

NEW TYPES OF WORK AS A CONSEQUENCE OF THE TECHNOLOGICAL DEVELOPMENT

Miroslava Knapková²⁰⁴

DOI: <https://doi.org/10.31410/EMAN.2018.479>

Abstract: *Adult human beings spend more than half of their lives by performing work. Many economists focus on different aspects of the labour market and its conditions and we can find various contributions mostly regarding traditional dependent work performed by employee for employer under the employment contract.*

The aim of this article is to provide an overview of new kinds of work that could be performed by individual persons (natural persons) or eventually artificial creature (intelligent non-human creature) and which are developing and spreading because of the technological development. This article is based on the theoretical and empirical economic and legal studies and official legal acts of the member state of European Union (if applicable). According to the available legal definitions, and theoretical and empirical works, I distinguish between the traditional forms of work (categories of work, which are standardly regulated by the labour law or business law in most of the European countries), and new forms of work (they are either not legally regulated or they are partly regulated only in few countries and they exist or may exist in the future because of the technological development). Traditional forms of work are all kinds of paid work, including dependent work (all kinds of employment contracts, such as part-time work, full-time work, working contract for the definite period, working contract for the indefinite period, homework, telework), independent self-employed work, work performed according to the business law contracts (such as contract with a commission agent, mandate contract, managerial contract, contract on the manager director function in the private limited company), and work performed according to the civil law contracts (such as contract of intermediation). Traditional forms of work include also all forms of unpaid work (performed in households by husband and wife, by children, or other household's members, as well as work performed within the neighbourhood relationships, and volunteer work). Illegal work belongs also to the traditional forms of work. In the current digital economy and society, new forms of work will be increasingly common. Atypical (new) forms of the work are linked with different changes on the labour market. As new forms of work I consider economically dependent self-employment, "crowd work" and "work-on-demand via apps", which are typical for so-called gig-economy, as well as work performed by artificial creatures. Based on the analysis of more than hundred legal acts from the labour law area of all European Union member states, theoretical and empirical contributions, I tried to sum up legally used definitions and empirical descriptions of unusual (new) types of work. Knowing the changes on the labour market, including an interest of individuals to offer their labour force in new, unusual forms, gives business leaders an overview of new forms of work and provides them a basis for strategic decisions on the company's employment policy.

Key words: *Work, Economically dependent self-employment, Crowd work, Work-on-demand via app, Artificial creature.*

²⁰⁴ Faculty of Economics, Matej Bel University, Tajovského 10, 975 90 Banská Bystrica, Slovakia

1. INTRODUCTION

There is an endless list of literature describing the role of the labour, work, job occupation and job satisfaction in our society. They have been a subject of sociology ([14], [19], [20]) as well as economy (mostly in the connection with the labour market, employment and unemployment [6], [10], [15]) and management ([7], [18]). Adult human beings spend more than half of their lives by performing work. Theoretical and empirical studies focus, however, only on the specific kinds of work, usually from the partial point of view.

The aim of this article is to provide an overview of new kinds of work that could be performed by individual persons (natural persons) or eventually artificial creature (intelligent non-human creature) and which are developing and spreading because of the technological development. Based on the analysis of more than hundred legal acts from the labor law area of European Union member states, theoretical and empirical contributions and official documents and statistics of the International Labour Organization (www.ilo.org), I eliminated all legally used definitions of the work (as dependent work performed by the employee for employer), as a traditional form of work, and I tried to identify new types of work in digital era.

2. METHODOLOGY

Most of the labor law acts in the European Union countries deal with the social protection of workers / employees and with the termination of the employment relationship. Almost no legislation focuses on the specification/ definition of the work (as dependent work performed for employer), except of Slovakia, Czech Republic, the United Kingdom, Estonia, and Finland, partly in Latvia and Romania. However, only in Slovakia and Czech Republic, clear and specific definition of dependent work is legally promulgated.

In the Table 1, there is information about the most relevant legal acts regulating work and employment in European Union countries. From all legal acts regulating work, working conditions and employment conditions, I selected those, which are relevant for private area and for concluding labor (work, employment) contract.

<i>Country</i>	<i>Legal Acts Regulating Employment relationship</i>
Austria	Federal Law Gazette I No. 100/2002 Federal Act on Corporate Staff and Self-Employment Provision – BMSVG
Belgium	Law on Employment Contracts, the Labour Act (16.3.1971)
Bulgaria	Labour Code, No. 26 and 27/1986
Croatia	Zakon o radu, Labour Code of 18.7.2014
Cyprus	Termination of Employment Law, Law 24/1967
Czech Republic	No. 262/2006 Coll. Labour Code
Denmark	Employment Contracts Act, White-Collar Workers Act
Estonia	Employment Contracts Act of 15.4.1992
Finland	Employment Contracts Act (55/2001)
France	Law no. 2016-1088 relating to work, modernization of social dialogue and securitization of professional careers
Germany	Works Constitution Act
Greece	Law 4336/2015, Law 4387/2016
Hungary	Labour Code (Act I of 2012)
Ireland	Workplace Relations Act (2015)
Italy	Law 183/2014 on Jobs Act

Latvia	Act no. 15/2001 on Labour Law (Zinotajs)
Lithuania	Labour Code (4.6.2002)
Luxembourg	Labor Code (Code du Travail).
Malta	Employment Status National Standard Order
Netherlands	Working Conditions Act, NLD-1999-L-68800
Poland	Act no. 21/1997 The Labour Code
Portugal	Law no. 7/2009, Labour Code
Romania	Labour Code
Slovakia	Act no. 311/2001 Coll. Labour Code
Slovenia	Employment Relations Act (2013)
Spain	Act no. 1/1995 Workers' Statute Royal Decree
Sweden	Act no. 80/1982 Employment Protection Act
United Kingdom	Act no. 20/2012 Labour Code, Employment Act

Table 1: Legal regulation of work in European Union countries and other chosen countries

Source: the author.

According to the available legal definitions, theoretical and empirical works, I distinguish between the traditional forms of work (those categories of work, which are standardly regulated by the labor law), and new forms of work (which are either not legally regulated or are partly regulated only in few countries and which exist or may exist in the future because of the technological changes). Traditional forms of work are all kinds of paid work, including dependent work (all kinds of employment contracts, such as part-time work, full-time work, working contract for the definite period, working contract for the indefinite period, homework, telework), independent self-employed work, work performed according to the business law contracts (contract with a commission agent, mandate contract, managerial contract, contract on the manager director function in the private limited company), and work performed according to the civil law contracts (such as contract of intermediation). Traditional forms of work include also all forms of unpaid work (performed in households by husband and wife, by children, or other household's members, as well as work performed within the neighborhood relationships, and volunteer work). Illegal work belongs to the traditional forms of work, as well. New forms of work include economically dependent self-employment, crowd work and work-on-demand via apps, and work performed by artificial creatures.

Ing. Mgr. Miroslava Knapková,

PhD., works at the Department of Economy at the Faculty of Economics, Matej Bel University in Banská Bystrica, Slovakia. In



her teaching and research work, she focuses on the interactions between the law and economy and economic and legal aspects of entrepreneurship, business companies, paid and unpaid work.

Currently she lectures and publishes texts in the fields of theory of law for economists, Business law, Labour law and Administrative law.

3. NEW FORMS OF WORK AS CONSEQUENCE OF TECHNICAL DEVELOPMENT

Atypical (new) forms of work are linked with the changing situation on the labour market. As new forms of work I consider economically dependent self-employment, crowd work” and “work-on-demand via apps”, which are typical for so-called gig-economy, and work performed by artificial creatures.

Economically dependent self-employed work is relatively new term in all European Union countries. This term characterizes person, whose job activities are on the border between dependent employment and independent entrepreneurial activities. According to the study „Social protection rights ... “ [9], there are only few countries in European Union, in which „hybrid” category of dependent self-employed persons is legally allowed. These countries are Austria (it is possible to work as a free service workers, new self-employed workers and contractor of work and services), Germany (free service contract workers) and Italy (contracts of continuous and coordinated collaboration and contracts for a project). In the United Kingdom, dependent self-employed workers are also legally recognized category [2]. Another country, where status of economically dependent self-employed workers is legally recognized, is Spain [12]. According to the Maltese Employment status national standard order, there is a list of criteria which should be fulfilled when considering the employment status of a person who is nominally self-employed and is *prima facie* not considered as an employee.

Modern labour markets have faced new phenomena arising in a so-called gig economy. Growing number of Millennials (generation of persons born between 1979 and 1994 [17], are entering to labour markets and their expectations about the working environment and working conditions (mostly using the sharing platform, digital platforms and on-demand platform of the work) are different from the traditional employee – employer relationships [5]. Economic conditions in which Millennials prefer to organize their working habits, is called gig-economy, eventually collaborative economy [13]. Forms of work in the gig-economy include crowd work, and work-on-demand via apps, under which the demand and supply of working activities is matched online or via mobile apps [8]. Crowd work usually refers to working activities that imply completing a series of tasks through online platforms. Work on-demand via apps is a form of work in which the execution of traditional working activities such as transport, cleaning and running errands, but also forms of clerical work, is channeled through apps managed by firms that also intervene in setting minimum quality standards of service and in the selection and management of the workforce (In: [8]). In general, we can understand work situation in the gig-economy as a situation powered by independent workers selecting jobs that they're interested in, rather than one in which people are forced into a position where, unable to attain employment, they pick up whatever temporary gigs they can land.

Different approach of Millennials and arising of the gig-economy is now more visible in the United States. However, we can expect, that similar situation will arise also in European labour market. Partial regulation of the gig-economy in the European Union is in Italy. With the efficiency from the 1st January 2016, it is possible to conclude coordinated and continuous collaborations relationships (so-called, “co.co.co”) contracts in Italy. In the co.co.co., collaborations will consist in the performance of work which will be mainly (not exclusively) personal and whose performance is not organized, also in terms of place and working hours, by the employer (Legislative Decree no. 81/2015 Code for contracts). The Decree also regulates the intermittent employment agreement (also called job-on-call). Job-on-call is defined as agreement, with open-term or fixed-term, whereby an employee places himself/herself at the disposal of an employer who can make use of the relevant job performance periodically or intermittently (Article 13, paragraph 1 of the Decree). This regulation, however, does not cover all the eventualities and features of the crowd work and work on-demand via apps.

Ideas about creating intelligent creature, which will be smart enough to replace (substitute) human beings in their work origins in 1990's ([1], [3], [4]). In 2013, Rotman [16] summed up theories and studies concerning to the jobs standardly occupied by humans and their reduction due to the technological progress. According to his paper, “fact that robots, automation, and

software can replace people might seem obvious to anyone who's worked in automotive manufacturing or as a travel agent. Technologies like the Web, artificial intelligence, big data, and improved analytics—all made possible by the ever-increasing availability of cheap computing power and storage capacity—are automating many routine tasks. Countless traditional white-collar jobs, such as many in the post office and in customer service, have disappeared.” In 2017, Frey and Osborne [11] elaborated a model for predicting probability of computerization of the jobs. They included 702 occupations in their model and according to their findings, 170 occupations will be computerized for more than 90 % in the near future (between them, for example, telemarketers, insurance underwriters, cargo and freight agents, new accounts clerks, library technicians, loan officers, shipping, receiving, and traffic clerks, driver/sales workers, radio operators, bookkeeping, accounting, and auditing clerks, hosts and hostesses, restaurant, lounge, and coffee shop, cashiers, receptionists and information clerks).

4. CONCLUSION

The aim of this article was to provide an overview of new kinds of work that could be performed by individual persons (natural persons) or eventually artificial creature (intelligent non-human creature) and which are developing and spreading because of the technological development. Using the available legal definitions, theoretical and empirical works, I identified list of the traditional forms of work and list of new (or atypical) forms of work (which are either not legally regulated or are partly regulated only in few countries and which exist or may exist in the future because of the technological changes influencing also labor market). Traditional forms of work are all kinds of paid work, it means dependent work, independent self-employed work, work performed according to the business law contracts, and work performed according to the civil law contracts. Traditional forms of work include also all forms of unpaid work and illegal work (in this article, I did not focus on the description of traditional forms of work). New forms of work include economically dependent self-employment, crowd work and work-on-demand via apps, and work performed by artificial creatures.

To get complete overview about all different kinds of work which is possible to perform in European Union and western world, it will be necessary to study in details also other parts of legislation, including business and entrepreneurship law, working conditions of minor children and other specific groups of the population, family law (regarding the unpaid work in the households), volunteer work regulations, etc. For the purpose of this article, it was, however, not possible to analyze all mentioned areas, and they can be included in future researches.

Contribution of this paper is in creating a list of different kinds of new forms of work that gives business leaders an overview of existing and potential future forms of work as a basis for strategic decisions and at the same time provides researchers with stimuli for future investigations in the dynamic changes of the labour market due to the technological changes and development. Not only human work, but also work of artificial creatures should be taken in account. Nowadays, Internet of Things (e.g., the smart building), the Internet of Vehicles and soon also the Internet of Autonomous Vehicles, becoming a fundamental part of our everyday lives. They still serve only as devices which facilitate work of human beings. There are no legal regulations concerning the independent work of intelligent artificial creatures, taxation of such a work or control of the working environment or working conditions of these creatures. It is, however, just matter of time when particular governments initiate also legal regulation of independent work performed by autonomous artificial creatures.

REFERENCES

- [1] Hunger, J. D., Wheelen, T. L. (2007) *Essential of Strategic Management*, Prentice Hall, Upper Saddle River, New Jersey, pp. 20-21.
- [2] Balkenius, C. (1995) *Natural intelligence in artificial creatures*. PhD thesis, Lund University Cognitive Studies 37
- [3] Boheim, R., Muehlberger, U. (2006) *Dependent Forms of Self-employment in the UK: Identifying Workers on the Border between Employment and Self-employment*. IZA Discussion Paper No. 1963.
- [4] Brooks, R. (1991) *Intelligence without representation*. In *Artificial Intelligence*, 1991, vol. 47, iss. 1, pp. 139-159.
- [5] Brooks, R. (2002) *Flesh and Machines: How Robots Will Change Us*, Knopf Doubleday Publishing Group, 2002. 272 pp. ISBN 9780375421938.
- [6] Brown, D. (2017) *The Gig Economy*. Available on SAGE Business Researcher. [retrieved 30-10-2017] <http://businessresearcher.sagepub.com/sbr-1863-103233-2807569/20170626/the-gig-economy>.
- [7] Burda, M., Wyplosz, Ch. (2013) *Macroeconomics: A European Text*, Oxford: Oxford University Press, 2013. 592 p. ISBN 978-0-19-960864-5
- [8] Cartwright, S., Holmes, N. (2006) *The meaning of work: The challenge of regaining employee engagement and reducing cynicism*. In *Human Resource Management Review*, 2006, vol. 16, iss. 2, pp. 199-208.
- [9] De Stefano, V. (2015) *The Rise of the 'Just-in-Time Workforce': On-Demand Work, Crowd Work and Labour Protection in the 'Gig-Economy'*. In *Comparative Labor Law & Policy Journal*, Forthcoming; Bocconi Legal Studies Research Paper No. 2682602. [retrieved 30-10-2017] <http://dx.doi.org/10.2139/ssrn.2682602>.
- [10] Eichhorst, W. et al. (2013) *Social protection rights of economically dependent self-employed workers*. Study of Policy Department, Economic and Scientific Policy. ISBN 978-92-823-4386-9.
- [11] Freeman, R. B. (1977) *Job satisfaction as an economic variable*. *American Economic Review*, 1978, v68(2), 135-141.
- [12] Frey, C. B., Osborne, M. A. (2017) *The future of employment: How susceptible are jobs to computerisation?* In *Technological Forecasting and Social Change*, 2017, vol. 114, pp. 254-280.
- [13] Garcia, C. A., Gonzáles, C. N. (2012) *The Regulation of Economically Dependent Self-employed Work in Spain: A Critical Analysis and a Comparison with Italy*. In *E-Journal of International and Comparative Labour Studies*, 2012, vol. 1, iss. 1-2, pp. 117-133.
- [14] Hook, L. (2015) *"Year in a word: Gig economy"*, *Financial Times*, Dec. 29, 2015, [retrieved 30-10-2017] <http://tinyurl.com/yaswd5u9>.
- [15] Morse, N. C., Weiss, R. S. (1955) *The Function and Meaning of Work and the Job*. In *American Sociological Review*, 1955, vol. 20, iss. 2, pp. 191-198.
- [16] Penner, R. G. (1964) *Development of the Labor Surplus Economy: Theory and Policy*. In *Canadian Journal of Economics and Political Science*, 1965, 31.2: 283-284.
- [17] Rotman, D. (2013) *How Technology Is Destroying Jobs*. In *MIT Technology Review Magazine*, 2013. [retrieved 28-10-2017] http://www.shellpoint.info/InquiringMinds/uploads/Archive/uploads/20130802_How_Technology_is_Destroying_Jobs.pdf.
- [18] Smola, K. W., Sutton, C. D. (2002) *Generational differences: Revisiting generational work values for the new millennium*. In *Journal of Organizational Behavior*, vol. 23, pp. 363-382.

- [19] Thompson, P., Smith, C. (2010). *Working Life: Renewing Labour Process Analysis. Critical Perspectives on Work and Employment*, Palgrave MacMillan, 2010. ISBN 978-0-230-22223-6.
- [20] Wrzesniewski, A. (2003) *Finding positive meaning in work*. Positive organizational scholarship: Foundations of a new discipline, 2003, pp. 296-308. [retrieved 27-10-2017] http://faculty.som.yale.edu/amywrzesniewski/documents/FindingPositiveMeaninginWork_wrzchapterfromPOS.pdf.
- [21] Wrzesniewski, A., Dutton, J. D., Debebe, G. (2003) *Interpersonal Sense making And The Meaning Of Work*. In *Research in Organizational Behavior*, vol. 25