists interested in sports activities can take the opportunity to attend sports competitions because in the village of Copăcel there is a large sports base, where sports championships are organized (for example the county volleyball championship).

3. CONCLUSION

In this context, the concerns regarding the conservation and safeguarding of the intangible cultural heritage resources materialized in activities such as summer schools, museum exhibitions, workshops, festivals, thematic excursions should easily obtain the support that is being sought

for The Land of Făgăraș. Using the information obtained in field research, we propose some ideas for thematic cultural routes. They can be configured in different ways, depending on the context. For example:

1. The route for learning Christmas Carols. We propose a route of one or two days, during the winter holidays. The group of tourists would visit the Lads group to strengthen their own repertoire of carols; Once plans to visit are made, the boys will be dressed in folk winter costumes (their carolling costumes); this activity can be combined with offering dishes specific to the holiday gastronomy. The route may include visiting the two groups from Sâmbăta de Sus at the end of the first day, correlated with accommodation at the Sâmbăta Climate Resort and visiting the Orthodox Monastery from Sâmbăta.

2. The route to accompany carollers. It is possible to make a route of one or two days, starting with Eve and the first day of Christmas; depending on the day of carolling in the villages of the Land of Făgăraș, tourists have the opportunity to accompany carollers (during the day the Group of Irozi and in the evening Lads group), participating in the last village on the route at the closing ceremony of the carolling (tourists can assist with the ritual washing at the river of the boys from the group and participate at this game). This moment can be combined with serving traditional Christmas gastronomic products.

3. The route to the Monasteries of the Land of Făgăraș. We propose a religious tourism route, of one or two days, with the possibility for the tourists to book accommodation in the Climatic Resort on Saturday; in this tourist route one will visit the functional monasteries in the area, as well as the places preserved in the collective memory as belonging to some old places of worship, destroyed in the 18th century. The circuit can be combined with the participation at the Festival of Religious Songs "Buna Vestire" from Viștea Village. If the tourist route takes place on fasting days with a release to eat fish, a meal can be offered of local fasting products and fish, considering that in the Land of Făgăraș there are many trout farms.

4. With regard to cultural experiences in the Land of Făgăraș we propose a one-day route consisting of visiting the villages from Olt River (on both banks) with Hungarian inhabitants and vestiges of the old Saxon inhabitants. Also churches and the local museums in the villages can be visited. A brunch can be organized with the specific gastronomic products from the Hungarian cuisine (at Hălmeag village) and Saxon (at Cincșor village).

5. Considering the route regarding the oral history in the Land of Făgăraș, we propose a one or two-day route that includes visits to several storytellers willing to share their memories of the anti-communist resistance (storytellers identified from field interviews in Drăguș and Viștea de Sus), plus local stories, legends and beliefs. The Museum of Canvas and Stories from Mândra village can also be visited.

6. The route learning about the past of the folkloric heroes and characters in the Land of Făgăraș – we propose a one or two day route in the Land of Făgăraș that will highlight the activity of some personalities who have roots in this area, for example, Dimitrie Gusti who was a Romanian sociologist, ethnologist, historian, and professor at the University of Iași and the University of Bucharest, and served as Romania's Minister of Education in 1932–1933; he was elected a member of the Romanian Academy in 1919, and was its president between 1944 and 1946, but most importantly is known as the main contributor to the creation of a new Romanian school of sociology. In this regard the museum in Drăguș, another prominent figure in the area is Valer Literat who was a Romanian teacher, priest and historian can also be visited. The memorial houses and/or monuments of different historical figures born in the area can also be visited, for example, Ion Codru Drăgușanu who was a Romanian writer, memorialist, participant in the

Revolution of 1848 - 1849, and Octavian Paler who was a writer, journalist, editorialist and Romanian politician.

7. Considering the route for crafts and craftsmen from the Land of Făgăraş it is possible to make a one-day trek, including visiting the mills from Ohaba, the whirlpool from Lisa, the Museum of Canvas and Stories from Mândra and the furriers from Drăguş. A brunch with specific sandwiches can also be organized, where buffalo cream and honey are served at in Lisa village. The administrators of the museum complex are also beekeepers.

The field interviews highlighted that good management with regard to local interest for the cultural heritage requires an involvement with the status of event counsellors of the community elders on the one hand, and, on the other hand, of specialists from institutions with responsibilities in conserving and safeguarding heritage resources, or *moştenire* as we like to say in Romania. The Land of Făgăraş has many resources for travel, education, and creating human bonds and its inhabitants are aware and proud of this gift they can share. Differences in customs, dress, gastronomy, songs differ between villages, even within a few kilometres. This only indicates the depth of these resources. Even though the Land of Făgăraş was designated the tourist destination of the year, the institutional strength of revitalization and support of tourist destinations in the Land of Făgăraş highlighted that touristic changes could be intensified by greater promotion, not only nationally, but even internationally.

Finally, we can say that in the Land of Făgăraş there is an ability to see the world anew, but through old eyes. Eyes and personalities that are timeless and fundamental to understanding our modern world and its strife better. With regard to the global misfortunes mentioned in the beginning of this paper, these areas in the Land of Făgăraş can show us the need to care and learn from traditions that are not globalized, material based, or invasive, but are ways of living that can attune the people who visit them towards learning ways of approaching life, that they may carry back to their homelands and share. It should be stated that the Land of Făgăraş is not a Disneyland, nor is it a Cancun. No, it is a place where people who can survive any storm are inviting you to learn how to deal with the outside world. This Land of Făgăraş is a gift.

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THE WINE ROAD IN VRANCEA COUNTY

Slave Camelia[1] ⓘD

Abstract: *Nowadays, G.I.S. is widely used in the traditional cultivation of vines. The vineyard cultivation in Vrancea County is a traditional activity specific to this hilly area. G.I.S. provides tools and information on how the vineyard is cultivated, depending on the environmental factors that influence it: climate, soil, geological substrate through created maps using the ArcMap 10.5 program. G.I.S. is a tool that can be used to analyse and improve vineyard management decisions, and is also a powerful tool in collection, analysis and monitoring data.*

This article aims to show that different spatial analysis tools used nowadays can play an important role in monitoring vine plantations and implicitly in increasing the production of grapes that will end up as obtained quality wines. To create the slope map and the solar radiation map, it was used a DEM (digital elevation model) with a resolution of 30m. With the help of the created maps, it is possible to make a spatial analysis of the resources within Vrancea County.

Keywords: *Geographical Information Systems (GIS), Geology, Slope, Solar radiation, Viticulture.*

1. INTRODUCTION

Vrancea County is located outside the Curvature Carpathians, with an area of 4,857 km² (2.04% of the country's surface) has the following neighbours: to the north Bacău County, to the northeast Vaslui County, to the east Galati County, to the southeast Brăila County, to the south and southwest Buzău County and to the west Covasna County. Vrancea is a link between the great areas of the Eastern and Southern Carpathians, the Siret Plain and the Danube Plain, because is located at a geographical crossroads.

From the physical-geographical point of view in Vrancea County, the following areas of the South-East region can be identified:
1. The Bărăgan Plain area, which includes parts of Vrancea, Buzău and Brăila counties,
2. The Southern Moldova area, which includes parts of Galati and Vrancea counties areas,
3. The Curvature Subcarpathians area, which includes the mountainous area from Vrancea and Buzău counties.

The agricultural lands of Vrancea County stretch on an area between the right bank of the Siret and the downhill of the Sub-Carpathian Hills of the Vrancea Mountains. The climate is suitable for field crops, and especially for vineyard cultivation of (9.95% of Romania's vineyards) and wine production. Vrancea County, being the largest wine-growing county in the country, is an exporter to Europe, America and Japan.

The agricultural county area represents over 52% of the total area of the county, and the arable area represents 58.06% of the total agricultural area.

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Vrancea County had in 2012 an agricultural area of 255,232 ha; most of the agricultural area are arable (148,176 ha), followed by pastures and hayfields (pastures: 43,708 ha, hayfields: 32,904 ha), wine and vineyards (26,752 ha), orchards and fruit nurseries: 3,692 ha. Forests and other forest vegetation comprise 193,326 ha.

Wine sector: Five wine-growing areas have been established in the European Union: A, B, C I, C II and C III.

The viticultural regions and the vineyards of our country fall into the following viticultural areas:
- Zone B – includes the viticultural region of the Transylvanian Plateau;
- Zone C I – includes the regions of the Moldavian Hills, the Banat Hills, the Crişana and Maramureş Hills, the Muntenia and Oltenia Hills – Ştefăneşti-Argeş Vineyards, Sâmbureşti, Drăgăşani and the Craiova Hills;
- Zone C II – includes the regions: Muntenia and Oltenia Hills – Buzău Hills, Dealu Mare, Severin and Drancei Plains Vineyards, Dobrogea Hills, Danube Terraces; Sands and other favourable lands in the southern part of the country.

These national wine regions levels generally overlap with the Romanian historically provinces formed, namely:
- The viticultural region of the Transylvanian Plateau,
- The viticultural region of the Moldavian Hills.

The viticultural region of the Moldavian Hills includes a number of 10 vineyards, namely: Cotnari, Iaşi, Huşi, Zeletin, Tutovei Hills, Bujorului Hills, Nicoreşti, Iveşti, Covurlui, Zeletin, Panciu, Odobeşti and Coteşti. There are 34 wine centres in these vineyards. [3]
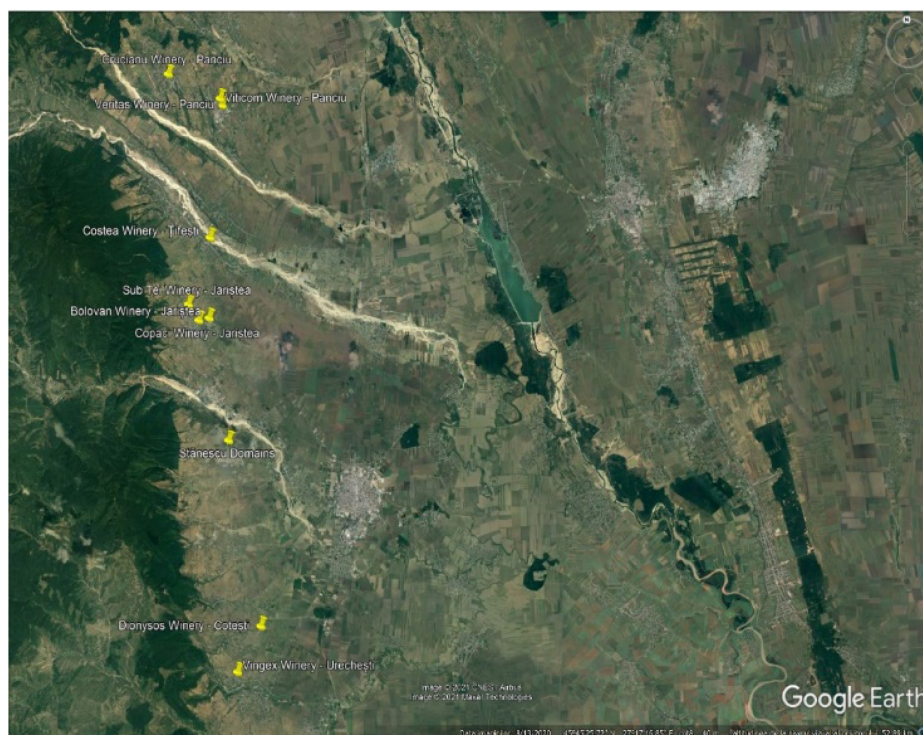
Figure 1. Geographical position of ten cellars on wine road (yellow pins)
Source: Clip from Google Earth, 2021

In figure 1 are presented the most important ten cellars on wine road: Vingex vinery – Urechesti, Dionysos vinery – Cotesti, Domenuiile Stanescu vinery, Sub Tei vinery – Jaristea, Copaci vinery – Jaristea, Bolovan vinery – Tifesti, Veritas vinery – Panciu, Viticom vinery – Panciu, Crrucianu vinery – Panciu.

The first place is the South-East region, in terms of vineyards by fruit area, holding about 40% of the country's vineyard area in recent years. The South-East region is recognized, both internally and externally, by the quality of wines from famous vineyards, which are found throughout the regions: Panciu, Odobeşti, Pietroasele, Nicoreşti, Niculiţel, Murfatlar, Însurăţei.

1.1. Study Area of Vrancea County

Vrancea County owns 14% of the country's viticultural area, which is part of this region and is divided into three representative vineyards: Panciu, Odobeşti and Coteşti. [2]

Viticulture is a traditional activity, of great economic importance, benefiting from favourable natural conditions in Vrancea.

Panciu vineyard is the largest in Vrancea County (9,500 ha) and includes three wine centres of national importance: Panciu, Ţifeşti and Păuneşti. Panciu Vineyard was and remains a permanent attraction for those who want to know the riches, beauties and vestiges of these places.

In the past, the wines were obtained from traditional varieties such as Plăvaie, Galbenă, Băbească neagră, Fetească albă and Fetească neagră. Later, other wines conquered the wine market, such as: Fetească regală, Riesling Italian, Sauvignon, Pinot Noir, Cabernet Sauvignon, which allowed to obtain wines with an origin designation and appearance of sparkling wines that raised the fame of the vineyard.

Odobeşti vineyard, with an area of approximately 7000 ha, is the oldest vineyard in our country, and in its portfolio are included the Odobeşti, Jariştea and Boloteşti wine centres.

Odobeşti vineyard is being considered a Dacian vineyard. Profiled on the production of wines and especially the white ones, in Odobeşti is cultivated a great variety of wineyards.

Galbena de Odobeşti still exists in culture, is mentioned among those of local origin, and on smaller areas are cultivated Plăvaie and Mustoasă varieties.

Among the existing varieties of local origin that are still cultivated is Galbena de Odobeşti, and on smaller areas are cultivated Plăvaie and Mustoasă varieties.

Romanian varieties, such as Feteasca Albă, Feteasca Regală and Sârbă are also found on vineyards, and foreign variety, Aligote, Riesling Italian and Muşcat Ottonel are cultivated on relatively large areas. The black grape varieties group is represented by Băbească neagră and Pinot noir.

Odobeşti Vineyard also presents favourable conditions for table grapes production, from the assortment of which does not lack varieties, e.g. Chasselas and Coarnă accompanied by Hamburger and Cinsaut Muscat.

Coteşti vineyard (6589 ha) is a continuation of the Odobeşti vineyard, benefiting from high heliothermal resources, and includes the viticultural centres: Coteşti, Vîrteşcoiu, Cîrligele, Urecheşti, Tîmboieşti and Dumbrăveni.

In all these wine centres there are production areas of white and red wines of current consumption from the varieties of Fetească regală, Aligote, Băbească neagră. High quality wines are obtained from the varieties: Fetească alba, Riesling Italian, Muşcat Ottonel, Cabernet Sauvignon, Fetească Neagră and Merlot.

The relief of Vrancea County is arranged in steps that decrease in altitude from west to east, and include: Vrancea Mountains (with the depressions Gresu and Lepsa), the Subcarpathian Hills and the Lower Siret Plain, bordered by the Moldavian Plateau (Tutovei Hills) to the northeast and the Plain Ramnicului to the southeast. The Vrancea Mountains are wrinkle mountains, made up of peaks that come from the fragmentation of the 1700 m erosion platform.

The spatial variability of the factors of relief, climate and soil is great, and the types of viticultural potential they determine are also numerous and very different. [4]

2. MATERIALS AND METHODS

To create the maps, it was used a DEM (Digital Elevation Model) with a resolution of 30m. A DEM is a raster representation of a continuous surface, usually referencing the surface of the earth. The accuracy of this data is determined primarily by the resolution (the distance between sample points).

From the point of view of the vineyard favourable cultivations, with the program ArcMap 10.5, the following maps resulted: slopes, solar radiation and geology. Generic data sets vector of Romania, (2009). [5], [6], [7]
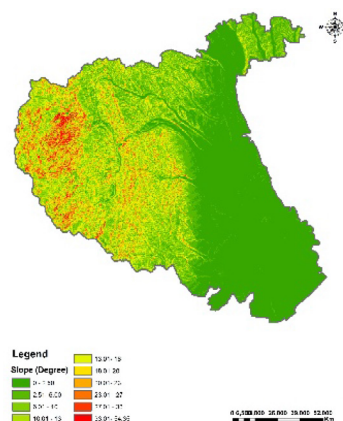
Figure 2. The slope map of the Vrancea Country

First DEM was used to represent the slope map (Figure 2). The slope represents a morphometric parameter that characterizes the deposition of the altitude steps inside the study area. The area is classified into ten slope angle categories, according to the International Union of Geography: 0-3° very slight slopes, 3-8° slight slopes, 8-13° moderate slopes, 13-20° and 20-30° steep slopes and over 30° very steep slopes. Analysing the slope map of the investigated area, it can be noticed that the 0-13° interval is dominant, representing over 50% of the area; continued by

the area between 13.01º - 23.00º , followed by a sloping area between 23.00º and 35.00º , which represents the limit up to which vineyard can be cultivated.

Solar radiation is a process that influences physical and biological growth and development of vineyard areas, and has a direct effect on the air and soil temperature, plants evaporation and transpiration, soil moisture and atmospheric humidity. [9]

For Vrancea County the solar radiation map (kcal/cm^2 March 1, 2020 - October 31, 2020) allows the analysis of the effects of the Sun on the geographical area for periods of (March 1, 2020 - October 31, 2020).

Also, the latitude and height of the place, the slope orientation and the daily and seasonal changes in the Sun angle have been taken into account.
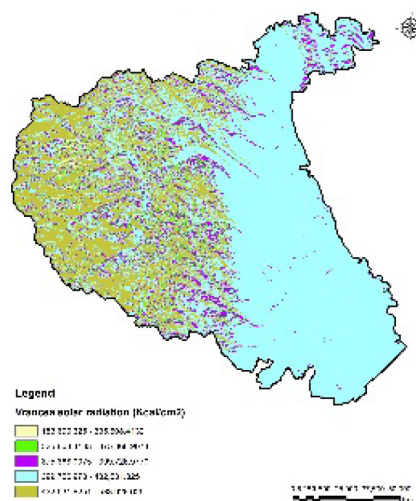
Figure 3. The solar radiation map of the Vrancea County
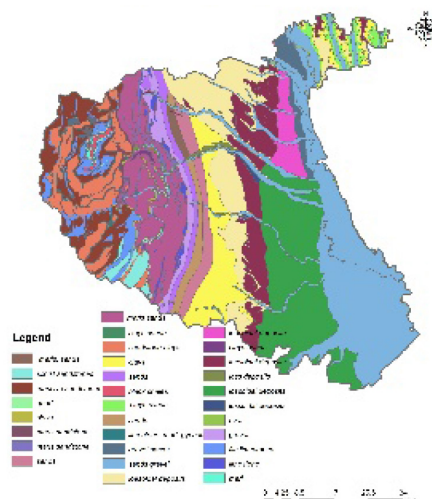
Figure 4. The geological map of the of Vrancea County

Figure 3 shows the solar radiation map in the study areas. DEM (digital elevation model) was used to create the map by the instrumentality of Spatial Analyst Tools – Solar Radiation – Area Solar Radiation. The highest amount of solar radiation is received in the South and South-East and it corresponds to the sub-Carpathian hills area (399726, 978 – 432.531, 825 kcal/cm^2).

From the Geological Map of Romania at a scale of 1: 200,000 containing two layers: lithology and geological limits, the studied area was cut. (Figure 4). The geological map of the study area provides a data set needed to obtain information on the bedrock on which the soil layer is placed. It greatly influences the quality of obtained wines.

The "terroir" term represents the unique character of the wine in a certain area and includes first of all the pedogeological characteristics of the area, the location, the climate and the methods used to maintain the soil fertility. There is a wide variety of sandy, lossoid deposits and limestone areas, in Vrancea County. [4]

The climatic factors as: temperature, solar radiation, precipitation decisively influence the development of the vine, of the obtained grapes, and that will be later recognized in the wine quality.

3.   CONCLUSION

Romania is an important wine country both in Europe and in the world. The total area with vineyards in 2019 was 182.6 thousand ha. In the Romanian viticultural regions, restructuring and reconversion processes took place, assisted with EU funds from the national support program allocated to Romania (i.e. 47.5 million Euros, annually, during the budget year 2014-2020). [8]

Vrancea represents a leader at a national level as a cultivated area with vineyards, as well as in grapes production. The vineyards have a high production potential, due to the natural favourable conditions. From economic point of view, viticulture represents an important branch of Vrancea County (30 - 40% of the value of the total agricultural production) and an activity in which a large part of the local population is involved. [2]

Vrancea has three important vineyards, respectively Panciu, Coteşti and Odobeşti. Known as the "Land of Vine and Wine", Vrancea is the county with the largest area cultivated by vineyards, with a viticultural heritage of 27,639 ha, of which 85% in the private sector, representing 11% of the total agricultural land of the county and about 10% of the viticultural area of Romania. Vrancea is a national leader, both in terms of area and in terms of grape production.

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CONTENT ANALYSIS OF MICHELIN RESTAURANTS ONLINE REVIEWS IN CROATIA

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Dora Rašan[3]
Bruna Bucić[4]
Marko Blažić[5]

Abstract: *The Michelin Guide is considered by many to be the hallmark of global fine dining and quality cuisine. For five years now, renowned and selected Croatian restaurants have been included in the worldwide Michelin Guide. In the latest edition of Michelin Guide, seventy Croatian restaurants were included. Nowadays, to find the ideal restaurant, diners are increasingly using TripAdvisor and reviews on social media. Online reviews are a great source for capturing unique customer experiences. The purpose of this study is to gain insight into the components of restaurant guest experiences. The most recent online reviews on TripAdvisor of 17 Croatian Michelin guide listed restaurants (7 one-star restaurants and 10 Bib Gourmand) were analysed. This study follows a content analysis approach. Simple frequency counts were performed on the number of positive, negative and neutral comments. The empirical results showed that the overall customer satisfaction in the analysed restaurants was positive. The content analysis revealed that customers mainly focused on the food, menu offerings, ambiance, and service in the online reviews. This study contributes to the customer experience literature by applying data mining techniques and content analysis of online reviews to understand customers' views of the restaurant experience. The findings of this study also provide practical implications for restaurateurs by identifying the key determinants in customer reviews of restaurants.*

Keywords: *Online customer experience, Online review, Content analysis, Michelin Guide, Restaurant.*

1. INTRODUCTION

Exploring restaurants on social media before visiting is now almost a must. Potential diners can research online for the restaurant's history, online reviews, and content posted on social media accounts. After researching, guests decide if this is the place for them. The reason guests search this way is because they want a great gastronomic experience, not just to satisfy their food needs.

The experience is a multidimensional complex concept. The importance of experience has been recognized in the hospitality industry as an important factor due to its influence to customers' emotions, satisfaction and behavioural intentions (Jang & Namkung, 2009). Few previous hospitality studies have examined specifically aesthetic components of customer experience (Bekar, 2017; Horng & Hsu, 2020, 2021). Aesthetic experience is a process to perceive-feel-sense an object, represent active sensation, emotion, cognition and integrate the aesthetic pleasure appraisal

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(Di Dio & Vittorio, 2009). Aesthetic experience is especially important for restaurant industry where consumers use all five senses in capturing overall perception.

Since experience is unique for every consumer, it is difficult to define and adequately measure. (Kandampully, Zhang, & Jaakkola, 2018). In today's digital economy, where consumers can share their experience online, it has become crucial for companies to have tools that will provide a better and faster understanding of the consumer experience and simplify the process to improve it. Online reviews are easy and cost-efficient (Bilgihan, Seo, & Choi, 2018) way to spread the word to more people in less time about the restaurant. Leaving the review helps not only the other guests in picking the restaurant, but the management of the restaurant to know what their guests think about the product or service that is given. TripAdvisor is one of the most popular and well-known social media platforms that provides information to travellers about the place they want to visit (Nicoli & Papadopoulou, 2017).

Michelin Guide is synonymous with quality service, food, and other aspects that create an unforgettable gastronomy experience. Recently Michelin Guide and TripAdvisor agreed that will significantly increase the visibility of the chefs and restaurants and increase restaurant booking ("The Michelin Guide – news," 2019). Croatian offer is well known to Michelin guide, and every year more and more restaurants win stars, and those who have already received them keep their place in the guide. Restaurants that go into the Michelin categorisation are fine dining restaurants or restaurants that give great value for money.

The purpose of this study is to examine the level of the overall aesthetic experience of Michelin restaurants guests based on online review analysis scraped from TripAdvisor. For analysis, 7 one-star and 10 Bib Gourmand Michelin restaurants from Croatia were selected. Thus, the objectives of this research are to: (1) analyse the quality of aesthetic restaurant experience by components for one-star and Bib Gourmand Michelin restaurants in Croatia, (2) analyse particles within each dimension by connotation for one-star and Bib Gourmand Michelin restaurants in Croatia, (3) determine the average ratings by dimensions for one-star and Bib Gourmand Michelin restaurants in Croatia, (4) compare the average ratings by dimensions for one-star and Bib Gourmand Michelin restaurants in Croatia. The structure of this paper is divided into theoretical background, methodology, results, and conclusion.

2. THEORETICAL BACKGROUND

2.1. Michelin Guide

The Michelin Guide is an important source for consumers and is known as the most considered system on the internet (Johnson, Surlemont, Nicod, & Revaz, 2005; Şahin, Çolakoğlu, & Özdoğan, 2021). Everywhere in the world, Michelin Guide is synonymous with quality service, food, and other aspects that create an unforgettable gastronomy experience. The same authors say that numerous guides are existing alongside online review sites, but none is internationally respected like the Guide Michelin or Guide Rouge. Getting the Michelin star by chefs is so important in terms of respectability; the given star has the same meaning as quality gastronomy (Şahin et al., 2021).

The first guide came out in 1900 and was pocket-sized and had about 400 pages (Johnson et al., 2005). The content of the guide was related to the car and its maintenance. Information about restaurants was introduced in 1922 (Snyder & Cotter, 1998), only for the larger cities. By the

1930s, it had developed into a tourist guide and has since been transformed into a gastronomy guide (Johnson et al., 2005).

In *Michelin Guide* (2020) there can be found that star-awarding system, as known today, started in 1926, for fine dining establishments, initially marking them only with a single star. Five years later, a hierarchy of zero, one, two, and three stars was introduced, and in 1936, the criteria for the starred rankings were published. A three-star restaurant is classed among France's "best tables and worthy of a special trip," two-stars "deserve a detour," and one star connotes a restaurant providing "a good table in its category" (Snyder & Cotter, 1998).

In order to select which restaurants are included in the Michelin guide, inspectors are sent to each restaurant to evaluate certain elements. Inspector visit restaurants in absolute secrecy (Snyder & Cotter, 1998), and no Michelin inspector ever published anything about his activities. Because of that, the Michelin rating system may appear unaccountably vague (Johnson et al., 2005). The same authors state that there are no written criteria or standards for the quality level required in various star levels. What Michelin Guide wants with that is to ensure creativity and individuality.

Many factors such as the spatial characteristics of the restaurant, the speed of the service, the guests' welcome, hospitality, the taste of the meals, the communication skills and the behaviours of the employees are the service elements of the restaurants (Şahin et al., 2021).

2.2. Aesthetic restaurant experience

Beauty is associated with pleasure and is the foundation of human existence and experience (Santayana 1896). Aesthetics involves what makes an object beautiful and what humans feel when they encounter a beautiful object (Horng & Hsu, 2020). The same authors state that beauty is based on simplicity, harmony and proportion.

The aesthetics have a great influence on the guest's overall gastronomic experience. The gastronomic experience in fine dining restaurants depends not only on the excellence of the food but also on the way it is served and on the ambience of the restaurant. Oh and Kim (2020) stated in their study that experience in fine dining restaurants is based on 10 elements: Ambiance, Service, Price, Reputation, Occasions, Location, View, Food, Drinks and Desserts. Taking into account all of these components and including all the senses, guests can experience a complete gastronomic experience.

Furniture, colour, lighting, décor, ambience (non-visual cues) and employees influence the most on guests satisfaction regarding the aesthetic component (Ryu and Shawn Jang, 2008). Aesthetic experience is a process to perceive-feel-sense an object, represent active sensation, emotion, cognition and integrate the aesthetic pleasure appraisal (Di Dio and Vittorio, 2009).

In a few of studies, the authors discussed the aesthetic component, mainly within areas such as: *food* (Correia *et al.*, 2008; Liu and Jang, 2009; Ryu, Lee and Kim, 2012; Canny, 2014; Horng and Hsu, 2020 Paakki et al., 2019, Marković et al., 2015, Oh & Kim, 2020; Ouyang et al., 2017), *beverage* (Bekar, 2017), *service* (Ryu and Shawn Jang, 2008; Wu and Liang, 2009, Apaolaza et al., 2020; Canny, 2014; Hanks & Line, 2018; Horng et al., 2013; Horng & Hsu, 2020, 2021; Jang & Namkung, 2009; Liu & Jang, 2009a, 2009b; Marković et al., 2011, 2013, 2015, 2010; Oh & Kim, 2020; Ryu & Han, 2011; Ryu & Shawn Jang, 2008; Tsaur et al., 2015; Walls et al., 2011; Wardono et al., 2012; Wu & Liang, 2009),

facility aesthetics (Bekar, 2017; Horng & Hsu, 2020, 2021; Marković et al., 2011; Canny, 2014; Carins et al., 2020; Liu & Jang, 2009b; Ryu & Han, 2011; Ryu & Shawn Jang, 2008; Wardono et al., 2012) and *experience* (Wu and Liang, 2009; Canny, 2014; Bekar, 2017; Horng and Hsu, 2020, 2021).

Service experience is defined as the customers' direct experience of the service process, the organisation, the facilities, other customers and how the customer is treated by the service firm's representatives (Johnston, 2005). The restaurant's service staff serves food and beverage to guests.

To make the gastronomic work of art, Hegarty and O'Mahony (2001) explained that it is consisted of balance and harmony in such areas as colour, temperature, taste and texture which in some cases can be dictated by the aesthetic demands of the raw materials which are used to create a gastronomic work.

Wooley and Wooley (1973) showed how salivation increases even just observing (or thinking) of palatable food. So given the importance of aesthetics, food aesthetics are defined by Loporcaro, Campo and Baldassarre, (2017) as an interaction between taste and sight that creates a certain influence on the customers' choices about food. Correia *et al.*, (2008) say that food consumption experience is a pivotal behaviour that can fulfil sensory, cultural, social and epistemic motivations. While for beverage factors, authors Bilgihan, Seo and Choi, (2018) included local, draught, taste, delicious and presentation.

All the environmental features of a restaurant, tangible or intangible one gave a significant impact on those psychological responses of customers. Facility aesthetics means architectural design, interior design and décor that contribute to the attractiveness of the dining environment (Wakefield & Blodgett, 1999). This segment supports the overall gastronomic experience because of the beautiful surroundings. Raajpoot (2002) defines the physical environment as the ambient, design, and product/service factors in the foodservice industry that evokes feelings of pleasure to facilitate employee productivity.

2.3. Online reviews of restaurants

Compared to traditional WOM (word-of-mouth marketing), eWOM is easy and cost-efficient and spreads to more people in a shorter period (Bilgihan et al., 2018). Online guest reviews can be defined as the subjective evaluation of experience service or product provided. They provide information about not just the product or service, but also aspects of the post-consumption experience such as quality, value for money and overall evaluation (Li, Ye, & Law, 2013).

These reviews can be posted directly on the website of the restaurant visited or on a third-party website (Mudambi & Schuff, 2010). There is generally a numerical scale (usually from 1 to 5) in which reviewers indicate the degree of satisfaction. Except that, there is a space to write the textual review of the experience.

There is a possibility to leave a comment or return the public message to the person who left the comment. TripAdvisor.com nowadays feature manager accounts through which hoteliers can interact with reviewers and respond to their reviews (Xie, Zhang, & Zhang, 2014). De Pelsmacker, van Tilburg and Holthof (2018) say that online feedback can help managers track the attitudes, opinions, and satisfaction of guests and can serve as the basis for a series of management actions including responding to feedback, targeting investments in services that consumers would desire, and perpetuating positive actions.

Customers that leave comments help not only the restaurants with their feedback, but they help other customers to know what to expect and what they can get in the given restaurant. Mudambi and Schuff (2010) say that helpful customer review is defined as a peer-generated product or service evaluation that facilitates the consumer's purchase decision process.

In the era of Big Data, companies can gain insights about their customers and gain a competitive advantage more than ever before. Making effective decisions based on Big Data analytics should be the primary goal of any business today. Holmlund et al. (2020) offered a conceptual framework for customer experience management based on customer experience insights derived from Big Data analytics. Since most companies today face the problem of how to capture, monitor, and analyse Big Data, they even created a step-by-step guide for managers on how to use Big Data analytics for customer experience management. In today's market, there are already several social media monitoring tools that help companies track and manage online conversations that are relevant to the business. The application of Big Data analytics in tourism and hospitality research is still at an early stage, but a variety of Big Data analytics have already been applied (Li et al., 2018). One of the most popular methods for analysing user-generated content is sentiment analysis. However, the application of sentiment analysis in tourism and hospitality literature is extremely limited (Mehraliyev, Kirilenko, & Choi, 2020). Sentiment analysis or opinion mining is "the computational study of people's opinions, appraisals, attitudes, and emotions toward entities, individuals, issues, events, topics and their attributes" (Liu & Zhang, 2012, p. 415). According to Nakayama & Wan (2019), restaurant reviews can be analysed in at least four aspects: food quality, service, ambiance, and price fairness. There are already some studies that have applied sentiment analysis to analyse online restaurant reviews (Yu et al., 2017; Nakayama & Wan, 2019; Mehraliyev et al., 2020; Tian, Lu, & McIntosh, 2021). This method has been shown to be useful in capturing and measuring individual opinion and determining the polarity of sentiment.

3. METHODOLOGY

This research was conducted in four steps, which is highlighted in the Methodological procedure (Figure 1): (1) data selection, (2) data collection, (3) analysis of scraped reviews by dimensions and constructs and (4) particle analysis according to the level of feelings strength.

The Methodological procedure shows four steps that were used and successfully completed in order to obtain the results.
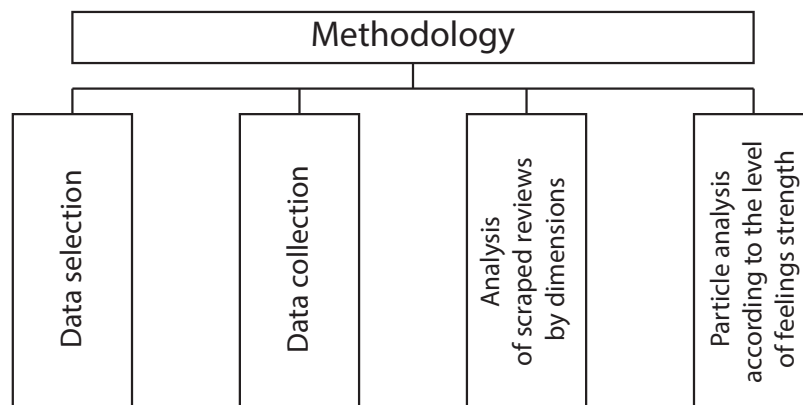
Figure 1. Methodological procedure
Source: Authors

3.1. Data collection and selection

Step 1: Data selection

In order to explore fine dining restaurants in Croatia, it is best to look for information in Michelin Guide. Michelin's guide in Croatia for the year 2020 included 7 one-star restaurants, 10 restaurants with the Bib Gourmand label, and 52 restaurants with the Michelin Plate label. Restaurants Boškinac (Novalja) and LD Terrace (Korčula) were awarded for one prestigious MICHELIN star, while Noel (Zagreb), Draga di Lovrana (Lovran), Pelegrini (Šibenik), 360º (Dubrovnik) and Monte (Rovinj) successfully kept their already previous years awarded stars (Croatia Full of Life, 2020). Monte was the first restaurant that received one Michelin star in Croatia in 2017. For the purpose of this study, all 7 one-star and 10 Bib Gourmand restaurants in Croatia were selected from Michelin Guide. Online reviews available on TripAdvisor for selected restaurants served as a data source for sentiment analysis.

Step 2: Data collection

In this study, online reviews were used from the social media platform TripAdvisor. TripAdvisor is one of the world's largest and well-known traveller's social media platform (Nicoli & Papadopoulou, 2017). This site provides database of individual online reviews that guests post related to their experience in the restaurant they visited.

ParseHub software was used to scrape online reviews from TripAdvisor. When scraping, only the content of the review was marked, and the last 40 reviews were scraped for each restaurant. For Michelin one-star restaurants, there were 280 scraped reviews and for Bib Gourmand restaurants 400. In total, 680 scraped online reviews have been further analysed.

3.2. Data analysis

Step 3: Analysis of scraped reviews by dimensions and constructs

Previously scraped data were first analysed by dimensions (Bilgihan et al., 2018): food, beverage, facility, experience and service. Consequently, the particles given by the scraped data were divided in three constructs: functional (food & beverage), mechanic (facility) and humanic (service & experience). After that, the particles were categorized according to the connotation into: positive, neutral and negative. The analysis of scraped reviews was performed in Monkeylearn software.

Step 4: Particle analysis according to the level of feelings strength

The following analysis consisted of particle analysis according to the level of feelings strength. Sentiment analysis has been already proven as the most reliable and realistic tool in the consumer dining experience analysis, because it secures the usage of spontaneous consumer data in natural consumption settings (Tian et al., 2021; Vidal, Ares, Machín, & Jaeger, 2015). SentiStrength software was used in this particle analysis to assess the strength of positive and negative feelings for identified particles within each dimension. What is more, the SentiStrength scale reports two sentiment strengths: negative (-1 to -5) and positive (1 to 5). In order to achieve the most precise results, particles which strength was neutral were eliminated.

4. RESULTS

As was previously mentioned, only the last 40 reviews were scraped from 7 Michelin one-star restaurants and 10 Bib Gourmand restaurants based in Croatia. The sample consisted of 280 scraped reviews of one-star Michelin restaurants and 400 reviews of Bib Gourmand restaurants. In total, there were 680 scraped online reviews which were divided by constructs and dimensions. The content of all particles has been analysed in Monkeylearn software according to the connotation (Table 1).

The analysis showed that all dimensions have accomplished extremely positive reviews by guests. The analysis has shown that the highest percentage of particles with positive connotations for one-star Michelin restaurants has the dimension "facility" (89.94%), while in Bib Gourmand restaurants has the dimension "beverage" (92.59%).

On the other hand, the highest percentage of particles with negative connotations for both Michelin one-star and Bib Gourmand restaurants address the dimensions "experience" and "service" which both belong to the "humanic" construct. Both dimensions have significantly negative percentage in comparison with other dimensions.

While the highest percentage of particles with neutral connotations has the dimension "beverage", there were no particles with neutral connotation in dimension "service" for One-Michelin-star restaurants. The highest percentage of particles with neutral connotations for Bib Gourmand restaurants has the dimension "facility", while the smallest number of neutral particles appear in the dimension "service".

Table 1. Analysis of scraped reviews by dimensions

CONSTRUCTS AND DIMENSIONS	MICHELIN RESTAURANTS WITH ONE STAR			BIB GOURMAND		
	positive	neutral	negative	positive	neutral	negative
FUNCTIONAL						
Food	85.89%	3.63%	10.48%	89.77%	6.53%	3.69%
Beverage	75.00%	20.00%	5.00%	92.59%	5.56%	1.85%
MECHANIC						
Facility	89.94%	6.29%	3.77%	85.34%	9.42%	5.24%
HUMANIC						
Service	88.78%	0.00%	11.22%	84.72%	2.78%	12.50%
Experience	84.80%	0.68%	14.53%	75.54%	6.47%	17.99%

In order to properly analyse the results, the dimensions were divided into three constructs: functional (food & beverage), mechanic (facility) and humanic (service & experience). The results are presented in Table 2.

In all three construct reviews are mostly positive. The highest percentage of particles with positive connotation for one-star Michelin restaurants has the construct "mechanic" (89.94%), while in Bib Gourmand has the construct "functional" (90.15%). On the other hand, the construct „humanic" has the largest percentage of particles with negative connotations for one-star Michelin restaurants (13.21%) and Bib Gourmand (14.65%). Furthermore, the highest percentage of particles with neutral connotations for one-star Michelin restaurants addresses the construct „functional" (7.62%) whilst in Bib Gourmand restaurants has the dimension „mechanic".

Table 2. Analysis of scraped reviews by constructs

CONSTRUCTS	ONE STAR MICHELIN RESTAURANTS			BIB GOURMAND MICHELIN RESTAURANTS		
	positive	neutral	negative	positive	neutral	negative
FUNCTIONAL	83.23%	7.62%	9.15%	90.15%	6.40%	3.45%
MECHANIC	89.94%	6.29%	3.77%	85.34%	9.42%	5.24%
HUMANIC	86.38%	0.41%	13.21%	81.13%	4.23%	14.65%

For further analysis, every particle was processed in the SentiStrength software. The results of the analysis are presented in Table 3 and Table 4. Similar to previous analysis all dimensions were divided according to connotation into positive and negative for Croatian Michelin one-star restaurants and Bib Gourmand restaurants. Moreover, the results were categorized in order to calculate the mean and the standard deviation. As mention earlier SentiStrength scale reports two sentiment strengths: negative (-1 to -5) and positive (1 to 5). In order to achieve the most precise results, particles which strength was neutral were eliminated. In this research, the focus was set on mean results and their impact on the overall ratings of Michelin restaurants in Croatia. As it is pointed out in Table 3, particle analysis within each dimension shows that the highest average value of positive connotations for one-star Michelin restaurants has the dimension "beverage" (mean=1.94), while in Bib Gourmand restaurants the dimension "food" (mean=1.93). The highest mean value of negative connotations for one-star Michelin restaurants has the dimension "experience" (mean=–1.66), while in Bib Gourmand restaurants has the dimension "service" (mean=–1.86).

Table 3. Particle analysis according to the level of feelings strength by dimensions

CONSTRUCTS AND DIMENSIONS	CONNOTATION	ONE STAR MICHELIN RESTAURANTS		BIB GOURMAND MICHELIN RESTAURANTS	
		Mean	SD	Mean	SD
FUNCTIONAL					
Food	positive	1.92	0.658	1.93	0.715
	negative	-1.40	0.548	-1.33	0.577
Beverage	positive	1.94	0.704	1.75	0.615
	negative	-1.25	0.500	0.00	0.000
MECHANIC					
Facility	positive	1.92	0.628	1.62	0.589
	negative	-1.00	0.000	-1.00	0.000
HUMANIC					
Service	positive	1.66	0.659	1.61	0.704
	negative	-1.40	1.046	-1.86	0.864
Experience	positive	1.73	0.698	1.74	0.627
	negative	-1.63	0.744	-1.56	0.527

Note: the abbreviation "SD" represents the standard deviation

Table 4 summarise the particle analysis of scraped reviews according to the level of feelings strength by constructs. The analysis of one-star Michelin restaurants' reviews has shown that guests are equally satisfied with the constructs "functional" (mean=1.93) and "mechanical" (mean=1.92); while the satisfaction is lowest for the construct "humanic" (mean=–1.51). Similar results are for Bib Gourmand restaurants, where the "functional" construct (mean=1.84) is the most positive, while the „humanic" construct (mean=–1.71) is the most negative. To conclude, the lowest level of guest's satisfaction is addressed to the construct „humanic", which is comprised of dimensions „service" and „experience".

Table 4. Particle analysis according to the level of feelings strength by constructs

CONSTRUCTS	CONNOTATION	ONE STAR MICHELIN RESTAURANTS		BIB GOURMAND MICHELIN RESTAURANTS	
		Mean	SD	Mean	SD
FUNCTIONAL	positive	1.93	0.013	1.84	0.124
	negative	-1.33	0.106	-0.67	0.943
MECHANIC	positive	1.92	0.628	1.62	0.589
	negative	-1.00	0.000	-1.00	0.000
HUMANIC	positive	1.70	0.047	1.67	0.093
	negative	-1.51	0.159	-1.71	0.213

Note: the abbreviation "SD" represents the standard deviation

5. DISCUSSION AND CONCLUSION

Croatian cuisine is famous across the world for its traditional and homemade dishes. The beacons of Croatian gastronomy are Michelin-rated restaurants based in Croatia. This study contributes to the measuring overall aesthetic experience of guests that have visited Croatian top-notch restaurants. What is more, in this research online reviews were scraped from renowned and very popular TripAdvisor social media. Online reviews scraped from TripAdvisor represent a great source for capturing unique and realistic customer experiences. The results of the research show the present state of overall aesthetic guest experience and emphasize which dimensions and constructs achieved the highest or the lowest level of guest experience. The study provides insights to restaurateurs on how their guests perceive the restaurant. In other words, the findings of this study also provide practical implications for restaurateurs by identifying the key determinants in customer reviews of restaurants. Following the content analysis approach, simple frequency counts were performed along with the usage of various data mining techniques. These techniques have completed the content analysis which helped to understand customer's views of the restaurant experience. The constructs and dimensions were set in order to categorize and to present results in precise and distinctive manner.

Therefore, the empirical results showed that the overall aesthetic guest experience in the analysed restaurants was positive. The content analysis revealed that guests are mainly focused on the food, menu offerings, ambiance, and service that have achieved the largest overall number of online reviews. The findings have shown that guests are the most satisfied with food, beverage and the facility of Croatian Michelin-rated restaurants. On the other hand, the guests are the least satisfied with construct „humanic", which include dimensions „service" and „experience". The selected restaurants are favourably rated, but there is still room for improvement, especially in the service providing sector. The improvement would not only raise the overall aesthetic rating of Michelin-rated restaurants but also increase the quality of Croatian gastronomy and consequently enrich Croatian tourist offer that will consolidate Croatia as a desirable gastronomic destination on the global market.

This study induces theoretical and managerial implications. Theoretical implication is associated with applied mixed qualitative and quantitative methods in analysing data from UGC (TripAdvisor) to gain a better understanding of customers' views on the restaurant experience. On the other hand, the managerial implications of this study are indicated in the fact that this study provides insights to restaurateurs on how their guests perceive the restaurant. Online reviews provide important information for restaurateurs regarding customer satisfaction and highlight areas for

improvement. Croatian top-notch restaurateurs should pay attention to raise the level of service and maintain the current level of quality in order to improve the overall rating of their restaurants.

This study has several limitations. First, only the 40 most recent reviews published on TripAdvisor in English for selected restaurants were analysed, which limits the sample of the study. Second, the collected data were manually categorised into dimensions and constructs that follow the previously established categories in Bilgihan et al.'s (2018) research. There is a possibility that other relevant factors that are important in measuring aesthetic guest experience may be omitted. To overcome the limitations of the study, future research should expand the sample to other geographical areas and include ratings in other languages in the analysis. It would be interesting to include available socio-demographic variables of reviewers in the datasets in future studies and investigate their characteristics. Finally, it would be beneficial to explore more advanced text analysis methods to gain a better understanding of the dining experience.

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RELIABILITY UNDER EU PUBLIC PROCUREMENT LAW

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Abstract: *To exclude or not to exclude? A question asked by many contracting authorities when assessing bids submitted by tenderers, whose reliability might be compromised by their previous misbehaviour or even worst – a criminal offence. According to law, contracting authorities can exclude such tenderers. However, at the same time, tenderers should be allowed to adopt compliance measures aimed at remedying the consequences of their action. In this article the author analyses some aspects of discretional exclusion of tenderers with doubted reliability in the public procurement process according to the 2014 European Union's Public Procurement Directive and the recent case law of the Court of Justice of the European Union.*

Keywords: *Misbehaviour, Proportionality, Optional exclusion, Compliance measures.*

1. INTRODUCTION

Public procurement is an important part of the European Union´s internal market. This can be proved, for example, by the volume of procured contracts. According to the European Commission, public authorities in the European Union spend yearly *around 14% of GDP on the purchase of services, works and supplies.*[2] This indeed presents a good motivation for economic operators to take part in public procurement and compete for public-contract awards. However, not every economic operator can compete for public contracts – this privilege is reserved only to those, who besides other criteria, prove their reliability. That is why reliability is so important. If the economic operator (or even its supplier) raises serious doubts regarding (mostly) tenderer´s integrity, a contracting authority is entitled to consider, whether such tenderer, despite fulfilling personal, technical, and economic criteria, shall be accepted in the procurement procedure. A Public Procurement Directive[3] recognize in Article 57 both the obligation and the possibility of contracting authority to exclude a tenderer which has been proven unreliable.

Contracting authorities shall mandatorily exclude an economic operator which has proven unreliable by final judgement or administrative decision due to various criminal offences (e. g. corruption, fraud, money laundering, trafficking in human beings, terrorist offences), or backlogs of payments of taxes or social security contributions. Furthermore, contracting authorities must exclude a tenderer, which has been excluded by final judgement from participating in procurement procedures.

On the other side, in situations of **minor gravity** such are for example participation of tenderer in cartel agreement with tendering competitors, when the tenderer is guilty of grave professional misconduct which compromises its integrity or due to poor past performance by the tenderer, **contracting authorities may decide, whether or not they exclude** such tenderer from bidding.

Decision on exclusion, however, must comply with the principle of proportionality and at the same time, the tenderer must be given a chance to adopt appropriate measures to demonstrate its reliability despite the existence of a relevant ground for exclusion and the right to prove it. Although contracting authorities, while assessing the sufficiency of reparatory measures adopted by doubted tenderer, enjoy wide discretion in their assessment, they must at the same time also consider the gravity and particular circumstances of the tenderers criminal misconduct or other misbehaviour.

Optional exclusion therefore presents a complex issue and brings various additional questions, e.g.: **How deep can contracting authorities dig in while verifying the reliability of a tenderer? How to solve the conflict of principle of proportionality versus principles of equal treatment and transparency when it occurs? Is the right of defence applicable during the proving of tenderer´s reliability**?

In this article, the author focuses on selected aspects of optional exclusion regarding the relevant EU regulation as well as the case-law of the Court of Justice of the European Union. The author aims to point out the problematic issues related to this topic. During the research, a doctrinal analysis was the most used method besides the comparison, deduction and synthesis.

2. OPTIONAL GROUNDS FOR EXCLUSION

As pointed out by Sanchez Graells (2014, p. 115) qualitative selection criteria refer to the "suitability to pursue the professional activity concerned, the economic and financial standing, or the technical and professional ability of the economic operator and are related and proportionate to the subject-matter of the contract and kept to a minimum in order to take into account the need to ensure genuine competition." Article 57:4 of the Public Procurement Directive then provides nine reasons for optional exclusion of tenderer from procuring procedure: (i) violation of obligations in the fields of environmental, social and labour law; (ii) bankrupt or insolvency of tenderer; (iii) grave professional misconduct; (iv) collusive behaviour with other tenderers; (v) conflict of interest; (vi) prior involvement in preparation of procedure; (vii) bad performance of previous contract; (viii) serious misinterpretation of in supplying information; (ix) unduly influence the decision-making process of the contracting authority. However, Member States are entitled to individually determine the implementing condition of the optional ground for exclusion of tenderer from procuring procedure. As the Court of Justice stated in ***Tim*** case (C-395/18, point 34), Public Procurement Directive "does not provide for uniform application at Union level of the exclusion grounds it mentions, since the Member States may choose not to apply those grounds, or to incorporate them into national law with varying degrees of rigour according to legal, economic, or social considerations prevailing at national level." As pointed out by Steinecke and Vesterdorf (2018, p. 618) to this regard "some Member States have even extended the [above mentioned] list of exclusion grounds."

Essential point for contracting authorities is, that they are free to use these optional grounds for exclusion when procuring the goods, services and works, while they ensure equal treatment during the procedure. Moreover, as procurement procedure is required to be transparent and must comply with the principle of transparency, **grounds for exclusion should be stated in the contract notice** (Steinecke and Vesterdorf, 2018, p. 631). Contracting authorities shall ensure the integrity of procurement procedure and therefore must assess reliability of each tenderer with due diligence. Such obligation of contracting authority is derived from the general princi-

ple of sound administration, towards which the General Court in **Vakakis Kai Synergates** case (2016, points 81, 82) stated that: "*the obligation of due diligence applies generally to the actions of the (...) administration in its relations with the public and obliges the relevant institution to examine carefully and impartially all the relevant facts of the case; and the finding of an irregularity which in comparable circumstances would not have been committed by a normally prudent and diligent administration permits the conclusion that the conduct of the institution constituted an illegality.*"

A multilevel approach of the contracting authority is therefore required. Firstly, (to ensure a transparency of procurement procedure) qualitative selection criteria must be clearly stated by the contracting authority in the tender notice in such form, that average eligible tenderer will understand its content. Secondly, it is for the contracting authority after submissions of bids to determine and verify "*the existence of a real risk of occurrence of practice capable to jeopardising transparency and distorting competition between tenderers*" (Vakakis Kai Synergates, point 100). If a tenderer is due to its action or omission either before or even during the ongoing procurement procedure, in situation falling to the scope of grounds for discretionary exclusion, a contracting authority may exclude such tenderer. However, such exclusion must be proportional to the gravity of reason, which led to it with regard to the procured contract.

Recently, the Court of Justice provide its assessment of proportionality substantively in cases relating exclusions due to the breach of labour law by tenderer´s subcontractor (Article 57:4.a of the Public Procurement Directive) and due to the bad performance of tenderer in previous public contract (Article 57:4.g of the Public Procurement Directive). Despite the limited scope of this article, these judgements are worth mentioning as they provide new answers to until now unanswered questions related to the consideration of reliability of tenderer´s subcontractor and to the interpretation of significantly bad performance of previous contract by the tenderer.

a.   Case Tim (C-395/18)

In **Tim** (2020) a tenderer Tim SpA submitted a bid within a tender procedure called by an Italian contracting authority in 2016 for procurement of a contract for the supply on an optical system for the interconnection of the data processing centre. In its bid, Tim referred to three subcontractors, which it intended to use for pre-performance of the contract, in the case of winning the award of contract. However, the contracting authority during the procedure found out, that **one of the subcontractors breached the rules relating to the labour right of disabled persons** and therefore excluded Tim from tender. Such exclusion, despite its optional character according to the Public Procurement Directive, was mandatory according to Italian law. At the same time, Italian law did not oblige the tenderer to use subcontractors mentioned in its tender if it was awarded the contract, nor was the tenderer required to verify that its subcontractors were not affected by the grounds for exclusion referred to in Article 57:4 of the Public Procurement Directive. The subject of the preliminary ruling was the question of **whether such exclusion of tenderer was following the principle of proportionality?**

Court of Justice to this regard stated, that "Member States enjoy some discretion in determining the implementing conditions of the optional grounds for exclusion" (point 34) and "that ground is drafted impersonally, without specifying who is responsible for the failure to fulfil the obligations [relating to environmental, social and labour law]" (point 35). As those obligations constitute "a cardinal value which the Member States must ensure compliance" (point 38),

Member States must be granted power to consider "that the party responsible for the failure to fulfil obligations may be not only the economic operator, who submitted the tender but also the subcontractor which the latter intends to use" (point 39). Member States therefore may provide in their national legislation, that the **contracting authority is entitled or even obliged to exclude a tenderer, whose subcontractor failed to fulfil the environmental, social and labour law obligations**.

However, as the Court of Justice reminded, that contracting authority must pay "particular attention to the principle of proportionality, taking into account in particular the minor nature of the irregularities committed or the repetition of minor irregularities. That **attention must be even greater** where the exclusion provided for by national legislation is imposed on the economic operator who submitted the tender for a **failure to fulfil obligations committed not directly by that operator** but by a person outside his undertaking, in relation to the control of whom the operator may not have all the authority required or all the necessary means at his disposal" (point 48). As Italian legislation did not allow the contracting authority such assessment, the Court of Justice considered it, due to the text providing automatic nature of the exclusion, violating the principle of proportionality.

b.   Case Delta (C-267/18)

In this case, the Court of Justice set standards of assessment of reliability in case for exclusion due to significant deficiency shown by tenderer while performing the previous public contract. From 2014, Delta performed awarded works contract for Romanian contracting authority 1. In 2017, contracting authority I terminated Delta′s works contract due to the fact, that it had used a subcontractor without prior authorisation of contracting authority 1 which caused the damage of amount 521 000 €. Shortly after that (still in 2017) Delta submitted a tender in a call opened by contracting authority 2 for construction project for widening a national road. Subsequently, it was excluded from the procedure due to the fact, that contracting authority 2 assessed the early termination of previous contract due to the unauthorised use of subcontractor as a significant deficiency in the performance of a substantive requirement under a prior public contract. The Court of Justice was in preliminary rulings to decide, **whether using unauthorised subcontractors, which led to early termination of previous contract, constitutes a significant or persistent deficiency shown in the performance of a substantive requirement under that public contract, and justifies excluding a tenderer from participation in a subsequent procurement procedure?**

The Court of Justice explained (point 26) that, "the option available to any contracting authority to exclude a tenderer from a procurement procedure is particularly intended to enable it to assess the integrity and reliability of each of the tenderers. In particular, the optional ground for exclusion mentioned in Article 57(4)(g) of Directive 2014/24 [bad performance of previous contract], read in conjunction with recital 101 of that directive, is based on an essential element of the relationship between the successful tenderer and the contracting authority, namely the reliability of the successful tenderer, on which the contracting authority's trust is founded." The Court of Justice pointed out that **contracting authority 2 must realise its own assessment of presumed bad performance** of Delta in previous contract, **as automatic reception of the opinion of contracting authority 1 would be considered not proportional**. To this regard the Court of Justice in points 30-34 of the judgement set the standards of such assessment when it explicitly bound the contracting authority 2:

- **to determine** whether **in its view** Delta's use of unauthorised subcontractor constituted a significant deficiency and, if so whether that deficiency affected the performance of a substantive requirement imposed on Delta under previous contract;
- **to evaluate** the significance of the part of the previous contract, which was subcontracted and determine, whether the subcontractor's involvement had an adverse impact on the performance of that contract;
- **to examine** whether the actual contract included an obligation which had to be performed by the successful tenderer itself or whether it made using a subcontractor conditional upon obtaining prior authorisation from the contracting authority I;
- **to assess** whether or not the use of a subcontractor is likely to constitute a substantial amendment of the tender submitted by the successful tenderer;
- **to assess** whether or not, in failing to inform it of the early termination of previous contract, Delta is guilty of serious misinterpretation in supplying the information required for the verification of the grounds for exclusion.

Therefore, the contracting authority 2 is entitled to exclude tenderer only in the situation, when it, following its own assessment, objectively found that the tenderer really provided in previous public contract a significantly bad performance.

3. RESTORATION OF RELIABILITY

The right of contracting authority to exclude a tenderer is balanced by the right of the tenderer to provide evidence, that it had adopted measures remedying its reliability. According to Article 57:6 of the Public Procurement Directive any tenderer that is in the situation which allows the contracting authority to (both mandatorily and optionally) exclude it, may provide evidence, that it adopted measures sufficient to demonstrate its reliability despite the existence of a relevant ground for exclusion. For this purpose, the tenderer shall prove that it has comprehensively clarified the facts and circumstances by actively collaborating with the investigating authorities and taken concrete technical, organisational and personnel measures that are appropriate to prevent further criminal offences or misconduct. Such measures, as stated in para. 102 of the Preamble of the Public Procurement Directive, might consist of the severance of all links with persons or organisations involved in the misbehaviour, appropriate staff reorganisation, the implementation of reporting and control systems, the creation of an internal audit structure to monitor compliance and the adoption of internal liability and compensation rules. However, a tenderer that has been excluded by final judgement from participating in procurement, shall not be entitled to make use of the possibility to restore its reliability during the banned period.

Although conditions for liability might appear to be clear, some application problems have arisen. In **RTS infra** (2021) case, the Court of Justice dealt with the question of **whether the evidence of reliability remedying measures should be submitted by the tenderer at the time of submitting the tender or it may be submitted even later upon the request of the contracting authority?** Firstly, it recalled, that the Public Procurement Directive did not specify "how and at what stage of the procurement procedure the evidence of corrective measures can be provided" (point 27). Therefore, the possibility for tenderers to provide such evidence may just as well "be exercised on their own initiative or on the initiative of the contracting authority, as well as at the time of submission of the request to participate or of tenders or at a later stage of the procedure" (point 28). Finally, the Court stated **that Article 57:6 of the Public Procurement Directive has a direct effect** (point 43) and must be interpreted as precluding a practice of contracting author-

ity whereby a tenderer is required, at the time of submission of its tender, to provide voluntarily evidence of the corrective measures taken to demonstrate its reliability despite the existence, in respect of that operator, of an optional ground for exclusion, where such an obligation does not arise either from the applicable national rules or from the tender specifications. However, as the Court of Justice followed on, the same provision does not preclude such an obligation where it is laid down in a clear, precise, and unequivocal manner in the applicable national rules and is brought to the attention of the tenderer by means of the tender specifications.

How deep can contracting authority to dig in while verifying the reliability of tenderer? From when the banned period for participation in tendering begin to run? Those are the questions answered by the Court of Justice in ***Vossloh Laeis*** (2018) case. Vossloh Laeis was the tenderer who in 2011 participated in cartel agreement, for which he was imposed fine in 2016, while at the same time took the benefits from the leniency program, as it cooperated with the competition authority during the cartel investigation. Due to this situation, reliability of Vossloh Laeis was doubted in 2016 in tender called by the contracting authority, which was concerned by the above-mentioned cartel agreement from 2014. In this regard, contracting authority required tenderer to submit the relevant decision of competition authority, which tenderer refused to comply. It reasoned that its cooperation with the competition authority was sufficient for the purposes of voluntary remediation. To this regard, the Court of Justice stated that "in order to verify the existence of certain grounds for exclusion, the contracting authorities may, in given circumstances, be led to carrying out searches and verifications" (point 24). Clarification of facts and circumstances by the investigation does not follow the same objective as does the tenderer′s reliability assessment (point 27). "A tender is required to prove that it clarified comprehensively, the facts and circumstances of the cartel in which it participated by actively collaborating with the competition authority entrusted with investigating such facts and the contracting authority must be able to ask a tenderer which has been held responsible for a breach of competition law to provide the decision of the competition authority concerning it" (points 29,30). Contracting authority therefore is entitled to require from the tenderer to "clarify the facts and circumstances relating to the criminal offence or the misconduct committed comprehensively by actively cooperating not only with the investigating authority, but also with the contracting authority, in the context of the latter's specific role, in order to provide it with proof of the re-establishment of its reliability, to the extent that that cooperation is limited to the measures strictly necessary for that examination" (point 33). At the same time, the Court pointed out, that while the existence of behaviour distorting the competition might be regarded as proved only after adoption of a final decision in that matter, the period of exclusion begins to run from the date of such decision (points 39, 41).

In ***Connexxion Taxi Services*** case the Court of Justice dealt with the **conflict between principle of proportionality and principles of equal treatment and transparency**, which arise when contracting authority hesitate to exclude a tenderer from the procuring procedure due to disproportionality of such act, despite such procedure was noticed in tender conditions. The Court of Justice prioritised the latter with establishing, that Public Procurement Directive read in the light of principle of equal treatment and the obligation of transparency must be interpreted as "precluding a contracting authority from deciding to award a public contract to a tenderer which has been guilty of grave professional misconduct on the ground that the exclusion of that tenderer from the award procedure would be contrary to the principle of proportionality, even though, according to the tender conditions of that contract, a tenderer which has been guilty of grave professional misconduct must necessarily be excluded, without consideration of the proportionality of that sanction" (point 44).

4.   CONCLUSION

The limited scope of this article does not provide the space for a deeper analysis of this interesting topic. However, even from such brief insight into this field of law raises many questions – both substantive and procedural, on how to deal with quality assessment in public procurement. Some of these questions were already answered by the Court of Justice. On the other side, the case-law relating to the application of the discretionary exclusion according to the Article 57:4 of the Public Procurement Directive is still at the beginning, as it comprises only seven judgements (five of them were mentioned in this article). Nevertheless, they present a good inspiration and solid ground for further academic research and discussions. Further research should focus mainly on proportionality and limits of discretion of contracting authorities while excluding tenderers from bidding in public procurement.

ACKNOWLEDGMENT

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ON THE UNDERSTANDING OF THE STATE
IN LEGAL THEORY AND DOCTRINE OF THE MODERN AGE

Slobodan Petrović[1]

Abstract: *There is a large number of teachings about the state in legal philosophy and theory; however, even today in the 21ˢᵗ century, the idealistic and realistic view (teaching) about the state stands out. In the first, the essence of the state is contained in a surreal environment, and in this regard, this direction emphasizes what the state should be like. Three views of this direction still dominate today: utopian, natural, legal, and ethical-cultural. In realistic theories, the state is seen as a phenomenon of the real world in which the essence is contained in the experiential world, determined by laws. Considering that legal theories about the state are relatively young because their largest number originated in the 19th and 20th centuries, this contributes to determining the state as a logically regulated unity of legal norms that regulate the behavior of people in society.*

In this paper, the emphasis is placed on presenting the modern point of view of the utopian, natural law, ethical-cultural, sociological, and political point of view on the state today. The modern state is considered as an institution within which modern social theories operate.

Keywords: *State, Theory of the state, Natural law, Utopia, Legal philosophy, Society.*

1.   INTRODUCTION

When we discuss the state from a purely legal point of view, then we view the state as a legal phenomenon, i.e. as a legal entity, as a type of society (corporation). What arises as a question in the philosophy of law is: how to distinguish the state from other such societies? Thus, the state as a legal entity is the personification of that community or legal order, which is the connective tissue of that social group. The difference is actually in the normative order that makes up that state-society. There is no absolute law, except for natural law (metaphysical state of justice and law as such), and only different systems of legal norms can be distinguished - English, French, American, etc. - whose spheres of validity are divided in a specific way, as evidenced by international law. The task of the theorists of the philosophy of law is to explain the specific nature of those systems of norms that represent empirical manifestations of positive law, what is the interdependence of these systems of norms, and how they are mutually delimited. The idea of the interconnectedness of the state and rights without supremacy over each other was emphasized by Robert Schmidt, Icilio Vani, Josef Kohler, Josef Binder, and others. (Radbruch, p. 123) With the help of rationalization, law transforms the state into a structured organization, regulates its functioning, makes the process of modifying the activities of the state into the application of the law, and limits its power. Law also influences the state through the process of transforming the state into a legal organization, as evidenced by the fact that the state is a legal organization from the very beginning, as long as it exists. The state is primarily a legal organization because it creates law, but more importantly, the state implements and enforces its sanctions based on law. The state is also a legal organization because it is organized on the basis of legal norms. However, the law at the same time enables the life of the state and this is achieved by clearly defining the type, position, composition, and the scope of work of state bodies, and then by regulating the actions of those same state bodies.

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2.   IDEALISTIC THEORIES OF THE STATE

There are a large number of theories and teachings about the state in the philosophy of law, but according to what understanding of the state prevails in each of these teachings, they are divided into idealistic and realistic theories. In idealistic theories, the state is considered as an idea outside the real world. According to this teaching, the essence of the state is contained in an idea that transcends the real, experiential world. Precisely for that reason, idealistic theories are important because they show and indicate, for example, what a state should be like. Within the Idealist theory of the state, we can speak of three subtypes, namely: utopian, natural-law, and ethical-cultural theories.

2.1. Utopian theories of the state

Utopian theories for the subject of study have either an ideal state or an ideal ruler. There is a third subject of interest of idealistic theories, and that is the creation of the state in which the majority of the people have power. However, there is another subject (direction) of study, and that is the abolition of the state as another delusion of humanity. (Mitrović, 2015: 16) However, that utopian theories can be ahead of their time which is proved by Francis Bacon's "New Atlantis" (New Atlantis, published in 1624 in Latin and 1627 in English), which is considered an important ideological and programmatic stimulus, in fact, a real inspiration for the founding of the United States. Authors who speak in favor of utopian-idealist teaching are Plato, then the utopians of the Middle Ages: Thomas More, Thomas Campanella; nineteenth-century socialist-utopians: Mablia, Morelia; anarcho-socialists: Saint-Simon, Proudhon; anarchists: William Godwin, Mikhail Bakunin, Piotr Kropotkin, Max Stirner, Emma Godman, Bertrand Russell, and Noam Chomsky. Of all these authors, Noam Chomsky is still alive today. In his work "Necessary Illusions: Control of Thought in Democratic Societies" he speaks about utopian forms of the state, with a strong reference to the so-called "Failed states."

2.2. Natural-legal theories of the state

Natural-legal theories about the state are an expression of the search for what can be achieved in the creation of a better or best state. Plato was the first to deal with the state in a theoretical way, then Aristotle. Aristotle was the first to develop teaching about the state that is not utopian but purely rationalist and natural law. With such a constellation of the state doctrine, Aristotle became the founder of scientific research of the world, the state, law. After Aristotle comes the period of Hellenistic theorists (Seneca, Polybius, Epicurus, Marcus Aurelius), and after them comes the so-called. "Roman-equal-political thought" (Cicero). With the strengthening of Christianity, which gained strength precisely in the collapse of the Roman Empire, an increasingly strong philosophical-theological thought is being formed, which puts the heavier part on the church-state relation. This relationship opened several questions and dilemmas, among which the most prominent is: Who is the legitimate holder of power in society? This question was answered by Aurelius Augustine in 420 in his work De Civitate Dei contra Paganos and Thomas Aquinas in 1274 in his work Summa Theologiae. Modern natural-law theories appeared among the Sophists, then the Jews, and also among the Epicureans. The essence of natural-legal theories is that they see the emergence of the state in the conclusion of the Social Contract. From the point of view of the philosophy of law, the most important feature of natural law is that it is predominantly non-experiential and thus objectively a true symbol of perfection, and therefore can serve as a model for positive law. (Lukić, 1995: 396) The state is established based on a natural legal contract, and in that way, its character is also established. One of the important factors of natural law theories is in the fact that they believe

that all people by birth acquire certain natural, innate and inalienable rights, while the state is only an institution for the protection of their rights. Representatives of this theory are Thomas Hobbes, John Locke, Jean-Jacques Rousseau; and today - John Rawls, Otfried Hefe.

2.3. Ethical-cultural theories of the state

The characteristic of ethical-cultural theories is that they investigate the correct or the most correct states, which they designate as "the highest person", "realized morality and freedom" or as "builders of culture". In a word, these theories are the result of a rational explanation of the idea of the "smart state" (Immanuel Kant, Johann Gottlieb Fichte, Friedrich Wilhelm, Josef Schelling).

3.   REALISTIC THEORIES (TEACHINGS) ABOUT THE STATE

Here, the state is the appearance of the real world, space, and time in which it exists as such. The essence of the state is conceived on the empirical dimension and is determined exclusively by the laws of that dimension. However, this theory deals with the state regardless of whether it exists at this moment or once existed. Therefore, realistic theories are more comprehensive than similar theories that consider a typical state, whose image is derived from reality by distinguishing in real states those features that are common to them. (Mitrović, 2010: 61) Within realistic theories, we can talk about three main types of these theories: legal, sociological, and political.

3.1. Legal theories of the state

Relatively young, considering that most of these theories originated in the 19th and 20th centuries, these are theories that determine the state as a legal institution, i.e. as a synthesis of legal norms that regulate the functioning of the state. These theories primarily deal with the organization and legal regulation of the state. The essential teaching of this doctrine is the law and the legal idea in general. Legal theory connects the details of the state organization with each other, showing how they are all derived from several main ideas - in a diversity of these ideas it finds a certain logical unity. (Jovanović, 2011: 60) Legal theories prevail even today because only the legal understanding of the state as a subject (i.e. legal entity, its uniqueness, continuity and permanence, power, sovereignty, and internal organization) can be explained, including, most importantly, its will, which is lent to it by individuals as its organs. (Mitrović, 2015: 18)

3.2. Sociological theories of the state

Sociological theories are the oldest theories about the state, and as such, they study the relationship between society and the state. These theories view the state as a social phenomenon. There are two dominant variants of explaining the origin of the state. The first, modern, socio-political theory considers it impossible to determine the essential elements (common elements) of ancient, medieval, and modern states because there is a qualitative, not a quantitative difference between them. According to another (older) theory, the state exists as a global, universal phenomenon. (Tadić, 2007:254) There are also those sociological theories that explain the social role by the conflict of interests of social groups (Rudolf von Jering, Rudolf Stamler). Finally, we should mention purely class theories that explain the social role of the state exclusively by class struggle (Hans Kelzen, Karl Marx).

3.3. Political theories about the state

These theories see the state and consider it as a political phenomenon. Their primary goal is to determine who exercises (the one who has) political and state power in society. These theories study whether political power in the state is executed by the economically ruling class, the political ruling class, the elite class, the ruling elite, the ruling class, or the supranational or world elite. The state is a political organization as it is an order that regulates the use of force because it monopolizes the use of force - therefore, the state is a politically organized society since it is a community composed of a forced order, and that forced order is right. (Kelzen, 2010: 283) In his work "Sociologische und der Juristische Staatsbegriff" Kelzen points out that the state is a specific normative entity and not an entity that can be understood based on causal laws. It is the personification of the legal order as a supra-individual will, and the dualism of state and law is only an inadmissible duplication of what can only be the subject of legal and normative knowledge. (Troper, 2014:149) Like the political groups that historically precede it, the state represents the relationship of people's power over people that relies on legitimate violence (i.e., violence that is considered legitimate); for the state to exist, subordinate people must submit to authority claimed by those currently in power. (Weber, 2014: 48)

4. CONCLUSION

The state is, therefore, a legal, political, sociological, cultural creation, and as such it represents a system of organized government that uses force, the apparatus of coercion, for the sake of its survival. Of all the mentioned theories about the state, today in the modern age the most developed and most diverse are natural law, sociological and political theories. The situation seems simpler when the state is discussed from a purely legal point of view, then the state is viewed as a purely legal phenomenon. This thesis is supported by the fact that positive law empirically appears in the form of state legal orders, which are interconnected by the international order, so - there is no absolute law, there are only different systems of legal norms. It is indisputable that in the very interior of the state there are interactions that take place in different relations of its population, as well as that on the other hand there are objective theories of "collective will" or "collective interest". However, if the theory of the state should not exceed what gives us experience or degenerate into metaphysical speculation, then the so-called "collective will" cannot be the consciousness of one being. Under political fiction, we can bring the claim of all citizens "who have the same state of consciousness about one phenomenon". We can also say that the state is a natural organism, so the real goal of organic theory is to ensure the value of the institution of the state as such. The state cannot be identical with any of those actions that can be the subject of a social process (interaction), but all social processes are processes that take place within the state as an institution. The state is the order of human behavior that we call the legal order, the order according to which certain human actions are determined; the state is the idea to which individuals adapt their behavior. Accordingly, modern society uses scientific knowledge obtained from all analyzed theories of the state, because all theoretical approaches that chronologically explained the state still exist and are empirically applicable, which is only a scientific confirmation of the necessity of knowledge and use of legal doctrine from its inception to this day, in order to determine more clearly and precisely the progressiveness of the philosophy of law.

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GOVERNMENT LEGAL RESPONSE IN COVID-19 PANDEMIC: A CASE STUDY OF SLOVENIA

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Abstract: *The COVID-19 pandemic has been a disruptive occurrence that has impacted our economies and lives with many restrictions. Countries around the world suffered comparable problems, and many were caught by surprise or unprepared. Each took a slightly different approach. This paper examines a case study of a member of the European Union, Slovenia, how it tried to mitigate the consequences of the pandemic with the implementation of eight new legal acts and helped its economy. Speed proved as one of the crucial factors in legal response while battling the COVID-19 pandemic and trying to help the most affected areas by the disease and various restrictions.*

Keywords: *Acts, Covid-19, Impact on economy, Legal implementation*.

1. INTRODUCTION

European Union has 27 member states, and one of them is since May 2004 also Slovenia. European Union has different competencies in various areas, and they are defined in Articles 2 –6 of the Treaty on the functioning of the European Union. Health can be found in shared competencies as well as in Competencies to support, coordinate or supplement actions of the Member States, which gives them a high level of autonomy for decision making (European Commission, 2021).

When the COVID-19 pandemic caught European Union more or less unprepared for the healthcare crisis of such measures as COVID-19 turned out to be, Member states could not wait on the decisions of the European Union in spring of 2020. They decided to act on their own in the hope to minimize the spread of the COVID-19 and limit the negative effect on other areas that were most hit by the disease. That meant Member States had different approaches to tackling many issues that COVID-19 brought, but main national guidelines and measures were similar. Many countries implemented social distancing guidelines and different protocols to limit the spreading of the COVID-19, such as closing schools and started with online teaching. While the main focus was on healthcare systems, the number of infections, numerous campaigns and informing people how important it is to stay at home and wear masks, there was also a significant impact on the economy and also almost all the other aspects of life, which changed suddenly and had an extensive impact on the life as we knew it before the COVID-19 pandemic became an everyday reality in our lives. The first case of COVID-19 in Slovenia was confirmed on 4th March 2020, and the first death of COVID-19 infected the person just ten days later, on 14th March 2020. World Health Organization declared COVID-19 as a global pandemic on 11th March 2020 (World Health Organization, 2020).

2. CHARACTERISTICS OF GOVERNMENTS RESPONSES

COVID-19 has been around for more than a year and around the world has proven for a difficult and resilient problem. No matter the size or the strength of the economy and its healthcare system, COVID-19 has appeared almost as a stress test on the economic and social scale in

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the South African Republic (De Viliers, Cerbone & Van Zijl, 2020, p.798). The problem was even more prominent for countries such as India, where most of the workers are informal, so when COVID-19 and restrictions, including lockdowns, were introduced, it effectively meant those workers had little or no social protection (Ghosh, 2020, p. 522). South Korea dealt with COVID-19 more successfully and is considered as one of the role models for its response (Kumar, Priya & Srivastava, 2021, p. 77). However, not every country has resources and can respond as quickly as South Korea did. Many economies were struggling even before COVID-19. Thus global pandemic is expected to make their recovery, especially economic, even more challenging (Dragoi, 2020, p. 20).

The economic and healthcare situation in the Member States of the European Union before the pandemic was better than in most countries worldwide, but COVID-19 exposed all the weaknesses and brought healthcare systems to the maximum capacity in some countries. To reduce the impact of the COVID-19 pandemic on the most strained areas, countries began with the implementation of various legal acts with the objective mainly to survive and come out of the pandemic with as little losses as possible, be it in human casualties, companies, jobs, GDP decrease or even just with lighter and shorter restrictions, while recovery from the COVID-19 pandemic was also in policymaker's minds. Time and speed proved to be crucial factors that helped in Portugal (Peixoto, Vieira, Aguiar, Sousa & Abrantes, 2020) as well as in China (Liu & Saltman, 2020, p.1146). Because European Union has not had such experiences with contagious diseases like COVID-19 before, the quick response on a supranational level was almost impossible to expect. Countries tailored their responses to each country's abilities and systems and did not use a united approach when dealing with COVID-19. Even though some of the national strategies were quite similar, the many Member States implemented travel restrictions and lockdowns.

3. RESEARCH ON IMPACT OF LEGAL MECHANISMS ON ECONOMY

Governments and policymakers tried to be effective and quick with decisions as speed has proven crucial in the successful limitation of the spread of COVID-19 as well as limit damage to the economy. Many therefore did not use regular bills and multi reading and amending procedures but took quicker and simplified routes to ensure that help was enabled in the shortest possible time.

One of the mechanisms with the objective of job retention and helping companies keep their workers, whom many additionally educated for the specific job they had, was a priority, especially in sectors that were most vulnerable to restrictions because of the nature of their work. As OECD study finds, job retention schemes allowed retain workers at minimal or zero costs, which prevented a surge in unemployment (OECD, 2020).

A smooth transition from job retention schemes back to unsupported working again will be the crucial stepping stone towards success for such schemes. Important will be to recognize which jobs are so limited in prospects that workers will eventually have to choose a different career path and to help those make that change. For such workers would be great to start (re)training and thinking about shifting careers while they are on reduced hours (ibid).

Governments in Europe and around the world faced similar problems, but some recorded their first confirmed COVID-19 case earlier than others and had, therefore, less time to prepare. Italy, for example, had first confirmed the case relatively early while Slovenia, with which it shares a border,

on the other hand, had first confirmed the case later. That meant Slovenia had a little bit more time to prepare and observe Italy and other countries in their responses. The Italian government had announced one of the first quarantines in Europe on 22nd February because of the alarmingly high rise of the number of COVID-19 positive cases (Fang, Nie & Penny, 2020 p.643).

It was quickly evident how vital will be a fast implementation of legal acts that will enable changes that appeared as necessary at the moment and help manage the crisis in multiple areas as well as reassure people that help is on the way and offer some relief, especially from the economic point of view. The Slovenian government act was designed and created with the objective to help (table 1). Since all the problems were not apparent initially and the process was rushed with the intention to try to save as many jobs and companies as possible, other acts followed soon after and covered many additional areas. They quickly became widely known as „Anti COVID-19 Acts" and the number per order in which they passed.

Table 1. Comparison of the legal acts Slovenian government responded to the (economic) crisis

Name of the act	Date of the passing of the act	Estimated value in euros	Main areas of aid
Act Determining the Intervention Measures to Contain the COVID-19 Epidemic and Mitigate its Consequences for Citizens and the Economy	2nd April 2020	3 billion	• Financial aid for students and retirees with the lowest pensions • Cover of 80% of salary for workers who cannot work due to restrictions • Tax reliefs • Self-employed, farmers and religious employees who suffered more than a 25% drop compared to the previous month (February) received basic monthly income
Act Amending the Act Determining the Intervention Measures to Contain the COVID-19 Epidemic and Mitigate its Consequences for Citizens and the Economy	28th April 2020	Limited at 2 billion euros of state guarantees	• Easier access to bank loans for companies with state ensured guarantees • Raise of income per capita for municipalities
Act Determining the Intervention Measures to Mitigate and Remedy the Consequences of the COVID-19 Epidemic	29th May 2020	The voucher's value was 345 million	• Funding of half workday (20hours per week) • Every adult citizen received 200 euro, and every underage citizen received a 50 euro tourist voucher to spend in Slovenia
Act Determining Intervention Measures to Prepare for the Second Wave of COVID-19	9th July 2020		• Extension of aid for those waiting on work (and are unable to because of restrictions) • Compensation for the duration of the quarantine order • Implementation of mobile app for easier tracking of contacts of people with confirmed COVID-19
Act Determining Temporary Measures to Mitigate and Remedy the Consequences of COVID-19	15th October 2020		• 100% payment guarantee for those with quarantine orders or 250 euros for self-employed in case of a quarantine order • All people with health care insurance are entitled to a free vaccine against flu.
Act Determining the Intervention Measures to Mitigate the Consequences of the Second Wave of COVID-19 Epidemic	25th November 2020	1 billion	• Coverage of fixed expenses for companies • Bonus for working in high-risk areas • Extension of aid for those waiting on work (and are unable to because of restrictions) • Pupils who receive subsidized meals are entitled to them during the week also while school is online

Act Determining Intervention Measures to Assist in Mitigating the Consequences of the Second Wave of COVID-19 Epidemic	29ᵗʰ December 2020	550 million	• Students, low-income workers, retirees and religious workers receive additional benefit • For every born child since the pandemic started, 500 euros grant is confirmed • Big families (with three or more children) receive additional support
Act on Additional Measures for Mitigation of Consequences COVID-19	3ʳᵈ February 2021	320 million	• Extension of aid for those waiting on work (and are unable to because of restrictions) • One time aid for high school students and Slovenian students studying abroad • The act covers expenses of covid testing for Slovenian athletes • Penalties for queue jumping for vaccines

Sources: Act Determining the Intervention Measures to Contain the COVID-19 Epidemic and Mitigate its Consequences for Citizens and the Economy, 2020; Act Amending the Act Determining the Intervention Measures to Contain the COVID-19 Epidemic and Mitigate its Consequences for Citizens and the Economy, 2020; Act Determining the Intervention Measures to Mitigate and Remedy the Consequences of the COVID-19 Epidemic, 2020; Act Determining Intervention Measures to Prepare for the Second Wave of COVID-19, 2020; Act Determining Temporary Measures to Mitigate and Remedy the Consequences of COVID-19, 2020; Act Determining the Intervention Measures to Mitigate the Consequences of the Second Wave of COVID-19 Epidemic, 2020; Act Determining Intervention Measures to Assist in Mitigating the Consequences of the Second Wave of COVID-19 Epidemic, 2020; Act on Additional Measures for Mitigation of Consequences COVID-19, 2021;

The table shows the eight main Acts that were passed and implemented for a fast and adequate response that enabled Slovenia to mitigate the consequences of the COVID-19 pandemic. These were the main steps towards the socio-economic recovery of the country as a whole and tried to help the most affected areas the most. The first act was the most crucial because it offered first help in very uncertain times in spring 2020 when nobody knew exactly what we were dealing with and the disease was not researched enough due to its novelty. Additionally, there were none of the vaccines or medications available that were developed specifically for COVID-19, whereas now, in 2021 situation is much better because healthcare professionals have a lot more knowledge about the disease and its course, as well vaccines and better knowledge on which medications are helpful.

4. CONCLUSION

Countries had different approaches to tackling the issue of COVID-19. Many countries were caught unprepared, and due to lack of exclusive competencies by the European Union in the area of (public) health, each country tailored its approach to its abilities and tried to lessen the burden on healthcare systems while also saving the economy and other aspects of life which have been affected by the COVID-19 pandemic and restrictions.

Slovenia took the approach by which it tried to help the most affected as soon as possible and then added other also affected areas in the pandemic in later acts with which it tried to alleviate the consequences of COVID-19.

The critical phase will be when restrictions ease, and everyday life will slowly start returning to the way it was before the COVID-19 pandemic. Nevertheless, we should not anticipate this transition as something simple and easy, but rather something that will need some preparation in order to proceed successfully and actually retain the jobs that countries so desperately tried to retain during the pandemic and all the restrictions.

European Union an enormous step forward with joined vaccines orders and purchases to help all the countries get a supply of vaccines. This would not have been an issue for bigger countries with powerful economies that could afford more, but it could have been the point where smaller or economically weaker countries were left out and prolonged their recovery time even more.

Although it brought many sorrowful moments from a positive point of view, we can look at the current crisis. European Union was before the COVID-19 pandemic became everyday reality strong, but the pandemic exposed all of its weaknesses, even if they were not considered a weakness. This gives an incredible opportunity to all of the Member States and the European Union as a whole to improve the most vulnerable areas and make the Member States and European Union even stronger than it was ever before.

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ANALYSIS OF INTEGRATION POLICIES FOR VICTIMS OF TRAFFICKING, THE NECESSITY OF THEIR MULTIDISCIPLINARY EVALUATION

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Abstract: *Extensive developments and changes in the economic, political, social, cultural and scientific fields have undoubtedly brought problems and disturbing phenomena in many parts of the world, such as the trafficking and exploitation of human beings. Every year many women, girls and children are illegally transported across the borders of their countries of origin, sold or bought, bringing to mind all the primitive ways of human slavery, seen in stark contrast to the galloping development that society has taken today, as well as aspirations for a worldwide civilization and citizenship. Regarding Albania, the beginning of trafficking in human beings dates in 1995 (Annual Analysis of 2003 of the State Social Service, Tirana), where the country found itself in a situation of instability of political, economic, social and cultural changes, as well as in a transitional geographical position to was used by traffickers, mostly Albanians, as an "open door" for the recruitment, transportation and sale of women, girls and children from Moldova, Russia, Romania, Turkey, Albania, China, etc. Albania is identified as a source and transit country for trafficked women and children. In addition, many NGOs and international organizations report significant increase cases in the trafficking of human beings. In 1999, official sources reported that young women and girls had been lured or abducted from refugee camps in Albania during the Kosovo crisis and then sold for prostitution in Italy and the United Kingdom. Reports from Italy, Germany, Belgium and the UK suggest that Albanian women and girls, which are trafficked for prostitution mostly are from rural areas (Organization for Security and Co-operation in Europe Review Conference, September 1999). It is almost common to talk about the phenomenon of trafficking in human beings, about the motivating and attractive factors, the consequences associated with this phenomenon of Albanian society. Given the extent of the trafficking phenomenon during the last 30 years transition period in Albania, the Government has made different legislative and institutional efforts, through a strategic approach to combat and mitigate this phenomenon. However, the elements of identification, protection, reintegration and long-term rehabilitation for victims of trafficking remain issues of concern and still not properly addressed, in the context of the institutional fight against trafficking in persons, which should have as its primary goal the protection of the human rights for victims of trafficking and not their further violation or re-victimization (Annual Report of the European Commission, 2007).*

Keywords: *Trafficking of human beings, Integration, Policies, Evaluation, Albania.*

1. INTERNATIONAL INSTRUMENTS AGAINST TRAFFICKING IN HUMAN BEINGS. DEFINITION OF "TRAFFICKING IN PERSONS"

Trafficking in persons is a crime of an international nature, which requires a coordinated response to anti-trafficking measures at the national and international levels.

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1.1. Additional Protocol (Palermo Protocol) to the UN Convention against Transnational Organized Crime 2000, "Preventing, Suppress and Punishing Trafficking in Persons, in Particularly Women and Children"[2].

The Palermo Protocol, for the first time, defines the crime of trafficking in persons, which does not have as its sole purpose the definition of the scope of the Protocol and the Convention against Organized Crime, related to trafficking and activities that related to it but also to serve as a model on which domestic legislation should be drafted, in terms of criminalizing activities related to trafficking, criminal proceedings and measures to protect victims of trafficking.

"Trafficking in persons" means the recruitment, transportation, transfer, detention or extradition of persons using threats or the use of force or other forms of coercion, kidnapping, fraud, forgery or abuse of power or a vulnerable position or by giving or receiving payments or benefits to obtain the consent of one person, having control over another person, for the purpose of exploitation.

The measures set out in the Palermo Protocol focus on three main areas: preventing and combating trafficking; protection and support for victims of trafficking; as well as the promotion of cooperation between member states (Article 2).

Regarding the protection of the rights of victims of trafficking in Protocol:
- Member states should protect the privacy and identity of victims of trafficking, including the confidentiality of procedures relating to trafficking in persons[3];
- States must provide them with adequate housing; counseling and information, especially on their rights, in a language that trafficked persons can understand; medical, psychological and material assistance, as well as employment, education and training opportunities[4];

1.2. OSCE Action Plan On Combating Trafficking In Human Beings (OSCE Permanent Council Decision No. 557)

Albania is a member of OSCE (Organization for Security and Co-operation in Europe) and therefore, the recommendations of this Plan should be taken into consideration by the responsible structures (at the political level and law enforcement structures) of the fight against trafficking in human beings. The plan focuses on the protection of human rights for victims of trafficking and in this context recommends to the member states among others:
- Non-punishment of trafficked persons for trafficking-related offenses, such as possession of forged passports or working without authorization even if they have agreed to keep these documents or to perform such work;
- Establishment of the National Referral Mechanism through the establishment of a cooperation framework, which will guarantee the protection and promotion of the rights for victims of trafficking in partnership with civil society and other actors involved in this process (such as anti-trafficking units and regional police, immigration and border control staff, health institutions, social services, non-governmental organizations providing services in this field), etc.

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[2]   Ratified by Law no. 8920, dated 11/07/2002, Official Journal 41, July 2002.
[3]   Article 6, paragraph 1, of the Protocol.
[4]   Article 6, paragraph 3, of the Protocol.

Given to political instruments and international strategies, which strongly influence and intervene, not only in mitigating trafficking but also in protecting the rights and lives of victims of trafficking around the world, in Albania legislation are included policies and instruments, obligations that arise as a member of political and military bodies in this field.

2. ALBANIAN LEGISLATION AGAINST TRAFFICKING IN HUMAN BEINGS

2.1. Constitution of the Republic of Albania

In the Constitution of Albania, the right to be protected from trafficking is not defined, however, the constitutional basis of measures against trafficking in human beings is found in Part Two, Chapter Two of the Constitution "Personal rights and freedoms". On the other hand, Article 3 of the Constitution provides that "... the dignity, rights and freedoms of the person, ... are the basis of this country, which has the obligation to respect and protect them".

Regarding the link between trafficking and exploitation for work and the performance of forced services, the Constitution provides for the human rights not to perform forced labor in Article 26, which is in accordance with Article 4 of the European Convention on Human Rights and Freedoms. The fundamental human being states that "No one shall be required to perform forced labor except in the case of the execution of a judgment, the performance of military service, a service arising from a state of war, a state of an emergency or a natural disaster that threatens the life or health of people ". An important provision of the Albanian Constitution is that of the supremacy of International Legislation (international agreements ratified by law) over the law of the country in case of non-compliance, which means the direct application of international legislation (anti-trafficking legislation) in case of domestic legislation.

2.2. Criminal Code

During the 90s there was no criminal offense of trafficking in human beings. This criminal offense was established in the Criminal Code in 2001 (Law no. 8733, dated 24/01/2001), which provides three figures of the criminal offense of trafficking: Trafficking in human beings, Article 110, paragraph a; Trafficking in women for pros title, article 114, paragraph b; Child trafficking, Article 128, paragraph b.

2.3. Inter-institutional cooperation in the fight against trafficking in human beings

- National Strategy to Combat Trafficking in Human Beings (VKM Nr. 1083, dated 23/07/2008), National Strategy for Combating Trafficking in Children and Protection of Children Victims of Trafficking (VKM Nr. 1083, dated 23/07/2008).

Since 2005, the Government has had a strategic approach to prevent and combat trafficking in human beings, by coordinating the work of central administration institutions, independent institutions, civil society and international organizations in the fight against trafficking in human beings, provided for in the above strategies, together with the respective action plans.

Regarding the implementation of the main objectives for the National Anti-Trafficking Coordinator Office (structure responsible for coordinating and monitoring anti-trafficking efforts) it could be mentioned:

- Implementation of the National Referral Mechanism, which has set up the Responsible Authority but the structures that support it are not functional. The main function of this Authority is to coordinate the referral process for initial assistance, protection and rehabilitation for potential victims of trafficking. The main link of identification and referral support for people at risk are the Regional Offices of the State Social Service in the Municipality or Commune but the lack of specialists in these offices (social worker, psychologist) or the non-existence of a database for people at risk in village or town, renders the Responsible Authority inefficient, and consequently the work of the entire National Referral Mechanism.
- Identification and referral of alleged trafficked persons -There is uncertainty regarding the standard procedures for identification / interviewing and referral of suspected victims due to the lack of clear indicators and guidelines for police officers. The only Guide is in the Appendix to the National Referral Mechanism, which provides for a limited list of "direct indicators" in identifying each of the elements of trafficking (exploitation, actions and ways of exploitation) and does not provide for other indicators (indirectly) to assist police officers in identifying alleged trafficked persons as soon as possible.

2.4. Context today

Women and girls of Albania are trafficked in Greece, Italy, Macedonia, and Kosovo as well as EU countries (also as the final destination region). Recruitment in most cases is carried out through fraud, by persons familiar with the victim, who make fake job offers or marriage vows. Children continue to be trafficked, mainly in Greece, by their parents or family members.

A worrying increase in numbers has been observed in the internal trafficking of women and children, mainly for prostitution and labor exploitation, especially in the new informal areas of urban centers. The full extent of the problem remains to be assessed and mechanisms for identifying, referring and reporting such cases are beginning to be set up. The same applies to labor trafficking from Albania, to Albania and within Albania.

3. PROTECTION AND ASSISTANCE FOR VICTIMS OF TRAFFICKING

Identifying a victim of trafficking has been assessed as the most important phase of the protection and assistance process. This process paves the way for a victim to be rescued from the clutches of trafficking and makes possibilities to be supported by social institutions.

Albania offers many opportunities for the victims of trafficking to receive the necessary assistance and a second chance to start a normal life. All identified cases have received the necessary protection and assistance. Residential centers for victims of trafficking have offered a fundamental contribution to this, thanks to the National Referral Mechanism[5]. A very important element of the fight against and prevention of trafficking is the encouragement for victims of trafficking to testify in criminal proceedings, but in fulfilling this goal institutions must ensure the protection of the victim during the trial and beyond. Victim assistance and protection are not conditional for the victim to cooperate with the judicial institutions.

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[5]   The National Referral Mechanism for Victims of Trafficking has been set up on the basis of the cooperation "On the Establishment of a National Reference Mechanism for Improved Identification and Assistance for Victims of Trafficking" between the Ministry of Labor, Social Affairs and Equal Opportunities, Center for National Reception for Victims of Trafficking, State Police Directorate, Ministry of Foreign Affairs, Non-Profit Organization "Vatra", Non-Profit Organization "Tjetër Vizion" and Organization for International Organization for Migration (IOM).

3.1. Completion of the legal framework for the protection and assistance for victims of trafficking

The adoption of the Law "On Assistance and Services Social", which is focused in the following directions. First of all, funding from the state budget for non-public reception centers. Pursuant to Article 4 of the Law no. 10252, dated 11.03.2010 "On some changes in Law 9355, as well as pursuant to Law no. 10355, dated 02.12.2010" On the Budget of 2011 ", Instruction of the Ministry of Finance no. 4, dated 27.01.2011 For the Implementation of the State Budget for 2011, the Ministry of Labor transfers funds (food) to the Program "Social Protection" for beneficiaries Victims of Trafficking, who receive social services to non-public service providers: "Tjetër Vizion" – Elbasan, "Different and Equal" Organization – Tirana, "Vatra" Organization – Vlora and Gjirokastra Community Center for 6 months.

This change in the law regarding the temporary funding of non-governmental organizations is insufficient, assessing the needs and requirements faced today by organizations assisting victims of trafficking because, in addition to food, the victims also include many other services such as medical, psychological, legal, educational assistance, which as it is known today have a high financial cost. In addition, what it was mentioned, the law does not clearly define the criteria, on the basis of which the distribution of the financial amount should be done and how the sustainability of these organizations will be ensured. The most appropriate way to provide certain financial amounts should be in proportion to the number of victims of trafficking that assists each organization, setting a daily quota for each assisted, a practice which is applied in the public center e.g. "National Reception Center for Victims of Trafficking".

3.2. The Law "On the Protection of the Rights of the Child" was adopted, no. 10347, 04.11.2010.

This law aims to create appropriate conditions for the design and implementation of policies that affect the rights of children, bringing them in line with international standards. Also, for the first time was established an effective system of monitoring and reporting on the realization of children's rights at the central and local level and institutional mechanisms are provided, which will be responsible for the implementation of this law and guarantee for the protection of children's rights, in general.

3.3. National Action Plan 2011-2013 in the fight against trafficking in human beings

Among the many goals and objectives included in this action plan, it mentions concrete aspects about the phenomenon of trafficking, consequently in its prevention such as:
- Enriching the school curriculum with topics on trafficking in human beings (including issues of child protection, children's rights, gender equality and domestic violence, as well as sex education).
- Organizing the educational training of the staff to address these topics.
- Inclusion of anti-trafficking awareness training in the programs of orphanages.
- Inclusion of trafficking awareness training in life skills / vocational training programs for dropouts.
- Ensure that children and their parents are made aware of community trafficking issues.

Specific objectives are the following:
- Establish/strengthen coordination and referral mechanisms for the identification of persons at risk and to provide preventive and supportive interventions as part of the "National Referral Mechanism".
- Creation of case management systems at the municipality/commune level to identify and assist persons in need and those trafficked, as well as to identify groups/communities in need, including integrated units for social assistance and child protection; case management system and local interdisciplinary referral groups and systems, where all relevant actors participate (contact points in schools/child advocates, community organizations/community counseling groups, police, labor inspectors, etc.).

4. CONCLUSION AND RECOMMENDATIONS

It can be concluded that the National Reception Center for Victims of Trafficking and other non-state centers of the International Organization for Migration (IOM) (represented by) the organization "Different and Equal" -Tirana; "Vatra" -Vlora, "Tjetër Vizion" – Elbasan; parts of the National Referral Mechanism are geographically distributed, making it possible to cover the needs in different regions of the country (Tirana, Elbasan, Vlora, Gjirokastra) with the exception of the northern part of Albania, the area where exploited girls, women and children are detained or deported at border crossing points in Kosovo, Montenegro, Serbia, etc.

This is an anomaly in the reintegration process for victims treated at border crossings in this area because:
- Without having a nearby reintegration center, victims prefer to return to their families, rather than travel to unknown places or destinations, which based on the experiences experienced have turned into a nightmare.
- Unless the victims refuse to receive social services at residential centers, there are also cases when women, girls and children trafficked are not offered the opportunity to assist at these institutions due to the lack of specialists in the field (social worker, psychologist), who must be present during the process of interviewing victims of trafficking at the time of their deportation or detention at police stations (referring to the National Referral Mechanism, Responsible Authority at the ONAC).

Recommendations for further improvement of the system are the following.
1. Improvement of legal procedures for victims of trafficking:
   - set and respect standards (environmental standards; quality of life standards; standards of results, professionalism and commitment).
   - supervised the quality of services (licensing, accreditation and certification, periodic inspection and measurement of indicators, the People's Advocate).
   - improving working conditions and processes (improving motivation, providing training, developing a Code of Conduct, setting up the management system and form and ensuring the involvement of users and service providers).
2. The state is needed to expand and increase the monitoring capacity of the well-being of victims of trafficking before the end of the rehabilitation and reintegration process, as they are very limited and extended in a short period of time (6 months, taking into account the risk that they carry for their lives and the lives of their families from tutors and users), which would positively affect the success of the rehabilitation process, as well as the once and for all detachment of VT from the phenomenon of trafficking. Not only that, but the

opportunities for involvement in the process of their "recycling" or in the change of status from VT to recruiters of victims of trafficking would be less, or would have been zero.

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THE EVOLUTION OF THE DESERTIFICATION PHENOMENON IN ROMANIA IN CONNECTION WITH CLIMATE CHANGE

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Abstract: *The purpose of this study is to ensure a model using GIS technologies to reduce the negative consequences of the drought and to propose redevelopment of irrigation and growing plant species adapted to the climatic conditions in the study area. Such model is presented in form of three maps: hypsometric, relief and CLC. The maps can provide important information for the investigated area, and it is a useful tool for analysis of the possibilities of cultivating agricultural lands affected by the desertification – drought. Data from the National Institute of Statistics for the period 2015-2019 were also used.*

Keywords: *Desertification, Drought, Land use.*

1. INTRODUCTION

Desertification is the phenomenon that affects land in arid, semi-arid and dry areas. It is mainly caused by climate change and human activities. Desertification does not refer to the expansion of the existing desert. This is because dry ecosystems, which cover more than a third of the globe's surface, are extremely vulnerable to overexploitation and inappropriate land use. Poverty, political instability, deforestation, overcrowding and inadequate irrigation practices can undermine land productivity. [7]

The desertification, according to American Heritage Dictionary, represents:
> *"The transformation of arable or habitable land to desert, as by a change in climate or destructive land use". And drought "A long period of abnormally low rainfall, especially one that adversely affects growing or living conditions".* [8]

World Day to Combat Desertification and Drought is marked annually on June 17th.

This day has been marked since June 17, 1995, to draw attention to the need to stop or slow down the desertification process and to mitigate the effects of drought, as established by the UN General Assembly by Resolution 49/115 of 1994.

At the same time, this day is an opportunity to promote the implementation of the United Nations Convention to Combat Desertification (UNCCD), the only legally binding international agreement linking the environment and development to sustainable land management.

This Convention includes 195 states whose collective effort is to improve the situation of the exposed population to areas affected by drought, to maintain and repair soil productivity and to mitigate the consequences of drought.

On the Day of Desertification and Drought on June 17, 2020, the focus was on changing the public's attitude towards the leading driver of desertification and land degradation: humanity's re-

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lentless production and consumption. According to UN Convention to Combat Desertification, globally, one fifth of earth's land area – more than 2 billion hectares – is degraded, including more than half of all agricultural land.

> "*If we keep producing and consuming as usual, we will eat into the planet's capacity to sustain life until there is nothing left but scraps. We all need to make better choices about what we eat and what we wear to help protect and restore the land.*" Ibrahim Thiaw, Executive Secretary of the UN Convention to Combat Desertification [7]

The effectiveness and efficiency of preventing and combating desertification activity of the drought and land degradation phenomena depends largely on the existence of a legislative and institutional framework to meet the needs of those involved in this activity.

The main normative acts that directly or indirectly address these aspects are:
- Law no. 24/1994 on the ratification of the United Nations Framework Convention on Climate Change, signed at Rio de Janeiro on 5 June 1992;
- Law 58/1994 for the ratification of the Convention on Biological Diversity, signed at Rio de Janeiro on 5 June 1992;
- Law no. 111/1998 on Romania's accession to the United Nations Convention to combat desertification in countries severely affected by drought and/or desertification, especially in Africa, adopted in Paris on June 17, 1994.

The convention objective is to achieve sustainable development in areas affected by drought and desertification through cooperation and combined actions at international and regional level, and in accordance with the provisions of Agenda 21;
- Law no. 3/2001 for the ratification of the Kyoto Protocol to the Framework Convention of the United Nations Convention on Climate Change, adopted on December 11, 1997;

2.   MATERIAL AND METHODS

The materials used in this study are the topographical map of Romania at 1: 25000 scales, processed through scanning and geo-referenced into the stereographic projection system 1970 and digital elevation model (DEM) with a resolution of 30 m. The DEM was downloaded free from (www:// geo-spatial.org) and all used vectors were downloaded free from (http://www.opengis.org). [3] [5]

The first map is the hypsometric map that shows the distribution of relief in the studied area (Figure 1). The map was created from DEM with the ArcGIS 10.5 Program.

Study Area, Dolj County is the most arid area in the country, being considered the only European desert, with a rare fauna and flora and frequent sandstorms [1].

Dolj County is located in the south-southwest area of Romania, stretches between 44°00'and 44°30' north latitude and 22°00' and 23°00' east longitude, being crossed from north to south by the river Jiu, whose name it bears – Doljiu, meaning Jiul de Jos (in Romanian). The total area of Dolj is 7.717 km² and represents 3.1% of the country's surface and is bordered by Mehedinti counties in West, Gorj and Vâlcea to the North, Olt in East and the Danube River to the South, with a length of about 150 km. This distance is part of Romania's natural border with Bulgaria. The county's relief includes the Danube meadow area, the plain and the hill area, benefiting from a mild climate with an annual average of 11.5°C.
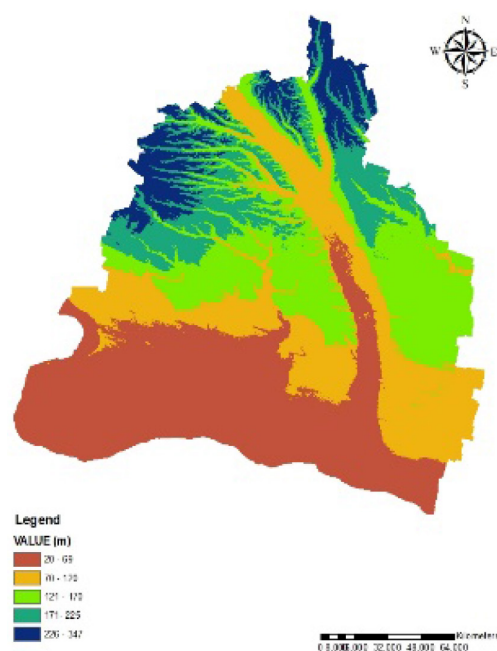
Figure 1. The hypsometric map of the study area

In Dolj County the altitude is 30-350 m above sea level and the variation is from south to north. The relief appears as flat steps that rise in the pyramidal shape from the Danube meadow to the Amaradia Hills. In the south of the county, there are the largest sandy surfaces in Romania, along with many lakes formed by the Danube overflows or by rain accumulations. (Figure 2)
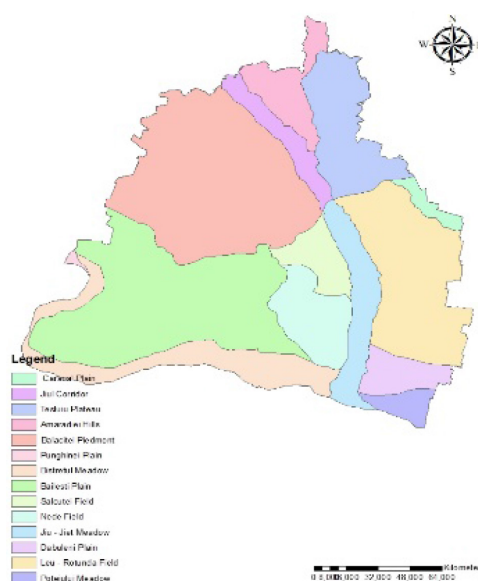
Figure 2. The relief map of study area

On the lower terrace, in the Danube Meadow, the Calafat-Rast and Bechet-Dăbuleni sector, affected by sand accumulations, there is a mosaic of soils with slight domination of sandy chernozems. The class of undeveloped soils, present in the Danube and Jiu meadows, is grouped in alluvial soils, which in many parts have evolved into alluvial chernozems. In the Danube Meadow, the presence of sandy alluvium and wind-blown sands determined the predominance of sandy soils in different degrees of evolution, as well as unsolved sands. Five percent of Dolj's soil is desertified.

The CORINE Program was established by the European Commission to create a harmonized Geographical Information System on the state of the environment in the European Community (Figure 3). [2]

CORINE Land Cover 2000 (CLC) is a source of spatial data that was produced by photo – interpretation, the images provided by Landsat ETM +. These data are widely used in monitoring and evolving the geographical space both urban and rural. [4]

In figure 3 is represented CLC – Dolj, and from the analysis most of the studied territory represents unirrigated land areas.
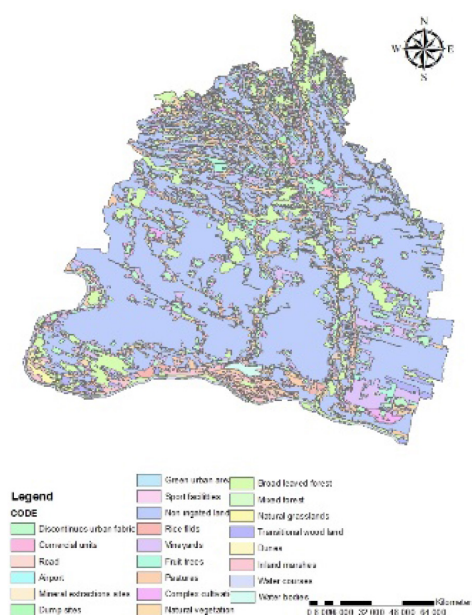
Figure 3. The CLC map of study area

Drought is mainly a meteorological problem, which depends on the level of precipitation, but its intensity depends to a considerable extent on the soil characteristics of the affected territory. Thus, the effects of drought can be intensified with the loss of part of the water from precipitation on soils with a reduced capacity of water retention (sandy, skeletal or low-thickness soil profile soils), with low permeability or compacted, or located on sloping terrain. The effect of drought can also be reduced by the presence of shallow water, supplementing it with the amount of water accessible to plants. Drought can be operationally defined as the state of water deficit in relation to the needs of the population and of the branches of the national economy, which create discomfort and disruption of socio-economic activities, as well as negative impact on other environmental factors. [9]

In Dolj County the total arranged surface is 314931 ha; for the landscaped agricultural surface there is a decrease from 299581 ha in 2015 to 299572 in 2019. At the irrigated area there is a constant increase starting with 2019. [6]

Table 2 shows the production per hectare for the period 2015 – 2019 of different agricultural crops. The table specifies the most important agricultural crops in this south Romania. It is noted that during this period there is an increase in production in the private sector and in individual agriculture holding.

Table 1. The arranged irrigation works area and irrigated agricultural area

Land improvements	Land use	Macro-regions, development regions and counties	Year				
			2015	2016	2017	2018	2019
			UM: Ha				
			Ha	Ha	Ha	Ha	Ha
Irrigation arrangements – total	Total landscaped area	Dolj	314931	314931	314931	314931	314931
-	Landscaped agricultural	Dolj	299581	299579	299577	299574	299572
-	Arable land	Dolj	280780	280778	280776	280773	280771
Agricultural area effectively irrigated with at least one watering	Landscaped agricultural area	Dolj	7475	5256	13763	18518	17679
-	Arable land	Dolj	7475	5256	13763	18518	17679

Source: Romania's Statistical Yearbook, 2015, 2016, 2017, 2018, 2019

Table 2. Cultivated area with the main crops, by ownership forms

The main agricultural crops	Ownership forms	Counties	Year				
			2015	2016	2017	2018	2019
			Kg/ ha				
			Kg	Kg	Kg	Kg	Kg
Total grey	Total	Dolj	3319	3357	4510	4521	4491
-	Private forms	Dolj	3310	3355	4510	4525	4492
-	of which: Individual agricultural holdings	Dolj	3132	3122	4531	4539	4359
Corn grain	Total	Dolj	3471	4025	6856	7779	6332
-	Private forms	Dolj	3467	4027	6862	7794	6333
-	of which: Individual agricultural holdings	Dolj	2977	3681	7197	7220	5683
Sunflowers	Total	Dolj	1659	1697	3027	2765	2946
-	Private forms	Dolj	1661	1693	3036	2773	2947
-	of which: Individual agricultural holdings	Dolj	1558	1435	3757	2902	3363
Rapeseeds	Total	Dolj	2336	2605	2724	2148	1856
-	Private forms	Dolj	2338	2604	2721	2178	1845
-	of which: Individual agricultural holdings	Dolj	1783	2555	2812	2155	1390
Watermelons and yellows melons	Total	Dolj	22662	27538	28786	34521	30835
-	Private forms	Dolj	22662	27538	28785	34521	30839
-	of which: Individual agricultural holdings	Dolj	22556	27536	28852	34609	30834

Source: Romania's Statistical Yearbook, 2015, 2016, 2017, 2018, 2019 [6]

3.   CONCLUSION

Based on the data and facts presented in the paper, the following conclusions and recommendations can be drawn:

The major problem in Dolj County is land degradation, subject of natural and anthropogenic factors. The largest unproductive areas are in the south Dabuleni, Calafat and Bailesti. The solution would be to afforest them with acacia species;

A significant increase in non-agricultural areas as a result of the removal of some lands from the agricultural circuit, was registered in Dăbuleni, a locality with specificity in watermelons cultivation;

The agricultural lands located in the southern part of Dolj County manifest a strong water and drought deficit.

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ECONOMIC STUDY OF GREEN ROOFS AS A SUSTAINABLE CONSTRUCTION SYSTEM

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Abstract: *Green roofs respond to a need of today's society to orient its development towards sustainability. Architecture and urban planning, as builders of the modern city, play a crucial role in the search for a balance between social, environmental and economic growth. Green roofs imply recognized benefits in all three fields, but a study of the economic viability of these solutions is necessary, especially in the field of rehabilitation with tighter budgets. Through a cost-benefit analysis throughout its useful life, it is intended to avoid that the initial construction cost of a green roof, or any sustainable construction, could discourage users, helping them to understand its global dimension from an economic point of view.*

Keywords: *Green roof, Sustainability, Energy saving, Construction cost.*

1. INTRODUCTION

Sustainability is currently presented as the engine of the changes that must take place in our society. It is understood as such the balance between three main axes that define and determine the development of the contemporary world: social, environmental and economic (Think. org Inc.). The wide disparities that have occurred in recent decades in the social field, at the mercy of an irregular economic development in the different strata of the population, have led to an unsustainable current situation. To this we must add that, in the constant clash between the social and the economic, the environmental axis has become rather their battlefield, completely forgetting about its necessary care. The balance has been diminished, the three axes do not have the same importance or the same visibility.

Organizations such as the United Nations determined in 2015 a series of goals to be achieved, encompassed in the 17 Sustainable Development Goals (SDGs) (United Nations). This seeks to achieve greater equality and ensure stable and balanced prosperity between society, the environment and the economy. Considering that more than half of the world's population lives in cities (according to Lesjak et al (2020) 55% of the population, a value that rises to 74% when considering only Europe), and this number is expected to keep increasing in the next decade, it must be taken into account that cities have become a nucleus of inequality and social, environmental and economic pathology, although, also for this reason, they are presented as neuralgic spaces in the sustainable career. Architecture, urban planning and construction, as designers of the urban

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context, must join in this necessary search for growth that does not harm communities socially and economically, but especially the environment in which they are located. In the SDGs, cities are dedicated to a particular objective (Goal 11: Sustainable cities and communities) that seeks to achieve inclusive, safe, resilient and sustainable settlements. Architecture, in its new path of green and sustainable architecture, is in charge of materializing this new space of balance.

2. SUSTAINABLE CONSTRUCTION

Green roofs, as one of the booming tools of sustainable architecture, are capable of achieving a series of benefits included in the social, environmental and economic axes. From the social point of view, the renaturation of cities will improve, according to the degree of development of an inclusive network of green spaces with equitable access, the feeling of collectivity (Huang et al, 2015), urban and natural education (Walters & Midden, 2018) and people's health (Peen et al, 2010) (Pastor & Villacañas, 2014).

In the environmental field, these vegetable coating systems allow to improve air quality by capturing dust particles and pollutants (Penonić, 2016); reduce and improve the quality of rain-water runoff, minimizing flood risks (Berndtsson, 2010); reduce the urban heat island effect (UHI) by humidifying and reducing the temperature of the air near the roof (Mentens, 2006) (Correa, 2001); increase acoustic absorption by reducing environmental noise (Meulen, 2019); and increase biodiversity by rebuilding natural spaces eliminated during urbanization (Walters & Midden, 2018).

From an economic point of view, the use of green roofs presents a series of benefits throughout its useful life, such as increasing the value of the building and the surroundings (Jim & Chen, 2006), but also its benefits should be considered due to the reduction of energy consumption for air conditioning (cooling and heating) (Mohammadi & Sobouti, 2016). Its improvement in the insulation of the thermal envelope (facades and roofs) of the building makes it possible to reduce internal temperature variations. The energy saving will be more remarkable if the green roof is installed in a building with poor thermal characteristics of the envelope (rehabilitation) than if it is installed in a new building, whose envelope must comply with current thermal regulations, already very restrictive. If the vegetal coating is installed on a roof with a thermal transmittance value (U) of 0.51 W/m²K (knowing that the U is the inverse of the resistance that an element opposes to the passage of heat, this value indicates good insulation and thermal resistance) the reduction in the annual consumption of cooling energy was only 0.6%, while in a roof without any previous insulation, this same vegetal covering could produce an annual cooling energy saving of 10.5% (Wong et al, 2003).

3. CONSTRUCTION COST ANALYSIS

Therefore, it is necessary to determine how much the construction cost of the green roofs will be, so that, combined with an analysis of costs and benefits throughout the useful life of a building (between 50 and 100 years), the viability of the construction project of this sustainable system can be determined with greater perspective. It should be noted that to maximize the energy benefits of this solution, using it in rehabilitation of buildings with little or no insulation in the envelope, the cost of construction must be considered even more carefully, since, especially in small or medium-sized renovation projects, the execution budgets are usually highly conditioned.

The study of the cost of construction of the roofs is carried out based on their multilayer structure, since the construction section is made up of different elements with specific functions, the cost of which can be studied separately. The combination of each of the layers responds to the good execution and the needs of each type of roof, also defining a specific construction cost. For the study conducted, nine models have been taken: M1 with a gravel finish (traditional roof existing in buildings susceptible to rehabilitation) and M2-M9 different types of green roofs. The multilayer composition will allow us to study the variation in construction cost not only between a green roof and a traditional roof with a gravel finish, but also between vegetable roofs, assessing the influence of some of the layers depending on the choice of materials or the thickness.

The standard construction section of a green roof is made up of the following layers over the structure, considering an inverted system in which the thermal insulation is placed over the waterproof sheet: slope formation, regulation mortar, waterproof sheet, anti-roots sheet, thermal insulator, drainage layer, filter sheet, substrate and vegetation. The choice of the inverted system is due to an increase in the durability of the waterproof sheet since being located under the thermal insulator it is subjected to lower thermal stress (Liu, 2003), thus also reducing the costs associated with repairs and replacements throughout the life of the roof (Meulen, 2019).

The M2-M9 models, which respond to green roofs, are determined with all the layers mentioned previously, studying the difference in the use of different materials in the drainage layer and the different substrate thicknesses, and the consequent size of vegetation they can support. According to the thickness of the substrate, the green roofs are divided into extensive, with substrate thicknesses between 8 and 15 cm, although in hot climates and with little rainfall, as is the case of the Mediterranean climate, it is recommended that the minimum thickness be 10 cm; semi-intensive, with thicknesses between 15 and 30 cm (Ajuntament de Barcelona, 2015); and intensive, with a substrate between 30 and 100 cm, although thicknesses of 60 cm are usually used (Cruz, 2017). The vegetation that can be used in intensive roofs is larger, considering the use of shrub, even trees and palms. The models studied are the following:

M1. Gravel finish roof with 8 cm thick insulation.

M2. Extensive green roof (10 cm thick substrate) with drainage layer of nodular panels and 4.5 cm thick insulation.

M3. Thin semi-intensive green roof (20 cm thick substrate) with drainage layer of nodular panels and 3 cm thick insulation.

M4. Depth semi-intensive green roof (30 cm thick substrate) with drainage layer of nodular panels and 3 cm thick insulation.

M5. Intensive green roof (60 cm thick substrate) with drainage layer of nodular panels and 3 cm thick insulation.

M6. Extensive green roof (10 cm thick substrate) with drainage layer of granular materials and 5 cm thick insulation.

M7. Thin semi-intensive green roof (20 cm thick substrate) with drainage layer of granular materials and 3 cm thick insulation.

M8. Depth semi-intensive green roof (30 cm thick substrate) with drainage layer of granular materials and 3 cm thick insulation.

M9. Intensive green roof (60 cm thick substrate) with drainage layer of granular materials and 3 cm thick insulation.

Once the different layers have been chosen, a detailed study of the construction cost of each layer has been carried out, including labor and materials. Responding to its multilayer operation, the overall cost of the roof depends on the construction solution used. The detailed costs of two roofs with different materials as drainage layer are detailed below (Figure 1, Figure 2) and the total costs of the nine models studied (Figure 3).
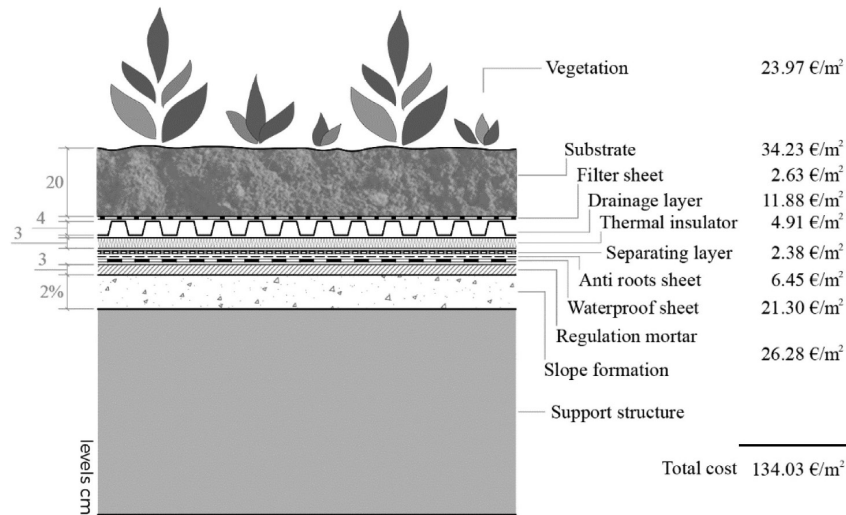
Figure 1. Indicative detailed cost M3
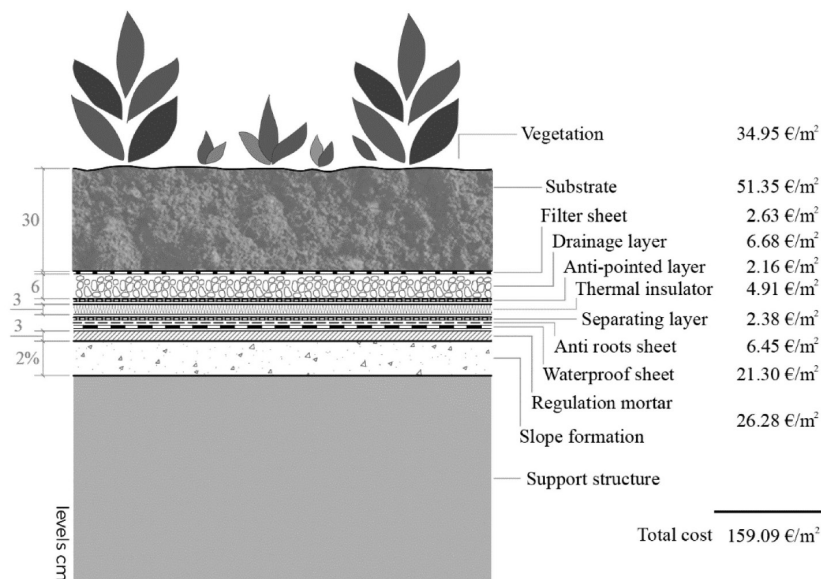
Figure 2. Indicative detailed cost M8
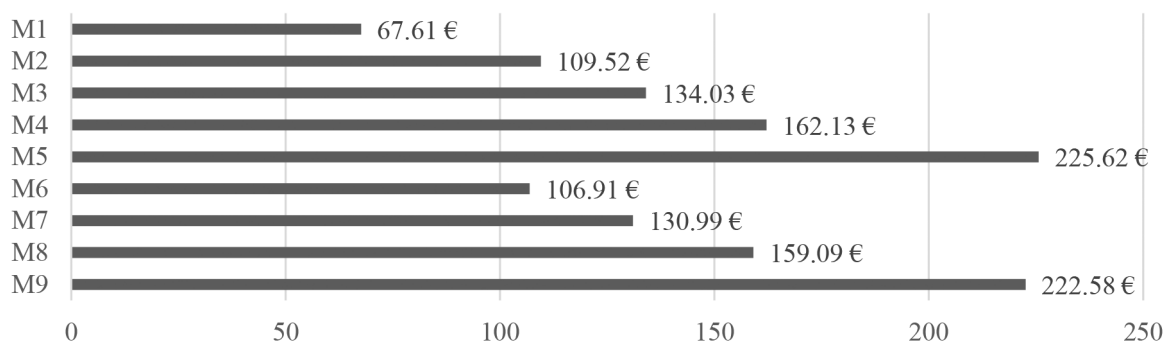
Figure 3. Indicative cost of the models studied

4.   CONCLUSION

From the data presented above, first of all, we are going to focus on the influence of the different layers of an extensive green roof (M2) on the final construction cost (Figure 4). If we consider a total cost in which only the particular layers of a green solution are valued (from bottom to top: waterproof sheet, anti-roots sheet, drainage layer, filter sheet, substrate and vegetation), the construction cost of the group is 75.08 €. Substrate, drainage layer and filter sheet account for 38% of the total construction cost, 37% depends on the waterproof and anti-roots sheet and 25% is related to the vegetation. This agrees with the conclusions of Townshend (2017) in which, for a roof with a 10 cm thick substrate, the greatest influence on the final construction cost was the substrate and the draining layer. In his case of it, the influence of the substrate, the drainage layer and the fertilizer was 48%, 31% referring to the waterproof and anti-roots sheet, 16% to the vegetation and 5% to irrigation. Considering the absence of irrigation and fertilizer in the M2 model, and the use of an EPDM waterproof sheet, which is more expensive than the PVC used in the case of Townshend, the variations in the percentages can be justified. Even so, the high percentage that the substrate represents makes it possible to reflect on the possibility of considerably reducing construction costs by using a substrate that can take advantage of construction waste as an inorganic component (for example, broken bricks).
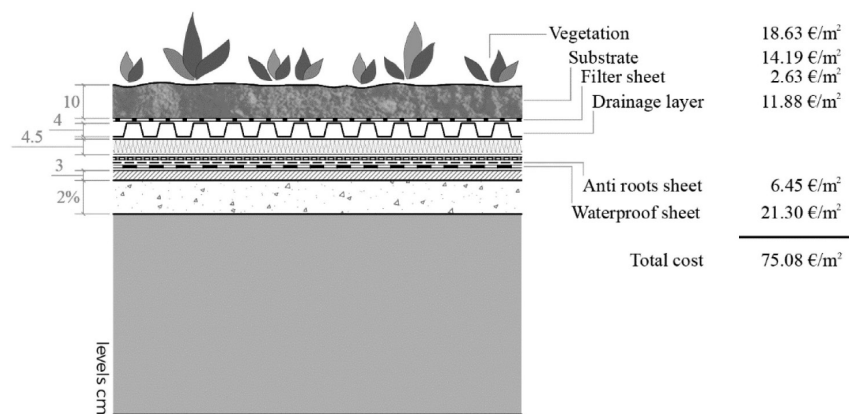
Figure 4. Indicative detailed cost of M2 with only representative layers

Making a comparison between the different models (Figure 3) it can be seen that the choice of an extensive green roof (M2 and M6) supposes a construction cost less than double (approximately 60%) compared to a traditional roof with a finish gravel (M1). On the other hand, the use of a solution with greater thicknesses (M5 and M9) represents an increase of approximately 230% in the cost of the traditional roof. Due to the fact that all the roofs have been calculated to comply with the thermal requirements of current Spanish regulations, we see that large thickness of substrate, or higher construction costs, are not necessary to achieve comfortable conditions inside, greater energy efficiency of the building and an improvement in the sustainability of the solution.

It should be noted that the construction cost of a green roof is relevant, but the entire useful life of the roof must be considered, with its associated costs and benefits. Peri et al (2012), after their studies, concluded that throughout the useful life of a green roof, construction costs only represented 36.1% of the total, with 59.3% maintenance costs and 4.6% disposal costs. Since the cost of construction does not represent the main percentage of the total cost of the roof over the entire life cycle, the cost-benefit final balance of a green roof can be considerably close to the values of a traditional roof. According to Carter and Keeler (2008), considering a useful life of

60 years, the green roof is only 10-14% more expensive than a traditional roof. But it should be noted that in the future case that the cost of energy increases, the prevention of floods becomes a priority of public policies or the cost of construction of the green roofs will decrease, only by 20%, due to a higher standardization or development of techniques related to green roofs, then these sustainable systems would become more economically attractive. But it must be taken into account that in these evaluations the social benefits or all the environmental benefits are not considered, so it can be concluded that although the cost of construction of an extensive green roof is 60% higher than in a traditional roof, the properties of any sustainable construction are capable of generating environmental and social benefits that are not currently accounted for in cost-benefit studies throughout their useful life, and that is capable of reversing the initial cons.

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WATER QUALITY STATUS IN THE ISHMI RIVER, ALBANIA OVER THE PERIOD 2014 -2019 AND PROSPECTIVE TOWARDS THE ACHIEVEMENTS OF EU WFD OBJECTIVES IN ITS BASIN

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Abstract: *The Ishmi River basin, although it is the smallest of the seven watersheds of Albania, is by far the most polluted one. The assessment of water quality monitoring data over the period 2014 – 2019 in the river system shows annual average concentrations above limit values for ammonia, nitrogen dioxide, nitrate and phosphorus.*

The paper presents the key stages of the approach followed to identify waterbody pressures, status and impacts assessment, namely:
- *Identification of driving forces and pressures;*
- *Identification of the significant pressures;*
- *Determination of the consequent status;*
- *Assessment of the impacts; and*
- *Evaluation of the risk of failing to meet the objectives.*

Quantification of pressures, though feasible, requires significant amounts of good quality data, many of which are not currently collected in Albania. Significant improvements in data collection and coordination between competent authorities will be required as part of future measures.

Keywords: *Water quality, EU Water Framework Directive, Monitoring acquis.*

1. INTRODUCTION

The Ishëm is formed from several rivers which arise to the northeast of Tirana in the Skanderbeg Mountains beyond the Krujë range. The most important of these are:
- The Tiranë, which has its source to the northeast of Mount Dajt;
- The Lanë, which rises on the western slopes of Mount Dajt and flows through the city center of Tirana to the south of the Tiranë River in a west direction until it meets it;
- The Tërkuzë, which crosses the Tirana Plain near the Tirana Airport, before it meets the Tiranë River. Once these two rivers join, the river is referred to as the Gjole;
- The Zezë, which arises east of Krujë and meets the Gjole a few kilometers after the Tërkuza.

From the point where the Zeze joins the Gjole, the river is known as the Ishëm. It flows in a west direction until it reaches the edge of the Tirana Plain, then turns to the northwest and discharges into the Adriatic Sea to the southwest of Laç in the Rodon Bay. The total length is 74 km.

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The drainage basin of the Ishëm covers a total area of 673 km2. The average discharge at the mouth of the river is 20.9 m³/s. The highest annual discharge is over six times the annual minimum.

In 2019 the population living in the basin was estimated by INSTAT – 896,275 people (31 % of the country' total) mainly divided among the Municipalities of Tiranë, Krujë, Vorë, and Kamëz.

In 2019, the annual surface water monitoring programme by the National Environment Agency identified 7 monitoring sites. Results of the monitoring are shown in the Table below (number 1 station being close to the source, number 7 being close to the mouth of the river).

Table 1. Surface monitoring results for the Ishmi River Basin in 2019

River Ba-sin	Monitor-ing station	Parameter (mg/l)						EQS
		DO	BOD$_5$	NH$_4$	NO$_2$	NO$_3$	P-Tot	
Ishmi	Salmer Bridge - 7	5,9	13	1,71	0,11	0,5	0,37	V
	Gjola Bridge - 6	5,7	21	2,42	0,09	0,4	0,45	V
	Rinas Bridge - 5	5,6	23	2,7	0,08	0,5	0,59	V
	Kamza Bridge - 4	7	28	3,52	0,05	0,2	0,55	V
	Yrshek - 3	4,1	64	13,2	0,1	0,4	1,49	V
	Lanabre-gas - 2	8,6	5	0,32	0,04	0,85	0,12	III
	Brari Bridge - 1	8,8	3	0,14	0,011	0,5	0,04	II

Source: NEA 2019, www.akm.gov.al

Table 2 provides the scheme for classification of the physico-chemical quality of rivers applied in Albania, which although distinguishing five classes, labeled from "high" to "bad" – is not yet designed fully in accordance with the requirements of the WFD.

Table 2. The classification scheme for assessment of physico-chemical parameters in rivers

Parameters	Unit	Parameter limit values				
		High Status (I)	Good Status (II)	Moderate Status (III)	Poor Status (IV)	Bad Status (V)
Dissolved O$_2$	mg/l	>7	>6	>5	>4	<3
BOD$_5$	mg/l	< 2	< 3,5	< 7	< 18	> 18
pH (acid)			> 6,5	> 6		
pH (alkaline)			< 8,5	< 9		
NH$_4$	mg/l	<0,05	<0,3	<0,6	<1,5	>1,5
NO$_2$	mg/l	<0,01	<0,06	<0,12	<0,3	>0,3
NO$_3$	mg/l	<0,8	<2	<4	<10	>10
PO$_4$	mg/l	<0,05	<0,10	<0,2	0,5	>0,5
Total-P	mg/l	<0,1	<0,20	<0,4	<1	>1

Available monitoring data and assessment criteria do not yet allow for a comprehensive assessment of the environmental state of water bodies. However, some conclusions can already be made.

In relation to dissolved oxygen, the waters of Ishmi River Basin at the 7 stations are of moderate quality (Class III). There is barely sufficient dissolved oxygen to sustain aquatic life in the water

of the Ishmi River Basin from Yrshek to Salmer Bridge. The highest concentration of DO is measured in Brari Bridge with 8.8 mg/l.

NH_4, NO_2, and P-total measured in the river basin are below the EQSs for good status in most of the stations. The levels of NH_4 are of bad quality (Class V) in five stations, namely: Yeshek, Kamza, Rinas, Gjola and Salmer, they are moderate at Lanabregas (Class III) and of good quality in Brari station. The levels of NO_2 are of moderate quality (Class III) in four stations, namely: Yeshek, Rinas, Gjola and Salmer. The levels of P-total are of poor quality (Class IV) at Kamza, Rinas, Gjola, and moderate (Class III) in Salmer.

The levels of BOD_5 concentrations in the Ishmi River exceed the limit of good quality in all stations except for the Brari station. The concentration of BOD_5 indicates chemical and biological pollution and a poor quality of the river that can be attributed to discharges from wastewater, and industrial effluents.

As for No_2, the concentrations are for good quality status in all stations.

To conclude, the measurements indicate a river with generally bad water quality, except the Brari Bridge section, where water is of good quality. **Based on the above results, the status of Ishmi river waters can be classified overall as 'bad' quality (Class V) waters**. The monitoring results indicate the presence of discharges of industrial and urban wastewater and possibly agricultural run-off.

2.   METHODOLOGY

The WFD requires the systematic identification of significant pressures on rivers' water quality from point sources of pollution, diffuse sources of pollution, modifications of flow regimes through abstractions or regulation and morphological alterations, as well as any other pressures. 'Significant' means that the pressure contributes to an impact that may result in failing to meet the WFD objective of not having at least 'good status'. In some cases, the pressure from several drivers may in combination be significant.

Conventionally pressures and impacts occur either at diffuse scale or point scale. Diffuse pressures e.g. nitrate pollution from agriculture e.g. over-abstraction of groundwater – may require general environmental policies or management strategies that apply over a wider area (e.g. a sub-basin or aquifer). Conversely, point pressures such as wastewater discharges or hydropower outflows may require specific actions for individual water bodies, although correctly determined and enforced higher-level policies should in theory prevent the need for later remedial specific measures.

The pressures assessment and resultant status are central for understanding and quantifying the gaps between environmental objectives and the current state of water bodies in the river basin. The assessment is necessarily a mixture of analytical and descriptive criteria depending on the level of data available.

Whereas assessment of waterbody status can be a reasonably simple exercise by comparison against standards based on a single analytical sample, assessment of pressures is more complex, because *a)* pressures are typically more diffuse and harder to measure *b)* different pressures combine in complex ways to influence a water body's status.

Urbanization, industrial development, agriculture, energy production, the presence of hot spots, and urban and rural wastewater discharge are regarded as the main sources of pollution.

A useful interim approach is to adopt the standard reporting procedures and codified enumeration lists set out by the WISE guidance [4] [5] which provides an 'overview approach'.

The logic and the methodology behind characterizing water bodies and introducing parameter limit values for classification of ecological status for surface water and chemical status for groundwater is among others intended for making risk assessments. The risk assessment is done to identify surface water bodies at risk of not achieving at least good environmental ecological or chemical status. The methodology is to compare measured parameter values from ongoing monitoring programmes with parameter limit values applied for good environmental or chemical status. In this comparison, the parameter with the lowest quality classification is decisive for the classification of the whole water body.

3.   RESULTS AND DISCUSSION

Urban development is a point source of mainly organic pollution that poses particularly intensive pressures on the water resources of the Ishmi river basin.

In 2019 about 759,370 people were connected to a centralized water supply system (84.7% of the basin's population), with a rate of population covered varying from 41% for Vore to 95% of Tirana Municipality (see Table 3). Based on a daily norm of 150 liters per capita the water demand in the basin is estimated at 39 million m³/y, the highest in the country.

The drinking water supply comes mainly from natural springs and underground water sources, except for the Tirana metropolitan area which gets a portion of its supply from the Bovilla reservoir, which is formed by a dam of the river Tërkuzë.

None of the 4 water utilities operating in the basin manage to provide 24 hours of pressurized water supply service across their entire systems all day and throughout the year. The population compensates for the service discontinuity by purchasing and installing booster pumps and water storage tanks.

Table 3. Water Service Provision in the Ishmi Basin, 2019

Municipality	Population (2019)	WSS Company	Water Supply Coverage (%)	Sewerage Connection Coverage (%)	Population connected to a WWTP (%)
Kamëz	108.864	Kamez UK Sh.A	46,05	99,93	0,0
Krujë	63.357	Kruje UK Sh.A	63,7	37,13	0,0
Tiranë	682.863	Tirane UK Sh.A	95,49	83,8	0,0
Vorë	41.191	Vore UK Sh.A	40,82	34,97	0,0
TOTAL	**896.275**		**84,7%**	**80,2%**	**0,0**

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[4]   The approach adopted in the new template for RBMPs in Albania is to closely align with WISE reporting requirements in terms of feature classes and attributes. This focuses data collection only on what is needed for WISE and EIONET reporting and orientates the NWRC data structures to be broadly aligned with WFD outputs.

[5]   Water Information System for Europe – WISE GIS Guidance – on the reporting of spatial data to WISE, v 6.0.6, 2016.

All the Municipalities of the Basin have sewerage connections, but none of them has a WWTP. This means that wastewater is collected in public sewers and/or septic tanks and then released into the environment without receiving treatment. The main municipal outfalls have been identified by AMBU (see Table 4).

Table 4. Municipal outfalls, AMBU 2019

Municipality	WSS Company	Municipal Outfall
Kamëz	Kamez UK Sh.A	4 outfall points along the Tiranë River
Krujë	Kruje UK Sh.A	2 outfall points along the Perroi Mzeze branch of the river ishem 1 outfall at Bidrit stream 3 outfall points at Bërdharit stream 1 outfall at Gjolës River
Tiranë	Tirane UK Sh.A	38 outfall points along the Lanë River 1 outfall point at Paskuqanit stream, a branch of Lane River 2 outfall points along the Gjeroskess, a branch of Lane River
Vorë	Vore UK Sh.A	2 outfall points along the Vores stream branch of Lane River

The pollution load deriving from urban wastewaters can be determined (see Table 5) using the following unit values for 1 PE[6]:
- Biochemical Oxygen Demand (BOD_5) = 60g/person/day[7],
- Total Nitrogen (TN) = 11 g/person/day,
- Total Phosphorus (TP) = 2.8 g/person/day.

The amount of Tot-P, Tot-N and BOD5 and water consumption within the basin can be calculated as shown in Table 5.

Table 5. The daily and yearly load from 1 PE and the load from 896,275 people living within the basin

1 PE	Day	Year	896,275 PE/year
Tot-P	2.8 g	1.0 kg	896 t
Tot-N	11 g	4.0 kg	3585 t
BOD_5	60 g	21.9 kg	19628 t

Industrial activities are point sources of pollution that place constant pressure on the water resources of the river basin. These mainly include the following.
- **Manufacturing industry**. The revenue leading sector and include production activities of cement and construction materials; metals (in particular iron and ferrochrome alloys); leather goods; textile goods and footwear; aluminum for construction. Five industrial installations operate with Class A permit[8], as follows.

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[6]   PE: Person Equivalent. Common applied values in EU countries.

[7]   The estimated organic load of 60 g/person/day corresponds to one population equivalent (PE), as defined in the Directive 91/271/EEC.

[8]   The current Albanian permitting system in relation to environment protection is established by the Law on Environmental Permitting No. 10488 Dated 14.7.2011, which provides the basic principles for the environmental permitting process. The Law establishes a three-tier system for permits of installations and activities, namely: Class A, Class B, and Class C Environmental Permit. These three are distinguished from each other by the thresholds of industrial activity, production and capacity. A Class A permit shall take into account the environmental performance of the installation or the activities as a whole. The permit set emission limit values for pollutants, according to Best Available Techniques. *The Class A permit is aligned to the EU IPPC permit.*

Table 6. Large industrial installations within Ishem River Basin

Municipality	Product or processing	Activity by EU Sector
Tirana	Centre for hospital waste treatment	Waste
Tirana	Polystyrene production	Misc.
Tirana	Plant for red bricks	Mineral
Tirana	Fireworks production	Chemistry
Tirana	Storage of chemical fertilizers, products for plants processing	Misc.

In addition, 75 medium-sized enterprises (SMEs) operate under Class B permit. Industries normally discharge their wastewater into the urban sewerage system.

However, there are no official data on the amounts of water used by this sector, nor for the quantity/quality of discharged wastewater.

- **Mining.** The mining sector is a historic pillar of Albanian industrial production due to the relative abundance of minerals in the territory. There are 45 active mining permits in the Ishmi Basin (16 within the Tirana Municipality, 1 within Vore, 28 within Kruie). The mining industry in the basin mainly produces limestone and clay for the construction industry. The sector uses surface water and/or groundwater for technological processes, but there are no official data on the amounts used in Albania. The environmental impact of mining includes erosion, formation of sinkholes, loss of biodiversity, and contamination of soil, groundwater, surface water from mining processes. In some cases, additional forest logging is done in the vicinity of mines to increase the available room for the storage of the created debris and soil. Mining can have bad effects on the surrounding surface and groundwater if protective measures are not taken. Runoff of mere soil or rock debris – although non-toxic – also devastates the surrounding vegetation.
- **Sand and gravel excavations** take place in the Ishmi basins. There are 55 active gravel extraction permits in the Ishmi Basin (47 within Tirana Municipality, and 8 within Kruje). The assumed effects of environmental impacts associated with gravel extraction are increasing. These impacts include loss or degradation of spawning beds and juvenile fish rearing habitats; migration blockages; channel widening, swallowing, and ponding; loss of hydrologic and channel stability; loss of pool/riffle structure; increased turbidity and sediment transport; increased bank erosion and/or stream bed down-cutting; and loss or degradation of riparian habitat.

Contaminated sites/Abandoned industrial sites represent areas of diffuse sources of pollution that pose pressure on water resources. In many cases, termination of the activity in the early '90s was not followed by the necessary environmental restoration; consequently, the industrial ruins still occupy the territory and can contaminate the soil and, ultimately, water bodies. Past industrial pollution hotspots in the basin include the following.

Table 7. Hot spots within the Ishmi basin

Facility	Location
Albanian Film Studio	Tirana
Auto & Tractor Factory	Tirana
Dajti Metallurgy Enterprise	Tirana
Institute for Public Health	Tirana
Workshop for regeneration of used transformer oils	Tirana
Transformer repair workshop	Tirana

Agriculture and farming activities are diffuse sources of organic and inorganic pollution (mainly BOD, nitrogen and phosphorus) that place constant pressure on the water resources of the river basin as they may cause deoxygenation and eutrophication of surface waters and contribute to declining fish stocks, and a loss of biodiversity.

Agriculture run-off also remains a challenge for river pollution as it is a major contributor to the eutrophication of freshwater bodies.

Mineral fertilizers, such as nitrogen (N) and phosphorus (P), are widely used in agriculture to optimize production. They are important nutrients that are absorbed from the soil by plants for their growth. A surplus of nitrogen and phosphorus can, however, lead to environmental pollution like the eutrophication of surface water.

Albania mineral fertilizer consumption fluctuated substantially in recent years, it tended to increase through the 2002-2019 period and was 126.14 kg/ha of arable land.[9]

The yearly fertilizer consumption in the Ishmi basin is estimated at 3,505 tons/ha.

Based on the information on fertilizers usage it is possible to estimate the usage of different nitrogenous and phosphorus fertilizers in the river basin as shown in the table below.

Table 8. N and P from fertilizers – Nitrogen and Phosphorus fertilizer use
(a ton of fertilizer and an equivalent ton of N and P), 2019

Basin	Ishmi
Urea Nitrogen (tons)	1.367
containing 46% N (tons)	629
Ammonium Nitrate (tons)	1.262
containing 34.5% N (tons)	435
Tons of Nitrogen applied	**1.064**
Super Phosphate (tons)	876
containing 7.07% P(tons)	62
Total Phosphorus applied	**62**

The main pollutants related to animal farming are BOD, nitrogen and phosphorus. The estimation of the pollution loads can be made by knowing the livestock's number, based on emission factors taking into account local experience and data reported in the literature.[10]

Based on livestock structure data from the Albanian Institute of Statistic (INSTAT), the total load for N and P from animals in the Ishmi basin can be estimated as follows:

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[9]   Source: https://data.worldbank.org/indicator/AG.CON.FERT.ZS?locations=AL

[10]   Data on livestock manure characteristics presented are obtained by combining a wide base of published information on livestock manure production and characterization. Actual values vary due to differences in animal diet, age, usage, productivity and management. Whenever actual sample analyses can be performed, such information should be considered in lieu of the mean values presented here.

Table. Fresh manure characteristics per 1.000 kg live animal mass per day

Parameter	Unit	Animal Type						
		Cattle	Cows	Sheep / goats	Pigs	Equines	Poultry	Turkey
Total N	Kg	0,45	0,34	0,41	0,48	0,3	0,33	0,52
Total P	Kg	0,05	0,092	0,07	0,14	0,07	0,22	0,23

The pollution by livestock in each of the basins can be calculated by considering a typical live animal masses of: cattle 450 kg; swine 150 kg; sheep/goat 50 kg; horse 200 kg; poultry 0.8 kg; turkey 3.5 kg.

Table 9. Estimate load of N and P from livestock

Animal Category	Ishmi	
	N load (ton/year)	P load (ton/year)
Cattle	2301	256
Sheep	706	121
Pigs	89	26
Equidae	80	19
Poultry	114	76
Turkey	10	5
Total	**3299**	**501**

The total amount of nitrogen and phosphorus generated or applied from the above sources can be summarized as shown in the table below.

Table 10. The total amount of nitrogen and phosphorus generated or applied within Ishmi Basin area

	Total N load (tons/year)	Total P load (tons/year)
Total from fertilizer (tons)	1.064	62
Total from livestock (tons)	3.229	501
Total	*4.293*	*563*

Hydropower. Due to the morphological features, Ishmi basin's rivers although with small flows, have considerable cascade which make them substantially important for the hydropower potential. Today, Albania is almost totally dependent on hydropower for electricity generation; nearly 100 percent of the country's domestically produced electricity comes from hydropower. Hydropower generation is not a consumptive use of water (i.e. water abstracted without returning it to its resource). The overall water balance remains equal, but water available for further use is partly regulated by the operation of reservoirs.

Six hydropower plants are currently installed in the basin.

Solid Waste Disposal. Random disposal of waste on land and along watercourses is common and represents a major problem in the basin. Waste disposal might more appropriately be addressed as a source of diffuse pollution.

Dumping in poorly managed landfills is the main method of municipal solid waste disposal. These sites lack the necessary infrastructure or engineering provisions to collect and contain landfill leachate and gas.

Four dumpsites exist, at Kamez (the site is located adjacent to the main trunk road through Kamez in a gravel extraction pit, where the waste is being dumped into the depressions left from the gravel extraction), at Vore (located near the village of Kuc and consists of a dump site at the side of the road resulting in the infilling of a valley to the south of Vore), at Kruje (located off the main road in a mountainous valley to the east of the city of Kruje). The site has been created by removing the brick wall which prevented traffic from going off the road, down the ravine, and then reversing the refuse vehicles, completely blocking the main road and tipping directly over the edge of the road and down into the ravine), and at Fushe Kruje (located to the east of the city, as a more organized dumpsite relying on the infilling of a relatively narrow valley).

4.   CONCLUSIONS AND RECOMMENDATIONS

Tables below present a final register of the identified pressures, an estimation of the waterbody's status, and an estimation of the water bodies at risk of failing the environmental objectives.

Available monitoring data and assessment criteria do not yet allow for a comprehensive assessment of the environmental state of water bodies in the Ishmi basin. Generally, Ishmi is polluted largely due to the discharges of untreated wastewater. This implies that the river will not comply with the WFD criteria for "good" status.

Reservoirs – used for irrigation, hydropower and/or drinking water supply – impose hydro morphological pressures. However, there are no monitoring data for substantiating the state and impacts of reservoirs.

Water Body Name	POINT						DIF-FUSE			
				Dams, barriers and locks			Hydrological alteration			
	1.1 Urban waste water	1.2 Storm overflows	1.3 IED plants	1.4 Non IED plants	1.5 Con-taminat-ed sites or aban-doned industrial sites	1.6 Waste disposal sites	1.8 Aquacul-ture	2.2 Agri-cultural	2.6 Dis-charges not con-nected to sewerage network	2.8 Min-ing
Ishem				x		x	x	x	x	x
Zeze	x	x		x		x			x	
Terkuza				x		x			x	
Tirana	x	x	x	x		x	x		x	
Lana	x	x		x	x	x			x	

Water Body Name	ABSTRACTION		PHYSICAL ALTERATION					
	3.1 Agri-culture	3.5 Hy-dropower	4.2.1 Hydro-power	4.2.3 Drinking water	4.2.4 Irri-gation	4.3.3 Hydro-power	4.3.4 Public water supply	4.3.6 Gravel Ex-traction
Ishem	x	x	x		x	x		x
Zeze		x	x			x		x
Terkuza	x			x	x		x	x
Tirana	x	x	x			x		x
Lana	x	x			x	x		

WATER-BODY NAME	POINT PRESSURE	DIFFUSE PRESSURE	ABSTRACTION PRESSURE	PHYSICAL PRESSURE	BQES EQR	P-CHEM	H-MORPH	ANNEX X PSs	ANNEX VIII RBSP	OVERALL STATUS	RISK LEVEL	CL
Ishem	1.4 Non IED plants	2.2 Agricultural	3.1 Agriculture	4.2.1 Hydro-power		poor					At-risk	2
	1.6 Waste disposal sites	2.6 Discharges not connected to sewerage network	3.5 Hydropower	4.2.4 Irrigation								
	1.8 Aquaculture	2.8 Mining		4.3.3 Hydro-power								
				4.3.4 Public water supply								
				4.3.6 Gravel Extraction								
Zeze	1.1 Urban waste-water	2.6 Discharges not connected to the sewerage network	3.1 Agriculture	4.2.1 Hydro-power							Probably	1
	1.2 Storm over-flows		3.5 Hydropower	4.2.5 Recreation								
	1.4 Non IED plants			4.3.3 Hydro-power								
	1.6 Waste disposal sites			4.3.4 Public water supply								
				4.3.6 Gravel Extraction								
Terkuza	1.4 Non IED plants	2.6 Discharges not connected to the sewerage network	3.1 Agriculture	4.2.3 Drinking water							Probably	1
	1.6 Waste disposal sites			4.2.4 Irrigation								
				4.2.5 Recreation								
				4.3.4 Public water supply								
				4.3.6 Gravel Extraction								

Column group headers: PRESSURE ANALYSIS (WATER-BODY NAME, POINT PRESSURE, DIFFUSE PRESSURE, ABSTRACTION PRESSURE, PHYSICAL PRESSURE); STATUS AND OVERALL STATUS or POTENTIAL (BQES EQR, P-CHEM, H-MORPH, ANNEX X PSs, ANNEX VIII RBSP, OVERALL STATUS); RISK ASSESSMENT (RISK LEVEL, CL)

						Status	Risk	
Tirana	1.1 Urban waste-water	2.6 Discharges not connected to the sewerage network	3.1 Agriculture		4.2.4 Irrigation	poor	At-risk	2
	1.2 Storm over-flows				4.2.4 Irrigation			
	1.3 IED plants				4.3.4 Public water supply			
	1.4 Non IED plants				4.3.6 Gravel Extraction			
	1.6 Waste disposal sites							
	1.8 Aquaculture							
Lana	1.1 Urban waste-water	2.6 Discharges not connected to the sewerage network	3.1 Agriculture		4.2.1 Hydro-power	poor	At-risk	2
	1.2 Storm over-flows		3.5 Hydropower		4.2.4 Irrigation			
	1.4 Non IED plants				4.3.3 Hydro-power			
	1.5 Contaminated sites or abandoned industrial sites -							
	1.6 Waste disposal sites							

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E-VEHICLES WITH A FOCUS ON TESLA CARS

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Abstract: *The paper presents research on electric cars with an emphasis on Tesla cars. The paper aimed to get to know the development of Tesla and the innovation of their vehicles. As part of the development of their cars, range, consumption and charging play an important role, the research was focused on comparing models and finding the best car. The research found that all Tesla models, that are currently on the market, are comparable, with good range, charging time and consumption. Nowadays, however, an important issue in our lives is the pandemic, so part of the article also describes the consequences of Covid-19 on the company, in which we found that the company managed to operate profitably despite this situation. In addition to cars' good features, it's also important to have charging options, which we explored in this paper using a hypothetical route to various European cities and found that charging stations are the most widespread in Western Europe and that it is almost impossible to drive east.*

Keywords: *Elon musk, Electric cars, Car model.*

1. INTRODUCTION

More and more car manufacturers are looking for new, innovative solutions on how to improve their cars and also more and more of them are opting to produce electric cars. But as advanced as these cars are, they also have their drawbacks. One of them is the range or the distance that a car can travel without refuelling and consequently also filling stations that are not at every petrol station.

All of these, however, are reasons why many people do not choose to buy an electric car. Of course, these cars also have many advantages. In this article, we want to show all the pros and cons and present whether buying a Tesla electric car is worth it or not.

In this article we want to answer three research questions:
- Which Tesla model is the most economical / most worth buying?
- What is the prevalence of filling stations across Europe? Can you go a long way?
- What are the prices of Tesla's cars?

2. DEVELOPMENT OF TESLA ELECTRIC CARS

Tesla Inc. or as it was formerly called Tesla Motors, was founded in July 2003. The company was founded by M. Eberhard and M. Tarpenning with three co-founders, one of whom was also, best known to us today, Elon Musk. (https://www.britannica.com/topic/Tesla-Motors)

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The first car was produced in 2008 and was called the Roadster. Its regular production began in 2008 and sold for $ 109,000. With this, however, the company reached its first major milestone. The Roadster was sold at that price until 2012, and by then they had sold 2,450 cars.

Their second car model should have been released in the same year, but when Musk became the company's CEO, he moved the production for three years, until mid-2011. The prototype of the Model S car was unveiled in 2009, after financial assistance, which was helping the company to get out of bankruptcy.

The company's second major milestone, however, occurred around 10 years ago, on June 29, 2010, when the company began selling shares for just $ 17, earning as much as $ 226.1 million. (https://www.businessinsider.com/most-important-moments-tesla-history-2017-2)

It is also important to mention their battery factory, located in Nevada. With this, Gigafactory wants to lower battery prices through innovative production, waste reduction and simple optimization of placing most production processes under one roof. In 2014, when this project started, it was estimated that this factory will start operating by 2020 and that they will then be able to reduce the price of batteries by as much as 30% and thus also reduce car prices. It was also estimated that the Tesla Model 3 could go on sale for as little as $ 35,000. (https://www.tesla.com/en_EU/gigafactory?redirect=no)

The first car for the mass market, the Tesla Model 3, was introduced in 2016, which was expected to have a range of 345 km and to sell for only $ 35,000. In January 2019, however, they began production in China - making them the first independent Western car manufacturer in China. This, in turn, meant an easier breakthrough for the company into the Chinese car market. In this production, they planned to produce 3,000 cars a week, or up to 500,000 cars a year. In 2019, they also announced a new car model, namely the Tesla Model Y, which was expected to have a range of 480 km and sell for $ 47,000.

In 2020, all production was delayed by a few months; in June, the Tesla Model S was brought to a range of 640 km by reducing the car's weight and increasing regenerative braking. (https://www.businessinsider.com/most-important-moments-tesla-history-2017-2)

3. TESLA CHARGERS ACROSS EUROPE

When Tesla started selling cars, the charging stations were placed in precisely strategically defined locations among major urban areas. However, as Tesla began to lower prices and now cars were also available to residents who do not have access to home charging, the company began setting up more charging stations in cities and in 2017 began launching Urban Superchargers. (https://electrek.co/2020/09/10/tesla-urban-superchargers-europe-support-growth/)

There are more than 2,000 Supercharger stations in Europe with more than 20,000 rapid charging stalls. Most of them are located from Central Europe (Germany) to the West (France). (https://www.tesla.com/sl_SI/supercharger?redirect=no)

4. THE IMPACT OF THE PANDEMIC ON THE COMPANY

Despite the pandemic, the company managed to double its profits in the third quarter of 2020 and was approaching record numbers of cars delivered.

The company delivered as many as 139,300 vehicles in the third quarter of 2020, which was also a new record for vehicles delivered in one quarter. The company's goal was to deliver as many as 500,000 vehicles by the end of the year. Profit for the third quarter was as much as $ 331 million. In the same period in 2019, the company had a profit of $ 143 million. So, despite the pandemic, the company managed to increase profits more than once. Revenue also rose 40 per cent to $ 8.7 billion. (https://www.dw.com/en/tesla-doubles-quarterly-profits-despite-pandemic/a-55357780)

Even during the pandemic, Elon Musk worked to quickly add production capacity and add new vehicle models, and nothing stops him from achieving the set goals, especially the goal of making Tesla a regular vehicle manufacturer and not just a niche. Of course, his actions are not without risks, because the crisis will come only when the pandemic is over. In the previous crisis, Elon Musk lost almost everything because of such moves.

As already mentioned, Chinese production has contributed to profits despite the pandemic, with revenues in China doubling compared to previous years. Despite the high numbers, revenues in the USA decreased by as much as 11%. (https://www.bangkokpost.com/business/1961575/tesla-pulls-ahead-in-coronavirus-era-after-elon-musks-years-of-struggle)

5. RESEARCH FINDINGS - ANSWERS TO RESEARCH QUESTIONS

The first research question: Which Tesla model is the most economical / most worth buying?

To solve this question, we compared the features of all Tesla models currently available on the market.

Table 1 shows all the compared car models and their characteristics.

Table 1. Comparison of different models of Tesla cars

	From 0-100km/h	Top speed	Range	Weight	Average consumption
Model S (Performance)	2,5 s	261 km/h	639 km	2236 kg	193 Wh/km
Model S (Long Range)	3,8 s	250 km/h	652 km	2184 kg	190 Wh/km
Model 3 (Performance)	3.3 s	261 km/h	567 km	1844 kg	166 Wh/km
Model 3 (Long Range)	4,4 s	233 km/h	580 km	1844 kg	160 Wh/km
Model 3 (Standard)	5,6 s	225 km/h	430 km	1745 kg	149 Wh/km
Model X (Performance)	2,8 s	261 km/h	548 km	2494 kg	236 Wh/km
Model X (Long Range)	4,6 s	250 km/h	561 km	2466 kg	226 Wh/km

Source: https://www.tesla.com https://www.tesla.com/en_EU/support/european-union-energy-label

From Table 1, we have found that all three models, and also their different ones are very suitable. We see that the fastest acceleration is the Tesla Model S Performance, and this model also has the fastest top speed, which is as much as 261 km / h. The Tesla Model 3 Performance and the Tesla Model X Performance have the same top speed.

The longest charging distance can be corrected by the Tesla Model S Long Range, otherwise 652 km. Tesla Model 3 Standard has the lowest consumption, otherwise 149 Wh / km.

So, the question - which model is the best is hard to answer, as it is necessary to ask beforehand what we want from the car. If we want fast acceleration with a long range, we will buy the Tesla Model S as the best, while we want the lowest consumption and the best purchase of all the different Tesla Model 3 models.

The second research question is: What is the prevalence of Tesla chargers across Europe? Can you drive a long way?

To answer the question, it is necessary to look at the distribution of chargers in different parts of Europe. We took three different routes for the research, a route from Slovenia to Paris, to Lisbon and Belgrade.

In this experiment, we paid attention to the travel time, the charging time and the number of stops. We also used Audi and Ford electric cars for comparison.

We set a maximum speed limit at 120 km/h. The limitations in this research were the prices of electric charging at charging stations for electric cars of other brands, or at charging stations where there are no Tesla chargers, as certain stations did not have publicly announced prices.

Table 2 shows the route from Velenje, Slovenia to Paris, France.

Table 2. Comparison of electric cars on the way from Velenje to Paris

	Cost	Charge Duration	Distance	Drive duration	Time together	No. of stops
Tesla 3 Performance 2021	52 €	1h 35min	1317 km	13h 3min	14h 39min	6
Tesla S 2020 Performance	47 €	1h 44min	1317 km	12h 45min	14h 30min	4
Tesla X 2020 Performance	63 €	2h 4min	1317 km	13h 3min	15h 8min	6
Audi Q4 e-Tron	38 €+	1h 15min	1317 km	15h 41min	16h 57min	4
Ford Mustang Mach-E Extended	37 €+	1h 17min	1317 km	15h 34min	16h 51min	3

Source: own research, 2020

Table 3. Comparison of electric cars on the way from Velenje to Lisbon

	Cost	Charge Duration	Distance	Drive duration	Time together	No. of stops
Tesla 3 Performance 2021	134 €	4h 59min	2728 km	25h 55min	30h 54min	9
Tesla S 2020 Performance	127 €	4h 49min	2728 km	25h 28min	30h 17min	8
Tesla X 2020 Performance	194 €	5h 33min	2728 km	26h 49min	32h 23min	13
Audi Q4 e-Tron	110 €+	3h 2min	2728 km	32h 8min	35h 10min	8
Ford Mustang Mach-E Extended	102 €+	3h 22min	2728 km	35h 26min	35h 26h	8

Source: own research, 2020

From Table 2 we can see that the trip to Paris can be done without major problems, as there are enough charging stations on the way; we also see that charging all Tesla cars is faster. The data show that the fastest is the Tesla Model S, which requires the least stops.

Table 3 shows the route from Velenje, Slovenia to Lisbon, Portugal. Here we can see that, again, the drive is possible and that there are enough charging stations on the way. We can also see that the Tesla Model S is the fastest and needs the least charging time.

The last route we wanted to examine was to the eastern part of Europe. First, we wanted to plan the drive to Greece, but we quickly saw that there are not enough charging stations on the way. So, we decided to plan a route to Belgrade, Serbia. All of the cars we compared needed one stop on the way and there was exactly one charging station on the way. The driving time and charging time, is like in the last two cases, the best with Tesla Model S.

Table 4. Comparison of electric cars on the way from Velenje to Belgrade

	Cost	Charge Duration	Distance	Drive duration	Time together	No. of stops
Tesla 3 Performance 2021	76 HRK	21min	530 km	5h 31min	5h 52min	1
Tesla S 2020 Performance	52 KRK	14min	530 km	5h 21min	5h 35min	1
Tesla X 2020 Performance	85 HRK	25min	530 km	5h 31min	5h 56min	1
Audi Q4 e-Tron	41 HRK+	11min	530 km	6h 29min	6h 41min	1
Ford Mustang Mach-E Extended	26 HRK+	7min	530 km	6h 29min	6h 37min	1

Source: own research, 2020

Overall, we can see that all three models of Tesla electric cars, that are currently available, are compatible on longer drives with drive duration and charging duration, but out of these three, the best model is Tesla Model S. With the other two brands we can see that the drive and charging take longer.

The numbers of stops for all cars are quite similar, except for Tesla Model X, which is an SUV car and it's bigger, so it was expected for this model to have bigger consumption.

As for charging stations, with this research, we saw that long drives are possible in Western Europe, especially in France and Germany. But if we would want to drive to Eastern or South countries of Europe, we would face a lot of difficulties with finding Tesla chargers or other electric chargers along the way.

The last research question is: What are the prices of Tesla's cars? For this question, we took the prices of Tesla cars in the different markets, Slovenian, UK and American, as we can see in table 5.

From this table, we can see that the prices are the lowest in the USA and the most expensive in the United Kingdom. We can also see that the Tesla Model 3 is the cheapest, no matter which version we're interested in. Then is the Tesla Model S which is almost double the price of the Tesla Model 3. And the most expensive is, of course, the SUV model, Tesla Model X. With these prices in different markets, it's also important to keep in mind, that some countries offer financial subsidies and tax relief options; for example, in Slovenia, you are entitled to 6.000€ subsidy when buying an electric car.

Table 5. Comparison of prices for Tesla cars

	Price SLO	Price UK	Price USA
Model S (Performance)	101.990 €	106.187 € (£94.980)	71.264 € ($84.990)
Model S (Long Range)	84.990 €	89.415 € (£79.980)	52.339 € ($62.420)
Model 3 (Performance)	58.990 €	63.129 € (£56.490)	39.564 € ($47.190)
Model 3 (Long Range)	53.990 €	52.512 € (£46.990)	32.857 € ($39.190)
Model 3 (Standard)	43.999 €	45.245 € (£40.490)	25.311 € ($30.190)
Model X (Performance)	110.990 €	115.039 € (£102.980)	78.121 € ($93.190)
Model X (Long Range)	93.990 €	98.333 € (£87.980)	61.363 € ($73.190)

Source: own research, 2020

6. CONCLUSION

Every year, more car companies are opting to produce electric cars, as many countries plan to ban gasoline cars in the coming decades. For many years, Tesla has been trying to introduce electric cars that would be accessible to everyone. Thus, all three models of Tesla cars currently available are leaders in this market.

However, we note that in order to implement the plans, it is first necessary to expand the network of charging stations around the world so that they will be available to everyone, regardless of whether they are from larger cities or suburbs because only then will people start buying electric cars.

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PROCJENA RIZIKA OD PRANJA NOVCA U OKVIRU RAČUNOVODSTVENE PROFESIJE[1]

MONEY LAUNDERING RISK ASSESSMENT REGARDING THE ACCOUNTING PROFESSION

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Sadržaj: *Procjena rizika od pranja novca i financiranja terorizma provodi se na nadnacionalnoj i nacionalnoj razini, uzimajući u obzir čimbenike i varijable rizika. Temeljem navedenog, računovodstvena profesija je dužna procjenjivati rizik na razini obveznika, što rezultira prijavama sumnjivih transakcija. Broj prijava sumnjivih transakcija računovođa u Republici Hrvatskoj i u svijetu je vrlo nizak, što govori u prilog činjenici nedovoljne razine svijesti o prijetnjama koje takvo postupanje predstavlja. Evidentna je i podložnost računovodstvene profesije nezakonitom postupanju kroz mogućnost prilagođavanja financijskih izvještaja u okvirima kreativnog računovodstva, dok se zbog nepoštovanja zakonske regulative, neprofesionalizma i neetičnosti javlja potreba za forenzičnim računovodstvom. Osobitosti računovodstvene profesije ukazuju na njezinu višeznačnu ulogu prilikom detekcije pranja novca i drugog nezakonitog postupanja, uz ograničenje provođenja mjera a posteriori.*

Ključne riječi: *Procjena rizika, Sumnjive transakcije, Dubinska analiza, Forenzika, Prijevara.*

Abstract*: The assessment of money laundering and terrorist financing risks is conducted at the supranational and national level, including risk factors and risk variables. Based on the mentioned, the accounting profession is required to provide risk assessments at the level of obliged entities, which results in suspicious transactions reports. The number of suspicious transactions reported in the Republic of Croatia, as well in the world, is notably small, which speaks in favor of insufficient awareness of the threats posed by such conduct. The susceptibility of the accounting profession to illegal actions through the possibility of adjusting financial statements within the framework of creative accounting is evident, while due to non-compliance with legal regulations, unprofessionalism, and unethical needs, there is a need for forensic accounting. The peculiarities of the accounting profession support its ambiguous role in the detection of money laundering and other illegal activities, however, such measures are always implemented a posteriori.*

Keywords: *Risk Assessment, Suspicious transactions, Due diligence, Forensic, Fraud.*

1. UVOD

Pranje novca i financiranje terorizma (u nastavku: PN/FT) često se provode u međunarodnom okruženju, a mjere koje se donose u cilju njihovog sprječavanja nužno obuhvaćaju međunarodnu koordinaciju i suradnju. Uz kazneno-pravni pristup, rezultate mogu dati i mjere prevencije provedene kroz financijski i nefinancijski sektor. Jedan od najvećih iskoraka u provođenju

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mjera prevencije PN/FT odnosi se na procjenu rizika koja se provodi na nacionalnoj razini i na razini obveznika. Temelji takve procjene mogu se tražiti u nadnacionalnoj procjeni rizika.

Prepoznavanje, procjena i razumijevanje rizika od PN/FT važan je dio provedbe i razvoja nacionalnog sustava prevencije. Na idućoj razini, razini obveznika, razrađuje se analiza rizika te se nastoji utjecati na njegovo smanjenje, uzimajući u obzir čimbenike rizika koji se odnose na stranke; države ili geografska područja; proizvode, usluge i transakcije; te kanale dostave. Prilikom provođenja mjera dubinske analize obveznici uzimaju u obzir i varijable rizika koje se odnose na prirodu poslovnoga odnosa, vrijednost imovine, visinu obavljenih transakcija i trajanje poslovnoga odnosa. Područja većeg rizika zahtijevaju primjenu mjera pojačane dubinske analize, dok područja manjeg rizika dozvoljavaju primjenu ograničenih mjera. Iako se obuhvat mjera procjene rizika ne može decidirano propisati, učinkovitost njihove primjene uključuje prepoznavanje i kategorizaciju rizika, kao i poduzimanje primjerenih mjera njihovog suzbijanja.

2. ULOGA VANJSKOG RAČUNOVOĐE U SUSTAVU PREVENCIJE PRANJA NOVCA

Računovodstvo je sveobuhvatna i kompleksna profesija, što dokazuje značaj pravodobne i točne računovodstvene informacije u poslovnom svijetu. Osim računovodstvenih znanja i vještina, profesionalni računovođa mora posjedovati kompetencije poput odgovornosti, objektivnosti, poštenja, spremnosti zauzimanja čvrstog stajališta uz neizostavnu primjenu profesionalne etike. Profesionalni računovođe imaju znatnu ulogu u otkrivanju i prevenciji pranja novca, prijevara i drugih kaznenih djela kroz evidentiranje poslovnih promjena i sastavljanje financijskih izvještaja. Iz tog se razloga od njih očekuje visok stupanj profesionalnosti uz prihvaćanje odgovornosti prema korisnicima računovodstvenih informacija.

Računovodstvena struka je uvedena u sustav prevencije PN/FT izmjenama i dopunama Zakona o sprječavanju pranja novca (NN 117/03). Osim što su, uz ostale samostalne profesije i struke, uvedeni u zasebnom članku i time odvojeni od ostalih obveznika, još jedna od specifičnosti u odnosu na njih proizlazi iz obveze prijavljivanja zatraženog savjeta za pranje novca. Znatne promjene u sustavu prevencije pranja novca predstavljene su (u to vrijeme) novim Zakonom o sprječavanju pranja novca i financiranja terorizma (NN 87/08) kojim su samostalne profesije i struke dobile svoje mjesto uz ostale obveznike primjene mjera prevencije. Međutim, i taj je zakon na određeni način izdvojio navedene profesije i struke u smislu isticanja posebnosti prirode njihovog djelovanja, prilagođavajući ih obvezama provođenja mjera prevencije. Jedna od specifičnosti koja se odnosi na revizorsku profesiju propisana je čl. 53. st. 8. istog zakona, sukladno kojoj revizorsko društvo i samostalni revizor, pri uspostavljanju poslovnog odnosa sa strankom koja podliježe obveznoj reviziji godišnjih računovodstvenih izvješća, može izvršiti pojednostavljenu dubinsku analizu, osim ako u vezi sa strankom ili okolnostima revizije postoje razlozi za sumnju na PN/FT.

Recentni Zakon o sprječavanju pranja novca i financiranja terorizma (NN 108/17, 39/19) ne prepoznaje specifičnosti računovodstvene profesije, osim u odnosu na primarnu obvezu dostave podataka o zatraženom savjetu za pranje novca. Važno je istaknuti iskorak u obuhvatu pripadnika samostalnih profesija i struka na koje se referira čl. 9. st. 2. t. 18. Zakona o izmjenama i dopunama Zakona o sprječavanju pranja novca i financiranja terorizma (NN 39/19), a kojim su među njih uvrštene i sve ostale osobe koje se obvežu da će izravno ili pomoću drugih osoba s kojima su povezane pružati materijalnu pomoć, potporu ili savjete o poreznim pitanjima kao glavnu poslovnu djelatnost ili profesionalnu aktivnost.

3.   ZNAČAJ NACIONALNE PROCJENE RIZIKA

Unutar sektora samostalnih profesija i struka, Prva nacionalna procjena rizika (Ministarstvo financija, 2016) utvrđivala je ranjivosti računovodstvenog sektora zajedno sa sektorom poreznog savjetništva. Za taj je, objedinjeni sektor, nakon provođenja kontrolnih mjera procijenjena srednje niska ranjivost (0,24) od PN/FT. Unatoč niskoj procjeni rizika, istaknute su manjkavosti koje mogu utjecati na stupanj ustanovljene ranjivosti. Posebno je istaknuto da tada važeći Zakon o računovodstvu (NN 78/15, 134/15) nije propisao uvjete pod kojima određena osoba može pružati računovodstvene usluge, odnosno njihovo licenciranje. Iz tog se razloga na tržištu nalazio znatan broj osoba s neprimjerenim kvalifikacijama za obavljanje poslova ovlaštenog računovođe. Sljedeća se manjkavost odnosi na nedostatak interesa za jedinstveno sektorsko udruživanje na nacionalnoj razini jer takva udruženja postoje samo na lokalnoj razini. Manjkavosti su primijećene i u odnosu na nedostatak službenog registra svih društava koja u Republici Hrvatskoj obavljaju računovodstvene usluge. Druga Nacionalna procjena rizika (Ministarstvo financija, 2020) počiva na istim načelima te procjenjuje računovodstvenu profesiju i profesiju poreznih savjetnika skupno, a utvrđene manjkavosti recentnog Zakona o računovodstvu (NN 78/15, 134/15, 120/16, 116/18, 42/20, 47/20) ne izostaju. Međutim, ustanovljen je viši stupanj ranjivosti, štoviše, srednja ranjivost od PN/FT (ocjena inherentne ranjivosti iznosi 0,55, a konačna ranjivost 0,50).

Temeljem obje nadnacionalne procjene rizika, provedene 2017. (European Commission, 2017) i 2019. (European Commission, 2019), utvrđena je znatna ranjivost samostalnih profesija i struka, a time i računovođa. Tome su doprinijele specifičnosti računovodstvene profesije, tj. široka lepeza mogućnosti u smislu davanja legitimiteta transakcijama s ciljem prikrivanja protuzakonito stečenih sredstava. Drugom nacionalnom procjenom rizika (Ministarstvo financija, 2020, str. 199) utvrđena su najfrekventnija područja ranjivosti poslovnih aktivnosti tog sektora u pogledu PN/FT, što korespondira s navodima iz Nadnacionalne procjene rizika Europske komisije (European Commission, 2017, str. 144-145): manipulacije pri obračunu poreza; nadfakturiranje ili podfakturiranje ili lažna izjava o uvozu/izvozu dobara; osnivanje/upravljanje trgovačkim društvima, trustovima, dobrotvornim organizacijama; kupoprodaja nekretnina; zloporaba računa klijenta; i pružanje jamstava. U svojstvu nadzornika, Financijski je inspektorat u periodu 2014.-2018. obavio 282 supervizije vanjskih računovođa pri čemu je izrečeno 226 mjera za ispravljanje utvrđenih nepravilnosti i podneseno osam optužnih prijedloga. Najčešće utvrđene nepravilnosti odnosile su se na utvrđivanje stvarnog vlasnika, korištenje liste indikatora, provođenje dubinske analize i procjene rizika (Ministarstvo financija, 2020, str. 198).

Evidentno je da predstavnici računovodstvene profesije mogu biti suučesnici u shemama pranja novca stvaranjem netransparentnih vlasničkih struktura u cilju prikrivanja identiteta stvarnog vlasnika putem nominalnih direktora. Izloženi su poslovanju sa strankama koje predstavljaju visoki rizik od pranja novca, poput politički izloženih osoba (European Commission, 2017, str. 145). Jedan od najvećih nedostataka je neprepoznavanje prednosti samoregulatornog tijela poput udruženja računovođa koje bi na nacionalnoj razini imalo ulogu nadzornika i poveznice s Uredom za sprječavanje pranja novca (European Commission, 2019, str. 3).

4.   KREATIVNO I FORENZIČNO RAČUNOVODSTVO

Računovodstvena profesija po svojoj prirodi zahtijeva multidisciplinarnost, tj. poznavanje širokog područja ekonomije i prava, uz specijalizaciju u području poreza, financija i računovodstva. Iako im široki spektar sagledavanja proslovnog procesa daje prednost pred ostalim profesijama

pri detektiranju PN/FT, negativna strana se očituje u tome što se takve aktivnosti manifestiraju *post festum*, nakon izvršenja prijevarne radnje ili pranja novca.

Navedeno ukazuje na značaj korporativnog upravljanja kao ključnog faktora u prevenciji pranja novca. Specifična poveznica korporativnog upravljanja i korporativnog kriminala proizlazi iz „sive zone" tumačenja transakcije kao formalno legalne, koja implicira njezinu stvarnu regularnost (Cindori & Slović, 2017, str. 800). Samom činjenicom postojanja veze između korporativnog upravljanja i prijevara, odnosno pranja novca, evidentna je mogućnost utjecaja rukovodećih struktura na računovođe kako bi svojim profesionalnim znanjem prikrili nezakonite aktivnosti. U te se svrhe koriste i profesionalni perači novca koji će kroz treću fazu pranja novca (faza integracije) nelegalne transakcije učiniti pravno valjanim. Naknada za takvo nezakonito postupanje najčešće ovisi o stupnju rizika kojem se računovođa izlaže, kompleksnosti postupanja, metodama koje koristi i o samom predikatnom djelu (FATF, 2018, str. 11).

Financijski izvještaji predstavljaju temeljnu podlogu i polaznu točku analize poslovanja poslovnog subjekta (Žager, Mamić Sačer, Sever & Žager, 2008, str. 52). Moraju biti istiniti, objektivni i pouzdani, ali su i podložni određenim manipulacijama. Manevarski prostor pronalazi se u računovodstvenim standardima koji su često nejasni i vrlo složeni, dok su procjene subjektivne. U cilju otkrivanja manipulacija financijskim izvještajima potrebno je utvrditi indikacije koje upućuju na primjenu kreativnog računovodstva. Kreativno računovodstvo nije nezakonito, ali se nameće pitanje etičnosti zbog uključivanja postupaka i metoda manipuliranja bilančnim pozicijama i njihovim vrijednostima prikazanim u financijskim izvještajima. Primjenjuje se u svrhu ostvarivanja različitih ciljeva koji mogu rezultirati kršenjem propisa, u kojem trenutku prerasta u lažno financijsko izvještavanje.

Kreativno računovodstvo je, u svojim začecima, trebalo omogućiti realan prikaz stvarnog financijskog stanja i rezultata poduzetnika prema tekućim vrijednostima imovine, obveza i kapitala, pored njihove vrijednosti iz prethodnih razdoblja. Stoga je u primjenu računovodstvenih postupaka uvedena fleksibilnost utemeljena na primjeni instituta „fer vrijednosti" i različitih modela procjene. Međutim, u praksi se kreativno računovodstvo pretvorilo u manipulativno računovodstvo (Belak, 2011, str. 141). Jedna od najpotpunijih definicija kreativnog računovodstva ukazuje da ono obuhvaća sve postupke čija primjena omogućava manipuliranje podacima u financijskim izvještajima, uključujući agresivno računovodstvo, primjenu računovodstvenih načela suprotno njihovom duhu, lažno financijsko izvještavanje i sve postupke koji vode k upravljanju zaradom ili manipuliranju prihodima (Mulford & Comiskey, 2002, str. 3).

Osnovne karakteristike kreativnog računovodstva obuhvaćaju prilagođavanje financijskih izvještaja uz mogućnost izbora fleksibilnih računovodstvenih metoda, postupaka i procjena. Također se koriste rubne mogućnosti iskazivanja događaja, kao i nejasna područja računovodstvenih standarda koji otežavaju kontrolu i reviziju. Ističe se značaj informacija koje pogoduju izvještajnom subjektu, a umanjuje i skriva značaj onih koje mu ne pogoduju. Primjenjuju se i mnoge druge zlouporabe koje značajno prekoračuju zakonske okvire i prelaze u kriminal koji se teško otkriva (Belak, 2011, str. 143). Primjer toga su knjiženja temeljem lažne dokumentacije, što dovodi do lažnih financijskih izvještaja. Primjena kreativnog računovodstva u praksi poprima različite forme poput primjene agresivnog računovodstva, odabira računovodstvenih politika, upravljanja zaradom, primjene računovodstvenih procjena, namještanja stvarnih transakcija, stvaranja fiktivnih transakcija i lažiranja financijskih izvještaja. Ono može izaći i iz regulatornih okvira, što dovodi do potpuno nepravilnih knjiženja, u područje lažiranja financijskih izvještaja.

Suprotnost kreativnom računovodstvu je forenzično računovodstvo koje se javlja s pojavom ne-poštovanja zakonske regulative, neprofesionalizma i neetičnosti poslovanja. Pojmovi poslovna forenzika i forenzično računovodstvo obuhvaćaju slične aktivnosti. Poslovna forenzika se definira kao skup znanja i metoda u borbi protiv poslovnih prijevara i korupcije, dok je forenzično računovodstvo uži pojam. Prema definiciji Udruženja instituta ovlaštenih javnih računovođa (AICPA), forenzičko računovodstvo uključuje primjenu posebnih vještina u računovodstvu, reviziji, financijama, kvantitativnim metodama, primjenu zakona i rezultata istraživanja. Također, uključuje i kvantitativnu vještinu prikupljanja, analize i procjene financijskih dokaza, kao i sposobnost tumačenja i priopćavanja svojih nalaza (Okoye & Gbegi, 2013, str. 3).

Forenzično računovodstvo se provodi s ciljem otkrivanja manipulacija u financijskim izvještajima. Njegov su fokus najčešće korporativne prijevare. Forenzični računovođa primjenom određenih tehnika i metoda pokušava rekonstruirati, otkriti ili poduprijeti tvrdnju o eventualnim financijskim nepravilnostima te otkriti knjigovodstvene pogreške. U odnosu na navedeno, može se zaključiti kako forenzični računovođe, zahvaljujući profesionalnom znanju te vještinama i tehnikama koje primjenjuju, imaju mogućnost jasnog uvida u nepravilnosti i nepravednosti koje se javljaju unutar trgovačkog društva (Koletnik & Kolar, 2008, str. 122).

5. OBVEZA OBAVJEŠĆIVANJA O SUMNJIVIM TRANSAKCIJAMA

U okviru obavljanja profesionalne djelatnosti, a sukladno čl. 57. Zakona o sprječavanju pranja novca i financiranja terorizma (NN 108/17, 39/19), računovođa je obvezan Uredu za sprječavanje pranja novca Republike Hrvatske dostaviti obavijest o sumnjivim transakcijama. Temeljem raspoloživih podataka, informacija, dokumentacije te procjene rizika, za svaku stranku s kojom posluje, računovođa je obvezan prepoznati i ukazati na okolnosti pod kojima se stranka može naći u ulozi kanala za pranje novca. Prilikom analize poslovnih transakcija s aspekta sumnje na pranje novca, bitno je ne promatrati ih pojedinačno, već sagledavati njihov ekonomski smisao i vremenski okvir. Prividna regularnost zasebno promatrane transakcije može rezultirati suspendiranjem profesionalnog skepticizma, što onemogućuje indikaciju sumnje na pranje novca.

U nastavku teksta je prikazana statistika dostavljenih obavijesti o sumnjivim transakcijama računovodstvene profesije za razdoblje 2009. – 2019. Prikazan je udio dostavljenih obavijesti o sumnjivim transakcijama računovođa u ukupnom broju dostavljenih obavijesti o sumnjivim transakcijama svih obveznika u 18 promatranih zemalja.

Tablica 1. Udio prijava sumnjivih transakcija računovođa u ukupnom broju prijava sumnje na pranje novca za razdoblje 2009.-2019.

DRŽAVA	Udio prijava sumnjivih transakcija u %										
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
ANDORA	0,0	0,0	0,2	0,0	0,0	0,0	1,7	0,0	0,0	0,8	0,7
AUSTRIJA	0,4	0,2	0,1	0,1	0,2	0,2	0,2	0,3	0,2	0,2	0,3
BERMUDA	0,0	0,0	0,0	0,0	0,0	0,0	0,3	0,0	0,0	0,3	-
CRNA GORA	0,0	0,0	0,0	0,0	0,0	0,0	1,0	0,0	-	-	-
VELIKA BRITANIJA	-	-	-	2,1	1,7	1,4	1,2	1,0	1,1	1,0	0,9
ESTONIJA	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,2	0,1	0,2
FIDŽI	0,0	0,2	0,3	0,2	0,4	0,3	0,0	0,0	0,0	0,0	0,0
FRANCUSKA	0,3	0,5	0,6	0,6	0,7	0,6	0,7	0,7	0,7	0,6	0,5

HRVATSKA*	0,0	0,0	0,2	0,2	0,7	0,2	0,1	0,3	0,0	1,3	0,0
HONG KONG	0,1	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
ITALIJA	0,2	0,2	0,2	0,1	0,2	0,2	1,8	1,3	0,4	0,3	0,3
LUKSEMBURG	2,2	0,9	1,2	1,0	2,0	1,8	0,9	0,3	0,1	0,1	0,2
MAĐARSKA	0,1	0,0	0,0	0,1	0,1	0,1	0,3	0,2	0,1	-	-
NIZOZEMSKA	0,3	0,6	0,3	0,4	0,9	1,0	1,1	0,5	0,6	0,5	0,5
NJEMAČKA	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
SJEVERNA MAKEDONIJA	0,0	0,0	0,0	0,0	0,0	0,7	0,0	0,4	-	-	-
SRBIJA	0,0	0,0	0,0	0,0	0,0	0,0	0,1	0,1	0,0	0,3	0,3
TURSKA	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	-	-	-

* Broj sumnjivih transakcija za razdoblje 2009.-2016. prikazan je skupno za računovođe i porezne savjetnike, a za razdoblje 2017.-2019. samo za računovođe.

Izvor: analiza autorica na osnovi podataka godišnjih izvješća analiziranih financijsko-obavještajnih jedinica

Iz usporedbe broja prijavljenih sumnjivih transakcija računovođa, u odnosu na ukupan broj prijavljenih sumnjivih transakcija svih obveznika, izvodi se zaključak o njihovoj disproporciji. Razlog niskog broja prijava sumnjivih transakcija računovođa potencijalno proizlazi iz nedostatka jasnih uvjeta za obavljanje računovodstvene profesije te svijesti o prijetnjama PN/FT, manjkave edukacije, rada sa strankama niskog rizika i sl. Temeljem izloženog proizlazi da je broj prijava sumnjivih transakcija nejasan indikator promjena, a samim time i učinkovite primjene mjera dubinske analize i procjene rizika.

6. ZAKLJUČAK

S obzirom na prirodu računovodstvene profesije i zahtijevanu multidisciplinarnost, na međunarodnoj je razini ustanovljena povećana ranjivost od prijetnje PN/FT. Domaća praksa ukazuje na srednju razinu ranjivosti koja je eksponirana u nekoliko segmenata: uloga računovođa u korporativnom upravljanju, priroda računovodstvene struke koja transakcijama omogućuje privid legalnosti s ciljem prikrivanja protuzakonito stečenih sredstava te dostignuta razina svijesti o ustanovljenim prijetnjama od PN/FT. Upravo niska zastupljenost prijavljenih sumnjivih transakcija računovodstvene struke ukazuje na potrebu za poduzimanjem aktivnijih mjera nadzornih tijela u smislu frekventnijeg nadzora provođenja mjera prevencije i dubinske analize, a posebice identifikacije stvarnog vlasnika, politički eksponiranih osoba i procjene rizika općenito. Pritom je kontinuirana edukacija nezaobilazan element podizanja razine svijesti računovodstvene struke i formiranja stava pred izazovima koje postavljaju etika, moral te pred zahtjevom za transparentnošću i odgovornošću pri financijskom izvještavanju.

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BITNE ODREDNICE KORPORATIVNOG UPRAVLJANJA

ESSENTIAL DETERMINANTS OF CORPORATE GOVERNANCE

Slobodan N. Bracanović[1]

Apstrakt: *Korporativno upravljanje i odlučivanje nastoji prevazilaziti konfliktnosti podjele upravljanja i vlasništva u kompanijama. Omogućava se povoljniji pristup novom kapitalu na finansijskim tržištima, kadrovima i sa težnjom jačanja konkurentnosti i komparativnih preimućstava, uspješnosti, efikasnosti investicija. Oblik je, metod, način, razvijanja savremenog upravljanja kompanijama, kao i izgrađivanja poslovne kulture.*

Ključne riječi: *Korporacija, Vlasništvo, Upravljanje, Metod, Kapitali, Tržište, Uspjesi.*

Abstract: *Corporate governance seeks to overcome the conflicts of division of management and ownership in companies. It provides more favorable access to new capital in the financial markets, human resources and with the aim of strengthening competitiveness and comparative advantages, success, investment efficiency. It is a form, a method, a way of developing modern management, as well as building a business culture.*

Keywords: *Corporation, Property, Management, Method, Capitals, Market, Success in business.*

1. PRETHODNE ODREDBE

Modernim okolnostima privređivanja, izražavaju se organizaciono, tehničko-tehnološki, ekonomski i dr., kompleksni i složeni korporativni subjekti, entiteti, sa razdvajanjem funkcija vlasništa i upravljanja. Vlasnici angažuju profesionalne i osposobljene upravljače, menadžere, za upravljanje i rukovođenje u poslovnim subjektima. Menadžeri, međutim optimalno ne vrše, ne obavljaju (valorizuju) svoju funkciju, tj. prioritetno realizuju vlastite težnje, ciljeve i zadatke, umjesto glavnih, ciljeva i interesa vlasnika i (ili) suvlasnika privrednih činilaca (društava).

Manifestovani ozbiljni i akutni problemi i teškoće, dovode do nastajanja korporativnog upravljanja koje predstavlja: sklop, obuhvat, („spektar", „lepezu", „dijapazon") mehanizama i instrumentarijuma kojim se djeluje na upravljanje, rukovođenje i odlučivanje od strane manadžera, u stanjima i situacijama, kada postoje neusklađenosti, podjele, protivrječnosti, konfliktnosti: menadžerskih i vlasničkih interesa ili ciljeva.

Isto tako, korporativno upravljanje podrazumijeva: strukture, procese i dešavanja u cilju i svrsi: vođenja, kontrole, ili nadzora privrednih činilaca (društava). Postoji različitost između: korporativnog upravljanja i (ili) rukovođenja. Naime, korporativno upravljanje (sa višeg nivoa, ranga i interesa akcionara) usmjerava se na težnje i zadatke postizanja: objektivnosti, transparentnosti, odgovornosti (u okvirima ovlašćenja, nadležnosti) u ponašanju, postupanju. Korporativno rukovođenje sa svoje strane, orijentiše se na sredstva i načine nužne za odvijanje poslovne djelatnosti. Povezuje ih: poslovna projekcija, koncepcija, strategija, taktičko-operativne aktivnosti.

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Javlja se i razlika korporativnog i javnog (državnog) upravljanja. Javno upravljanje, rukovođenje i odlučivanje, usmjereno je na strukture i tehnoekonomske sisteme u javnom sektoru (pojam javnog sektora, širi je od državnog, jer može obuhvatati i privatne i mješovite subjekte od javnog interesa). Međutim, postoji, u realnoj stvarnosti korporativno upravljanje, privrednim subjektima (preduzećima) i u državnom vlasništvu.

Korporativno upravljanje, moguće je da ojača elemente: poboljšavanja, optimizacije relacija prema okruženju tj. društvenoj zajednici, korporativne društvene odgovornosti, poslovne etike i morala. Postoje međutim i razlikovanja od ovih koncepata.

Polazeći od nivoa privrednog subjekta (kompanije), korporativno upravljanje omogućava (ili se ovo očekuje) poboljšani i uspješniji (probitačniji) pristup, po povoljnijim, prihvatljivijim uslovima (nižim cijenama i kamatnim stopama) dodatnom i (ili) novom («svježem») kapitalu. Dužim i dugoročnim vremenskim horizontom poboljšava se konkurentnost, na bazi uporednih (komparativnih) prednosti, (preimućstava). Korporativni vid upravljanja omogućava (ili se predviđa) ostvarivanje više dobiti profita (akcionarima), kao i osnaživanje povjerenja ulagača u tržište kapitala. Kompanijski kapital sastoji se od: hartija od vrijednosti (akcija) u veoma disperziranoj i diverzifikovanoj vlasničkoj strukturi (velikog opsega akcionara i investitora). Saglasno pravilima, trguje se (akcijama) na tržištima (berzama, javnom dostupnošću svih relevantnih i selektovanih informacija, sa kontrolom i nadzorom: „Komisije za hartije od vrijednosti kao regulatora tržišta kapitala"). Korporativno upravljanje je interregionalnog domena, jer se smatra da čini bitnost, „srž" poslovne uspješnosti kompanija, sa postizanjem „stabilnosti i uravnoteženosti privrednih sistema zemalja". Međuzavisno je od: privrednog i pravno-političkog sistema zemlje, normativne, zakonske regulative ove sfere, kao i globalnih tokova, metoda, pravila i (ili) propisa. Suštinski, korporativno upravljanje podrazumijeva: oblik upravljanja kompanijama i kompanijskim strukturama, kadrovima, finansijama, zaposlenošću poslovnim politikama, efikasnošću, efektivnošću (2) i poslovnom kulturom u cjelini. Monolitni standardi upravljanja realno ne postoje primjenljivi i za sve kompanije. Korporativno upravljanje zavisno je od: organizacije, tehnike i tehnologije, kadrova, tržišta, izvora kapitala, veličine subjekta. Oblast nije dovoljno istražena. (3; 301-303)

2. EKONOMSKI HORIZONTI

Cilj i svrha korporativnog upravljanja je ostvarivanje: povoljnije i optimalnije efikasnosti i (ili) efektivnosti kompanije, profitabilnosti, akumulativnosti, produktivnosti rada, ekonomičnosti troškova, rentabilnosti sredstava. Bitna pitanja ovog vida upravljanja su i: prava, kompetencije, obaveze i odgovornosti kompanijskih struktura i elemenata (akcionara, ulagača, zaposlenih, menadžmenta i organa upravljanja, rukovođenja, kontrole i dr.). Utvrđenim načelima, nastoji se postići unapređenja i optimalnija relacija: upravljačko-rukovodeće strukture rada, odlučivanja, kontrole i nadzora (u transparentnom pogledu). Težnja je: prevazilaženje nesklada, konfliktnosti vlasničke i menadžerske strukture (teorijski, ili praktični „principal-agent" problem). Akteri (sudionici) u domenu korporativnog upravljanja brojni su, multidimenzionalni (vlasnici, menadžeri, odbori, ulagači, kupci, dobavljači, povjerioci, sindikati, planeri, programeri, analitičari, revizija, marketinške strukture, propaganda, mediji, kao i dr.).

Rešenja, prevazilaženje, problema (3; 304): vlasnika i menadžera („principal-agent") nastoje se postizati određenim metodima (normativno-pravnom zakonskom regulativom, kontrolom i nadzorom menadžmenta, izrazito povoljnijim nagrađivanjem, simulansima, bonusima i enormnog nivoa, finansijskim posrednicima, posebnim i specijalnim ugovorima o djelu vlasništva

nad kompanijom i sl.). Postižu se i efekti. Dalje postoje i problemi kod vlasnika („principal-principal"). Naime, pitanje je načina obezbjeđivanja, u kompanijama sa suženim, koncentrisanim vlasništvom, da: većinski, ili kontrolni vlasnik ne deformiše, poremeti (zloupotrijebi) kontrolu nad poslovnim subjektom, za neopravdano sticanje višeg obima (volumena) dobiti tj. profita i ukupnih korisnosti. Prisutna je konfliktnost između jednog većinskog vlasnika koji u cjelosti (ili uglavnom) kontroliše preduzeće i većeg opsega malih i manjih akcionara koji nijesu u stanju i (ili) sposobnostima suprotstavljanja dominantnom vlasniku. Ove dileme pokušavaju se otklanjati zakonskom regulativom, tj. prinudom (a ne na dobrovoljnoj bazi). Prisutni su i problemi između samih menadžera („agent-agent"). Preciznije, menadžeri iz egoističnih i karijerističkih ciljeva, ne biraju sredstva, metode i načine da ostvare međusobno konkurentne ciljeve dolaženja na mjesta, pozicije, napredovanja i nagrađivanja.
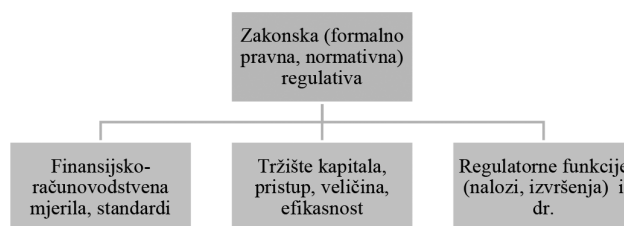
Dijagram 1. Činioci, mehanizmi ili i instrumenti, odvijanja, korparativnog upravljanja
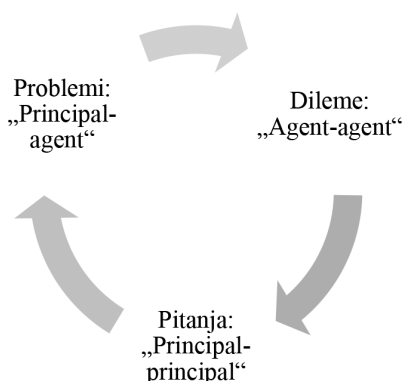
Izvor: Autor

Dijagram 2. Iskristalisani problemi, pitanja, ili dileme, u savremenim korporacijama
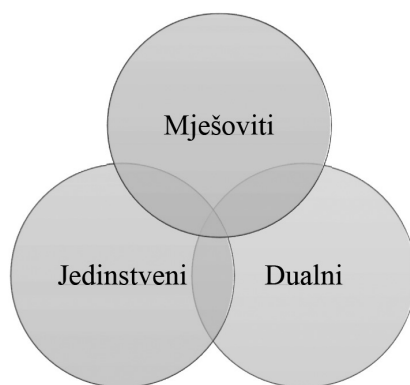
Izvor: Autor

Upravljačka, tehničko-tehnološka i organizaciona struktura savremene korporacije, kao poslovnog sistema, u tokovima privrednog života i realno okruženje, kompleksni su, složeni i isprepletani. Imanentni su raznovrsni pripadajući elementi (normativno pravna i zakonska regulativa, kreatori poslovne i ekonomske politike, zaposleni, akcionari, menadžeri, upravljači i rukovodioci, ulagači i preduzetnici, kupci, dobavljači, finansije i računovodstvo, tržište kapitala, povjerioci, planeri- analitičari, sindikati, revizori, skupštine akcionara, upravni, nadzorni i izvršni odbori, sindikati, marketing, propaganda, socijalne, kulturne vrijednosti, ciljevi i dr.).

Korporativno upravljanje obuhvata sisteme u zavisnosti od oblika kapitalizma: tržišno orijentisanog, ili „modifikovanog i novog" (SAD, Kanada, Velika Britanija),(7,124), korporativističkog (Japan, Njemačka), državnog (Francuska, Italija), socijaldemokratskog kapitalizma (Švedska; Austrija i dr.). Dalje, makroekonomskim aspektima, pouzdan model korporativnog upravljanja omogućen je zakonskim i institucionalnim državnim gabaritima i postavlja ciljeve jačanja privrede određene zemlje (disperzijom kompanija i izvan nacionalne ekonomije). Pored ovog,

mikroekonomskim domenima, solidan model korporativnog upravljanja ustanovljava ciljeve suzbijanja nepovoljnih učinaka, privrednog kriminala i korupcije (mita), utvrđivanjem poslovne prakse zaštite akcionara i ulagača od djelovanja (zloupotreba), menadžmentskih struktura.

Postoji i prelazni nivo (mezo, granski, regionalni, integracija), sa povezanim, ciljevima. Razlikuju se, u osnovi: a) jedinstveni (Kanada, SAD, Velika Britanija); b) dualni (Japan, Njemačka); v) kombinovani, mješoviti, unakrsni (zemlje u tranziciji kao ranijeg socijalističkog ustrojstva), modeli i (ili) modaliteti korporativnog upravljanja.


Dijagram 3. Elementarni, bazični i izvedeni oblici, sistemi, korporativnog upravljanja
Izvor: Autor

Jedinstveni sistem korporativnog upravljanja favorizuje ciljeve očuvanja, zaštite, interesa ulagača i akcionara, tj. maksimizacije (njihove) dobiti i profita, kao i kontrolisanja menadžmentske, upravljačko-rukovodeće strukture odlučivanja. (6) Najveći dominatan i presudan uticaj u odlučivanju ostvaruje: većinski vlasnik, ili akcionar, koji raspolaže „većinskim, ili i kontrolnim paketom akcija" (natpolovičnim, preciznije, 51%). Omogućava se ulaganjima, jedino, kratkoročna efikasnost i efektivnost.

Dualni sistem predstavlja model čija osnovna svrha, zadatak je zaštita interesa poslovnih aktera (investitora, banaka i dr. finansijskih institucija, akcionara posebno manjinskih i dr.), na bazi pravne, normativne i zakonske regulative kojom se otklanjaju mogućnosti kontrolisanja subjekta, kompanije od velikih, krupnih, akcionara. Imanentno je organizacino usklađivanje rada i poslodavaca. Materijalni interesi investitora i akcionara nastoje se da budu zaštićeni, očuvani. Ovaj upravljački model je (normativnošću) nedovoljno fleksibilan. Isto ovako nedovoljna je i mobilnost kapitala.

Kombinovani mješoviti („unakrsni") sistem korporativnog upravljanja, smatra se prihvatljivim za zemlje u prelaznom periodu ka izmijenjenom, ili novom društveno-ekonomskom sistemu, tj. u „tranziciji". Tumači se da: privredne kompanije, jedino, korporativnim upravljanjem u mogućnostima su da nastupe i izvrše prodor na međureginalnom i globalnom tržištu. Ali ovo nije jedini, isključivi oblik upravljanja! Pored ovog, indikativni su mnogi problemi i teškoće u zemljama u „tranziciji" (povezanosti države i finansijske sfere, izgrađenosti pravosuđa, sudstva, arbitraže", preplitanja državnog, javnog, mješovitog i privatnog vlasništva, preduzetničke „klime" i dr.). Postoje specifičnosti, posebnosti (ili „specijalnosti") postprivatizacionih tokova nakon („zahuktale") privatizacije koja je tranzicionih odrednica neuspjelog (ili i iskompromitovanog) procesa! Neophodno je vlasničko (organizaciono, tehničko-tehnološko, kadrovsko upravljačko) jasno kristalizovanje, ili stabilizovanje. (3; 306-308)
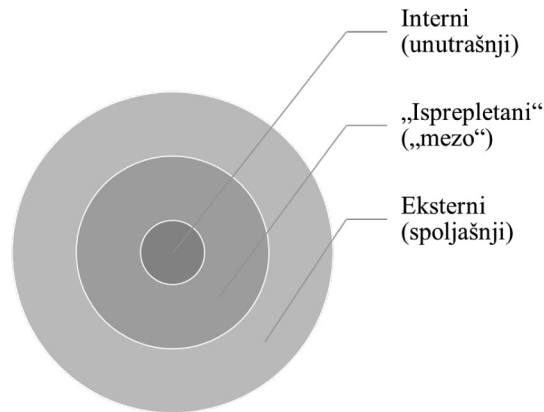
Dijagram 4. Mehanizmi i instrumentarijumi, metoda i modela, korporativnog upravljanja
Izvor: Autor

Interne mehanizme korporativnog upravljanja kreiraju i realizuju organi upravljanja kompanijom (skupština akcionara, upravni, izvršni, nadzorni odbor; sistemom interne revizije i sl.). Ostvarivani mehanizmi su raznovrsni (koncentracija vlasništva, informisanje, relacije između ulagača, novčane naknade menadžmentu i dr.). Eksterne mehanizme realizuju činioci izvan kompanije (organi, akteri, institucije; sitemom eksterne revizije i sl.). Karakteristični su, uglavnom, određeni (normativna, pravna regulativa, zaštita prava naročito manjinskih akcionara, kontrola i nadzor, konkurentski uslovi, ili prilike, na bazi komparativnih preimućstava i sl.). (3; 312-313) Postoje i povezani, mehanizmi, sa elementima i jednog i drugog oblika, ili dominiranjem.

Investicije označavaju ulaganja i prirast kapitalnih tokova i dobara (građevinski objekti, oprema, zalihe nedovršene prozvodnje, ili gotovih proizvoda i dr.). (1; 495-502) Razlikuju se investicije: klasične i (ili) u hartije od vrijednosti (akcije, obveznice i sl.). Genaratorska su snaga i pretpostavka privrednog rasta i razvijanja. Mehanizmi korporativnog upravljanja koji regulativom štite prava ulagača (i akcionara) prijemčiva su za investitore. Privlačenje kapitala (domaćeg i stranog) je povoljnost kompaniji da privređuje kao uspješniji i efikasniji poslovni sistem. Osnovni i postojeći kapital kompanije najčešće nije dovoljan za (njen) rast i razvoj. Vrši se i optimiziranje, „racionisanje" kapitala primjenjivanjem metoda za izbor programa i projekata u uslovima limitiranih kapitalnih i ukupnih sredstava. Planiranje kapitalnih ulaganja podrazumijeva elemente (prihode, troškova, vrijeme, kriterijume efikasnosti i efektivnosti i sl.). Kod ocjene investicionih projekata, u bitnom, primjenjuju se dinamičke metode (neto sadašnja vrijednost, interna stopa prinosa, indeks rentabilnosti). Sagledavaju se: novčani tokovi i vremenska vrijednost novca (diskontni faktor i svođenje budućih vrijednosti na sadašnje). Preciznije: kod metoda neto sadašnje vrijednosti, projekat se shvata rentabilnim kada je neto sadašnja vrijednost pozitivna (veća od nule). Metodom interne stope prinosa, projekat se prihvata kada je ova stopa iznad zahtijevane. Indeksom rentabilnosti (kao relativnom mjerom), svaki samostalni projekat odobrava se sa prihvatljivim indeksom (iznad jedinice). Kod velikih kompanija, sa kompleksnom i složenom strukturom, problemi izbora su komplikovaniji i rešavaju se metodima linearnog programiranja (i operacionih istraživanja). Osim ovog, kristališe se i korporacijski konceptualni posebno finansijski gabarit. Osnovni cilj kompanije je: optimizacija tj. maksimiranje dobiti, profita (za akcionare). Kod (zatvaranja) konstrukcije finasiranja relevantne su: različite cijene kapitala (kamatne stope), kao i dugovi (sa raznim rokovima dospijavanja anuitetskih obaveza, glavnice i kamate). Nužno je sagledavati srazmjerno učešće duga u ukupnom prihodu i izvorima finasiranja. Enormnim finasiranjem iz tuđih izvora sredstava (visok „leveridž") i sa nepovoljnim uslovima, može biti ugrožena uspješnost poslovanja i mogućnosti, kontrole. (3; 315-318).

Dalje (u tržišnim ekonomijama), korporativno upravljanje regulisano je, neposrednom zakonskom regulativom (pravilima, propisima). Osnov (baza) za racionalnu i svrsishodnu regulativu su princpi, načela (OECD). Postoje i „preporuke" za region jugoistočne Evrope („Bijela knjiga"). Riječ je jasno o regulaciji (ne deregulaciji)! (3; 318).

Krupni tehno-ekonomski sitemi i privredni subjekti u državnom vlasništvu (ili pod kontrolom), predstavljavju krupan dio ekonomije ozbiljnih država. Ovi sistemi i subjekti, dominiraju naročito: krupnom privrednom i društvenom infrastrukturom, kao „kičmom" privredne strukture, od najvećeg i ključnog značaja. Moguće je korporativno upravljanje državnim (javnim) sistemima i subjektima, težeći rastu efikasnosti. Država može sticati i povoljne učinke od mehanizama primjenljivih za privatnu sferu (privatni subjekat može odlukom države biti javni). Stremi se nalaženju: ravnoteže između odgovornosti države za aktivnu primjenu vlasničke funkcije (odbori) i istodobno bez velikog, enormnog, političkog uticaja u upravljanju kompanijama. Nužno je omogućavati i ravnopravne uslove državnim, privatnim i (ili) mješovitim subjektima. (3; 319-322). Neophodna je: korporacijska društvena (pravna, ekonomska, etička, socijalna, filantropska) odgovornost. Ali sada, jača upravljanje: metodima državnog, javnog, sektora!

3.   ZAKLJUČAK

Teorijski i praktično, naglašava se uloga i značaj korporativnog upravljanja u savremenim uslovima razvitka. Ukazuje se da ovaj oblik upravljanja predstavlja „srž" modernog kapitalističkog sistema, posebno kod ekonomski razvijenih zemalja. Ovo posebno ističu teoretičari koji kapitalizam smatraju jedinim svjetskim sistemom, bez adekvatne alternative (4). Korporativno (i mješovito) upravljanje moguće je i u državnim subjektima. Ali u savremenim uslovima dolazi do izražaja i državno upravljanje, u domenima državnog (javnog) sektora i grandioznih, krupnih tehnoekonomskih (naročito infrastrukturnih) sistema kao i, posebno, velikih privrednih subjekata; od presudne važnosti kao „kičme" privredne strukture. Teoretičari ističu i promjene, „surogate", „modifikovani" ili i „novi kapitalizam." Smatram da: kapitalizam nije i jedini sistem!

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SLOGAN MALOPRODAVAČA U FUNKCIJI CJENOVNOG IMIDŽA

RETAILER'S SLOGAN IN THE FUNCTION OF PRICE IMAGE

Jelena Franjković[1] ⓘ

Sažetak: *Imidž maloprodajnog branda i cjenovni imidž maloprodavača od značajne su važnosti za postizanje konkurentske prednosti i dugotrajno jačanje cjelokupnog imidža. Slogani maloprodavača trebali bi odražavati njihovu sveukupnu strategiju te olakšati i učvrstiti željeno pozicioniranje u svijesti kupaca, tj. potrošača. Rad proučava maloprodavače pretežito prehrambenim proizvodima, tj. visoko obrtajnim proizvodima. Maloprodavačima koji prodaju proizvode različitih brandova teže je upravljati i kontrolirati pozicioniranje vlastitog branda, a u tome značajnu ulogu ima i cjenovni imidž. Cilj rada je istražiti i usporediti percepciju potrošača o sloganima maloprodavača i njihovom cjenovnom imidžu. Provedeno je primarno istraživanje čiji su ispitanici bile osobe koje sudjeluju u kupovini namirnica za svoje kućanstvo, a obuhvaćeno je vodećih pet maloprodavača na hrvatskom tržištu. Rezultati istraživanja pokazali su kako slogan maloprodavača može imati važnu ulogu u uspješnom upravljanju cjenovnim imidžem. Zabilježena je usklađenost percepcije cjenovnog imidža maloprodavača od strane ispitanika s asocijacijama njihovih slogana na razinu cijena. Konačno, zaključuje se kako usklađenost svih elemenata maloprodajnog marketinškog spleta olakšava i učvršćuje željeno pozicioniranje u svijesti potrošača, pa tako i cjenovnog imidža.*

Ključne riječi: *Maloprodajni brand, Percepcija potrošača, Slogan, Cjenovni imidž.*

Abstract: *The image of the retail brand and the price image of the retailer are of significant importance for achieving a competitive advantage and long-term strengthening of the overall image. Retailers' slogans should reflect their overall strategy and facilitate and consolidate the desired positioning in the minds of customers, ie consumers. The paper studies retailers with predominantly food products, i.e., high-turnover products. Retailers who sell products of different brands find it more difficult to manage and control the positioning of their brand, and the price image also plays a significant role in this. This paper aims to investigate and compare consumer perception of retailers' slogans and their price image. A primary survey was conducted with persons participating in the purchase of groceries for their household and included the top five retailers in the Croatian market. The results showed that the slogan of retailers can play an important role in the successful management of the price image. The compliance of the perception of the price image of retailers by the respondents with the associations of their slogans to the price level was noted. Finally, it is concluded that the harmonization of all elements of the retail marketing mix facilitates and strengthens the desired positioning in the minds of consumers, and thus the price image.*

Keywords: *Retail brand, Consumer perception, Slogan, Price image.*

1. UVOD

Stvaranje i osnaživanje cjelokupnog pozitivnog imidža tvrtke od velike je važnosti za svaku tvrtku, pa tako i one koje se bave maloprodajom. Rad proučava maloprodavače pretežito prehrambenim proizvodima, tj. visoko obrtajnim proizvodima (FMCG sektor). Izražena konkurencija među maloprodavačima u tom sektoru te osnaživanje njihove pozicije u opskrbnim lancima posljednjih desetljeća, ojačalo je važnost njihovog marketinškog promišljanja i pozicio-

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niranja vlastitog branda u svijesti potrošača. Maloprodavačima koji prodaju proizvode različitih brandova proizvođača teže je upravljati i kontrolirati pozicioniranje vlastitog branda, u čemu vrlo važnu ulogu ima percepcija cjelokupnog imidža maloprodavača, ali nezaobilazno i cjenovnog imidža kao njegovog dijela. Cijene su najdirektnije područje u kojem se maloprodavači međusobno nadmeću, a koje potrošači najlakše i najbrže primjećuju. Ipak, procesuiranje izrazito velikog broja cijena za veliki broj proizvoda za potrošače je vrlo težak i izazovan, stoga je važno za maloprodavače kreirati pozitivan dojam i percepciju niskih cijena. Osim samih cijena, u tome im mogu i trebaju pomoći i ostali marketinški alati. Iz tog razloga, cilj ovog rada je istražiti i usporediti percepciju potrošača o sloganima maloprodavača i njihovom cjenovnom imidžu.

2.   PREGLED LITERATURE

Među istraživačima maloprodajnog branda postoji mišljenje kako njegovo upravljanje još uvijek nije na dovoljno dobroj razini te da maloprodavači više ulažu u merchandising i operativni marketing, nego što ulažu u strateški marketing (Mathews-Lefebvre i Dubois, 2013). Isti autori naglašavaju i kako je maloprodavačima koji prodaju proizvode različitih brandova teže upravljati i kontrolirati pozicioniranje vlastitog branda. Standish (2018) ističe kako je svojevrstan imperativ maloprodavačima raditi na svom brandu i osnažiti povjerenje potrošača u njega. Stvaranje takve baze potrošača je za maloprodavača vrlo važno, jer potrošači koji su vezani uz njegov brand su vjerni i najprofitabilniji visoko vrijedni segment potrošača za maloprodavača (Green i dr., 2018). Istraživanjem 16 različitih FMCG kategorija proizvoda, Guyt i Gijsbrechts (2018) pokazali su kako je polovica potrošača fokusirana na brand proizvoda i radije će promijeniti maloprodavača kako bi kupili određeni brand proizvoda, dok je polovica fokusirana na prodavaonicu i radije će promijeniti brand proizvoda za kupovinu. Naravno da u tome utjecaja ima praktičnost kupovine poput blizine lokacije prodavaonice i navika potrošača, ali zasigurno određenu ulogu ima i brand maloprodavača uz kojeg su potrošači vezani. Smigielska i Stefanska (2017) naglašavaju važnost pozicioniranja maloprodavača te razvijanje imidža koji će reflektirati željenu tržišnu poziciju. Ističu snažnu ulogu promocije u tom procesu, osobito promotivnih slogana maloprodavača jer njima maloprodavači upućuju potrošačima poruku na koji se način žele diferencirati od konkurencije. Iacobucci (2016) (prema Prediger i dr. 2019) navodi kako poruka slogana naglašava glavnu prednost maloprodavača, koje su i ispitane ovim istraživanjem – npr. radi li se o širokoj i dobroj ponudi, diferenciranim ekonomskim uvjetima, što mogu biti i niže cijene, te da utječe na imidž branda povećavajući sklonost i vjernost prema brandu.

Ailawadi i Keller (2004) smatraju kako suvremeni maloprodavač može upravljati osobnošću svog branda i njegovom arhitekturom kako bi pojasnio i približio potrošačima što od njega mogu očekivati. Današnji suvremeni maloprodavači ulažu značajna sredstva u izgradnju branda koji će poslužiti kao pokretač za privlačenje ciljnih potrošača (Gunnarsson, 2015). Kao i kod drugih brandova, može doći do stvaranja određenog poistovjećivanja i emocionalne povezanosti prema brandu. Ta emocionalna povezanost vjerojatno se može gledati i kao jedan dio osobnosti branda koju Ailawadi i Keller (2004) vide kao neopipljivo obilježje koje nadilazi fizička obilježja i kojim se očekuje da ciljni potrošači osjećaju sklonost prema određenom maloprodavaču. Za učinkovitu komunikaciju prema ciljnim potrošačima, potrebna je dobro definirana i usklađena cjelokupna komunikacijska strategija, uključujući viziju, misiju, logo i slogan (Tamulienė i dr. 2020). Uobičajeni promotivni alat u maloprodaji pretežito prehrambenim proizvodima su tjedni katalozi koji uglavnom informiraju o posebnim ponudama ili cjenovnim akcijama. Vrlo često na naslovnici komuniciraju slogan maloprodavača. U svom istraživanju Prediger i dr. (2019) potvrdili su kako prisutnost slogana na naslovnici promotivnog kataloga povećava namjeru potrošača za posjetom prodavaonici.

Kompleksnost imidža branda, ne samo maloprodajnog, već općenitog, prikazali su Latif i dr. (2014) u svom konceptualnom okviru prethodnica i ishoda imidža branda, naglašavajući pri tome kako je njegova izgradnja od značajne važnosti za postizanje konkurentske prednosti i dugotrajno jačanje cjelokupnog imidža. Brand maloprodajnog gospodarskog subjekta se u svojoj biti ne razlikuje od ostalih brandova drugih industrija. Slično kao i kod ostalih brandova, na reputaciju i percepciju maloprodajnog branda tvrtke utječu mediji, investitori, javne vlasti, lokalne zajednice (Burt i Davies, 2010) i ostali vanjski potencijalni čimbenici. Kao ishode imidža branda Latif i dr. (2014) navode prisnost ili upoznatost potrošača s brandom, zatim zadovoljstvo, povjerenje i vjernost brandu. Navedeni ishodi poželjni su i za maloprodajni brand jer to znači zadovoljnog potrošača koji će se vraćati u prodavaonice maloprodavača, imajući povjerenje u njegovu ponudu i uslugu. Kao bitan čimbenik u izgradnji i održavanju institucionalnog i tržišnog imidža, Lacœuilhe i dr. (2018) vide i društveno odgovorno poslovanje te teritorijalnu legitimnost, koja se ostvaruje kroz kreiranje diferencirane ponude prilagođene tržištu na kojem maloprodavač posluje. U skladu s tim, i Baird (2016) ističe kako maloprodavačima više nije dovoljno imati u ponudi samo najbolje brandove proizvođača, već da moraju definirati i razviti vlastiti brand, tj. trgovačku marku.

Imidž prodavaonice dio je maloprodajnog branda kojeg Gunnarsson (2015) vidi kao holistički i višedimenzionalni konstrukt koji uključuje i cjenovnu sastavnicu. Ipak, kako maloprodavači često imaju nekoliko desetaka ili stotina prodavaonica, za očekivati je da postoje određene razlike u poslovanju različitih prodavaonica te da ostavljaju različite dojmove na potrošače, iako su sve pod brandom istog maloprodavača. Za razliku od ostalih elemenata koji su podložni subjektivnosti, primjerice ljubaznost osoblja, ili pak dostupnosti proizvoda ili čistoće same prodavaonice koja može varirati među prodavaonicama, cijena maloprodavačima i potrošačima pruža jednu dosljednost, osobito ukoliko maloprodavač koristi strategiju jednakih cijena u svim svojim prodavaonicama, neovisno o lokaciji i formatu. Simon i Fassnacht (2018) smatraju kako cjenovni imidž potrošačima može poslužiti kao smjernica pri donošenju odluka.

U sklopu cijene kao dijela branda maloprodavača, Ailawadi i Keller (2004) naglašavaju tri područja koja utječu na imidž maloprodavača: percepcija razine cijene prodavaonice, cjenovni format maloprodavača i cjenovne promocije - njihova učestalost, snaga i raznolikost asortimana koji obuhvaćaju. Percepcija razine cijene prodavaonice zapravo reflektira cjenovni imidž te je blisko povezana s cjenovnim pozicioniranjem, koji u konačnici rezultira cjenovnim imidžem. Ofir i dr. (2008) vide cjenovno pozicioniranje jednim od osnovnih elemenata marketinške i maloprodajne strategije. Simon i Fassnacht (2018) navode kako je za maloprodavače cjenovno pozicioniranje prioritet, kako na razini cjelokupnog asortimana, tako i na razini pojedinih kategorija proizvoda te ističu važnost cjenovnog imidža i potrebu za njegovim smislenim upravljanjem. Chernev (2017) smatra cjenovni imidž vrlo važnim dijelom branda maloprodavača koji može utjecati na to da maloprodavač bude prvi odabir potrošača, te da se vraća u njegove prodavaonice.

Važnu ulogu u upravljanju brandom, imidžem i cijenama maloprodavača imaju proizvodi trgovačke ili privatne marke maloprodavača. Kumar i dr. (2017) ističu kako su ih maloprodavači i lansirali na tržište kako bi postigli jedinstveni identitet vlastitog branda. Osim toga, uvođenje vlastitih proizvoda omogućilo je maloprodavačima i veću kontrolu prodajnih cijena proizvoda i njihovu bržu prilagodbu ciljnim segmentima potrošača. Naziv branda tih proizvoda može biti isti ili sličan nazivu maloprodavača ili pak uklopljen u karakteristike kategorije proizvoda u kojoj se prodaje, ovisno o strategiji maloprodavača. Ipak, uobičajeno je da jedan maloprodavač ima više svojih trgovačkih marki. Glavni razlog tome upravo je cjenovno pozicioniranje i prilagodba ponude različitim segmentima potrošača. Segetlija i Dujak (2013) navode kako se takvi brandovi pozicioniraju kao ge-

nerički, klasični i premium. Naravno, generički brandovi su se prvi pojavili na tržištu i u početku su bili percipirani kao proizvodi niske kvalitete i niskih cijena. Jačanjem uloge maloprodavača u opskrbnom lancu i osnaživanjem njihovih brandova u percepciji potrošača, otvorila se mogućnost za unaprjeđivanjem i poboljšanjem ponude proizvoda pod trgovačkom markom u koje su potrošači počeli imati više povjerenja, a koje im jamči brand maloprodavača. Pojedini maloprodavači imaju brojne proizvode pod svojom trgovačkom markom čije ime nije vezano uz brand maloprodavača. Može se pretpostaviti kako maloprodavači zasigurno time žele izbjeći percepciju proizvoda niže kvalitete te kreirati vlastitu trgovačku marku koja će se i u tom pogledu ravnopravno boriti s pro-izvođačkim brandovima za svoj prodajni udio na njihovim policama. Nadalje, s takvim proizvo-dima su među prvima započeli diskonteri, koji su za primarni cilj imali ponuditi cijene niže od konkurencije. S razvojem njihovog poslovanja, ali i suvremenog maloprodajnog tržišta općenito, i oni mijenjaju asortiman proizvoda vlastitih trgovačkih marki kako bi ublažili naglasak na cijenu te naglasili ostale dimenzije svog branda poput kvalitete i jedinstvenosti te u konačnici unaprijedili svoj cjelokupni imidž (KantarConsulting, 2018). S obzirom na sve navedeno, može se zaključiti kako su trgovačke marke imale značajnu ulogu u postizanju željene percepcije cjenovnog imidža nižih cijena, ali su u posljednje vrijeme doprinijele i osnaživanju branda maloprodavača.

3. METODOLOGIJA I REZULTATI ISTRAŽIVANJA

Primarno istraživanje provedeno je na prigodnom uzorku od 271 ispitanika iz dvije županije u istočnoj Hrvatskoj, osobama starijim od 18 godina koje sudjeluju u kupovini namirnica za svoje kućanstvo. Korišten je visoko strukturirani upitnik. Istraživanjem je obuhvaćeno 5 vodećih ma-loprodavača na razini Hrvatske, bez izraženog regionalnog karaktera. U uzorku prevladavaju žene sa 76,9%, udio ispitanika po dobnim skupinama je 15,4% za dobnu skupinu 18-29 godina, 30-39 godina 25,3%, 40-49 g. 22,3 %, 50-59 g. 26% te 60 godina i više 10,6%. Većina ispitanika u uzorku su zaposleni - njih 83,5%, dok kod razine obrazovanja većina ih ima završen fakultet i više 58,2% ili srednju školu 37%. Najveći udio ispitanika (57,5%) imao je mjesečni prihod kućanstva između 5.000,00 i 10.999,00 kuna.

Kako je navedeno ranije u radu, potrošači mogu imati mišljenje o cijenama kod nekog malopro-davača čak i ako kod njega ne kupuju. Određeni dojam mogu steći putem promocijskih aktivno-sti maloprodavača (oglašavanje putem različitih medija, publicitet), razgovora s ljudima u svom okruženju i sl. Grafikon 1. prikazuje je li za ispitanike pojedini maloprodavač veća asocijacija na niske ili visoke cijene.
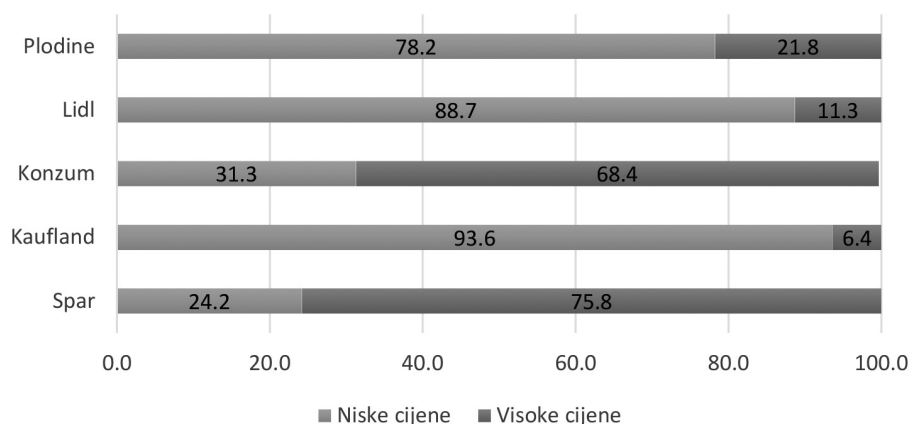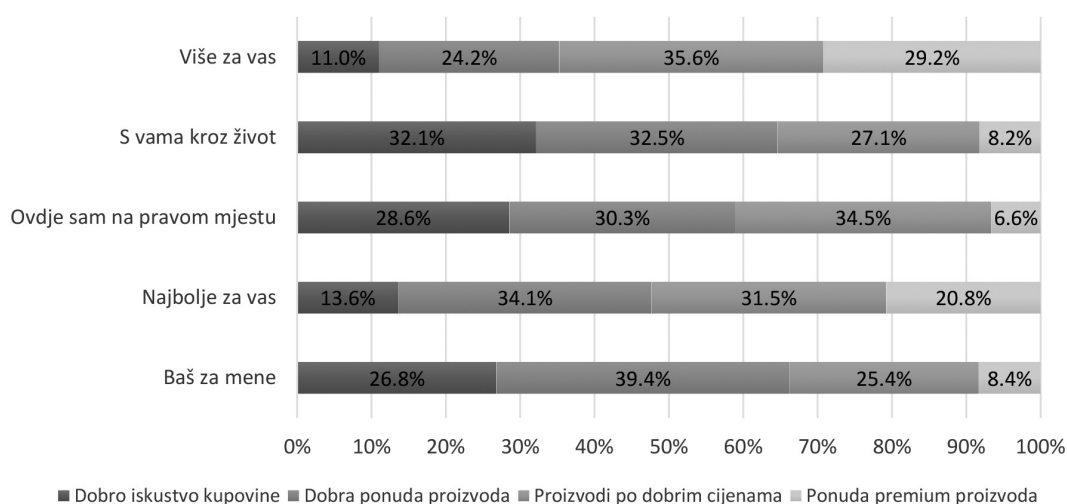

Grafikon 1. Maloprodavač kao veća asocijacija na niske ili visoke cijene
Izvor: vlastito istraživanje

Rezultati pokazuju kako na niske cijene najveći postotak ispitanika asocira Kaufland (93, 6%), dok se na drugom mjestu nalazi Lidl (88,7%), a na trećem Plodine (78,2%). Ostala dva maloprodavača više asociraju ispitanike na visoke cijene i to najviše Spar (75,8%) te Konzum (68,4%).

Nadalje, ispitanicima su navedeni slogani maloprodavača (samo slogani, bez navođenja kojem maloprodavaču pripadaju) i četiri obilježja te su ispitanici trebali odabrati jedno obilježje na koje ih pojedini slogan najviše asocira. Na grafikonu 2. je vidljivo kako slogan koji najviše asocira na proizvode po dobrim cijenama je Lidlov slogan *Više za vas* (35,6 %), zatim Kauflandov slogan *Ovdje sam na pravom mjestu* (34,5%) te slogan Plodina *Najbolje za vas* (31,5%). Slogan koji najmanje ispitanika asocira na proizvode po dobrim cijenama je onaj Spara *Baš za mene* (25,4 %). Slogan koji najviše asocira na dobro iskustvo kupovine je Konzumov *S vama kroz život* (32,1%), potom slogan Kauflanda *Ovdje sam na pravom mjestu* (28,6%) te Spara *Baš za mene* (26,8 %). Na dobru ponudu proizvoda ispitanike najviše asocira slogan Spara *Baš za mene* (39,4%). Zanimljivo je kako Lidlov slogan koji najviše asocira na proizvode po dobrim cijenama, najviše asocira i na ponudu premium proizvoda (29,2 %).

Grafikon 2. Slogani maloprodavača – asocijacije na pojedino obilježje
Izvor: vlastito istraživanje

Na grafikonu 3. vidljivo je kako dojam niskih cijena najviše ostavljaju Lidlov slogan *Više za vas* i Kauflandov *Ovdje sam na pravom mjestu*, ali je uvjerljivo na prvom mjestu slogan *Više za vas* (36,2 %).
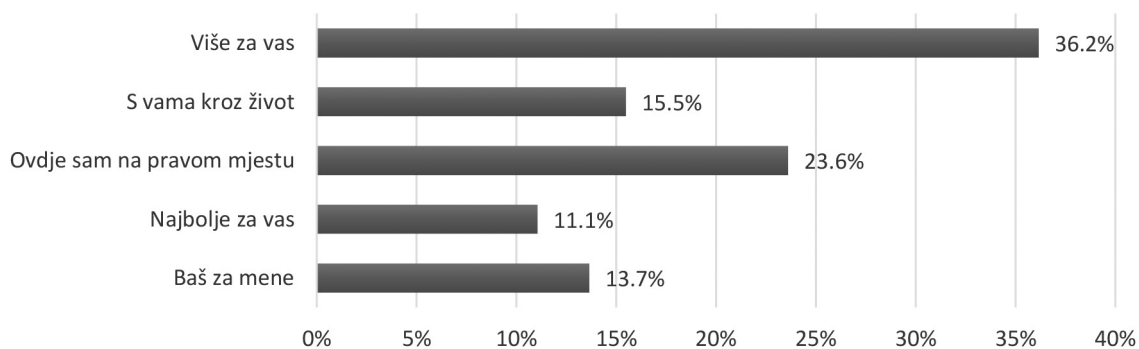
Grafikon 3. Slogan koji najviše ostavlja dojam niskih cijena
Izvor: vlastito istraživanje

Slogani koji najmanje ostavljaju dojam niskih cijena su onaj Plodina (11,1%) i Spara (13,7%).

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4. ZAKLJUČAK

Pozicioniranje branda maloprodavača te stvaranje željenog imidža i cjenovnog imidža dugotrajan je proces koji zahtjeva dosljednu strategiju potpomognutu svim marketinškim alatima. Slogani maloprodavača trebali bi odražavati njihovu sveukupnu strategiju, glavnu prednost te olakšati i učvrstiti željeno pozicioniranje u svijesti potrošača. Slogani vodeći po dojmu niskih cijena su oni Lidla i Kauflanda, maloprodavača koji su percipirani i kao oni s najnižim cijenama. S obzirom da je poznato da su strategije ta dva maloprodavača orijentirane na niske cijene, može se reći kako su i korišteni slogani u skladu sa željenom strategijom i željenim pozicioniranjem u svijesti kupaca. Unatoč tome, zanimljivo je i kako Lidlov slogan od svih ponuđenih slogana najviše asocira i na ponudu premium proizvoda. Za one koji su prepoznali Lidlov slogan i koji su dobro upoznati s njegovom ponudom, to može biti zahvaljujući dobroj ponudi i snažnom oglašavanju Lidlove premuim trgovačke marke. S druge strane, za one koji slogan nisu povezali s Lidlom, slogan može biti doživljen kao „više za vas" u kvantitativnom smislu (niže cijene) ili kvalitativnom smislu (bolji proizvodi). Može se zaključiti kako je Lidl uspio postići najbolju kombinaciju – percepciju niskih cijena, ali ne i lošu kvalitetu proizvoda ili dojam da su njihove prodavaonice prvenstveno namijenjene potrošačima s manjim budžetom. Tijekom godina je Lidl postupno podigao razinu svoje usluge, za razliku od oblika gotovo hard diskontera s kojim je ušao na tržište. Poboljšane su prodavaonice i ponuda, ali je glavni slogan ostao nepromijenjen. U međuvremenu, neki maloprodavači su mijenjali svoje slogane tijekom godina. Slogani maloprodavača koji najmanje asociraju na niske cijene - Spar i Konzum, također ostavljaju i slabiji dojam niskih cijena. Najveća razlika u percepciji može se uvidjeti kod Plodina, koje iako asociraju na niske cijene, imaju vrlo slabu podršku slogana u osnaživanju cjenovnog imidža kao niskog jer njihov slogan najmanje ostavlja dojam niskih cijena.

Konačno, može se zaključiti da su rezultati istraživanja pokazali i kako maloprodavači mogu uspješno upravljati cjenovnim imidžem, što pokazuje usklađenost percepcije cjenovnog imidža od strane kupaca s asocijacijama njihovih slogana, a sve u službi samog branda maloprodavača. Usklađenost svih elemenata maloprodajnog marketinškog spleta olakšava i učvršćuje željeno pozicioniranje u svijesti potrošača, pa tako i onog cjenovnog imidža.

Ograničenja ovog istraživanja proizlaze iz činjenice da uzorak ispitanika nije u potpunosti reprezentativan, ali rezultati mogu poslužiti kao indikativni. Također, nije istraženo jesu li ispitanici prepoznali kojem maloprodavaču pripada pojedini slogan te koliko je to imalo utjecaja na dojam – jesu li slogane subjektivno povezali s maloprodavačem. Buduća istraživanja bi mogla uzeti u obzir i taj čimbenik te bi svakakao bilo korisno razviti upitnik koji bi omogućio primjenu naprednijih statističkih analiza.

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UDRUŽIVANJE MALIH GOSPODARSKIH SUBJEKATA RADI PLASMANA POLJOPRIVREDNIH PROIZVODA KROZ DISTRIBUTIVNI CENTAR: SLUČAJ HRVATSKIH PROIZVOĐAČA VOĆA

ASSOCIATION OF SMALL ECONOMIC ENTITIES FOR PLACEMENT OF AGRICULTURAL PRODUCTS THROUGH A DISTRIBUTION CENTER: THE CASE OF CROATIAN FRUIT PRODUCERS

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Sažetak: *Radi postizanja konkurentnosti malih gospodarskih subjekata na tržištu uz visoke standarde kvalitete ključno je njihovo udruživanje na lokalnom području. Budući da tržištem prevladavaju veliki poljoprivredni proizvođači koji količinom proizvoda smanjuju njihovu cijenu ugrožen je opstanak, a samim time i poslovanje malih proizvođača lokalnih prehrambenih proizvoda. Predmet istraživanja je detaljno proučiti determinante učinkovitosti distributivnog centra koji posluje s malim gospodarskim subjektima i osigurava im otkup i sigurno tržište. Da bi se istaknuli ključni aspekti rada distributivnog centra za voće i povrće, analizirali su se ekonomski pokazatelji za razdoblje 2009.-2019. godine. Također su korištene metode kojima se želi detektirati koje su to varijable ključne za udruživanje i uključivanje malih gospodarskih subjekata u distributivne centre radi plasmana voća odgojno obrazovnim ustanovama koje sudjeluju u provedbi školske sheme.*

Ključne riječi: *Školska shema, Distributivni centar, Mali gospodarski subjekti, Plasman proizvoda.*

Abstract: *To achieve the competitiveness of small businesses in the market with high-quality standards, it is crucial to unite them in the local area. Since the market is dominated by large agricultural producers who reduce the price of products by the amount of products, survival is endangered, and thus the business of small producers of local food products. The subject of the research is to study in detail the determinants of the efficiency of a distribution center that cooperates with small businesses and provides them with a buyout and a secure market. In order to highlight the key aspects of the work of the distribution center for fruits and vegetables, the economic indicators for the period 2009-2019 were analyzed and methods were used to detect which variables are crucial for the association and inclusion of small businesses in distribution centers for the placement of fruit in educational institutions participating in the implementation of the school scheme.*

Keywords: *School scheme, Distribution center, Small businesses, Product placement.*

1. UVOD

Distributivni centri u današnje vrijeme postaju temeljni faktori za rast i razvoj malih proizvođača ili pak onih koji se povezuju i udružuju u proizvođačke organizacije na lokalnom području. Uloga Distributivnih centara posebno je važna u zemljama koje se oslanjaju na lokalnu proizvodnju i plasman poljoprivrednih proizvoda. U Hrvatskoj je osnovan Distributivni

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centar za voće i povrće d.o.o. za potrebe poljoprivrednih proizvođača koji je u većinskom držav-nom vlasništvu i jedini je takve vrste u Republici Hrvatskoj. Osnovan je s ciljem uspostavljanja tržišno konkurentne proizvodnje voća i povrća na području Zagrebačke županije. Distributivni centar je ključan radi udruživanja proizvođača voća i povrća u proizvođačke organizacije, jača-nja njihove konkurentnosti jer im pruža sigurnu uslugu skladištenja kroz duže vremensko raz-doblje i samu pripremu proizvoda za tržište. Time je osiguran bolji položaj lokalnih proizvođača uz siguran plasman i prodaju proizvoda na tržištu izvan sezone kada su prodajne cijene prihvat-ljive. Budući da evaluacija učinka distributivnog centra nije provedena, svrha ovog rada je istra-žiti uspješnost njegova poslovanja kroz vremensko razdoblje s malim gospodarskim subjektima koji su se udružili kako bi sigurno plasirali proizvode visoke kvalitete iz domaće proizvodnje. Procjena učinka se temelji na analizi ekonomskih parametara kroz duže vremensko razdoblje.

2. PREGLED LITERATURE I ANALITIČKI OKVIR

Za opstanak malih gospodarskih subjekata i povećanje proizvodnih količina potrebno je sigurno tržište za plasman lokalno proizvedenih proizvoda. U Republici Hrvatskoj je domaća proizvod-nja ključna komponenta gospodarstva. Do 90-tih godina su mnogi gospodarski subjekti bili u državnom vlasništvu koji su privatizirani pa u lokalnoj proizvodnji dominiraju mala obiteljska poduzeća i OPG-ovi. Njihovo poslovanje je vezano za poljoprivrednu politiku čije su osnove postavljene Rimskim ugovorom iz 1957., koje su bile temelj razvoja zajedničke poljoprivrede politike. Već tada je utvrđena nedovoljna opskrba poljoprivrednim proizvodima iz domaće pro-izvodnje. Stoga članak 33. Rimskog ugovora definira ciljeve za podizanje poljoprivredne pro-duktivnosti promicanjem tehničkog napretka, racionalnog razvoja poljoprivredne proizvodnje uz optimalno korištenje proizvodnih faktora, radne snage, stabilizacije tržišta poljoprivrednih proizvoda, osiguranje redovne opskrbe potrošača prehrambenim proizvodima, te osiguranje pri-hvatljivih cijena poljoprivrednih proizvoda. Ugovor iz Rima je izmijenjen, a danas je poznat kao Ugovor o funkcioniranju EU čiji su ciljevi od razdoblja potpisivanja ostali gotovo isti. U Repu-blici Hrvatskoj Zakonom o državnoj potpori u poljoprivredi, ribarstvu i šumarstvu, čija je prva inačica usvojena 2002. godine, (Narodne novine 87/02, 117/03, 82/04, 12/05, 141/06) definirani su modeli poticanja proizvodnje, model potpore dohotku, kapitalnih ulaganja i ruralnog razvo-ja. Cilj je bio zadržavanje stanovništva u ruralnim područjima, povećanje konkurentnosti proi-zvodnje i stvaranje većeg dohotka poljoprivrednih proizvođača kroz programe razvitka seoskog prostora, marketinške pripreme poljoprivredno–prehrambenih proizvoda i očuvanja izvornih pasmina. Idealan primjer za istraživanje u Republici Hrvatskoj vezano za različite ekonomske pokazatelje i funkcioniranje propisanih mjera je Distributivni centar za voće i povrće čija će se učinkovitost poslovanja prikazati kroz duži vremenski period. Bryla (2005) jednostavnom (nai-ve) metodom usporedbe prije – poslije, utvrđuje pozitivan učinak na broj zaposlenih, produktiv-nost rada i vrijednost proizvodnje. Iz prikupljenih podataka na samom početku se istražilo da je DCVP započeo s radom 2009. godine kada je dobilo koncesiju s pravom građenja na rok od 40 godina u radnoj zoni Rakitovec. Gradnja I. faze centra završena je 2012. godine., nakon osigu-ranih financijskih sredstava. Istraživanje realizacije druge faze na temelju uzajamne usporedbe performansi veže se za izgradnju ULO hladnjače s tehnološkom opremom i transportnim sred-stvima koja je započela 16. svibnja 2017. godine, a završila u prosincu iste godine. U Latviji, pri-mjenom metode grupiranja i komparativne analize, Veveris (2014) istražuje učinak investicijskih potpora iz mjere Modernizacija poljoprivrednih gospodarstava na poslovanje uz analizu broja zaposlenih, ukupnog prihoda i bruto dodane vrijednosti. Da bi se prevladala određena ograni-čenja povezana s ograničenim brojem promatranih entiteta i brojem upotrijebljenih varijabli, u analizi dobivenih rezultata ovog istraživanja se pristupilo prije i nakon dobivanja bespovratnih

sredstava kako bi se opravdala svrha i dobili pokazatelji učinkovitosti nakon ulaganja. Predmet analize i utjecaj primljenih potpora iz Programa ruralnog razvoja na poslovanje farmi istražuju Kirchweger i Kantelhardt (2014) i pronalaze pozitivan učinak primljenih potpora na dodanu vrijednost, profitabilnost i produktivnost farmi kao i na ukupni prihod. Potpisivanjem Sporazuma o stabilizaciji i pridruživanju od 1. 1. 2005. godine stvoreni su temelji za prilagođavanje nacionalne poljoprivredne politike koji su bili sukladni poljoprivrednoj politici Europske unije. Time su se stvorili preduvjeti za mogućnost korištenja različitih oblika potpore iz Europskih i nacionalnih financijskih sredstava. Jedan od korisnika je bio Distributivni centar čije će determinante učinkovitost analizirati u ovom radu, uz osvrt na njegovu ulogu za male gospodarske subjekte koji plasiraju lokalno proizvedene proizvode, poštujući sustave sigurnosti i visoke standarde kvalitete. Potrošnja voća i povrća u zemljama EU, kao glavnom izvoznom tržištu hrvatskog voća i povrća, stabilna je, a prodajom dominiraju trgovački lanci. Konkurencija na maloprodajnom tržištu vrlo je velika, ali postoji prostor za rast diferencijacijom na temelju dodane vrijednosti uz istodobno zadovoljavanje visokih zahtjeva za sigurnost i kvalitetu hrane (Logatcheva, 2018.).

Distributivni centar za voće i povrće je prvi pilot projekt u Hrvatskoj koji pruža infrastrukturu za potrebe malih gospodarskih subjekata koji se udružuju radi jednostavnije i brže organizacije plasmana proizvoda, pri čemu ostvaruju uštede pri skladištenju i pakiranju uz kontinuiranu opskrbu tržišta dovoljnom količinom proizvoda te postižu veće prosječne cijene proizvoda. Proizvođači bi trebali biti više uključeni u procese skladištenja, pakiranja i plasmana te igrati aktivniju ulogu u opskrbnom lancu (Svjetska banka, 2020). Dvoulety i Blažkova (2019) istražuju učinak javnih politika EU za razdoblje 2007.–2013. na prehrambenu industriju u Češkoj.

3.   IZVORI PODATAKA I METODOLOGIJA

U ovom istraživanju su testirani ekonomski parametri koji su vezani za učinkovitost i rezultate poslovanja distributivnog centra kroz vremensko razdoblje. Podaci o Distributivnom centru su preuzeti iz dostupnih baza podataka godišnjih financijskih izvještaja FINE, dokumentacije i izvještaja u vlasništvu Distributivnog centra za voće i povrće d.o.o., te od Agencije za plaćanja u poljoprivredi, ribarstvu i ruralnom razvoju koji su obrađeni su od strane autora. Značajne razlike financijskih pokazatelja kroz razdoblja su istražene iz baza podataka Financijske agencije koje su bile ključne za analize uspješnosti poslovanja distributivnog centra. Za objektivnu procjenu profitabilnosti i poslovne učinkovitosti analizirala se struktura prihodovnih komponenti iz financijskih izvještaja od 2009.-2019.godine. Većina prihoda se analizirala po osnovi isporuke vezano za strukturu prodaje za trgovačke lance, obrazovne i zdravstvene institucije. Obavljen je dubinski intervjui s ključnim osobama u distributivnim centrom za voće i povrće kako bi se dobio uvid vezano za način njihova poslovanja, te njihov odnos prema proizvođačima domaćih proizvoda koji valoriziraju brojene prednosti da postanu konkurentniji na domaćem tržištu. U početnoj fazi istraživao se utjecaj distributivnog centra na gospodarske subjekte koji nisu imali interes za udruživanjem već su bili orijentirani drugim vidovima plasmana u odnosu na proizvođače koji su imali direktne koristi od modernizacije i nadogradnje proizvodnih kapaciteta u distributivnom centru. Ispitanici su vlasnici obiteljskih poljoprivrednih gospodarstava koji su se udružili kako bi prebrodili brojne izazove koji proizlaze iz neorganiziranosti proizvođača, nedostatka tržišne infrastrukture, kompleksne zakonske regulative, usitnjenosti gospodarstva i konkurencije. Ispitani gospodarski subjekti nisu raspolagali pravovaljanim ekonomskim podacima potrebnim za analizu pa su se zbog nedostupnih financijskih rezultata poslovanja varijable mjerile pomoću percepcije ispitanika i sudjelovanja u provedbi Školske sheme voća. Agencija za plaćanja u poljoprivredi, ribarstvu i ruralnom razvoju (APPRRR) raspisala je Javni poziv za iskaz interesa osnivača školskih

ustanova za sudjelovanje u Školskoj shemi kojom se ugovaraju isporuke voća i povrća te mlijeka i mliječnih proizvoda. Provedba Školske sheme voća i povrća te mlijeka i mliječnih proizvoda propisana je Pravilnikom od strane Ministarstva poljoprivrede. Stoga su se mali lokalni proizvođači povezali i udružili u proizvođačke organizacije kako bi ponudili dovoljne količine kvalitetno proizvedenih proizvoda po konkurentnim cijenama radi promicanja uravnotežene prehrane i zdravih prehrambenih navika u školama. Škole i Distributivni centar su ugovorili isporuku voća i povrća koja se provodila jednom tjedno u razdoblju održavanja nastave. Školska shema se provodila u svim državama članicama Europske unije s ciljem promicanja uravnotežene i zdrave prehrane, pravilnih prehrambenih navika djece te razvijanja svijesti o važnosti voća i povrća.

4.   REZULTATI I RASPRAVA

Mjerenje i istraživanje plasmana voća veleprodajnim i maloprodajnim centrima, bolnicama, školama, te učinkovitost Distributivnog centra uključuje različite parametre s ciljem uspostavljanja tržišno konkurentne proizvodnje voća i povrća na području Zagrebačke županije. Faktori i razlozi povezivanja gospodarskih subjekata radi plasmana proizvoda su široko istražene teme u brojnim poslovnim područjima uključujući i ruralni, budući da je isporuka poljoprivredno prehrambenih proizvoda i učinak distributivnog centra u kategoriji voća i povrća predmet analize. Očito je da udruživanje malih gospodarskih subjekata radi plasmana poljoprivrednih proizvoda dobiva sve značajniju ulogu s obzirom da brojne prednosti koje donosi. Udruživanje gospodarskih subjekata i njihovo poslovanje s distributivnim centrom je bitno za poslovanje većine ispitanika koji koriste Distributivni centar za voće i povrće za skladištenje, sigurnu prodaju i plasman proizvoda. Specifično je da svi ispitanici radi plasmana poljoprivrednih proizvoda koriste i druge prodajne kanale. Što se tiče proračuna namijenjenog za troškove poslovanja koje imaju gospodarski subjekti vidljivo je njihovo smanjenje koje se postiglo udruživanjem i plasmanom proizvoda unutar distributivnog centra kao lanca opskrbe lokalno proizvedenog voća i povrća. Radi specifičnih uvjeta koje gospodarski subjekti moraju zadovoljiti sukladno regulativi vezano za kvalitetu i sigurnost hrane tijekom plasmana proizvoda većina ispitanika namijenila je 1-10% sredstava, a nitko od ispitanika nije potrošio 75-100% svog proračuna na skladištenje, pripremu i plasman proizvoda na tržište jer se sve realizirao kroz distributivni centar.

Veleprodajna poduzeća predstavljaju dominantan kanal za plasman poljoprivrednih proizvoda u kategoriji lokalno proizvedenog voća i povrća, a koristi ga 100% ispitanika. Prate ga maloprodajni lanci (84%), trećina ispitanika od 32% plasira proizvode za javni sektor, 16% zauzimaju ostali potrošači iz sektora maloprodaje, a 10% se plasira prerađivačima voća i povrća.

U tabličnom prikazu su prikazani rezultati istraživanja za ciljane kategorije s financijskim pokazateljima koji su prikazani kao povrat sredstava kroz vremenski period sukladno broju učenika koji su sudjelovali u Školskoj shemi i koji predstavljaju prihodovnu komponentu.

Promatrano razdoblje je od samog početka provedbe Pravilnika Školske sheme Republike Hrvatske od 1. kolovoza 2017. godine. Analiza se bazirala na podacima od školske godine 2017./2018. pa do 2019./2020. Školska shema je analizirana za učenike osnovnih i srednjih škola sukladno sklopljenom ugovoru za shemu voća i povrća. Tablica 1. prikazuje povrat sredstava u kunama za školsku shemu voća i broj učenika za sedamnaest nasumično odabranih osnovnih i srednjih škola sa područja Zagrebačke županije. Broj analiziranih učenika je stabilan. To ukazuje na prosječno slične razmjene učinkovite isporuke sukladno Školskoj shemi iz čega je vidljivo da su kroz vremenski period udjeli kroz školske godine neznatno razlikuju od jedne do

druge osnovne ili srednje škole. Iz priloženih pokazatelja riječ je o sigurnim kupcima kojima su se dostavljali proizvodi vrhunske kvalitete po korektnim cijenama. S druge pak strane vidljiva je sigurna naplata iz podataka ukupnog povrata izraženog u kunskoj vrijednosti koja je temelj za sigurnu profitabilnost i daljnji razvoj poslovanja Distributivnog centra koji je bitan za proizvođače voća i povrća.

Tablica 1. Prikaz povrata sredstava za isporučeno voće kroz školsku shemu i broja učenika po godinama

| Škola	Povrat ukupno (kn) 17/18	Broj učenika 17/18	Povrat ukupno (kn) 18/19	Broj učenika 18/19	Povrat ukupno (kn) 19/20	Broj učenika 19/20
OŠ Ante Kovačića	5,505	138	5,285	140	4,995	130
OŠ Bistra	17,497	596	22,868	606	23,090	601
OŠ Braće Radić	19,113	478	17,583	466	17,520	456
OŠ Ivana Perkovca	13,136	310	11,067	293	11,603	302
OŠ Ivane Brlić Mažuranić	11,341	284	10,043	266	10,527	274
OŠ Jakovlje	12,794	319	11,893	315	12,525	326
OŠ Josipa Badalića	8,716	217	8,038	213	7,722	201
OŠ Luka	4,378	110	4,115	109	4,265	111
OŠ Pavao Belas	16,004	401	15,367	407	16,597	432
OŠ Pokupsko	5,816	128	4,842	128	4,879	127
OŠ Pušća	12,268	307	13,032	345	12,717	331
OŠ Slavka Kolara	4,316	168	5,995	160	6,416	167
Ekonomska, trgovačka i ugostiteljska škola	16,673	415	15,616	414	15,867	413
Srednja strukovna škola Samobor	17,409	430	16,628	441	18,211	474
Srednja strukovna škola Velika Gorica	18,683	486	16,061	426	18,019	469
Srednja škola Ban Josip Jelačić	26,523	666	24,461	649	25,011	651
Srednja škola Vrbovec	19,879	493	16,563	438	16,252	423

Izvor: Distributivni centar za voće i povrće
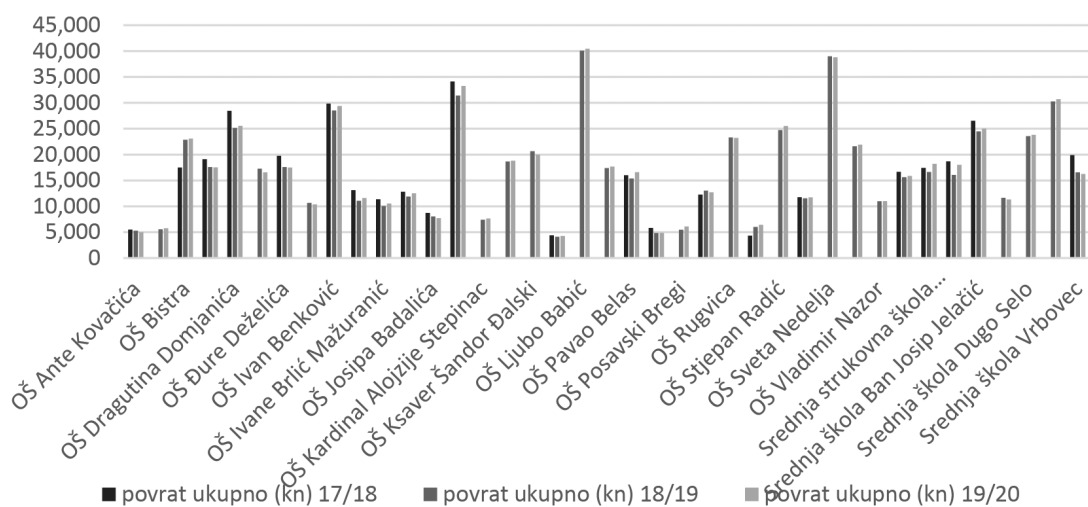
Grafikon 1. Prikaz povrata sredstava u kunama po godinama

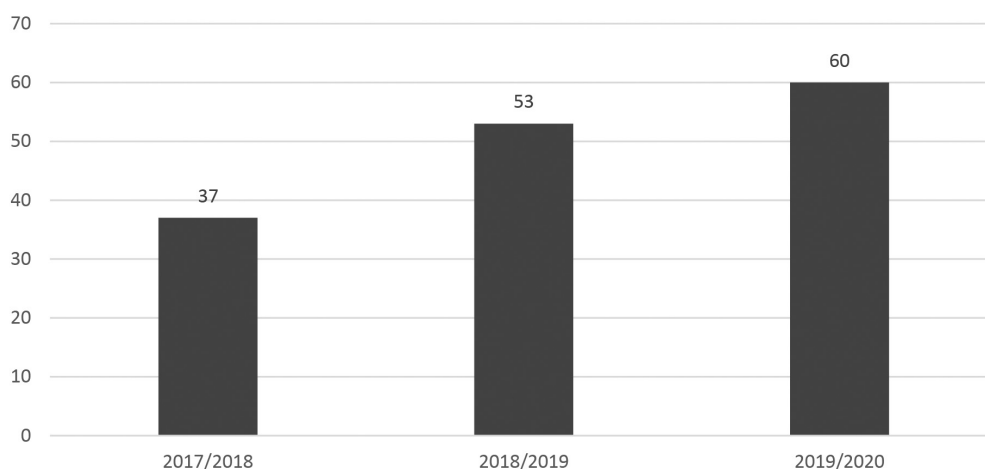**Izvor:** Distributivni centar za voće i povrće

Grafikon 1. prikazuje usporedbu ukupnog povrata financijskih sredstava za sedamnaest osnovnih i srednjih škola na području Zagrebačke županije za školske godine 2017/2018, 2018/2019 te 2019/2020. Tijekom isporuke voća i povrća uočena je visoka svijest i motiviranost za usvajanje zdravih životnih navika što se vidi iz priloženog grafikona budući da je isporuka zastupljena po osnovnim i srednjim školama. U grafičkom prikazu vidljive su oscilacije, međutim povrat sredstava za realiziranu isporuku po školama je stabilan. Ukupan povrat financijskih sredstava prati isporuku kroz razdoblje od tri školske godine. U nastavku su prikazana dva grafička primjera koja predstavljaju ilustraciju ukupnog broja djece i broja škola koja su bila uključena u projekt Školske sheme kroz godine.
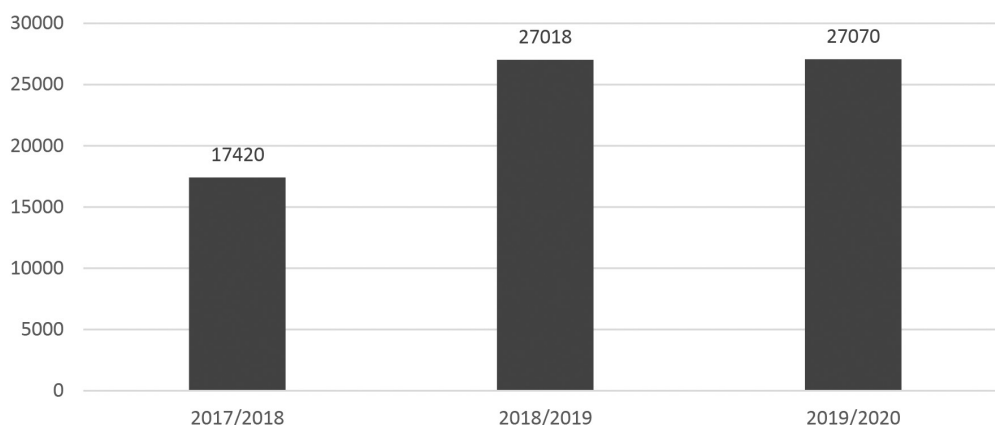
Grafikon 2. Ukupan broj djece uključene u projekt kroz godine
Izvor: Distributivni centar za voće i povrće

Grafikon 2 prikazuje porast broja djece kroz godine koji su uključeni u projekt. Grafički prikaz istraženih podataka predstavlja ključne parametre koji služe kao polazna točka za opravdanost plasmana prema školama budući da se iz istraženih podataka vidi trend porasta broja učenika kroz vremenski period. Stoga Distributivni centar za voće i povrće nikada nije postigao loš rezultat vezano za isporuku koja ja vidljiva uz porast ukupnog broja djece. Njegova učinkovitost je prikazana kroz četiri školske godine. Učinkovitost rezultata može postati referenca i primjer dobre prakse za poslovne subjekte kojima bi ovakav slučaj poslužio kao referentni model u vezi zdravlja djece školskog uzrasta koji konzumiraju lokalno proizvedene proizvode visoke kvalitete.

Grafikon 3. Ukupan broj škola uključenih u projekt kroz godine
Izvor: Distributivni centar za voće i povrće

Grafikon 3 prikazuje porast broja škola kroz godine uključene u projekt. Grafički prikaz istraženih podataka daje jasnu sliku ukupno analiziranih škola te je vidljivo da je njihov trend u konstantnom porastu što pokazuju istraženi podatci kroz vremenski period. U prvoj godini provedbe je sudjelovalo svega 37 škola, dok je u školskoj godini 2018/2019 vidljiv porast od 53 škole. Najviše škola je sudjelovalo u Školskoj shemi u posljednjoj istraživanoj godini i iznosi ukupno 60 škola u kojima su zastupljene i osnovne i srednje. Analizirajući procjenu učinkovitosti identificirani su financijski pokazatelji koji su ostvareni isporukom voća i povrća lokalnih proizvođača kroz distributivni centar. Iz navedene analize i financijskih pokazatelja za razdoblje 2009.-2014. podaci su dostupni po glavnim stavkama, dok je za razdoblje 2015.-2019., su prikazani detaljni podaci. Iz podataka je vidljiv porast ukupne imovine što proizlazi iz ulaganja u izgradnju i tehnologiju s potrebnom opremom za poslovanje što je financirano iz sredstava Europske unije i javnih izvora. Kroz vremenski period prisutan je kontinuirani rast prihoda i zaposlenih. Većinsku strukturu prihoda čini prodajni segment i bespovratna EU sredstava. Prihodi od prodaje čine najveći udio u ukupnim prihodima, u prosjeku 88% tijekom promatranih 11 godina. Udio prihoda nešto je manji za razdoblje 2018.-2019. Kada se uključuju prihodi od bespovratnih sredstava iz EU fondova. Prosječna godišnja stopa rasta ukupnih prihoda za 11 godina iznosi 17,17%, a prosječna stopa rasta ukupnih izdataka 17,42%. Najveće vrijednosti prihoda i rashoda zabilježene su 2013. godine nakon nekoliko godina rasta.

Pad vrijednosti uslijedio je kroz 2017., a novo razdoblje rasta započelo je 2018. Prihod po zaposleniku bio je najveći u početnom razdoblju kada je broj zaposlenih bio manji, 2014. vrijednost se smanjila, a zatim ponovno ušla u fazu rasta. Svi parametri su prihvatljivi pokazuju stabilno poslovanje što je ključni faktor za udruživanje malih gospodarskih subjekata i plasman proizvoda.

5. ZAKLJUČAK

Većina gospodarskih subjekata koji su se udružili i sudjelovali u plasmanu voća preko distributivnog centra su proširili svoju poslovnu mreže i ostvarili bržu naplatu potraživanja. Za povezivanje malih gospodarskih subjekata te širenje domaće proizvodnje hrvatskih proizvoda je bilo ključno tehnološko znanje, investicije u opremu, prilagodba u organizacijskom, kadrovskom, prodajnom segmentu što je povećalo mogućnosti za bolju isporuku i više korištenje distributivnog centra za voće i povrće. Broj distributivnih centara u poljoprivredi ima intenciju razvoja u drugim županijama RH, budući da je Distributivni centar za voće i povrće u Zagrebačkoj županiji jedini primjer uspješnog javnog ulaganja za potrebe domaćih proizvođača voća i povrća. Tome u prilog ide i činjenica da je većina udruženih proizvođača domaćeg voća i povrća u Hrvatskoj radi plasmana poljoprivrednih proizvoda zadovoljna ishodom, budući da je većina imala pozitivno iskustvo suradnje s distributivnim centrom. Zadovoljstvo se odrazilo kroz rast broja plasmana što je evidentno kroz maloprodajne i veleprodajne isporuke, te kroz isporuku voća kroz distributivni centar za školsku shemu voća. Ovim smo pokazali važnost povezivanja malih gospodarskih subjekata koje je ključno za donositelje poslovnih odluka kao primjer dobre prakse u predviđanju sigurne prodaje, isporuke i naplate potraživanja. Za distributivni centar je važno da na tržištu, a posebno kod odgojno obrazovnih ustanova isporuči proizvod domaće proizvodnje uz visoko razinu kvalitete. Analize ekonomskih pokazatelja iz programa potpore daju informacije o njihovom učinku na financijske pokazatelje poslovanja. Iz priloženih financijskih pokazatelja može se zaključiti da je provedba javnih politika bila uspješna s obzirom na financijske indikatore učinkovitosti distributivnog centra. Rezultati istraživanja sugeriraju da je povezivanje gospodarskih subjekata bitno radi podizanja kvalitete isporučenih proizvoda,

postizanja više prodajne cijene voća, povoljnije distribucije proizvoda, efikasnije tržišne organizacije voćara i veće konkurentnosti. Rezultati i buduće analize mogu se promatrati kroz dulje vremensko razdoblje, a gospodarske subjekte se može podijeliti po regijama. Također bi se moglo usporediti povezivanje gospodarskih subjekata u europskim zemalja što bi rezultiralo doprinosu postojećoj literaturi.

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PERCEPCIJA NASTAVNIKA I VASPITAČA
O PRIMJENI INKLUZIJE U ŠKOLAMA I VRTIĆIMA

PERCEPTION OF TEACHERS AND EDUCATORS
ABOUT THE APPLICATION OF INCLUSION IN SCHOOLS
AND KINDERGARTENS

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Sažetak: *Veliki broj zakona i politika kojim se svoj djeci (bez obzira na razlike i specifičnosti) osigurava pravo na kvalitetno obrazovanje i jednake mogućnosti za razvoj usvojen je da bi obrazovni sistem bio u skladu sa evropskim standardima. Jedan od tih projekata je inkluzivno obrazovanje. Inkluzivno obrazovanje znači da škole i vrtići trebaju prihvatiti svu djecu bez obzira na njihove fizičke, intelektualne, socijalne, emocionalne, jezičke i druge osobine. Nastavnici i vaspitači u školama i vrtićima trebaju njegovati inkluzivnu kulturu i svojim ponašanjem davati primjere i modele sprovođenja inkluzije u grupama. U radu su prikazani stavovi nastavnika i vaspitača o primjeni inkluzije, iz kojih se jasno vide njihove sličnosti i razlike.*

Ključne riječi: *Djeca, Inkluzija, Obrazovanje.*

Summary: *A large number of laws and policies that guarantee all children (regardless of differences and specifics) the right to quality education and equal opportunities for development have been adopted to bring the education system in line with European standards. One of these projects is inclusive education. Inclusive education means that schools and kindergartens should accept all children regardless of their physical, intellectual, social, emotional, linguistic and other characteristics.*

Teachers and educators in schools and kindergartens should nurture an inclusive culture and by their behavior provide examples and models of implementing inclusion in groups. The paper presents the attitudes of teachers and educators on the application of inclusion, which clearly shows their similarities and differences.

Keywords: *children, inclusion, education.*

1. UVOD

Princip inkluzivnog obrazovanja usvojen je na Svjetskoj konferenciji o obrazovanju učenika sa posebnim potrebama u Salamanci, te je ponovljen na Svjetskom forumu o obrazovanju održanom u Dakaru 2000. godine. U postojeći obrazovni sistem uvedeni su novi projekti i metodologije rada koji su u skladu sa evropskim standardima u obrazovanju.

Implementacijom ovog projekta treba da se osiguraju optimalni uvjeti za ostvarivanje prava u obrazovnom sektoru za sve učenike, bez ikakve segregacije. Djeca i mladi sa posebnim ra-

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zvojnim i obrazovnim potrebama stiču obrazovanje u redovnim školama i prema programima prilagođenim njihovim individualnim potrebama i mogućnostima. Ovi individualni programi trebali bi omogućiti djeci sa posebnim potrebama optimalan fizički, mentalni i psihosocijalni razvoj u redovnom obrazovanju.

Naglasak inkluzivnog obrazovanja nije u kognitivizmu i didaktičkom materijalizmu, već u naglašenom individualno-prilagođenom kognitivnom, psiho-socijalnom i emocionalnom razvoju. Inkluzija omogućava svim učenicima jednakopravnost u razvoju, pozitivniji, humaniji pristup u obrazovanju, obrazovanje bez segregacije i diskriminacije u bilo kojoj oblasti razvoja.

2. INKLUZIJA KAO HUMANISTIČKA NOVACIJA

U inkluzivnom procesu u obrazovanju naglasak je na pozitivnom i zdravom razvoju, socijalizaciji i socijalno-psihološkoj poziciji učenika i komunikaciji. U takvom procesu razvoja i učenja razvija se tolerancija i pozitivna socijalno-psihološka klima u kojoj se učenici uče da se oslanjaju jedni na druge, da uče jedni od drugih i da pomažu jedni drugima. Bolji učenici su uzor drugima, a ovi drugi od njih uče (Došen, Gačić-Bradić,2005).

Uzajamno pozitivno djelovanje i tolerancija razvijaju pozitivna individualna i interakcijska iskustva i humanizam. Cilj nastave nije samo edukacija (odnosno integracijska edukacija), već pozitivan i zdrav razvoj u cjelini koji kao proces treba da priprema učenika za život i pozitivan cjeloživotni razvoj (Cerić, 2004).

U inkluzivnoj nastavi svakom se dijetetu odnosno učeniku, pruža mogućnost da napreduje u skladu sa svojim specifičnim razvojnimkarakteristikama i da te karakteristike budu osnova za razvoj individualno-prilagođenih inkluzivnih programa koji se kontinuirano razvijaju kroz pozitivan i zdrav razvoj.

Tako ćemo kod nekih učenika razvijati posebne darovitosti i kreativnosti koje će kod njega razvijati poseban ponos i koje će kao pozitivno-razvojne kompetencije činiti ga spremim, zdravim i optimističnim. Isto tako, kod djece sa određenim smetnjama u razvoju razvijati ćemo pozitivno-razvojne i alternativne, inkluzivne programe razvoja koji će uticati na pozitivan razvoj u onom segmentu razvoja koji je pozitivno moguć za tu individuu. Npr. osoba sa tjelesnim invaliditetima može se pozitivno razvijati u mentalnim ili drugim kreativnim sferama razvoja kako bi izgrađivala svoje samopoštovanje i težila najvišem individualnom cilju razvoja - samoaktualizaciji u izgrađenoj vještini, sposobnosti ili kompetenciji (Bojanin, Pijanović, 1999).

Nastavnici u praksi, najčešće, prepoznaju samo one učenike sa naglašenijim onesposobljenjima i svoju pažnju u radu usmeravaju na tu djecu i prema njima usmjeravaju individualne programe rada. Oni, najčešće, ne vide one druge nadarene učenike, nemaju vremena da svoje individualne programe rada usmjeravaju i na tu kategoriju djece.

Zbog toga roditelji darovite djece reagiraju i ljute se, s pravom, jer su njihova djeca u takvom radu zapostavljena. Inkluzija treba da predstavlja pozitivan odnos društvene zajednice prema djeci i omladini sa posebnim potrebama (Vukajlić, 2010).

Integracija je mnogo uži pojam od inkluzije i obuhvata integriranje sve djece u zajedničko pohađanje nastave, bez obzira na mogućnosti, poteškoće u razvoju, osobenosti u razvoju, na vjer-

sku, nacionalnu ili bilo koju drugu osobenost. Inkluzija podrazumijeva aktivno uključivanje djeteta s posebnim potrebama u njegovu užu i širu društvenu zajednicu u skladu sa njegovim potrebama i mogućnostima. Inkluzija je proces u kojem škola pozitivno, individualno razvija posebnosti svakog učenika (Dautović, 2006).

Inkluzivno obrazovanje se odnosi na organizaciju rada u školi, sadržaj i metod rada u obrazovanju. Svaku bi školu trebalo razvijati kao inkluzivnu zajednicu u kojoj svi imaju jednaka prava i mogućnosti za svoj razvoj. Inkluzivna je ona škola koja je otvorena za svu djecu. Za svaku kategoriju učenika, shodno njihovim razvojnim potrebama i mogućnostima, treba razvijati individualne programe rada u nastavnom procesu. Tako ćemo razvijati inkluzivnu svijest u društvenoj zajednici, sto i jeste osnovni cilj inkluzije.

Indeks inkluzivnosti je ideja Centra za proučavanje inkluzivnog obrazovanja (CSIE) iz Bristola, Centra za edukativne potrebe iz Manchestera, Centra za edukativna istraživanja iz Canterburyja, a štampan je u svim školama u Velikoj Britaniji. Ovaj priručnik štampan je širom svijeta, a autori su mu prosvjetni radnici Iony Booth i Mel Ainscow. Preveden je na više od 30 jezika (Dautović, 2006).

Za razvoj inkluzivnosti u školama i društvenoj zajednici potrebno je:
- stvaranje inkluzivne svijesti, kulture i inkluzivne vrijednosti u zajednici;
- kreiranje inkluzivne politike u razvoju škole jednake za sve;
- razvoj inkluzivne prakse kroz prilagođenu nastavu, mobiliziranje svih resursa u školi i zajednici ka inkluzivnom djelovanju.

U istraživanju Bryana G. Cooka (2001) objavljeno je da je na uzorku od 1133 učenika sa posebnim potrebama (Nevada, SAD) njih 79% savladalo individualni edukacijski program na kraju školovanja. Istraživanja su pokazala da su učenici sa posebnim potrebama integrirani u redovne razrede, pokazuju dobre rezultate na području edukacije i socijalizacije, ukoliko se za njih organizuju posebni programi rada, koji su u skladu sa njihovim sposobnostima (Davison, Neale, 1999).

U psihološkom razvoju djeteta inkluzivno obrazovanje najviše pomaže djeci u socijalizaciji.

Predmet istraživačkog rada pod nazivom „Inkluzivna kultura, teorija i praksa u konceptu inkluzivnog pristupa vrtića" i jeste dolaženje do teorijskih i praktičnih saznanja o postojanju i primeni osnovnih dimenzija inkluzivnog pristupa u vrtiću i školi.

3. PODRŠKA RAZLIČITOSTIMA MEĐU UČENICIMA

Sve aktivnosti u školi koje na potrebe učenika odgovaraju, tj. koje povećavaju učešće svih učenika u vaspitno-obrazovnom procesu podrazumijevaju se pod pojmom PODRŠKA RAZLIČITOSTIMA MEĐU UČENICIMA. Dio pokušaja da se poveća učešće svih učenika je samo pružanje podrške pojedinim učenicima. Kao što može doprinijeti poboljšanju nastave za širu grupu učenika, individualna podrška može povećati aktivno, nezavisno i efikasno učenje (Eškirović, Vučinić, Jablan, 2005).

Primjeri podrške su kada nastavnik priprema nastavu imajući u vidu aktiviranje svih učenika, a uzimajući u obzir njihova različita predznanja i načine učenja, ili kada učenici pomažu jedni

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drugima na času. Potreba za individualnom podrškom u učenju i učešću učenika se smanjuje, ukoliko su nastavne aktivnosti tako koncipirane da podržavaju učešće svih učenika.

4. INKLUZIVNA ŠKOLA

Sličnosti poimanja škole u pedagoškoj i leksikografskoj literaturi možemo dati početnu radnu definiciju INKLUZIVNE ŠKOLE, kao i respektujući opšta značenja termina INKLUZIJA (sveobuhvatnost i potpuna uključenost) i izvedenog pridjeva INKLUZIVNA.

Škola koja obuhvata i stalno uključuje svakog učenika sa preprekama u učenju i učešću (tj. pojedince sa lakšim razvojnim teškoćama i darovite) i sve ostale učenike u sve vidove vaspitno-obrazovnih aktivnosti nastavnih, vannastavnih, društveno-korisnih, kulturno-javnih prema njihovim individualnim potencijalima (kognitivnim, konativnim, socijalno-moralnim, afektivnim, psihomotornim) i maksimalno očekivanim ishodima učenja, kreiranja i poučavanja je INKLUZIVNA (Golubović, i sur. , 2008).

5. NA KOGA SE ODNOSI INKLUZIJA?

Inkluzija se nikako ne odnosi samo na djecu s posebnim potrebama već na sve one koji su na neki način dugačiji ili su diskriminirani. Razlog diskriminacije može biti pripadnost etničkoj grupi ili religiji, različita kultura, jezik, boja kože, socio-ekonomski status i drugo (Golubović, Maksimović, 2008).

Pored navedenih grupa djece spominju se još i djeca koja su žrtve nasilja, djeca bez jednog ili oba roditelja, djeca čiji su se roditelji odali raznim drogama, djeca sa specifičnim razvojnim poremećajima, psihoza razvojnog doba, poremećaji raspoloženja (afektivni poremećaji), razvojne disharmonije, poremećaji (teškoća) prilagođavanja, zlostavljanje i zanemarivanje djece, zloupotreba supstancija, suicidhost li razvojnom periodu, poremećaji ishrane, poremećaji spavanja, intemacionalne klasifikacije epileptičnih napada, ali i talentovana i nadarena deca, deca sa specifičnim potrebama li razvoju, deca povratnici, deca iz nepotpunih porodica i deca iz manjinskih grupa.

Inkluizija uvažava učenike sa smetnjama u razvoju kao ravnopravne učesnike obrazovnog sistema. Ovaj termin ne podrazumeva jednakost svih već teži stvaranju novih ideja.

6. ULOGA UČITELJA, NASTAVNIKA, KAO PROFESIONALNOG ODGAJATELJA

Kod nas je uobičajna praksa da se odgajatelji učenika razredne nastave nazivaju učiteljima, u predmetnoj nastavi u osnovnoj školi nastavnicima, ponekad i profesorima, a u srednjoj školi profesorima. U novije vreme prevladava opšti naziv učitelj za sve odgajatelje u osnovnoj školi. Obzirom da savremena škola traži sve više inventivne, kreativne i odgovorne stručnjake, to se menja i uloga učitelja-nastavnika.

Hrnjica (2004) navode sljedeće uloge savremenog učitelja:
– Poučavanje učenika u svrhu sticanja znanja, veština i razvoja sposobnosti (obrazovanje učenika, polaznika); uloga obrazovanja. Poučavanje učenika u svrhu usvajanja ili promjene vrednosti, stavova i navika (odgajanje učenika, polaznika), uloga odgajatelja.

– Sudelovanje u procesima razvoja škole, odnosno u razvoju procesa obrazovanja i od-goja, zajedno sa ostalim članovima brazovne organizacije, inspektorima, savetnicima i stručnjacima iz razvojnih službi, razvojna uloga.

Zadaci koji se postavljaju pred savremenog nastavnika su brojni. Ti zadaci su:
– novi nastavni sadržaj,
– nove nastavne strategije (oblici, metode, sredstva),
– nova uloga učenika,
– korištenje raznovrstnih izvora znanja,
– osposobljavanje učenika za permanentno obrazovanje (Hrnjica, 2004).

7.   METODOLOGIJA RADA

7.1.   Cilj i zadaci istraživanja

Cilj ovog rada jeste UTVRĐIVANJE POSTOJEĆEG STANJA U POGLEDU POSTOJANJA inkluzivne kulture, teorija i prakse u konceptu inkluzivnog pristupa vrtića i škole na osnovu ispitivanja profesionalnih i ličnih iskustava iz svakodnevne prakse vaspitača i učitelja / nastav-nika. Na osnovu ovako postavljenog cilja, definisani su sledeći zadaci istraživanja:
• Utvrditi značaj uloge vaspitača i učitelja u procesu inkluzije;
• Utvrditi da li vaspitači i učitelji imaju dovoljna predznanja o inkluzivnoj kulturi;
• Utvrditi da li vaspitači i učitelji neguju i proširuju kod dece inkluzivnu kulturu;
• Utvrditi da li vaspitači i učitelji primenju novije metode inkluzivnog obrazovanja u praksi;
• Utvrditi neophodnost prisustva pratioca u nastavi ;
• Utvrditi da li se u praksi pokazuje da se deca bolje snalaze nego vaspitači i učitelji kada se u razredu nađe dete sa smetnjama u razvoju;
• Utvrditi na koje načine vaspitač i učitelj kroz vannastavne časove i aktivnosti promovišu stavove o nediskriminaciji i jednakosti bez obzira na razlike.
• Utvrditi i prikazati da vaspitači i učitelji podržavaju inkluzivno vaspitanje i u praksi maksi-malno ga sprovode bez bilo kakvog vida diskriminisanja;
• Utvrditi da li vaspitači i učitelji imaju dovoljno edukovanja na temu inkluzivnog obrazovanja;
• Utvrditi otežavajuće okolnosti u realizaciji rada na inkluziji u vrtiću i školi.

7.2.   Hipoteze istraživanja

Na osnovu ovako postavljenih zadataka definisane su sledeće hipoteze istraživanja:

Osnovna hipoteza istraživanja:

„Pretpostavlja se da se *inkluzivna kultura, teorija i praksa u školama i vrtićima sprovodi veoma uspešno.“*

Pomoćne hipoteze:

Glavnu hipotezu je potrebno konkretizovati sa nekoliko pomoćnih hipoteza, a to su:
– Pretpostavlja se da je veoma bitna uloga vaspitača i učitelja u procesu inkluzije;
– Pretpostavlja se vaspitači i učitelji imaju dovoljna predznanja o inkluzivnoj kulturi;
– Pretpostavlja se vaspitači i učitelji neguju i proširuju kod dece inkluzivnu kulturu;

– Pretpostavlja se vaspitači i učitelji primenju novije metode inkluzivnog obrazovanja u praksi;

– Pretpostavlja se da pratilac u nastavi nije potreban deci jer sam ja i njegov vaspitač kao i ostaloj deci;

– Pretpostavlja se da se u praksi deca bolje snalaze nego vaspitači i učitelji kada se u razredu nađe dete sa smetnjama u razvoju;

– Pretpostavlja se da vaspitač i učitelj kroz vannastavne časove vrši promovisanje inkluzivnih vrednosti kroz edukativne sadržaje na temu prevazilaženja stereotipa i predrasuda.

– Pretpostavlja se da vaspitači i učitelji podržavaju inkluzivno vaspitanje i u praksi maksimalno ga sprovode bez bilo kakvog vida diskriminisanja;

– Pretpostavlja se da vaspitači i učiteljiće nemaju dovoljno edukovanja za rad na inkluzivnom programu;

– Pretpostavlja se da postoje otežavajuće okolnosti za realizaciju rada na inkluzivnom programu.

7.3. Uzorak istraživanja

Metode, tehnike, postupci i instrumenti istraživanja

U istraživanju je korištena deskriptivna metoda koja obuhvata opisivanje, prikupljanje i obradu podataka, njihovu interpretaciju i izvođenje zaključaka.

Za prikupljanje podataka korištena je tehnika anketiranja koja je praćena odgovarajućim instrumentom – anonimnim anketnim upitnikom za vaspitače i učitelje.

Anketni upitnik za vaspitače i učitelje sadrži ukupno 7 pitanja otvorenog, zatvorenog i kombinovanog tipa i posebne tvrdnje izražene petostepenom Likertovom skalom, posebno za vaspitače a posebno za učitelje.

7.4. Organizacija i tok istraživanja

Prvi korak istraživanja bio je proučavanje stručne literature da bismo upoznali teorijske i empirijske postavke koje su neophodne za realizaciju istraživanja. Naredni korak je sastavljanje upitnika i ankete i njihovo baždarenje. Sakupljeni su podaci iz tri upitnika (namijenjenih svakoj grupi ispitanika) i ankete koji su popunjavali pedagozi koji vrše trijažu učenika. Potom je rađeno sređivanje, obrada, analiza i interpretacija dobijenih rezultata i izvođenje zaključaka na osnovu tih analiza.

7.5. Analiza i interpretacija rezultata istraživanja

Analiza rezultata istraživanja i njihova interpretacija, izvršena je u cilju ukazivanja na dobijene podatke, odnosno njihove povezanosti kao šireg pojma koji određuje odnos između ispitivanih varijabli. Rezultati istraživanja izloženi su u okviru tumačenja potvđenosti ili odbačenosti posebnih hipoteza postavljenih na početku istraživanja.

U svjetlu osnovnih teorijskih postavki navedenih istraživanja prikazani su rezultati istraživanja obavljenog za potrebe pisanja ovog rada. Iz podataka prikupljenih istraživanjem odgovarajućim postupcima obrade izdvojene su informacije radi kojih je istraživanje i poduzeto. U ovom istra-

živanju zaključci su izvedeni na osnovu rezultata ankete, odnosno odgovora anketiranih ispitanika. Podaci istraživanja su prezentovani procentualno, a zatim su i njihovi rezultati tabelarno i grafički predstavljeni.
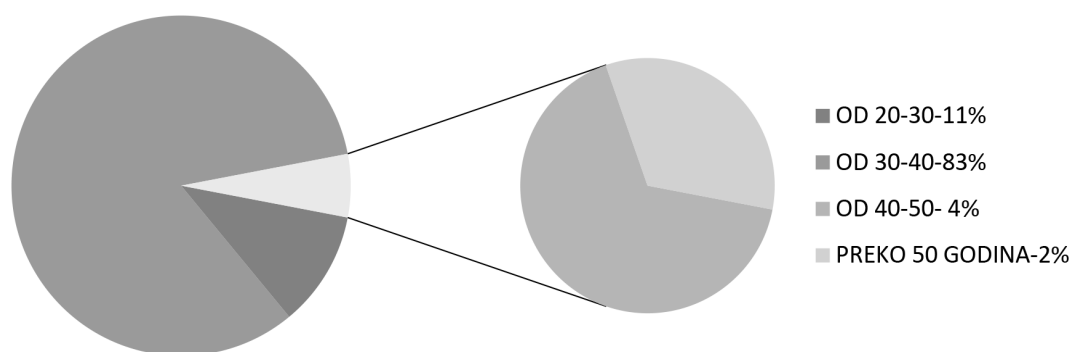
Tabela 1. Struktura uzoraka s obzirom na pol

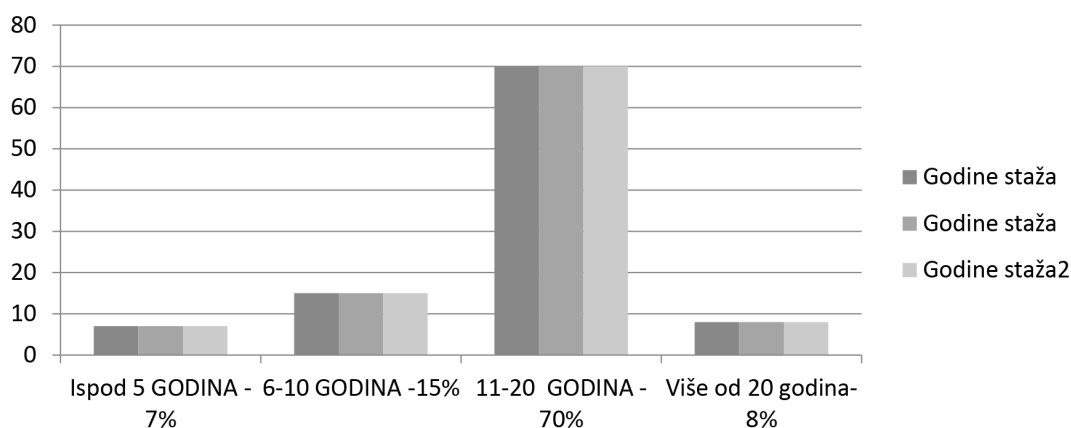| Pol		
Muško	26	26%
Žensko	74	74%
Ukupno	100	100%

U istraživanju pod nazivom *Inkluzivno obrazovanje kao humanistička inovacija škole* Učestvovalo je 100 ispitanika (učitelja i vaspitača), i to je bilo 26 ispitanika muškog pola što je 26 % od ukupnog broja ispitanika i 74 ili 74 % ispitanika ženskog pola. Dakle većina je ispitanika ženskog pola.

Tabela 2. Struktura ispitanika u odnosu na zanimanje

Zanimanje		
Učitelj	24	24%
Vaspitač	76	76%
Ukupno	100	100%

Legenda:
- OD 20-30-11%
- OD 30-40-83%
- OD 40-50- 4%
- PREKO 50 GODINA-2%

Grafikon 1. Uzorak ispitanika u odnosu na godine starosti

Legenda:
- Godine staža
- Godine staža
- Godine staža2

(osa x: Ispod 5 GODINA - 7% | 6-10 GODINA -15% | 11-20 GODINA - 70% | Više od 20 godina- 8%)

Grafikon 2. Uzorak ispitanika u odnosu na godine radnog staža

U istraživanju su učestvovali učetilji i vaspitači sa sledećim godinama radnog iskustva: najveći broj njih sa 11- 20 godina rada - njih 70 ili 70%, sa 6-10 godina radnog iskustva njih 15 ili 15% sa više od 20 godina rada njih 8 ili 8% i sa 5 i manje godina rada njih je 7 ili 7%.

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Grafikon 3. Struktura ispitanika u odnosu na predznanje o onkluziji

Na tvrdnju *Učitelji i vaspitači imaju dovoljna predznanja o inkluzivnoj kulturi* najveći broj ispitanika se delimično slaže njih 81 ili 81%, neodlučnih je 10 ili 10%, ne slaže se njih 5 ili 5% , delimično se slaže 3 ili 3 % dok je samo 1 ispitanik koji se delimično ne slaže.

Tabela 3. Struktura ispitanika u odnosu na to koliko njeguju i proširuju kod učenika inkluzivnu kulturu

	Učiteljii vaspitači njeguju i proširuju kod učenika inkluzivnu kulturu	
Ne slažem se	3	3%
Delimično se ne slažem	7	7%
Delimično se slažem	10	10%
Potpuno se slažem	73	73%
Neodlučan sam	7	7%
Ukupno	100	100%

Analizom podataka tabele 3 vidimo da na tvrdnju *Učitelji i vaspitači neguju i proširuju kod učenika inkluzivnu kulturu* najveći broj ispitanika se potpuno slaže - njih 73 ili 73% od ukupnog broja ispitanika, delimično se slaže njih 10 ili 10%, delimično se ne slaže njih 7 ili 7%, neodlučnih je 7 ili 7% dok je onih koji se ne slažu 3 ili 3% od ukupnog broja ispitanika.

Tabela 4. Struktura ispitanika i njihovih stavova o udžbenicima

	Sadržaji i udžbenici su prilagođeni tako da neguju inkluzivnu kulturu učenika	
Ne slažem se	80	80%
Delimično se ne slažem	10	10%
Delimično se slažem	10	10%
Potpuno se slažem	0	0%
Neodlučan sam	0	0%
Ukupno	100	100%

Na tvrdnju *Sadržaji i udžbenici su prilagođeni tako da neguju inkluzivnu kulturu učenika* većina se ne slaže njih 80 ili 80%, delimično se ne slaže njih 10 ili 10%, isti broj se i delimično slaže, dok nije bilo onih koji se potpuno slažu kao ni neodlučnih.

Tabela 5. Struktura ispitanika o predzanju na temu inkluzije

	Učenici imaju dovoljno teorije na temu inkluzije	
Ne slažem se	92	92%
Delimično se ne slažem	1	1%
Delimično se slažem	1	1%
Potpuno se slažem	1	1%
Neodlučan sam	5	5%
Ukupno	100	100%

Na tvrdnju *Učenici imaju dovoljno teorije na temu inkluzije* ne slaže se većina ispitanika njih 92 ili 92% od ukupnog broja ispitanika dok je neodlučnih bilo 5 ili 5%, a po 1 se ispitanik delimično slaže i ne slaže isto kao i potpuno slaže.

Tabela 6. Struktura ispitanika u odnosu na edukacije o onklizivnom obrazovanju

	Učitelji i vaspitači imaju stalna edukovanja na temu inkluzivnog obrazovanja	
Ne slažem se	2	2%
Delimično se ne slažem	1	1%
Delimično se slažem	87	87%
Potpuno se slažem	4	4%
Neodlučan sam	3	3%
Ukupno	100	100%

Analizom tabele 6 vidimo da se na tvrdnju *Učitelji i vaspitačii imaju stalna edukovanja na temu inkluzivnog obrazovanja* najveći broj ispitanika delimično slaže njih 87 ili čak 87 %, 3 su neodlučna, 4 se potpuno slaže 2 se ispitanika ne slaže što je 2%, i samo jedan ispitanik ili 1% se delimično ne slaže sa ovom tvrdnjom.

Tabela 7. Struktura ispitanika u odnosu na primjene novijih metoda u praksi

	Vaspitači i učitelji primenju novije metode inkluzivnog obrazovanja u praksi	
Ne slažem se	4	4%
Delimično se ne slažem	10	10%
Delimično se slažem	67	67%
Potpuno se slažem	9	9%
Neodlučan sam	10	10%
Ukupno	100	100%

Analizom tabele 7 vidimo da na tvrdnju *Vaspitači i učitelji primenju novije metode inkluzivnog obrazovanja u praksi* delimično se slaže njih 67 ili 67%, delimično se ne slaže i neodlučno je po njih 10 ili po 10%, potpuno se slaže njih 9 ili 9% i ne slaže se njih 4 ili 4%, od ukupnog broja ispitanika 100.

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Tabela 8. Stavovi ispitanika po pitanju pratilaca u nastavi

	Smatram da pratilac u nastavi nije potreban učeniku, jer sam ja i njegov učitelj i vaspitač, kao i ostalim učenicima i djeci	
Ne slažem se	100	100%
Delimično se ne slažem	0	0%
Delimično se slažem	0	0%
Potpuno se slažem	0	0%
Neodlučan sam	0	0%
Ukupno	100	100%

Na tvrdnji *Smatram da pratilac u nastavi nije potreban učeniku jer sam ja i njegov učitelj kao i ostalim učenicima,* svi ispitanici su odgovorili sa ne slažem se.

Tabela 9. Stavovi ispitanika o snalaženju učitelja i djece u inkluzivnom procjesu

	U praksi se pokazuje da se učenici i djeca bolje snalaze u unkluzivnom procjesu od učitelja i vaspitača	
Ne slažem se	1	1%
Djelimično se ne slažem	1	1%
Djelimično se slažem	1	1%
Potpuno se slažem	97	97%
Neodlučan sam	0	0%
Ukupno	100	100%

Analizom podataka iz tabele 9 vidimo da su ispitanici usaglašeni da je na tvrdnji *U praksi se pokazuje da učenici se bolje snalaze nego učitelji kada se u razredu nađe dete sa smetnjama u razvoju* potpuno se složilo većina njih čak 97 ili 97% dok je po 1 ispitanik odgovorio da se ne slaže kao i po 1 da se delimično ne slaže i delimično slaže sa ovom tvrdnjom.

Tabela 10. Stavovi ispitanika o motivaciji učenika kroz vannastavne časove

	Učitelji i vaspitači kroz vannastavne časove motivišu učenike i prave pozitivnu školu za sve učenike	
Ne slažem se	3	3%
Djelimično se ne slažem	7	7%
Djelimično se slažem	5	7%
Potpuno se slažem	83	83%
Neodlučan sam	2	2%
Ukupno	100	100%

Analizirajući tabelu vidimo da se na tvrdnju *Učitelji i vaspitači kroz vannastavne časove motivišu učenike i prave pozitivnu školu za sve učenike* veća polovina ispitanika potpuno slaže - njih 83 ili 83%, djelimično se ne slaže njih 7 ili 7%, 5 ili 5% se djelimično slaže, 3 ili 3% se ne slaže i 2 ispitanika su neodlučna.

Tabela 11. Stavovi ispitanika o podršci inkluzivnog procjesa

	Učitelji i vaspitači podržavaju inkluzivno vaspitanje i u praksi maksimalno ga sprovode bez bilo kakvog vida diskriminisanja	
Ne slažem se	13	13%
Djelimično se ne slažem	80	00%

Djelimično se slažem	4	4%
Potpuno se slažem	2	2%
Neodlučan sam	1	1%
Ukupno	100	100%

Analizom tabele 11 vidimo da na tvrdnju *učitelji i vaspitači podržavaju inkluzivno vaspitanje i u praksi maksimalno ga sprovode bez bilo kakvog vida diskriminisanja* delimično se ne slaže veća polovina ispitanika njih 80 ili 80%, ne slaže se njih 13 ili 13 %, delimično se slaže 4 ili 4%, manje je onih koji se potpuno slažu njih 2 ili samo 2%, i 1 je ispitanik ostao neodlučan.

Tabela 12. Stavovi ispitanika o otežavajućim okolnostima za realizaciju inkluzije

	Koje su, po Vašem mišljenju, otežavajuće okolnosti u realizaciji rada na inkluziji u školi i vrtiću (tehnički uslovi ili slaba saradnja sa roditeljima)?	
Tehnički uslovi	50	50%
Slaba saradnja sa roditeljima	50	50%
Ukupno	100	100%

Na pitanje „*Koje su, po Vašem mišljenju, otežavajuće okolnosti u realizaciji rada na inkluziji u školi i vrtiću?*" dobili smo podjednak broj odgovora, 50 ili 50% ispitanika je navelo tehničke uslove, dok je druga polovina navela lošu saradnju sa roditeljima kao otežavajuću okolnost pri realizaciji inkluzije u školi i vrtiću.

Tabela 13. Stavovi ispitanika o poboljšanju realizacije inkluzije

	Koji su Vaši prijedlozi za kvalitetniji rad na polju osposobljavanja vaspitača i učitelja za uvođenje inkluzivnog pristupa u radu vrtića i škole: (stalna edukacija ili kombinovana odeljenja)	
Stalna edukacija	92	92%
Kombinovana odeljenja	8	8%
Ukupno	100	100%

Prijedlozi za kvalitetniji rad su uglavnom usmjereni na stalnu edukaciju njih 92 ili 92%, a bilo je i prijedloga za menjanje razreda - njih 8 ili 8% od ukupnog broja ispitanika, što znači da je edukacija neophodna kako u vrtićima tako i uškolama. Komibnovana odeljenja nisu preporuka praktičara kao vid poboljšanja rada samog inkluzivnog procjesa.

8. DISKUSIJA

Na osnovu rezultata koje smo dobili ispitivanjem unaprijed postavljenih hipoteza možemo donijeti sljedeće zaključke:

- Što se tiče opšte hipoteze ovog istraživanja, ona nije u potpunosti potvrđena ovim istraživanjem. Opšta hipoteza pretpostavlja da je većina nastavnika osnovne škole spremna prihvatiti učenike sa teškoćama u razvoju.
- Rezultati pokazuju da su stavovi nastavnika redovnih škola prema inkluziji izuzetno homogeni i blago pozitivni. Nastavnici su umjereno spremni da se mijenjaju i prilagođavaju da bi ispoštovali principe inkluzije, ali im nedostaju za to relevantne komponente, kao i znanja o tome šta inkluzija podrazumijeva i koje su potencijalne dobiti od nje. Može se zaključiti da je neophodno raditi na razvoju kompetencija kod nastavnika.

- Što se tiče prve hipoteze, od posebnih, ona je ovim istraživanjem djelimično potvrđena. Ovom hipotezom smo pretpostavili da je većina nastavnika osnovne škole zainteresovana pomoći učenicima sa teškoćama u razvoju. Ipak, nastavnici su mišljenja da je potrebno ispuniti određene preduslove vezane za didaktičke materijale, opremljenost učionica i kabineta, kako bi nastava sa djecom sa teškoćama u razvoju imala rezultate.
- Što se tiče druge hipoteze, od posebnih, ona nije potvrđena. Ovom hipotezom smo pretpostavili da većina nastavnika osnovne škole na kreativan način radi sa učenicima sa teškoćama u razvoju. Nastavnici smatraju da kreativnost nastavnika mora biti praćena i nastavnim sredstvima kojih zbog teške finansijske situacije nema nikako ili nema u dovoljnoj mjeri.
- Što se tiče treće hipoteze, od posebnih, ona je djelimično potvrđena. Ovom hipotezom smo pretpostavili da većina nastavnika podržava inkluzivno obrazovanje. Na deseto pitanje kojim su anketirani nastavnici: „Podržavate li inkluzivno obrazovanje?“ samo 10% nastavnika dalo je negativan odgovor, dok je 90% nastavnika bezrezervno ili djelimično podržalo inkluzivno obrazovanje. Inkluzivno obrazovanje uglavnom nisu podržali stariji nastavnici sa velikim brojem godina radnog staža, koji se još uvijek zalažu za tradicionalni pristup nastavi.

9. ZAVRŠNO RAZMATRANJE

Škole i vrtići za vaspitanje i obrazovanje djece svojim kapacitetima, koji podrazumijevaju prije svega stručnjake sa znanjem i iskustvom u radu ali i asistivnu tehnologiju, odnosno, sredstva i pomagala koja se koriste u radu sa djecom, mogu biti značajna potpora inkluzivnom obrazovanju. Stručna podrška odgajateljima i nastavnicima treba da bude organizirana i kontinuirana kako bi se ispratile i uzele u obzir specifične obrazovne potrebe svakog pojedinačnog djeteta uključenog u redovan sistem odgoja i obrazovanja. Pored stručne podrške odgojiteljima i nastavnicima, potrebno je skrenuti pažnju i na značaj uspostavljanja institucionalnih formi napredovanja, nagrađivanja ili drugih oblika vrednovanja njihovog truda i rada kako bi se održao entuzijazam, kvalitet i visoka motivisanost za rad. Sprovođenjem inkluzije u redovne škole sprječava se diskriminacija, smještavanje u posebne institucije i izdvajanje iz obitelji. Znamo da je segregacija kršenje ljudskih prava garantovanih svim ljudima, a prema čitavom nizu sporazuma i deklaracija donesenih na međunarodnim nivoima. U našim uvjetima, potrebno je efikasnije raditi na otklanjanju postojećih predrasuda i svega onoga što stigmatizuje, etiketira i stvara dodatne teškoće djeci sa teškoćama u razvoju i učenju.

Shodno istraživanju koje je sprovedeno izvodimo sledeće zaključke:
- Vaspitači i učitelji se slažu da se djeca učenici bolje snalaze u radu sa djecom sa teškoćama u razvoju od njih samih;
- Vaspitači i učitelji se slažu da se u školi i vrtiću sprovodi sve kako bi se stvorila pozitivna klima u grupama;
- Vaspitači i učitelji se slažu da ne postoji diskriminacija sa njihove strane;
- Vaspitači i učitelji se slažu oko pratioca u nastavi, smatraju da je neophodan;
- Vaspitači-učitelji smatraju da tehnički uslovi otežavaju realizaciju inkluzivnog rada, kako u vrtićima tako u i školama;
- Obe strane predlažu edukaciju i bolju saradnju sa roditeljima kako bi olakšali sprovođenje inkluzivnog rada.

Time naša glavna hipoteza rada nije potvrđena, a to je da se ***Inkluzivna kultura, teorija i praksa u vrtićima i školama sprovodi veoma uspješno.***

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PLURALIZAM USTAVNIH VREDNOTA: KONSTITUIRANJE SOCIJALNOG TRŽIŠNOG GOSPODARSTVA U REPUBLICI HRVATSKOJ

PLURALISM OF CONSTITUTIONAL VALUES: CONSTITUTING SOCIAL MARKET ECONOMY IN THE REPUBLIC OF CROATIA

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Sažetak: *U radu se ističe značaj pripadnosti koncepta socijalne države, načela socijalne pravde i jednakosti te poduzetničke i tržišne slobode hrvatskom ustavnom identitetu za konstituiranje socijalnog tržišnog gospodarstva kao jedinog prihvatljivog oblika odvijanja tržišnih odnosa u Republici Hrvatskoj. Dodatno, iznosi se teza kako je sadržaj ustavnih načela oporezivanja, iako ona još nisu izrijekom potvrđena dijelom ustavnog identiteta, implicitno uveden u red vječnih načela hrvatskog Ustava kroz zahtjeve proizišle iz koncepta socijalne države te načela socijalne pravde i jednakosti. Pritom se ukazuje na potrebu opetovanog potvrđivanja predanosti hrvatskih građana socijalnim vrijednostima Ustava izborom socijalnih (redistributivnih) politika kroz rezultate demokratskog izbornog procesa.*

Ključne riječi: *Socijalna država, Socijalna pravda, Jednakost, Ustavni identitet, Redistribucija.*

Abstract: *Departing from the fact that the welfare state concept, principles of social justice and equality, and entrepreneurial and market freedoms make an integral part of the Croatian constitutional identity, the paper emphasizes the importance of the development for the institution of a social market economy (as the only acceptable form of market relations in Croatia). The central thesis of the paper is that the content of the constitutional principles of taxation, although not yet explicitly confirmed as part of the constitutional identity, stands implicit in the eternal principles of the Croatian Constitution via requirements that arise from the concept of welfare state and the principles of social justice and equality. Additionally, the authors point out a need to reaffirm the Croatian citizens' commitment to the social values of the Constitution by choosing social (redistributive) policies through the democratic electoral process.*

Keywords: *Social state, Social justice, Equality, Constitutional identity, Redistribution.*

1. UVOD

Svrha ustava pronalazi se u uspostavi fundacijskih vrednota novouspostavljenoga poretka, a „[z]a moderni se ustav ta načela mogu izravno uvidjeti. To su valjanost ljudskih prava, načelo demokracije, pravne i socijalne države (…)". Tako „moderni ustav donosi prethodne odluke o institucijskome ustroju, valjanosti ljudskih prava i o ciljevima zajednice te time unaprijed utvrđuje minimalni konsenzus koji ne može stalno iznova – a ponekad i lakomisleno – biti stavljan na raspolaganje" (Vorländer, 2001: 55-56). Tako su u hrvatskom ustavnom trenutku građani uspostavili neovisnu, demokratsku i socijalnu Republiku te su time stvoreni preduvjeti konstituiranja

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socijalnog tržišnog gospodarstva. S time na umu, u drugom se poglavlju institucionalizacija zahtjeva proizišlih iz koncepta socijalne države u Republici Hrvatskoj (u nastavku: RH) dokazuje kroz pripadnost socijalne države, socijalne pravde i jednakosti hrvatskom ustavnom identitetu i konstituiranje socijalnog tržišnog gospodarstva kao jedinog prihvatljivog ekonomskog modela u suvremenoj hrvatskoj državi. U trećem se poglavlju postavlja teza kako su ustavna načela oporezivanja, iako u praksi Ustavnog suda Republike Hrvatske (u nastavku: USRH) još nisu *eksplicite* prepoznata kao dio hrvatskog ustavnog identiteta, posredno uvedena u red nepromjenjivih (vječnih) normi Ustava Republike Hrvatske (u nastavku: URH) kroz zahtjeve za redistribucijom proizišle iz koncepta socijalne države te načela socijalne pravde i jednakosti. U zaključku se ističe potreba opetovane potvrde tih, u ustavnom trenutku definiranih, vječnih ustavnih načela izborom socijalnih i redistributivnih politika kroz rezultat demokratskog izbornog procesa.

2. PLURALIZAM USTAVNIH VREDNOTA: KONSTITUIRANJE SOCIJALNOG TRŽIŠNOG GOSPODARSTVA U REPUBLICI HRVATSKOJ

Isprva se valja zagledati u ustavnu podlogu mjera socijalne sigurnosti u RH. USRH (2011, t. 28.) je u svojoj praksi potvrdio kako URH „kao temeljni pravni akt hrvatske države, nije vrijednosno neutralan". Iz čl. 3., kojeg hrvatski ustavotvorac postulira kao polazišnu točku pri tumačenju ustavnih odredbi, proizlazi pluralizam vrednota čija (potencijalna) sukobljenost svjedoči predanost demokraciji i vladavini prava kao temeljima državne zajednice zasnovane na imperativu ostvarenja ljudskog dostojanstva. Štoviše, konstituirajući RH kao demokratsku i socijalnu državu (URH, čl. 1., st. 1.) ustavotvorac svjedoči vlastito uvjerenje o isprepletenosti i nerazdvojivosti individualne i socijalne slobode. USRH je u svojoj praksi potvrdio normativni karakter koncepta socijalne države i načela socijalne pravde (Cindori, Kuzelj, 2019: 834-835) te istaknuo fundamentalnu povezanost osiguranja minimuma ekonomskog blagostanja s mogućnošću ostvarenja života dostojnog čovjeka (Petrić, 2020: 125). U tom kontekstu valja promatrati zahtjeve proizišle iz načela jednakosti kao jedne od temeljnih ustavnih vrednota (URH, čl. 3.), čime URH nadilazi sferu filozofskog ideala formalne jednakosti pred zakonom, prepoznajući potrebu ispravljanja perzistirajuće supstancijalne nejednakosti (o dihotomiji načela jednakosti ogledanoj kroz rascjep između ideala formalne jednakosti i stvarnosti supstancijalne nejednakosti vidi Kostadinov, 2009). Tako shvaćen pojam jednakosti zahtijeva, *inter alia*, i osiguranje materijalne osnove participaciji u društvenom i političkom poretku.

Iz međuodnosa triju najviših vrednota (socijalne pravde, jednakosti i slobode, URH, čl. 3.), moguće je iščitati zahtjev za redistribucijom društvenih dobara, inherentno sadržan u konceptu socijalne države, koji smjera nivelaciji socijalnih nejednakosti. Takav je zahtjev po svojoj naravi egalitaran, u smislu da tumači jednakost „kao jednakost u potrebama i u dostupnosti njihova zadovoljavanja", iz čega „slijedi zahtjev za nivelacijom, koja implicira preraspodjelu" (Veljak, 2011: 59). Ipak, ne valja se složiti s daljnjim tumačenjem preraspodjele kako ju vidi Veljak (2011: 59-60), implicirajući da će nakon nivelacije svi „imati jednako, a budući da se dane potrebe ne mogu zadovoljiti u optimalnom obliku, neke će potrebe ostati nezadovoljene" te kako „egalitaristička nivelacija ide i dalje (…) te vodi (…) duhovnoj i intelektualnoj nivelaciji". Takvo shvaćanje valja odlučno odbaciti s obzirom da se hrvatski ustavotvorac nedvojbeno opredijelio konceptu ispravljanja ekstremnih nejednakosti i osiguranja minimuma sredstava za ostvarenje dostojnog života. Upravo iz pluralizma ustavnih vrednota proizlazi zabrana nivelacije u razmjerima koji bi doveli do apsolutnog materijalnog izjednačavanja i negiranja slobode razvoja ljudske osobe, ali i poduzetničke i tržišne slobode (URH, čl. 49., st. 1.). Stoga se valja nedvojbeno složiti s tvrdnjom

kako URH „već početno kroz čl. 3. izlaže jasnu arhitekturu svojih jamstava (…) Tih jedanaest jamstava postavlja se na položaj aksioma ustavne građevine koja se mora tumačiti na način koji ozbiljuje te vrhovne vrednote" te kako, *inter alia*, „upravo čl. 3." predstavlja „temelj hrvatskog 'ustavnog identiteta', tj. nepromjenjivu 'savjest' našeg Ustava" (Horvat Vuković, 2015: 489-490). Usprkos tome što URH *eksplicite* ne navodi vlastite odredbe koje se imaju smatrati nepromjenjivima (tzv. klauzule vječnosti), valja se složiti da, iako pojedini ustav ne identificira nepovredivu srž ustavnoga poretka, „pokušat će ju zaštititi upravo stoga što predstavlja njegov identitet" te kako „ništa ne sprječava ustavne suce da promijene vlastitu jurisprudenciju i proglase se ovlaštenima zaštititi ustavni identitet" (Kostadinov, 2012: 16).

Donošenje URH 1990. godine i uspostava demokratskoga ustavnoga poretka predstavlja prekretnicu za privrednu djelatnost, određujući poduzetničku i tržišnu slobodu temeljem gospodarskog ustroja RH (URH, čl. 49., st. 1.). Pritom tako zajamčenu slobodu poduzetništva ne valja promatrati izolirano od ostalih ustavnih odredbi iz Glave III. URH koja, uređujući gospodarska, socijalna i kulturna prava, neizravno definira uvjete odvijanja slobodnoga poduzetništva. Posebno valja imati na umu jamstvo prava vlasništva (URH, čl. 48., st. 1.) koje predstavlja *sine qua non* funkcioniranju tržišnih odnosa. S time u vezi, iako poduzetnička sloboda nije izrijekom uvrštena među najviše vrednote ustavnoga poretka, valja smatrati kako je njezina povezanost s jamstvom nepovredivosti vlasništva (URH, čl. 3.) *implicite* uvodi među aksiome ustavne građevine sadržane u čl. 3. (Kušan i Petrović, 2018: 255-256). Značaj slobodnog poduzetništva naglašava ustavnosudska praksa, potvrđujući odredbu o poduzetničkoj i tržišnoj slobodi (URH, čl. 49., st. 1.) dijelom nepovredive srži hrvatskog ustava, tzv. ustavnog identiteta: „Ono čini okvir unutar kojega se moraju tumačiti Ustavom definirani državni ciljevi i unutar kojega se ti državni ciljevi moraju zakonski razrađivati radi provođenja državnih zadaća" (USRH, 2015, t. 43.-43.1.). Pritom se ne radi o uzdizanju tržišne slobode u svojem izvornom, viktorijansko-liberalnom obličju, u red nepromjenjivih (vječnih) ustavnih načela, već o konstituiranju socijalnog tržišnog gospodarstva kao jedinog mogućeg ekonomskog ustroja demokratske i socijalne Republike definirane čl. 1., st. 1. URH. Stoga, USRH ne uvodi poduzetničku i tržišnu slobodu u hrvatski ustavni identitet zasebno. Naprotiv, prepoznajući pluralitet ustavnih vrednota, dijelom ustavnog identiteta proglašava čl. 49., st. 1., koji se „uvijek mora sagledavati zajedno s člankom 3. Ustava". Stoga bi bilo pogrešno iščitavati poduzetničku i tržišnu slobodu dijelom ustavnog identiteta, bez svijesti o nužnosti njihova korektiva koja proizlazi iz načela socijalne pravde i jednakosti sadržanih u čl. 3.

Valja napomenuti kako je u svojoj praksi USRH (2013, t. 3.) i čl. 1. te čl. 3. URH detektirao dijelom ustavnog identiteta, deklarirajući time jamstvo njihove „ustavne vječnosti". Stoga konstituiranje ekonomskog ustroja RH kao socijalnog tržišnog gospodarstva proizlazi iz same nepromjenjive srži URH te je jedino rješenje na koje je hrvatski ustavotvorac pristao. Tako shvaćena sloboda poduzetništva, uparena s načelima jednakosti, slobode i socijalne pravde kao izrazom socijalnog ustava, ne znači napuštanje načela tržišnosti. Naprotiv, evidentno je kako državno interferiranje u tržišnu funkciju ne smjera urušavanju slobodnoga tržišta, već njegovu korektivu u svrhu očuvanja demokracije. Pritom slobodno tržište ne treba poistovjećivati s neograničenim tržištem (neo)liberalnog kapitalizma. Umjesto toga, slobodno tržište u ustavnoj, demokratskoj i socijalnoj državi valja smatrati krajnjim izrazom (socijalne) slobode i jednakosti. Pritom pripadnost navedenih odredbi ustavnom identitetu svjedoči institucionalizaciju socijalne države i socijalnog tržišnog gospodarstva, s obzirom da njihova konstitucionalizacija predstavlja ustavni izbor hrvatskih građana izražen u ustavnom trenutku pri uspostavi ustavnopravnoga poretka RH (detaljnije o pojmovima „ustavni trenutak" i „ustavni izbor" vidi Smerdel, 2013: 22-24).

S obzirom na nedvojbenu nemogućnost ostvarenja egalitarizma u opisanom obliku apsolutne nivelacije hrvatskih građana, a što proizlazi iz temeljnog izbora hrvatskog ustavotvorca, valja se zagledati u sadržaj redistributivne naravi koncepta socijalne države, koja je dodatno konkretizirana poustavljenjem aksioma hrvatskog porezno-pravnoga sustava (URH, čl. 51.).

3. INSTITUCIONALIZACIJA ZAHTJEVA ZA REDISTRIBUCIJOM

Suvremena su društva suočena s paradoksom rastućih zahtjeva građana za boljim i brojnijim javnim (socijalnim) uslugama te istovremenim otporom elektorata povećanju poreza u svrhu njihova financiranja. Navedeno proizlazi iz kontradikcije sadržane u samoj biti kapitalističke države dobrobiti koja mora pospješiti akumulaciju kapitala, istovremeno provodeći (socijalne i redistributivne) programe i politike namijenjene legitimaciji kapitalističkoga poretka. Stoga se ključnim za konačnu distribuciju dohotka, potrošnju i pristup esencijalnim uslugama ističe način ubiranja poreza i njihove potrošnje (Farnsworth i Irving, 2019: 329-330). Pritom je današnja razina sredstava potrebnih za financiranje mjera socijalne države (države blagostanja) ishod stoljetnog razvoja socijalnih programa i politika, a čije je proširenje posljedica djelovanja dvaju faktora: proširenja spektra socijalnih prava te porasta populacije korisnika socijalnih usluga. Opseg i način njihova financiranja te mehanizmi (re)distribucije sredstava omogućuju uvid u razinu solidarnosti u pozadini društvenog ugovora pojedine socijalne države (Morel i Palme, 2019: 467-468). Proizlazi neporeciva važnost uređenja poreznog sustava, ne tek kao preduvjeta realizaciji tako postuliranih temeljnih društvenih vrijednosti (financiranja socijalnih usluga), već kao samog sredstva njihova ostvarenja (redistributivni učinak poreza). Richard Titmuss upozorio je na tendenciju zanemarivanja pogodnosti (potencijalno) sadržanih u samom poreznom sustavu, sugerirajući termin „fiskalne dobrobiti" (engl. *fiscal welfare*), kao alternativu pojmu „države blagostanja" (engl. *the welfare state*), s obzirom da potonji potiče usko shvaćanje utjecaja mjera kolektivne intervencije s ciljem zadovoljenja potreba pojedinaca i širih društvenih interesa. Razlikovanje dvaju pojmova proizlazi iz činjenice da, prema ustaljenom shvaćanju socijalnih mjera, fiskalne pogodnosti i olakšice dostupne kroz sustav oporezivanja dohotka nisu tretirane kao izdaci za socijalne usluge, iako iznos tako „ušteđenog" poreza predstavlja *de facto* transferno plaćanje (Sinfield, 2019: 23-24), postignuto drugačijom administrativnom metodom, naime, izuzimanjem (dijela) dohotka od porezne obveze, radije nego direktnim transferom proračunskih sredstava građanima.

Stoga se javlja potreba modificiranja zahtjeva proizišlih iz načela jednakosti te se ono ne zaustavlja na nužnosti (apsolutne) jednakosti pred zakonom. Suprotno, suvremeno shvaćanje ustavnog zahtjeva načela jednakosti podrazumijeva prepoznavanje supstancijalnih razlika među „pred zakonom jednakim" građanima te uz imperativ ostvarenja formalne (pravne) jednakosti ističe nužnost postizanja supstancijalne (stvarne) jednakosti. Tako shvaćeno načelo jednakosti u fiskalnim pitanjima, ističe Kostadinov (2009: 2), nije apsolutno i bezuvjetno već se, u skladu s viđenjem francuskog Ustavnog vijeća, „ustavni sudac ograničava ustavnim standardom koji je usmjeren na ispitivanje cilja kome zakonodavac teži. Ustavno vijeće tumači da načelo jednakosti nije prepreka ako zakonodavac odluči davati fiskalne povlastice, pod uvjetom da propisivanje temelji na *objektivnim* i *racionalnim* kriterijima u funkciji istaknutog zakonskog cilja (…) jasno je da ustavni sudac daje veliku normativnu slobodu djelovanja zakonodavcu za intervenciju na poreznom području". U tom smislu valja smatrati kako iz zahtjeva socijalne države i socijalne pravde evidentno proizlazi legitimnost socijalnog cilja pri uređenju fiskalnih povlastica određenim kategorijama građana s ciljem ispravljanja (ekstremnih) ekonomskih nejednakosti. U kontekstu modernih socijalnih država, koje ne smjeraju pružanju milosrđa već uspostavi supstancijalne jednakosti i opće solidarnosti, porezni sustav više ne počiva isključivo na fiskalnom cilju ubiranja proračunskih

sredstava, već teži ostvarenju socijalne pravednosti i na prihodovnoj strani državnog proračuna (Cindori, Kuzelj, 2018: 482). S tog je gledišta pravo propisivanja poreza i uređenja poreznog susta-va moguće okarakterizirati najvažnijim ovlaštenjem (zakonodavne) vlasti, uzimajući u obzir da, uz to što porezni prihodi čine preduvjet ostvarenju ostalih aktivnosti države, sami porezi imaju nezanemariv utjecaj na ponašanje građana (poreznih obveznika). Stoga zahtjev za ograničenjem poreznog suvereniteta legislative valja smatrati „maksimom ustavne demokracije" (Barker, 2006: 1). Iz tog razloga hrvatski ustavotvorac određuje „pravo proračunskog odlučivanja prerogativom zakonodavne vlasti… te dužnost svakoga pridonositi podmirenju javnih troškova, istovremeno (…) ograničavajući [zakonodavca, *op. a.*] poustavljenjem socijalno-političkih načela oporezivanja te odredbom o sudjelovanju u podmirenju javnih izdataka sukladno s ekonomskim mogućnosti-ma", pri čemu „[n]avedeno svjedoči da legitimitet porezne politike ne proizlazi tek iz ustavnog ovlaštenja uređenja poreznog sustava, već iz njegove pravednosti i socijalne osjetljivosti" (Cin-dori, Kuzelj, 2018: 482). Poustavljenjem načela plaćanja poreza sukladno ekonomskoj snazi po-reznog obveznika (URH, čl. 51., st. 1.) konstitucionaliziran je zahtjev za ostvarenjem vertikalne pravednosti, dok iz načela porezne jednakosti (URH, čl. 51., st. 2.) proizlazi važnost poštovanja horizontalne pravednosti u oporezivanju (Arbutina, 2012: 1287). Time je potvrđen redistributivan karakter hrvatskog porezno-pravnoga sustava. Iako iz prakse USRH (2009, t. 15.3.) proizlazi ne-mogućnost ustavnosudske (pr)ocjene progresivnosti poreznih stopa izravnih poreza (s obzirom na nedostatak eksplicitne ustavne odredbe o načelu progresivnosti poreznog sustava), valja podsjetiti kako utvrđivanje progresivnih stopa izravnih poreza (poglavito poreza na dohodak) ne predstavlja jedini način ostvarenja načela progresivnosti te kako je unutar poreznog sustava zakonodavcu na raspolaganju niz drugih instrumenata pogodnih njegovoj realizaciji. Imajući na umu zahtjeve socijalne države (URH, čl. 1., st. 1.), socijalne pravde (URH, čl. 3.) i socijalno-političkih načela oporezivanja (URH, čl. 51.), proizlazi da „[n]e treba posezati za pretjeranim ustavnosudskim ak-tivizmom kako bi se izveo zaključak da je zahtjev za progresivnim poreznim sustavom *implicite* sadržan u navedenim načelima" (Kuzelj, 2020: 472).

Iako USRH dosad nije potvrdio aksiome hrvatskog porezno-pravnoga sustava sadržane u čl. 51. URH dijelom hrvatskog ustavnog identiteta, valja smatrati da je njihov sadržaj već uvršten u red vječnih načela koja tvore nepromjenjivu srž hrvatskog Ustava. Pri argumentaciji iznesene teze valja poći od jedinstvenog njemačkog doprinosa shvaćanju jednakosti u sferi oporezivanja, proizišlog iz prisustva određenih fundamentalnih zahtjeva sadržanih u Temeljnom zakonu SR Njemačke (u na-stavku: TZ) poput osnovnog prava ljudskog dostojanstva (TZ, čl. 1., st. 1.). Usprkos nedostatku ek-splicitne odredbe o konkretnim zahtjevima u pogledu oporezivanja, s obzirom na temeljno određe-nje SR Njemačke kao socijalne države (TZ, čl. 20., st. 1.) i najveću važnost nepovredivosti ljudskog dostojanstva (TZ, čl. 1., st. 1.), u judikaturi njemačkog Saveznog ustavnog suda izveden je zahtjev za uvažavanjem tzv. „poreznog minimuma egzistencije" koji treba biti izuzet iz porezne osnovice pri oporezivanju prihoda poreznih obveznika. Iz dužnosti države na osiguranje minimalnih uvje-ta „za egzistenciju u skladu s ljudskim dostojanstvom putem socijalnih davanja" (Desens, 2018: 162) proizlazi dužnost oporezivanja obveznika sukladno načelu ekonomske snage, uz izuzimanje određenog iznosa od porezne obveze poreza na dohodak (koji mora biti dostatan za podmirenje osnovnih potreba za život dostojan čovjeka). Važnost utvrđivanja takvog osnovnog osobnog odbitka proizlazi iz nelogičnosti situacije u kojoj bi država isprva putem poreza umanjila prihode građana ispod razine egzistencijalnog minimuma, kako bi im ta sredstva (ispunjavajući zahtjev osiguranja minimuma egzistencije proizišao iz klauzule socijalne države) ponovno osigurala u obliku socijalne pomoći (Barker, 2006: 41-43; Desens, 2018: 162-163). Jednako kako je zahtjev za plaćanjem poreza sukladno ekonomskoj snazi u judikaturi njemačkog Saveznog ustavnog suda izveden iz zahtjeva socijalne države u pogledu osiguranja minimuma egzistencije za ostvarenje ljudskog dostojanstva,

razumno je tvrditi da su i u hrvatskom kontekstu zahtjevi za ostvarenjem vertikalne pravednosti (URH, čl. 51., st. 1.) te horizontalne pravednosti (URH, čl. 51., st. 2.) u oporezivanju sadržani u biti koncepta socijalne države (URH, čl. 1., st. 1.), načela socijalne pravde i jednakosti (URH, čl. 3.) S obzirom na važnost koju socijalna pravda kao sastavni dio koncepta socijalne države ima pri ostvarenju ljudskog dostojanstva te činjenicu da su čl. 1. i čl. 3. URH u praksi USRH potvrđeni dijelom hrvatskog ustavnog identiteta, moguće je tvrditi da je materijalna supstanca (sadržaj) načela oporezivanja iz čl. 51. posredno uvedena u red ustavno-identitetskih odrednica hrvatskog Ustava. S obzirom da ustavni identitet predstavlja samu srž ustavnoga poretka, on nije tek dio pozitivnog prava, već kao skup temeljnih društvenih normi koje stoje na pijedestalu ustavnih vrijednosti i tvore bit onoga što RH kao ustavna država jest, osvjedočuje institucionalnu stabilizaciju socijalne države i pravde u srži hrvatskoga ustavnopravnoga poretka i svijesti hrvatskih građana (koji su ih, djelujući u svojstvu ustavotvorca, učinili dijelom nepromjenjive srži Ustava).

4. ZAKLJUČAK

Imajući na umu *supra* izneseno, valja nedvojbeno utvrditi: socijalna država i pravda te jednakost i redistributivna pravednost ukorijenjene su u samoj biti moderne hrvatske države, jer „[t]eško je, naime, vidjeti kako bi suvremena razvijena društva (…) mogla uopće postojati, a da za pretežnu većinu stanovništva nisu stvoreni uvjeti neophodne materijalne i socijalne sigurnosti. A teško je, ujedno, vidjeti kako bi se ti uvjeti mogli osigurati autonomnom djelatnošću svakog pojedinca na tržištu, s obzirom na jake selektivne tendencije ugrađene u tržišni mehanizam koje izdvajaju tržišno uspješnu manjinu od većine ostalih" (Pusić, 1996: 214). Pritom te fundamentalne ustavne vrijednosti predstavljaju temelj pri konstituiranju socijalnog tržišnog gospodarstva kao jedinog mogućeg oblika odvijanja tržišnih odnosa u suvremenoj RH. Naposljetku, preostaje podsjetiti kako „[p]remda normativna snaga ustava djelomice proizlazi iz čina samoga ustavotvorstva, mnogo je više rezultat suglasnosti i priznanja koje dobiva u dugom vremenskom razdoblju… [p]otrebna mu je stalna suglasnost želi li biti valjanim i nakon konstitucijske faze" (Vorländer, 2001: 58). Stoga valja ukazati na potrebu opetovane potvrde (izborom socijalno osjetljivih i redistributivnih javnih politika) jednom institucionaliziranih vrijednosti socijalne države i pravde, odlukama o poželjnoj razini redistribucije donesenim kroz rezultate izbornih procesa. Stoga ohrabruju rezultati istraživanja Blažić i Štambuk (2019: 635) u kojem je „hipoteza da građani podržavaju redistributivan porezni sustav čvrsto potvrđena". Stavovi o pojedinim poreznim rješenjima povezani su s demografskim karakteristikama i podrškom redistributivnom načelu, a hrvatski građani podržavaju širok spektar nefiskalnih ciljeva poreznog sustava (Blažić i Štambuk, 2019).

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OPOZORILNI SISTEM ZA ZAVIRANJE V SILI ZA MOTORISTE – INOVACIJA V PROMETNI VARNOSTI Z UPORABO NESPECIALIZIRANE TEHNOLOGIJE

MOTORCYCLE EMERGENCY BRAKING WARNING SYSTEM – TRAFFIC SAFETY INNOVATION USING OFF-THE-SHELF TECHNOLOGY

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Povzetek: *V tem prispevku predstavljamo ugotovitve raziskave o sistemih za opozarjanje na trke in njihov vpliv na varnost v prometu ter predstavljamo MEBWS - opozorilni sistem za zaviranje v sili za motoriste, patentirano inovacijo, razvito na Fakulteti za informacijske študije v Novem mestu. MEBWS analizira gibanje motornega kolesa v realnem času s pomočjo merilnika pospeška, merjenja hitrosti z GPS ter z LIDAR-jem spremlja zasledujoča vozila. Po zaznavi nevarne situacije MEBWS z vklopom avtonomnega utripajočega LED svetila vozila za motornim kolesom opozori na nevarnost naleta. V okviru raziskave razvijamo simulacijski model, ki nam bo omogočil oceniti vpliv MEBWS na varnost prometa v velikih prometnih sistemih in njegov prispevek k cilju Evropske unije "Vision Zero" - zmanjšati število smrtnih žrtev na cestah na skoraj nič do leta 2050.*

Ključne besede: *Prometna varnost, Prometne nesreče, Motorno kolo, Pomoč pri zaviranju, Aktivna varnost.*

Abstract: *In this paper we present research findings on collision warning systems and their influence on traffic safety, and present MEBWS – Motorcycle Emergency Braking Warning System, a patented innovation developed at the Faculty of Information Studies in Novo mesto. MEBWS analyses motorcycle movement in real-time using an accelerometer and GPS speed measurement and monitors the following vehicles using a LIDAR. In case a dangerous situation is detected, the MEBWS alerts vehicles behind the motorcycle with an autonomous flashing LED. Furthermore, we are developing a simulation model that will allow us to gauge the influence of MEBWS on traffic safety in large traffic systems and its contribution to the European Union's goal "Vision Zero" – to reduce road deaths to almost zero by 2050.*

Keywords: *Traffic safety, Traffic accidents, Motorcycle, Braking aids, Active safety.*

1. UVOD

Motorno kolo ostaja najbolj tvegano prevozno sredstvo na prevoženi kilometer. Več kot 6500 voznikov in potnikov enoslednih vozil (motorji, skuterji, mopedi) vsako leto izgubi življenje v prometnih nesrečah znotraj EU, pri čemer je tveganje za smrtni izid prometne nesreče za motoriste 20x večje kot za uporabnike avtomobilov [1].

V Sloveniji se je leta 2011 v kategoriji PTW (angl. PTW, »powered two-wheeler«, tj. enosledna motorna kolesa in mopedi) zgodilo 30 nesreč s smrtnim izidom. To predstavlja 21 % smrti v primerjavi z nesrečami ostalih vozil v cestnem prometu ([2] str. 55). Leta 2016 je bilo nesreč

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s smrtnim izidom vsaj 22 [3]. Del nesreč predstavljajo naleti, tj. trki drugih vozil v zadek motornega kolesa. Po podatkih NHTSA (angl. NHTSA, National Highway Traffic Safety Administration) je razvidno, da je v ZDA 5 % vseh naletov na motorno kolo usodnih. To predstavlja približno 223 življenj letno (kot citirano v [4] str. 6). Motorist pri tem največkrat utrpi poškodbe glave, tudi do stopnje MAIS5 ([5] str. 133-141). Evropska komisija želi z ukrepom »Vision Zero« zmanjšati število smrtnih žrtev na evropskih cestah na nič do leta 2050 oz. zmanjšati nastanek hudih poškodb za 50 % do leta 2030 [6]. Mehanizmi, s katerimi bi lahko pripomogli k uresničitvi strategije »Vision Zero« so tudi opozorilne luči za zaviranje v sili, ki so predpisane z regulativo ter temeljijo na znanstvenih raziskavah.

Kljub določenim izvedenim študijam na tem področju, pa obstaja manko raziskav o učinkovitosti podobnih varnostnih mehanizmov za motorna kolesa (npr. EBD, MEBWS, AEB, FCW). Hkrati so ti varnostni pripomočki bistveno slabše dostopni pri motociklih kot pri osebnih vozilih ali težkih tovornih vozilih, čeprav je v letu 2016 v kategoriji motorjev in mopedov na evropskih cestah umrlo 4352 voznikov in sopotnikov (17 %) ([7], str. 2).

Zaradi omenjene problematike in manka raziskav na tem področju želimo z lastno raziskavo preveriti potencialne učinke vpeljave in razširitve vpeljave varnostnih mehanizmov na prometno varnost v Evropski uniji in s tem na uresničevanje strategije »Vision Zero«, pri čemer se bomo osredotočili na potencialni vpliv sistema za zaviranje v sili za motoriste aktivne varnosti MEBWS, ki je bil razvit v okviru raziskave na Fakulteti za informacijske študije v Novem mestu.

2. PREDHODNE RAZISKAVE

Pomemben dejavnik pri prometnih nesrečah z udeleženim motoristom ostaja oteženo zaznavanje in umeščanje motorista v prostor ter napačna ocenitev drugih udeležencev v cestnem prometu o njegovi lokaciji in dejanski hitrosti. Zaradi oblikovne enostavnosti in pomanjkanja prostora pa na motorju navadno najdemo le eno kombinirano svetlobno-signalno telo za označevanje vozila in signalizacijo zaviranja (zadnja pozicijska svetilka ter zavorna luč). Glede na to, da je kar 90 % vseh potrebnih informacij za vožnjo vozila vizualnega tipa, manjša vidna površina (kót) potencialno zvišuje možnost nesreče (Sivak et al. v [8], str. 534). Da bi preprečili nesrečo (nalet), mora zavorna luč motornega kolesa zagotoviti hitro, razločno in zadostno informacijo, da vozniki zadaj lahko pravočasno odreagirajo. Številne raziskave so bile izvedene in so se osredotočale na tovrstni problem pri avtomobilih. Najbolj poznan je primer tretje zavorne luči, ki povečuje vidnost (Farmer v [8], str. 534). Študij, ki bi se osredotočale na motorna kolesa pa je relativno malo.

Dosedanje raziskave so določile mejne pogoje za delovanje sistemov za opozarjanje v primeru nujne, zasilne zaustavitve z dodatno utripajočo zavorno lučjo v sili, reakcijske čase voznikov ter omejitve človeškega zaznavanja vizualnih signalov za zaviranje. EBD, zavorne luči v sili (angl. Emergency Braking Display, lahko tudi signal zasilnega ustavljanja, angl. Emergency Stop Signal) so luči, katere začnejo hitro utripati, ko voznik na vso moč začne zavirati (negativni pospešek je vsaj 6 m/s2) ([9] str. 2). To so lahko standardne zavorne luči ai pa varnostne utripalke ([10] str. 8). Sistem je še posebno učinkovit na avtocestah ([9], str.: 8). Parametri delovanja EBD zavornih luči v sili so predmet nekaterih mednarodnih predpisov (ECE regulativa 48, poglavji 6.23 in 6.25 ter UNECE Regulativa št. 13-H, poglavji 5.2.1.31 in 5.2.23), ki pa ne veljajo za motorna kolesa.

Kusano in Gabler [11] sta leta 2011 naredila študijo glede efektivnosti sistemov za zmanjševanje posledic prometnih nesreč (naletov) pri osebnih, dostavnih ter lahkih tovornih vozilih. Sistem PCS (angl. PCS, Pre-Collision System) je sestavljen iz več podsistemov: FCW (angl. FCW, Forward Collision Warning), PBA (angl. PBA, Pre-crash Brake Assist) in AEB (angl. AEB, Autonomous Emergency Braking). V študiji, kjer je bilo obravnavanih približno 1.080.000 naletov v letih od 1993 do 2008 sta ugotovila, da sistem PCS z ostalimi vključenimi podsistemi statistično značilno vpliva na zmanjševanje možnosti nastanka nesreče oz. na zmanjševanje posledic le-te. Avtorja [11] sta izračunala, da bi sistemi FCW, PBA in AEB skupaj preprečili 7,7 % naletov, v nesrečah, ki jih ne bi mogli preprečiti, pa bi se mediana ΔV (sprememba hitrosti pri trku) zmanjšala za 34 % (iz 17,0 km/h na 11,3 km/h). Delež voznikov (pripetih z varnostnim pasom), ki bi utrpeli srednje do hude (smrtne) poškodbe bi se zmanjšal za 50 % (iz 12,338 na 6,123) ([11], str. 10). Cicchino [12] je v raziskavi o učinkovitosti kombinacij FCW, AEB in FCW + AEB ugotovila, da sistem za opozarjanje na trk FCW zmanjša možnost naleta za 27 %, v kombinaciji z avtonomnim zaviranjem AEB pa za 50 %. Možnost, da bi v naletu utrpeli telesne poškodbe se tako zmanjšajo za 20 % z uporabo sistema za opozarjanje na trk FCW, skupaj s sistemom AEB pa za 56 %). Avtorica poudarja, da če bi v ZDA vsa vozila v letu 2014 imela vgrajena sistema FCW + AEB, bi bilo preprečenih približno milijon nesreč, posledično bi bilo približno 400.000 telesnih poškodb manj ([12], str. 1).

2.1. Opozorilni sistem za zaviranje v sili za motoriste MEBWS

Naloga opozorilnega sistema za zaviranje v sili za motoriste MEBWS (angl. Motorcycle Emergency Braking Warning System) je višanje ravni pozorne vidnosti zadka motornega kolesa z uporabo namenskih LED zavornih luči v sili.

Opozorilni sistem za preprečevanje naleta za motorna kolesa v primeru zaviranja motorista v sili ali prehitrega približevanja zasledujočega vozila rešuje problem slabega zaznavanja motoristov v prometu in s tem zmanjšuje možnost nesreče, v kateri so ti udeleženi. Sistem združuje v enem izumu dva funkcionalna dela. V prvem delu opozarja udeležence v prometu na motoristovo zaviranje v sili, kar predstavlja kontrolni sistem z odprto zanko, v drugem delu pa opozarja zasledujoče vozilo, ki se motornemu kolesu približuje prehitro, kar predstavlja kontrolni sistem z zaprto zanko. Ključni elementi sistema so LIDAR, ki omogoča zaznavanje približujočega se vozila, GPS modul, merilnik pospeškov, mikrokrmilniška enota in LED luči, ki so s sistemom povezane prek stikal za vklop zavornih luči v sili (Slika 1). Nosilec, na katerem se nahaja večina elementov sistema, se lahko vgradi v zadnji del sedeža motornega kolesa.
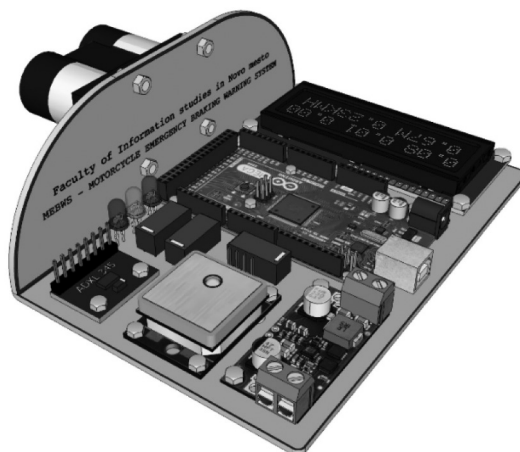
Slika 1. Prototip Sistema MEBWS

Delovanje prototipa je bilo empirično preizkušeno, s čimer je bila potrjena veljavnost koncepta. Algoritmi in parametri delovanja sistema temeljijo na podlagi znanstvene in strokovne literature ter so skladni s trenutno regulativo, ki velja za dvosledna vozila (podobni sistemi za enosledna vozila ne obstajajo). Inovacija je bila nagrajena z bronasto medaljo na 16. mednarodni razstavi inovacij ARCA leta 2018 v Zagrebu, kar je v okviru ARCA najvišje možno priznanje za inovacijo, ki v tistem trenutku še ni bila zaščitena s patentom. Za izum smo leta 2019 pridobili slovenski patent, ter leta 2020 patent v Ruski Federaciji (popolni preskus patenta).

3. RAZISKAVA VPLIVA VARNOSTNIH MEHANIZMOV NA PROMETNO VARNOST V EU

3.1. Izhodišče raziskave

V okviru raziskave nameravamo razviti celovit simulacijski model prometnega sistema, ki bo omogočil preučevanje vplivov varnostnih mehanizmov na prometno varnost. Z uporabo modeliranja in simulacije sistemov bomo preučili vpliv uporabe in razširjenosti MEBWS na prometno varnost v različnih scenarijih.

Glavni raziskovalni vprašanji, ki smo jih postavili v okviru naše raziskave sta
1. Kako bi uporaba MEBWS vplivala na izid (teža poškodb in materialni stroški) prometnih nezgod v izbranih tipičnih scenarijih prometne nesreče. To bo mogoče ugotoviti na podlagi krajšanja reakcijskega časa in s tem manjše verjetnosti trka oz. zmanjšane kinetične energije ob trku, in
2. Kakšen bi bil vpliv različnih stopenj penetracije MEBWS na trg motornih koles na celovito prometno varnost (tj. zmanjšanje števila prometnih nesreč in teže posledic le-teh).

3.2. Metodologija

Ker terenska raziskava oz. eksperimenti iz finančnih in etičnih razlogov niso izvedljivi, bo metodologija naše raziskave temeljila na uporabi metod modeliranja in simulacije sistemov, ki omogočajo izvedbo eksperimentov v modelu realnega prometnega sistema.

Model prometnega sistema bo vseboval omrežje prometnih povezav, v katerem bosta razmerje med dolžino cest različnih kategorij in gostota prometa posameznih kategorij ustrezala razmeram v EU. Vozila in njihovo vedenje bodo modelirana z uporabo metod agentnega modeliranje ABM (angl. ABM, Agent-Based Modelling), sistemske dinamike (SD) ter drugih metod. V okviru modela bomo definirali in simulirali najbolj pogoste scenarije prometnih nesreč z udeleženim motoristom.

Agentni model je tip računalniškega modela, ki se uporablja za simulacijo interakcij med posameznimi agenti nekega okolja, z namenom pojasnitve njihovega vpliva na sistem kot celoto. Definicija agentnega modela je osredotočena na koncept »agenta« ([13], str. 206). Agenti pri tem predstavljajo računalniške (pod)sisteme, ki so sposobni avtonomnega delovanja znotraj v naprej definiranih meja, z namenom, da dosežejo svoj impliciten cilj. To pomeni, da lahko agenti delujejo neodvisno, vendar pa lahko drugi agenti vplivajo na njihove odločitve. So diskretni subjekti, ki so sposobni sprejemati odločitve z uporabo postopkov ali pravil. Zaznavajo lahko spremembe okolja v katerem delujejo, zaznavajo lahko ostale agente, se prilagajajo, njihove aktivnosti pa imajo po navadi določene posledice ([14], str. 150).

Kot orodje za oceno vpliva varnostnih mehanizmov smo razvili model v metodologiji sistemske dinamike (SD model), ki omogoča preizkušanje vpliva in kalibracijo posameznih parametrov, kot so vpliv varnostnih mehanizmov, vremenskih pogojev, tehničnega stanja vozil itd. glede na obstoječe podatke o letnem številu prometnih nesreč v EU. Na podlagi končne verzije SD modela bomo znotraj modela prometnega sistema kalibrirali izračun verjetnosti za nastanek nesreče in posledic nesreče v posamezni situaciji, kjer bo obstajala možnost naleta dveh vozil. Poleg bo imel SD model tudi didaktično funkcijo, saj bo služil kot predstavitev medsebojnega vpliva raznih faktorjev na nastanek prometnih nesreč, npr. glede na vidnost, stopnjo vzdrževanja vozil, vremenske razmere vzdrževanje posameznih odsekov cest itd.

Slika 2 prikazuje aktualno verzijo SD modela. V njem se med tekom simulacije izrisuje kumulativno število prometnih nesreč (zeleni graf), ocenjeno gibanje dnevnega števila nesreč glede na prisotnost motornih koles v prometu ob posameznem delu leta in dneva (rdeči graf), dnevno povprečje števila nesreč (modri stolpec) ter letno povprečje števila nesreč (rumeni stolpec).
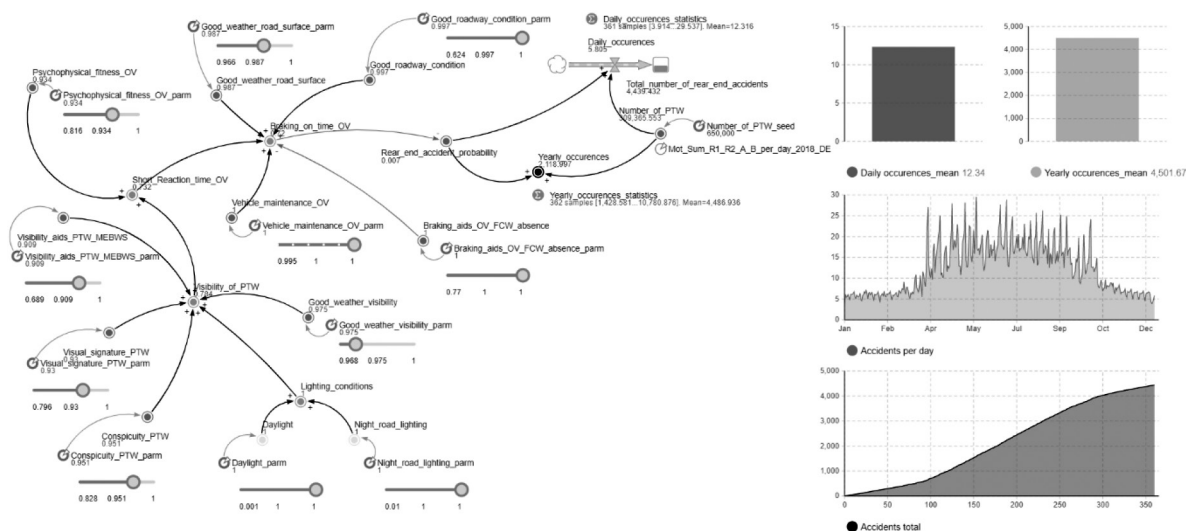
Slika 2. Model pojavnosti prometnih nesreč v odvisnosti of časa in vplivnih faktorjev

4. ZAKLJUČEK

V raziskavi se osredotočamo na delovanje in vpliv sistemov, ki zmanjšujejo verjetnost na nalete osebnih vozil na motorna kolesa na prometno varnost. Naš cilj je oceniti potencialne vplive vpeljave sistema MEBWS v prometni sistem EU. Za razliko od ostalih sistemov (npr. primerljivi sistemi EBD) je MEBWS možno v motorna kolesa enostavno vgraditi tudi naknadno, kar bi pri podatku, da je bilo v letu 2011 na evropskih cestah registriranih kar 37 milijonov motornih koles in mopedov, lahko pripomoglo k večji varnosti ([3], str. 3).

V dosedanjem poteku raziskave smo preučili dostopno znanstveno in strokovno literaturo ter uradna statistična poročila s področja prometne varnosti in razvili prvo verzijo modela, ki omogoča preizkušanje vpliva in kalibracijo posameznih parametrov, kot so vpliv varnostnih mehanizmov, vremenskih pogojev, tehničnega stanja vozil itd. glede na obstoječe podatke o letnem številu prometnih nesreč v EU. V nadaljevanju bomo razvili model prometnega sistema, ki bo omogočal simulacijo situacij, v katerih prihaja do prometnih nesreč z naletom v zadek motornega kolesa in agentni model udeležencev v prometu. Razvita modela prometnega sistema in udeležencev v prometu bosta omogočila modeliranje obnašanja večjega števila posameznikov

v realističnem modelu prometnega sistema in simulacijo velikega števila prometnih dogodkov. S tem bom lahko preizkusil različne scenarije vpeljave sistema MEBWS in njegov vpliv na prometno varnost.

Z modeliranjem vpliva uvedbe varnostnih mehanizmov v prometne sisteme bo načrtovana raziskava podprla načrtovalce strategij prometne varnosti in odločevalce na tem področju, in s tem prispevala k uresničitvi EU ukrepa »Vision Zero«. Hkrati bo razviti simulacijski model omogočal predstavitev rezultatov simulacijskih scenarijev posledic prometnih nesreč v oblikah, relevantnih za raziskovalce na drugih področjih (npr. industrijski inženiring, medicina dela, prometa in športa)

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