

THE PANDEMIC IMPACT ON THE DYNAMIC OF EMPLOYMENT IN DEVELOPING COUNTRIES IN THE CONTEXT OF VULNERABILITY AND INEQUALITY. THE CASE OF BULGARIA AND ROMANIA

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Abstract

The workforce with low and average skills is today very strongly impacted, feeling pressure on the one hand due to the inequality and vulnerability in work that it is forced to face, in the context of the Industrial Revolution 4.0, and, on the other hand, due to the economic situation and the changes caused by the COVID-19 pandemic. All these irreversible changes in society generate the restructuring of the social division of labor. The aim of the paper is to identify the transformations at the level of the employment registered in the period 2019-2020, at the level of two developing states, members of the European Union: Bulgaria and Romania.

Keywords: Labour market, vulnerability, inequality, digitalization

Clasificare JEL: E24, O33

1. Introduction and context of the study

Today, economies are experiencing severe macroeconomic imbalances. In this sense, the issue of inflation has become one of the major global concerns, which will particularly affect vulnerable groups and the vulnerable workforce, which is "often characterized by inadequate earnings, low productivity and difficult conditions of work that undermine workers' fundamental rights" [1]. The COVID-19 pandemic has also led to a deceleration in economic growth and has even brought economies to the point of facing recession, leading to job losses.

Looking at the overall challenges that society is facing today, under pressure from technological change, recession, and inequalities that are deepening, we believe that the accelerated transition to digitalisation, driven by the restrictions imposed by the COVID-19 pandemic, represents for people with low education and training and with a low level of digital skills a barrier to inclusion in the market labour. In this respect, the present paper contains a descriptive statistical analysis on the evolution of the number of workers at the level of two European Union member states, namely Romania and Bulgaria – the developing countries most unequal inequality at the EU level, with high rates of poverty and a low level of digitization at the level of the population. The analysis is carried out according to the main groups of occupations according to ISCO-08 for the period between 2019 and 2020, thus surprising the first changes in the structure of the labor force occupied in the pandemic context.

2. Inequality and vulnerability in work

Inequality, one of the four socio-economic-political major issues that society faces alongside with migration, corruption, and the destruction of the environment, reflects how the standard of living or opportunities in society varies [2]. Inequality has several facets, from inequality of opportunity and inequality before the law to inequality in results [3]. According to the International

Labour Organization (ILO), "obstacles workers face in gaining entry into decent jobs in the labour market", while inequality of results refers to "earnings and benefits for workers and their families".

Vulnerability, another characteristic problem of the lower class, related to inequality, represents the state of people facing economic insecurity. As Jimenez and Roig note, economic insecurity is "an intrinsic aspect of poverty" [4].

Economic security, the opposite of economic insecurity, is composed of labour and basic social security, the latter involving access to the fulfilment of basic needs, namely education, healthcare, housing, information, and social protection [5]. Labour security, in turn, comprises seven important components:

1. income security that involves ensuring the day-to-day receipt of income from work, which must be fair and cover the basic needs of the worker;
2. the worker's security of being represented as an employee, both through a legal framework and through bodies such as trade unions;
3. labour market security that is the result of matching demand with supply on labour market;
4. security of employment, which is ensured by a legal framework by which abusive dismissal is not allowed;
5. job security, which is to ensure that the employee has some control over the tasks he performs and the opportunity to build a career;
6. safety at work, which involves ensuring the necessary working conditions and equipment for employees, so that they are protected from illness, injury or overwork at work;
7. the security of reproduction of skills, which makes direct reference to the vocational training of the workforce.

Thus, people who face vulnerability in work most often do not benefit from decent working conditions, adequate social security, at the same time not being represented before the employer by organizations or other organizations with similar purposes [1].

Labour insecurity reflects some of the implications of inequality. Vulnerable people who do not benefit from economic security are lower class persons, who live in unequal societies.

The most affected by the COVID-19 pandemic in terms of negative economic effects are people on low incomes and their families, workers in the informal economy, migrants and workers with disabilities. In other words, the workforce facing economic insecurity in the pre-pandemic period is now in an even worse economic situation. Moreover, in the context of the COVID-19 pandemic, more and more people are facing uncertainty about the future [6].

Economic insecurity generates negative socio-economic effects, representing a barrier to achieving the sustainable development goals set out in the 2030 Agenda for Sustainable Development. Therefore, the process of achieving sustainable development goal number 8, which refers to ensuring decent work for the entire population, is also becoming more difficult in the pandemic context [7-8].

Countries with high rates of inequality and vulnerability will be the most economically impacted by the COVID-19 pandemic. For instance, in this situation can be found Romania and Bulgaria, which have had the highest poverty rates and are among the most unequal economies at the European Union level. These states are faced with a high level of the informal economy, as is often the case with developing countries.

Among the public policies proposed by the ILO [9-10] to reduce inequality and support vulnerable groups, there are the increase of the role of collective bargaining, the use of the minimum wage as an instrument for reducing inequalities, and fiscal redistribution through a progressive system of taxation, and transfers to vulnerable groups. At the same time, the ILO proposes to promote job creation, highlighting the fact that "access to and loss of employment is a key factor in income inequality" ([9], p. 61). However, taking into account

the negative effects generated by the COVID-19 pandemic on the economic security of the lower and even middle classes, the improvement in living standards recorded in the pre-pandemic period was fragile [11] and insufficient. This has two possible explanations: either the proposed policies have not been applied at the level of the economies, or their impact has not been strong enough, and it is necessary to design and adopt a more complex mix of policies in the future.

3. Challenges of technology on work

Technologies have great importance, representing the engine of economic growth of the developed society of the 21st century. Along with the way in which the production process is carried out, technological progress generates effects also at the level of work, bringing new opportunities but also challenges.

An advantage that technologies offer is the increase in efficiency and productivity in the case of technology companies. In this sense, a study conducted at the level of Italian companies with activities in different industries emphasized that digitalization, even used at an early stage, impacts the performance of companies in a positive sense [12]. This advantage, however, also brings challenges. The adoption of technology in the case of some companies represents an important competitive advantage over the non-technological concurrent companies. The difficulties of adopting the technology by some companies can lead to a decrease in revenues or even their bankruptcy, leading to the loss of a significant number of jobs.

Technological progress also has the potential to improve working conditions and quality in the case of a significant number of jobs. Thus, with the help of new technologies, employees will no longer have to perform tasks that involve a intense physical effort or even tasks that can generate health problems for employees or even put their lives at risk.

But new technologies, as technological progress evolves, can perform a wide range of tasks. Taking into account that technologies are faster and more accurate than the work factor, and in addition, technologies do not need leave and sick leave but, on the contrary, can work continuously 24 out of 24, technologies are and will be preferred to the workforce [13]. This is why the replacement effect of the workforce by new technologies is one of the key topics to the theme of technological impact on work. Thus, the high risk of removing the low-skilled workforce from the labour market is debated and measured in the literature, the replacement effect being one of the negative effects of the technology felt by workers performing routine tasks [14-16].

Another advantage of technology is the potential to create new jobs. For example, between 1999 and 2016, more than 23 million jobs were created in Europe due to the transition to technology. However, in the context of the Industrial Revolution 4.0, a decreasing trend of the creation of new jobs worldwide has been observed over time [17].

The jobs created by technological progress often involve high qualifications. Thus, taking into consideration the decrease of the demand for a low and medium-skilled workforce, the inclusion of this one in the labor market became more and more difficult. Moreover, as a result of the development and adoption on a large scale of digitalization and automation, jobs that require routine tasks and a low level of skills disappear. Therefore, especially in the case of developed countries, which have a high level of technology and automation, the low-income paid workforce is at risk of losing their jobs because of the effect of replacing

technologies.

Other benefits that digital technologies can generate are the improvement of workforce inclusion because employees can work at different companies without the condition to live in the same city or the same country. Due to digitalization, remote work is possible. Moreover, the remote work is today, in the context of the pandemic, at the basis of how the work takes place in different sectors. Regarding the flexibility of work, there is also the other side of the coin. Thus, one of the challenges of expanding and using technology is the development of the phenomenon of work on the platform. This represents a form of unregulated work, which although it can be regarded as a flexible and modern form of work, the problem of the lack of social and economic security is of undoubted importance, being one of the most addressed topics in the field of work on the platform, if not the most debated.

The use of the Internet and the level of digital skills are directly correlated with salaries, a conclusion that resulted from the analysis carried out at the level of the 27 Member States of the European Union [18]. Thus, citizens of Finland, the Netherlands, and Denmark, who are known to have the income from work is higher than the EU average, have the highest level of digital skills and internet usage. On the other hand, compared to the rest of the EU Member States, Romania and Bulgaria have the cheapest labour force and the lowest level of population digitization. In this regard, another study reinforces these conclusions, demonstrating that Romania and Bulgaria, together with Hungary and Greece, are digitally vulnerable EU Member States. In addition, the authors described the group of digitally vulnerable citizens: people with low digital skills who feel the threat of technological progress on their jobs. This group contains, in a proportion of about 80%, people over 40 years old. More than half of this identified vulnerable group is composed of workers who perform manual, routine tasks. Another important aspect is that digitally vulnerable people face poverty, almost half of them having difficulty paying their bills [19].

The failure to adapt to the era of digitalization, which shows that lagging behind a society of vulnerable people, deepens the economic insecurity in the case of disadvantaged groups, generating negative effects that are felt both at the micro-level, by vulnerable people, and at the macro level, in the entire economy. In order for the use of technology to generate benefits for a large percentage of the population, and at the same time to reduce the risks and adverse impacts caused by technological changes at the level of society, the active implication of the state through public policies is necessary [8].

4. Employment in Bulgaria and Romania according to the level of labour skills

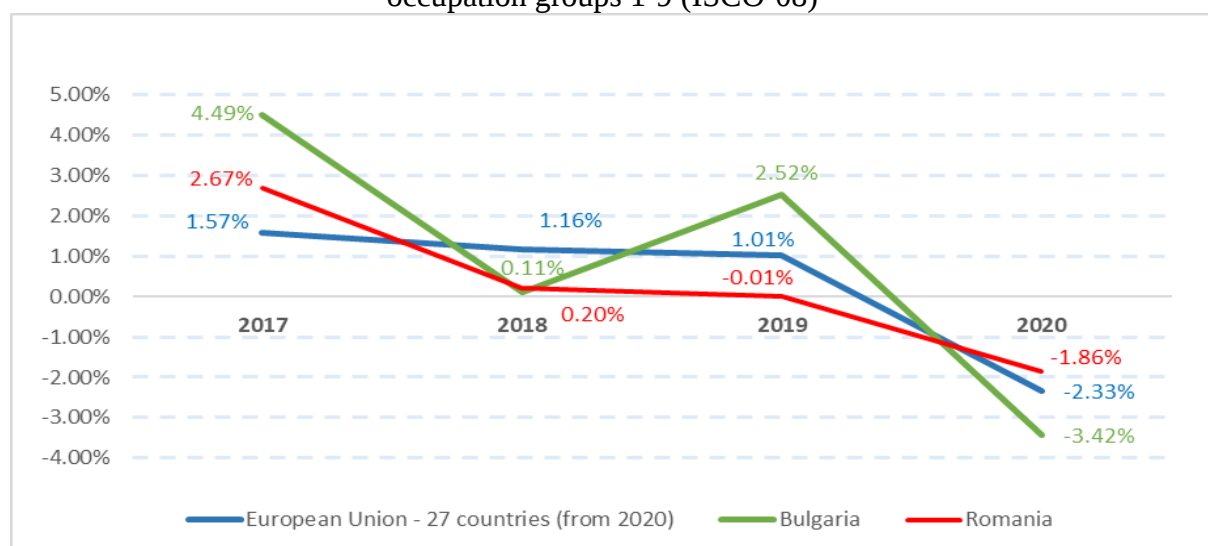
In the context of the COVID-19 pandemic, according to the Director General of the International Labour Organization, Guy Ryder [7], the vulnerabilities and inequalities that the lower class is facing have deepened and the process of adopting and using digital technologies are accelerated. These transformations are generated by changes in the labour force, especially in the social division of labour.

Identifying trends in the restructuring of the workforce amid the pandemic and industrial revolution 4.0 helps to establish a diagnosis of the economy, thus establishing the vulnerabilities on which public policies must focus. Therefore, this paper has the aim to be the beginning of a comprehensive structural analysis of the labour market at the level of Bulgaria and Romania. These two countries are badly affected by the economic crisis generated by the COVID-19 pandemic. Furthermore, they are characterized by a low level of digitization,

especially in terms of the digital skills of the population, high rates of inequality and poverty, occupying the last positions at the level of the European Union, and cheap labour. In order to carry out this analysis and to understand how the COVID-19 pandemic generates transformations in employment in the case of Bulgaria and Romania, it is observed the change in the number of workers within the major groups of occupations according to ISCO-08. These changes are also compared with those recorded on average at the level of the European Union.

At the level of the EU-27, which comprises all the Member States of the European Union since 2020, the workforce occupied as an absolute value in the pre-pandemic period recorded an upward but sustained trend, with low growth rates – of about 1% year-on-year (Figure 1). In the pandemic context, in 2020 there was a decrease in the employed labor force of 2.33 percent compared to the value recorded in 2019. Romania is following the evolution recorded at EU-27 level. Moreover, the number of workers in 2020 is only 1.86% lower than the number recorded for 2019. At the same time, the sharper decrease in the employment force in 2020 due to the pandemic was registered in Bulgaria, namely 3.42%.

Figure No. 1. Employment dynamics for the period 2017-2020, chain base - major occupation groups 1-9 (ISCO-08)



Source: Authors' calculation based on Eurostat (lfsa_eisn2)

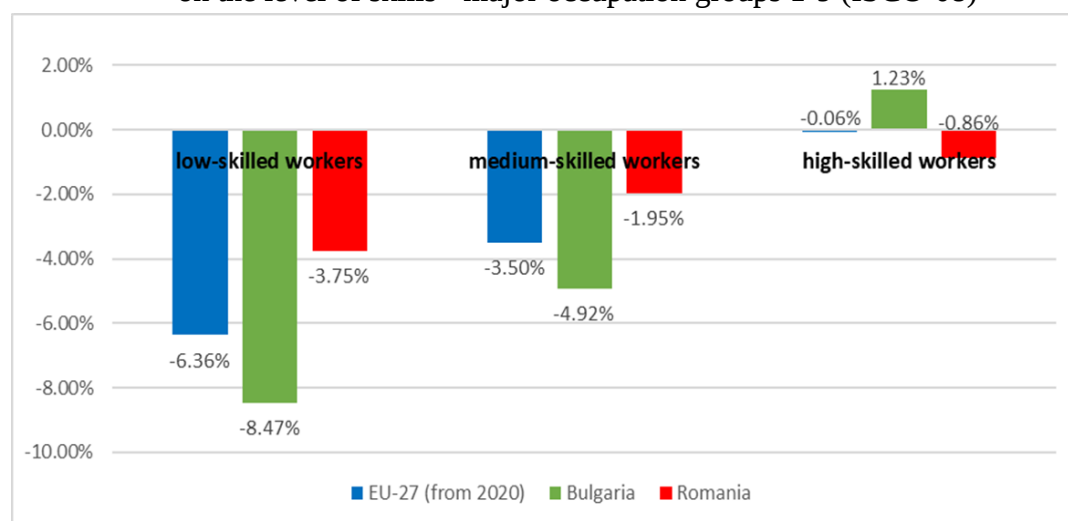
According to the ILO, it is considered that occupations that are included in the major group 9 occupations (Elementary occupations) involve low aptitudes. At the same time, the major groups 4, 5, 6, 7, and 8 occupations, representing Clerical Support Workers; Services and Sales Workers; Skilled Agricultural, Forestry and Fishery Workers; Craft and Related Trades Workers; Plant and Machine Operators, and Assemblers imply average skills. Next, the major groups 1, 2, and 3 of occupations (namely Managers, Professionals, and Technicians and Associate Professionals) imply a high level of skills. Using this classification, the impact of the COVID-19 pandemic on the workforce employed is further analysed, depending on the level of skills required for employment in those jobs [20].

As expected, the COVID-19 pandemic is affecting especially the low-skilled workforce (Figure 2) - this situation is found both in the case of the two European states analyzed and at the level of the European Union on average. Moreover, it is noted that as the

level of employment skills decreases, the impact of the COVID-19 pandemic on employment becomes increasingly strong. Thus, at the EU-27 level, the number of workers in the major group of 9 occupations, representing elementary occupations, is 6.63% lower in 2020 than in 2019. In addition, the workforce with average skills is affected by the crisis caused by the pandemic, the number of workers registered at the EU-27 level being 3.5% lower in 2020 compared to 2019.

The situation in the case of Bulgaria is conclusive concerning the transformations at the employment level. The number of workers with elementary occupations is 8.47% lower in 2020 compared to 2019. At the same time, the number of workers with occupations for which average skills are required in 2020 is lower by 4.92% compared to 2019. As for the number of employees in jobs that require high skills, it recorded an increase of 1.23% in 2020 compared to 2019. This trend is interesting, taking into account the unfavorable economic context due to the COVID-19 pandemic. It can be explained by the adoption of digitalization or even of the greater automation of some sectors of activity, generating, on the one hand, a decrease in the low and medium-skilled employment, and on the other hand, increasing the demand for highly skilled labour. Thus, the restructuring of the social division of labour observed for the period 2019-2020 is in line with the results of the academic literature studied, especially in the case of Bulgaria.

Figure No. 2. Changes in 2020, comparing to 2019, of the employment depending on the level of skills - major occupation groups 1-9 (ISCO-08)



Source: Authors' calculation based on Eurostat (lfsa_eisn2)

Regarding the structural change in employment in the context of the COVID-19 pandemic, several aspects attract attention. Firstly, it is observed how the share of the highly skilled workforce is increasing as a result of the loss of jobs of the low and medium-skilled workforce. In addition, in Bulgaria, the high-skilled workforce registered a slight increase in 2020 compared to 2019, while a significant percentage of the low- and medium-skilled workforce lost their jobs.

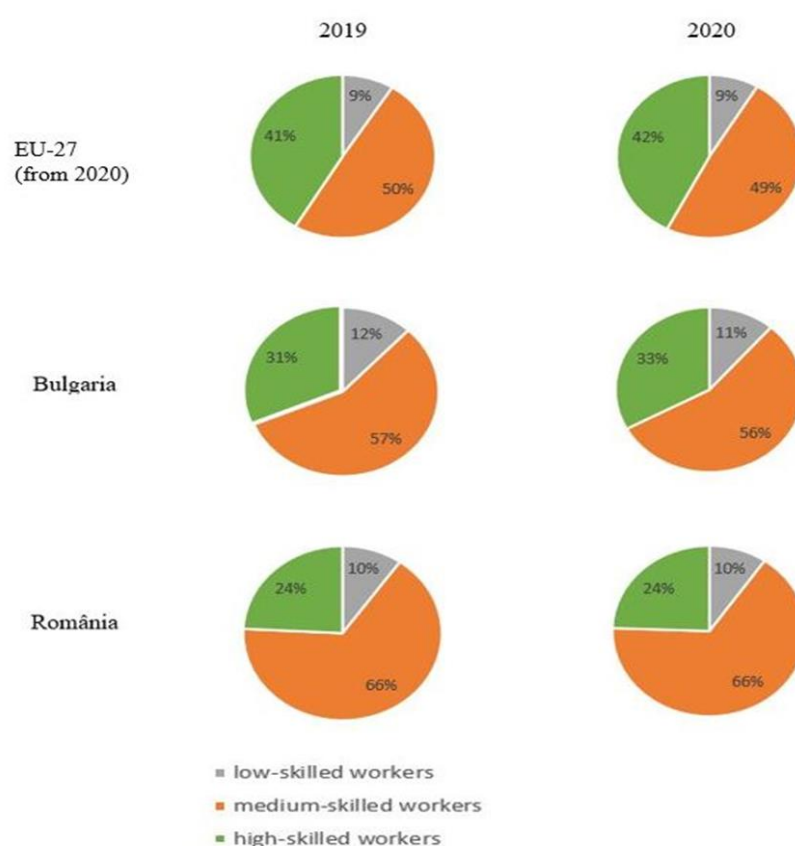
Looking at the overall workforce employed in the period 2019-2020 (Figure 3), we can see significant differences between the structure of the workforce in the major groups of occupations 1-9, keeping the same classification according to the level of labour skills

occupied, for Bulgaria and Romania, compared to the EU-27 average. At the level of the European Union, over 40% of the workforce has jobs that are found in the first three major groups of occupations, compared to 33% of the Bulgarian workforce in 2020 and only 24% of the workforce in Romania. On average, in the European Union, the shares of the employed workforce with high abilities and average abilities are close, namely 41% and 50% respectively in 2019, and subsequently, in the pandemic context, the proportions become even closer, namely 42% and 49%.

In the case of Romania, 66% of the workforce occupies jobs for which average skills are required, of which over 1.5 million workers are included in the major group of 6 occupations (Skilled Agricultural, Forestry and Fishery Workers) representing 18% of the total employment force occupied. This share is much higher compared to the situation at the European Union level, where about 4% of the workforce is included in this major group of occupations.

It is notable that Romanians are facing, in the pandemic context, job loss (Figure 2), but the structure of the workforce employed according to the level of skills is not changed during 2019-2020 (Figure 3). In other words, in Romania, the structure of employment has not changed between the pre-pandemic and pandemic period.

Figure No. 3. Employment force structure for 2019 and 2020 depending on the level of skills (low, medium and high) - major occupation groups 1-9 (ISCO-08)



Source: Authors' calculation based on Eurostat (lfsa_eisn2)

The average and low-skilled workforce suffer, on the one hand, due to the recession and, on the other hand, due to technological progress. Moreover, the real impact of the pandemic on vulnerable workers may be greater than the impact captured in the statistics, given the high level of informal economy that inequality and high poverty-skilled states confront, such as the case of Romania and Bulgaria.

5. Conclusions and discussions

As history has shown over time, any crisis generates effects at the socio-economic level, and the recovery from an economic crisis can take place through one of two ways: either by destroying the system and replacing it with a new system or by maintaining that system, the adoption of this system again being conditioned by its capacity to rebuild.

Due to the COVID-19 pandemic, the health system has faced big challenges, which generated crises at social and political level, and which have also generated a new economic crisis, affecting, to a greater or lesser degree, all the states of the world. From an economic point of view, society is facing global inflation that has the potential to become a point of destruction of less developed economies, with the capacity to generate serious issues such as the deepening of poverty and the increase in inequalities, the most affected being the citizens of the lower strata of society.

In the pandemic context, the unskilled and low-skilled workforce must cope with both the effects generated by inflation and the effects generated by technological progress. The adoption of technology, now being accelerated by the measures imposed in order to slow the spread of the virus, is causing the restructuring of the division of labor. Taking into account that jobs that require low or medium skills are the easiest to automate, workers occupying such jobs are threatened by the replacement effect of technology, which leads to the loss of jobs. At the same time, due to the exponential progress of technology, more and more jobs occupied by the average skilled workforce will also be considered in the near future jobs of the past. Thus, reaching the phenomenon of marginalization of the medium and low-skilled workforce, their inclusion on the labor market being achieved with more and more difficulty, the safety at work for workers with low and medium skills is strongly eroding.

Touching on both the issue of unemployment and inflation as a result of the recession caused by the pandemic context, we emphasize that economies are threatened by stagnation.

Taking into account all these pressures that are found now at the level of the economies, there is a necessity to involve the state through public policies that will mitigate the negative effects that citizens, especially vulnerable people, and their families, feel. Particular attention must be paid to less developed and developing countries, for which the risk of deepening inequalities is higher, and the dependence on powerful economies in the context of the major economic crisis that we are experiencing calls into question the ability of poorer states to resist and even maintain their political sovereignty.

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6. Bibliography

- [1] **Johnson, L. J.** "Vulnerable employment and poverty on the rise, Interview with ILO chief of Employment Trends Unit," 26 January 2010. [Online]. Available: https://www.ilo.org/global/about-the-ilo/mission-and-objectives/features/WCMS_120470/lang--en/index.htm. [Accessed 27 November 2021].
- [2] **McKay, A.** "Defining and Measuring Inequality," *Inequality Briefing*, vol. ODI, no. Briefing Paper no 1 (1 of 3), March 2002.
- [3] **Piketty, T.**, *Economia inegalităților*, Iași: Polirom, 2014.
- [4] **Jimenez, M. A., Roig, M.** "A New Global Deal Must Promote Economic Security," 21 Jun 2021. [Online]. Available: <https://www.un-ilibrary.org/content/papers/10.18356/27081990-90>. [Accessed 29 Jul 2021].
- [5] **ILO**, "Economic Security for a Better World," Programme on Socio-economic Security, Geneva, 2004.
- [6] **ILO**, "Inequalities and the world of work (ILC.109/IV(Rev.)), " International Labour Office, Geneva, 2021.
- [7] **Ryder, G.** "ILO head: 'Address inequalities to prevent long term scarring'," 15 July 2021. [Online]. Available: https://www.ilo.org/global/about-the-ilo/how-the-ilo-works/ilo-director-general/statements-and-speeches/WCMS_814410/lang--en/index.htm. [Accessed 17 November 2021].
- [8] **Perry, J.** "The politics of economic insecurity in the COVID-19 era," 31 Jan 2021. [Online]. Available: <https://www.un.org/development/desa/dspd/2021/01/the-politics-of-economic-insecurity-in-the-covid-19-era/>. [Accessed 29 Jul 2021].
- [9] **ILO**, "Global Wage Report 2014/15: Wages and income inequality," International Labour Office, Geneva, 2015.
- [10] **ILO**, "Decent work for sustainable development (DW4SD) Resource Platform. Equality," 2018. [Online]. Available: <https://www.ilo.org/global/topics/dw4sd/themes/equality/lang--en/index.htm#33>. [Accessed 17 November 2021].
- [11] **Jiménez, M.** "What Triggers Economic Insecurity and Who Is Most at Risk?," United Nations Department of Economic and Social Affairs, 28 Jun 2021. [Online]. Available: <https://www.un-ilibrary.org/content/papers/10.18356/27081990-95>. [Accessed 28 Jul 2021].
- [12] **Truant, E., Broccardo, L. Dana, L.P.** "Digitalisation boosts company performance: an overview of Italian listed companies," *Technological Forecasting & Social Change*, vol. 173, no. 121173, pp. 1-8, 2021.
- [13] **Kergroach, S.** "Industry 4.0: New Challenges and Opportunities for the Labour Market," *Foresight and STI Governance*, vol. 11, no. 4, pp. 6-8, 2017.
- [14] **Acemoglu, D., Restrepo, P.**, "Robots and Jobs: Evidence from US Labor Markets," *Journal of Political Economy*, vol. 128, no. 6, pp. 2188-2244, 2020.
- [15] **Chiacchio, F., G. Petropoulos, G., Pichles, D.** "The impact of industrial robots on EU employment and wages: A local labour market approach," *Working Papers 25186, Bruegel*, pp. 1-35, 2018.
- [16] **Korinek, A., Stiglitz, J.E.** "Artificial Intelligence, Globalization, and Strategies for Economic Development," *Institute for New Economic Thinking Working Papers*, vol. 146, pp. 1-41, 2021.

- [17] **World Bank**, "World Development Report 2019: The Changing Nature," World Bank, Washington, DC, 2019.
- [18] **Piroșcă, G.I., Șerban-Oprescu, G. L., Badea, B, Stanef-Puică, M.R., Valdebenito, C.R.**, "Digitalization and Labor Market—A Perspective within the Framework of Pandemic Crisis," *Journal of Theoretical and Applied Electronic Commerce Research*, vol. 16, no. 7, p. 2843–2857, 2021.
- [19] **Vasilescu, M.D., Șerban, A.C., Dimian, G.C., Aceleanu, M.I., Picatoste, X.**, "Digital divide, skills and perceptions on digitalisation in the European Union—towards a smart labour market," *PLoS ONE*, vol. 15, no. 4, pp. 1-39, 2020.
- [20] **ILO**, "International Standard Classification of Occupations (ISCO-08). Structure, Group Definitions and Correspondence Tables," International Labour Office, Geneva, 2012.