

## EMPLOYMENT OF GENERATION Y, Z IN THE LABOR MARKET IN THE CONDITIONS OF THE INDUSTRY 4.0 CONCEPT

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### Abstract

*The change in the structure of the labor market in recent years has been largely influenced by the rapid robotization and automation of industries associated with the Industry 4.0 initiative, globalization and an important factor are demographic changes implying a possible demographic crisis. All these factors bring challenges to both current and future generations in the labor market. However, their successful management also depends on the economic policy actors involved in labor market policy-making, which should aim to ensure the functioning of the market. In the presented article we want to point out how the employment (employment) of generation y, z changes on the labor market in the concept of Industry 4.0.*

### Key words

*industry 4.0, generation y, z, labor market, employment*

**JEL Classification:** O30, M52, J20

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### Introduction

One of the fastest changing markets in the economy is currently the labor market. Its uniqueness lies in the abstractness of the concept of "labor" as a factor of production, which is carried by man and his labor potential is traded on this market. Everyone has different efforts, preferences and expectations, which are reflected in the value of their work. If it were only a sale of labor for which a worker would receive a fixed wage, the labor market would not be of deep interest to many famous economists. What makes the labor market complex and complex are precisely the non-monetary incentives, benefits and privileges that one considers when looking for a job, which is why Brožová describes him as a "multidimensional personality" (Brožová, 2012). The challenge of robotics and automation, which threatens jobs themselves, is putting pressure on the workforce in the form of the need to improve human capital. The absence of an adaptation process in the transforming labor market may result in a mismatch between the structure of the labor force and the needs of the labor market, which will result in a slowdown in economic growth. Therefore, every active generation in the labor market must constantly maintain the quality of its human capital (Kaczor, 2013). Employment is a macroeconomic category which, according to Habáňik et al. (2014, p. 201) "characterizes the

involvement of the working population in the process of creating new products and services" and is one of the most important indicators of evaluating the performance of individual regions and entire economies. Employment is the ability of an individual to find a job that is in line with his or her individual characteristics and objective labor market requirements (Kuchař, 2007). Employment is a determining factor in human identity, it expresses the state of the labor market.

### Goal and Methodology

The main goal of the paper is to examine the employment of generation y, z in the conditions of the concept Industry 4.0., where we deal with employment and employers in the labor market. In order to achieve this goal, we had to study various publications dealing with the latest research, Industry 4.0, or the labor market itself, we worked extensively with Internet resources, especially articles, proceedings, but also magazines. The paper was processed using the method of comparison, observation, analysis and we also worked with various statistics or research. With our work we want to point out how the requirements of employment of generation y, z on the labor market are changing

in the 21st century, especially in the conditions of Industry 4.0.

## 1 Industry 4.0

Along with automation comes the fourth industrial revolution, which aims at an intelligent factory that is versatile, capable of ad-hoc adaptability, efficient use of resources and respect for the principles of ergonomics to facilitate and ensure occupational safety. In the fourth industrial revolution, it is a matter of adapting products to the needs of users on the basis of the offer of new technologies, the use of automated technology and the appropriate involvement of people in the production process (Tomek, Vávrová, 2017). The basis for the fourth industrial revolution is the availability of all real-time information, accessible by interconnecting all stages of control of the entire process through which the product goes. This revolution does not bring fundamental changes only for industrial production, but has a greater impact on society. The changes concern technical standardization, security, the education system, the legal framework, science and research, the labor market or even the social system. Industry 4.0 is understood as a new level of management throughout the product life cycle, which is focused mainly on individual customer requirements. It represents an aggregate term for technologies and concepts of production process organization and is dependent on the digitization and integration of vertical and horizontal production processes (Gilchrist, 2016). Industry 4.0 affects the whole of society very widely and, apart from production itself, will probably have the greatest impact on the structure of the labor market. Great changes are already taking place in the labor market, but also in the education system and the state's readiness for the planned changes. This work deals with the identification of the influences of Industry 4.0 on the specification of the workplace, t. j. parts of jobs related to man and his characteristics. Industry 4.0 can be seen as a continuation or deepening of ideas and technologies from the 3rd Industrial Revolution. In addition to a fundamental reassessment of production functionality, it will also lead to significant changes in the work environment (Wolter et al., 2015). New technologies are

rapidly changing the face of our economy and also our way of life. Thanks to this, we are entering another, namely the fourth industrial revolution (Mařík et al., 2016). It started at the turn of this century and was built on the digital revolution. It is characterized by the ubiquitous and mobile Internet, smaller and more powerful sensors that have become cheaper, artificial intelligence and machine learning (Schwab, 2016). The essence of Industry 4.0 is to achieve fully automated production, changes in the way production processes are managed, and revolutionary changes related to human resource requirements. The main idea is to connect the production machines, products, systems and subsystems of an industrial enterprise with a computer. It is a transformation of production from separate units to a fully integrated, automated and continuously optimized production environment. During Industry 4.0, industry and the economy as a whole are undergoing fundamental changes due to the introduction of information technology, cyber-physical and artificial intelligence systems into manufacturing, services and all sectors of the economy. The first change is the connection of communication between computers and devices in the production process, between customers and suppliers, but also with competitors. This is the Internet of Things, which is a communication network between devices where the human factor will not be needed, because the devices will be able to synchronize themselves. With the help of cameras and sensors, it will be possible to identify the environment by devices that will allow to obtain information about their condition, faults and repairs in the production process. Another change is the use of 3D printers and intelligent robots that will be capable of self-adjustment. All these changes can be summarized by the term artificial intelligence (Mařík et al., 2016).

### 1.1 Impacts of industry 4.0

The changes brought by Industry 4.0 are both positive and negative. They will not only have an impact on profit and cost structure, but will also change the whole core of the business. The first benefit is increased efficiency through robotics. By making robots work faster and more flawlessly, there is also a reduction in operating

costs and a consequent increase in profits. Another advantage is the optimization of production processes, by reducing the communication time between the parties involved, through which the time required to produce one piece of product is reduced. Increasing job opportunities and expanding human capital can be seen as an advantage on the one hand, but it is a threat on the other. The employment rate is expected to increase as there is an increase in demand for engineering professionals, programmers, scientists and mechanical technicians. On the other hand, there will be job losses in traditional positions due to people working in factories being replaced by robots. Increasing the demand for professionals may lead to a situation where there will not be enough qualified workers on the labor market able to work in these positions. To avoid this situation, education should develop new curricula that include the experience, competencies and skills needed for use in Industry 4.0. The government should also support companies investing in industry and ensure infrastructure changes so that business integration can take place (Gilchrist, 2016). Industry 4.0 can have negative consequences for human intellectual development. With evolving digitization, jobs are emerging that require most of the time to sit and work with a computer, increasing the risk of back and posture, tendonitis and visual disturbances caused by prolonged monitor monitoring. It will also affect the development of the younger generation, as it is easier for parents to entertain children by playing with a tablet and watching television than by engaging in physical activity, leading to an increase in the proportion of obesity in adolescents (Veber, 2018).

### 1.2 Generation Y, Z in the labor market

The labor market is characterized by considerable homogeneity both on the demand side and on the labor supply side. From gender, age and race to social background or religious beliefs - diversity is a natural part of workplaces and for their better synergy it is desirable to understand the worldviews of these groups of people. A frequent discourse is the categorization of age groups into the so-called "Generations". In his work (The ABC of XYZ:

Understanding the Global Generation, 2014), McCrindle argues that things are not as simple and the traditional definition of generation as the interval between the birth of parents and their offspring is unsustainable in today's technology-induced lifestyle changes. As an example, he cites the median age of women at the birth of their first child, which has shifted to 31 years compared to 25 years from the early 1980s. It therefore considers that we should focus on the sociological definition of generations (taking into account the evolution of the time) rather than the biological definition, with a maximum time span of 15 years (McCrindle, 2014). Although it is difficult to determine the exact definition of generations, the timeline creates certain boundaries within which people with similar traits are located (Bencsik, Horváth-Csikós, Juhász, 2016). McCrindle cites two experts in the field of generations who agree that: "Generations are shaped by the spans of time and space in history that make up their distinctive collective staff" (McCrindle, 2014, p. 2). It is also necessary to think about people born at the imaginary turn of individual generations. To categorize these people into one of the two generations would be simply ignoring the fact that these people can take over the characteristics of both generations and create a mix (Kapoor, Solomon, 2011). It is also not possible to generalize characteristics to all members of a generation, as each individual is diverse and unique (Kapoor, Solomon, 2011; McCrindle, 2014). Despite the fact that all previous generations of the 20th century have somewhat signed up to the world we live in today and it is certainly interesting to analyze the impacts and impact of their actions, for this work will be examined in more detail only the 2 youngest generations affected by the labor market. Authors on this subject have trouble finding a consensus on the exact dating of generations and often their dating differs from the year of their own publication, but McCrindle mentions for older, Generation Y, a range from 1980, when the number of children born rapidly increased until 1994, when, on the other hand, the birth rate declined for a longer period in the 1990s, while this year also preserves the time gap of 15 years for monitoring generations (McCrindle, 2014). Since the timing of generation Z is not yet anchored in the dictionary, this period also tends to be extended until the end of the century,

following the traditional definition of generation. The authors (Bencsik, Horváth-Csikós, Juhász, 2016; McCrindle, 2014; Seemiller, Grace, 2016) date the younger generation Z between 1995 and 2009. However, the individual divisions differ almost from author to author, Kapoor and Solomon date Generation Y until 1999 (Kapoor, Solomon, 2011), Dimock deviates from McCrindle as his time gap between the younger generations is 16 years (Dimock, 2019), at the core, however, they coincide with the key years of the generations. McCrindle dating will be used for the purposes of this work.

### 1.2.1 Generation Y

Generation Y, also commonly referred to as the "millennials," is the first generation to grow up, so to speak, in the comfort of modern technology (Tolbize, 2008), making it easier for them to use new and more sophisticated devices in information and communication technologies and instantly search for information online. (Bencsik, Horváth-Csikós, Juhász, 2016). At present, they form a category of people aged 25-39, which means that most of them are already part of the labor market. Despite their self-confidence and expressiveness, which help them adapt more quickly to change, they are not as independent as previous generations. They prefer following instructions if they have some flexibility in how they do their job (Kapoor, Solomon, 2011). The main motivation in their work commitment is work success and vision of the achieved goal, which often comes into conflict with family values (Bencsik, Horváth-Csikós, Juhász, 2016) and despite the fact that they like work, they do not want it to dominate their lives. , and therefore try to find a balance between work and personal life (Kapoor, Solomon, 2011). More than previous generations, millennials attach importance to opportunities for education and personal growth (Kapoor, Solomon, 2011; Solnet, Kralj, Kandampully, 2012), preferring on-the-job training, which is beneficial not only from the employer's point of view, but also by the millennials themselves. a time-efficient form of preparation (McCrindle, 2014). They demand from their employer the possibility of self-realization, the feeling that their work has meaning and a real impact on the world around

them (Kapoor, Solomon, 2011) and a corporate culture based on trust among co-workers (Solnet, Kralj, Kandampully, 2012). They also welcome diversity in the workplace and tolerate diversity (Kapoor, Solomon, 2011; McCrindle, 2014), but because of their overconfidence they are often at the root of conflict situations and find it difficult to accept criticism (Bencsik, Horváth-Csikós, Juhász, 2016). The authors (Kapoor, Solomon, 2011) even consider that the work preferences of this generation do not differ significantly from the preferences of previous generations. The key difference, they say, is that millennials are more likely to demand what they want.

### 1.2.2 Generation Z

The youngest active generation in the labor market is generation Z, often referred to as "post-millennials" or "iGeneration". While millennials grew up with technology and gradually learned to use it, Generation Z members do not even remember the period without them, and their use is intuitive for them (Seemiller, Grace, 2016). Technologies create a natural environment for them in which they feel good, which causes them to be technically taken, non-stop online and negatively reflected on their communication skills in the real world (Bencsik, Horváth-Csikós, Juhász, 2016). For this generation, it is no longer so important to acquire new knowledge, but rather the ability to search for information as quickly and efficiently as possible (Seemiller, Grace, 2016). At present, they form a category of people aged 10-24, which means that most of them are currently attending school educational establishments. Unlike millennials, who prefer teamwork (Tolbize, 2008), members of Generation Z also show less preference for teamwork due to problems with communication skills (Mohr, 2017). Paradoxically, however, most Generation Z prefers face-to-face communication (Seemiller, Grace, 2016). They prefer the intrapersonal way of learning, as the information is always within reach and it is not necessary to communicate with a third party, while they can independently determine the pace of learning. They try to organize the acquired information logically and in an organized way and then apply it, thus learning from experience (Seemiller, Grace, 2016). However, they belong to the less optimistic generations with concerns

both about the question of the future workplace and about getting the job itself after graduation (Mohr, 2017). Some of them are afraid of unemployment, resp. that their careers will remain deadlocked and they will not be able to further develop their talent (Bencsik, Horváth-Csikós, Juhász, 2016), the next part is afraid that they will not find a job after graduation. Knowing that an academic degree does not automatically guarantee the acquisition of a dream job, they focus on acquiring knowledge and skills relevant to future employment and education as a tool that should help students become familiar with a large amount of information and lead to a possible successful career. At the same time, work, as with the millennials, must have meaning and impact on the real world. They take for granted the possibility of doing work from anywhere, and therefore focus on the personal life that surrounds work (Seemiller, Grace, 2016). Generation Z welcomes diversity with open arms, evaluating diversity not only as a benefit, but also as a way to solve difficult tasks assigned in the workplace. They value diversity so much that fairness and the absence of discrimination in the workplace are more valuable to them than money, financial benefits or social status. Money is a motivator only for a small part of Generation Z, they are more interested in relationships and the opportunity to work on what they care about (Seemiller, Grace, 2016).

### 1.3 Requirements of generation y, z employees in the labor market

The common ground of all is higher wages, flexibility and interesting work. Employers have opportunities to attract and retain the necessary talent. This is influenced by age, gender and the stage at which he finds himself in his career. Generation Z (ages 18-24) is ambitious, eager for money and a career. Nevertheless, the desires of men and women are different. Women mention the importance of wages twice as often as their next priority (skills development), while according to men, skills and careers are almost as important as wages. For the first time after the entry of women and men with higher education into the labor market and after decades of unequal wages, women have the opportunity to achieve the same financial conditions, which is

why wages are so important to them. The millennials (ages 25-34) have a career ultramarathon ahead of them and they want to achieve a life balance in this long-distance run. For women, flexibility is a must. Most women take care of the household and children, trying to handle everything at the same time. In short, flexibility is essential for her, while she remains comfortable for him. Generation Y (age 35-54) is characterized by flexibility = feeling good. Flexibility is as important for men as it is for women. They want a flexible start and end of working hours, the possibility to work partly at a distance and they want to take part in parental leave. There are 52 million working parents in the US, 65.4 million households with children in the EU, and care for the elderly is growing. Flexibility becomes more than a condition for mental hygiene for both sexes. Baby boomers (age 55+) love leaders and teams. Their priorities are leadership and teamwork. The boss they work for, as well as the people they work with, are very important to them. Older employees want to pass on their experience, those over 65 are the most motivated goal. Learning new skills is less important for them. Members of this generation want to grow as personalities, not just as employees (Manpowergroup, 2020).

### Findings

More than half, ie 57% of employers in the Slovak Republic, cannot find enough suitable candidates in the long run. In terms of employer size, the differences are abysmal. Large companies have the biggest problem, 83% of Slovak employers with more than 250 employees state that they cannot fill their vacancies, for medium-sized companies (50-250 employees) it is 68% and for small companies (10-49 employees) it is 46%. The smallest problem to fill job positions, namely 35%, is reported by micro-companies with up to 10 employees. A number of studies and research have addressed the work preferences of millennials in the labor market, while more recent ones also include working respondents from Generation Z. The Deloitte Millennium Survey in 2018, on a total sample of 12,299 respondents, has a subtitle on the unpreparedness of young people for the Industry 4.0 agenda. Despite the fact that around 50% of respondents

from both generations think that Industry 4.0 will have a positive impact on their work, a slightly smaller percentage also say that they feel unprepared for change in terms of knowledge and skills and expect more from their employers. training in this area. Generation Z respondents think they also need to develop interpersonal skills along with self-confidence. In the first place, 57% of them have a positive corporate culture, in contrast to Generation Y, of whom 63% still rank financial evaluation first, while inclusion and flexibility are important for both generations (Deloitte, 2018). A recent Deloitte study in 2019, which involved 13,416 respondents, says that only one in five members of both generations believes they have all the skills and knowledge needed for a world influenced by Industry 4.0 technologies and the agenda. In the context of the "gig" economy, 80% of Generation Z members like this concept, mainly because of the opportunity to work a free number of hours a week, while better able to reconcile work and personal life. In contrast, only 6% of millennials would exchange this type of employment for full-time work. Both generations see the biggest problem in the form of unpredictable income (Deloitte, 2019).

## Conclusion

In our work, we focused on the employment of individual generations, specifically generations Y and Z in the labor market in the conditions of the Industry 4.0 concept, because artificial intelligence is rapidly evolving in the field of automation and technologies today define rather than replace desired jobs. The high demand for sales representatives, marketing specialists, assistants and drivers is due to the ever-increasing volume of online sales and logistics. However, these jobs have changed and continue to change over the last 10 years, while requiring new skills. A growing trend in the labor market is still the growing shortage of suitable workers, even for unskilled jobs, such as construction workers, storekeepers or staff in accommodation and catering. The lack of suitable talent reduces the ability of companies to satisfy customers, prolongs the delivery times of goods and services, and thus at the same time reduces the company's productivity and competitiveness. In conclusion, we can state that wages have long

been the main factor that appeals to employees under the age of 65, regardless of gender. More or less, salaries are growing by half as slower than ten years ago, especially in lower-paid jobs. Companies need to be creative so that the benefits are little more than just pay. Interesting work is one of the five main priorities for employees of all ages and has many different meanings. People want a job that offers diversity, expands their experience and builds knowledge and skills. They want the opportunity to develop further and earn more. In general, they prefer life balance and choice, and do not negotiate. They want to choose where, when and how they work and this does not only apply to the millennials, who prefer to work from cafes. They also demand a balance between their social and work life, which will be made possible by flexible work, which meets the requirements of the so-called one's life and desire to strengthen his sense of well-being. Employees want to be proud of their employer and stand behind what they do. A strong brand, a good reputation, a great job and the opportunity to change something for the better are among the ten main reasons to work for a given company.

## References

- BENCSIK, A., HORVÁTH-CSIKÓS, G., & JUHÁSZ, T. (2016). Y and Z Generations at Workplaces. *Journal of Competitiveness*, 8, s. 90-106. doi:10.7441/joc.2016.03.06.
- BROŽOVÁ, D. (2012). *Kapitoly z ekonomie trhu práce* (1. vyd.). Praha, Česká republika: Oeconomica.
- DELOITTE. (2018). The Deloitte Millennial Survey 2018: Millennials' confidence in business, loyalty to employers deteriorate. [online]. [cit. 2020-04-11]. Retrieved from: <<https://www2.deloitte.com/content/dam/Deloitte/global/Documents/About-Deloitte/gx-2018-millennial-survey-report.pdf>>.
- DELOITTE. (2019). The Deloitte Global Millennial Survey 2019. [online]. [cit. 2020-04-11]. Retrieved from: <<https://www2.deloitte.com/content/dam/Deloitte/global/Documents/About-Deloitte/deloitte-2019-millennial-survey.pdf>>.
- DIMOCK, M. (2019). Defining generations: Where Millennials end and Generation Z begins. [online]. [cit. 2020-04-11]. Retrieved from: Pew Research Center: <<https://www.pewresearch.org/fact->

- tank/2019/01/17/where-millennials-end-and-generation-z-begins/>.
- GILCHRIST, Alasdair. *Industry 4.0: the industrial internet of things*. Berkeley: Apress, 2016. ISBN 978-1-4842-2046-7.
- HABÁBIK, J. a kol. 2014. *Příklady a úlohy z makroekonomie*. Trenčín: TNU NI FSEV. ISBN 9978-80-8075-659-8.
- KACZOR, P. (2013). *Trh práce, pracovní migrace a politika zaměstnanosti ČR po roce 2011* (1. vyd.). Praha, Česká republika: Oeconomica.
- KAPOOR, C., & Solomon, N. (2011). Understanding and managing generational differences in the workplace. *Worldwide Hospitality and Tourism Themes*, 3, s. 308-318.
- KUCHAŘ, P. 2007. *Trh práce : sociologická analýza*. Praha: Karolinum. ISBN 978-80-246-1383-3.
- MANPOWER. 2020. Ako vyriešiť nedostatok talentov: Čo zamestnanci chcú. [online]. [cit. 2020-04-11]. Retrieved from: <<https://www.manpower.sk/manpower/sk/ako-vyriesit-nedostatok-talentov-co-zamestnanci-chcu-2020/>>.
- MAŘÍK, V. a kol.. *Průmysl 4.0: výzva pro Českou republiku*. Praha: MANAGEMENT PRESS, 2016. ISBN 978-80-7261-440-0.
- McCRINDLE, M. (2014). *The ABC of XYZ: Understanding the Global Generation* (3. vyd.). McCrindle Research.
- MOHR, K. A., & MOHR, E. S. (2017). Understanding Generation Z Students to Promote a Contemporary Learning Environment. *Journal on Empowering Teaching Excellence*, 1(1), s. 84-94. doi:<https://doi.org/10.15142/T3M05T>.
- SCHWAB, K. (2016). The Fourth Industrial Revolution. Retrieved from: <<https://luminariaz.files.wordpress.com/2017/11/the-fourth-industrial-revolution-2016-21.pdf>>.
- SEEMILLER, C., & GRACE, M. (2016). *Generation Z Goes to College*. John Wiley & Sons.
- TOLBIZE, A. (2008). Generational differences in the workplace. *Research and Training Center on Community Living*, 5(2), s. 1-21. Retrieved from: <[http://rtc3.umn.edu/docs/2\\_18\\_Gen\\_diff\\_workplac\\_e.pdf](http://rtc3.umn.edu/docs/2_18_Gen_diff_workplac_e.pdf)>.
- SOLNET, D., KRALJ, A., & KANDAMPULLY, J. (2012). Generation Y Employees: An Examination of Work Attitude Differences. *The Journal of Applied Management & Entrepreneurship*, 17(3), s. 36-54. Retrieved from: <[https://www.researchgate.net/profile/Jay\\_Kandampully/publication/260146142\\_Generation\\_Y\\_Employees\\_An\\_Examination\\_of\\_Work\\_Attitude\\_Differences/links/54257ffd0cf2e4ce94038626.pdf](https://www.researchgate.net/profile/Jay_Kandampully/publication/260146142_Generation_Y_Employees_An_Examination_of_Work_Attitude_Differences/links/54257ffd0cf2e4ce94038626.pdf)>.
- TOMEK, G., VÁVROVÁ, E. *Průmysl 4.0, aneb, Nikdo sám nevyhraje*. Praha: Professional Publishing s.r.o., 2017. ISBN 978-80-906594-4-5.
- VEBER J. a kol.. *Digitalizace ekonomiky a společnosti Výhody, rizika, příležitosti*. Praha: MANAGEMENT PRESS, 2018. ISBN 978-80-7261-554-4.
- WOLTER, M. I., MÖNNIG, A., HUMMEL, M., SCHNEEMANN, C., WEBER, E., ZIKA, G., Neuber-Pohl, C. (2015). Industry 4.0 and the consequences for labour market and economy. Retrieved from: <[http://doku.iab.de/forschungsbericht/2015/fb0815\\_en.pdf](http://doku.iab.de/forschungsbericht/2015/fb0815_en.pdf)>.

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