MANAGING THE RESKILLING REVOLUTION FOR THE DIGITAL AGE: CASE STUDY-WESTERN BALKAN COUNTRIES

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Original Scientific Paper

Marijana VIDAS-BUBANJA[1], Srđan BOGETIĆ[2], Cariša BEŠIĆ[3], Zoran KALINIĆ[4], Iva BUBANJA[5]

[1] Belgrade Business and Arts Academy of Applied Studies, 11000 Belgrade, Kraljice Marije 73, Republic of Serbia
ORCID ID (https://orcid.org/0000-0003-4257-1066)
[2]Belgrade Business and Arts Academy of Applied Studies, 11000 Belgrade, Kraljice Marije 73, Republic of Serbia
Corresponding author. E-mail: sbogetic@yahoo.com
ORCID ID (https://orcid.org/0000-0003-1855-0767)
[3]University of Kragujevac, Faculty of technical science Čačak, 32000 Čačak, Svetog Save 65, Republic of Serbia
ORCID ID (https://orcid.org/0000-0001-5370-5328)
[4]Independent University Banja Luka, 78000 Banja Luka, Veljka Mlađenovića 12e, Bosnia and Herzegovina
ORCID ID (https://orcid.org/0000-0001-9093-5472)
[5]Belgrade Business and Arts Academy of Applied Studies, 11000 Belgrade, Kraljice Marije 73, Republic of Serbia
ORCID ID (https://orcid.org/0000-0003-3440-7418)

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Technological changes, the COVID-19 pandemic, the green transition, geopolitical changes, and risks have all complexified the working and business environment on the global market. Employee knowledge and skills become the companies' key support, as the present circumstances compel them to react quickly and adapt to new business challenges. Education, training, and employee skills improvement aligned with new technological waves and changed work procedures are becoming prominent aspects of modern business. The analysis carried out in this paper has covered just some of the factors affecting the changes in employee skills, such as the effects of digital technologies on work performance, the problem of youth education and employment, the necessity of improving the existing workforce competencies as well as their reskilling and upskilling in the context of lifelong education. The research conducted had two goals. A comparative analysis of the implementation of supplementary adult and employee education in selected countries of the Western Balkans. The second goal was focused on the domestic labor market in order to show that local companies have a developed awareness of the need to innovate knowledge and skills, whereas it also drew attention to the specifics of that process with a distinctive focus on digital and green skills as skills necessary for modern business operations. The research results have shown that Serbian companies have become aware of the importance of a workforce that cultivates digital skills and possesses knowledge in the field of ICT. The analysis has shown a lack of awareness when it comes to personal employee upskilling, although most of the companies that participated in the research emphasize training programs and upskilling as something that is being continuously worked on.

Keywords: Modern business; Adult education; Digital skills; Digital technologies; Reskilling; Sustainable development.

INTRODUCTION

The modern world faces multiple disruptive situations and crises, from geopolitical turmoil and the war in Ukraine, to accelerated technological transformation, environmental challenges, demographic disturbances, and the energy crisis. The pandemic caused by COVID-19 and the impaired functioning of global supply chains has additionally driven the world economy into a slowdown in terms of its dynamics and growth. According to the latest World Bank report on global economic prospects, expectations point towards entering a protracted period of feeble growth and elevated inflation. This increases the risk of stagflation, with potentially harmful consequences, especially for middle- and low-income economies (Allam et al., 2022).

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Global growth of the world economy is expected to slump from 5.7% in 2021 to 2.9% in 2022, and such growth in advanced economies is projected to sharply decelerate from 5.1% in 2021 to 2.6% in 2022. Among emerging markets and developing economies, growth is also projected to fall from 6.6% in 2021 to 3.4% in 2022. For the year 2023, forecasts speak of a further decrease in growth dynamics to 2.2% (The World Bank, 2022).

Changes in fiscal, monetary, climate, and debt policies are needed in order to counter the misallocation of capital and growing inequalities in the world (The World Bank, 2022). In such a complex global situation, in addition to the powerful technological factor whose potential obviously impacts all modern trends, there is one area that is taking on a crucial role in the dynamizing and survival of the world economy and society, and that is the area of knowledge, science and an educated workforce (IPTS, 2007).

The world must prioritize investment in cost-effective, proven solutions in the field of education and skills development for both todays and future generations who need to be fitted out to solve such complex crises and revitalize the world economy. Equal responsibility lies with educational institutions, companies, and the business sector, and especially with governments and political decision-makers, who must, through strategic decisions and financial support, facilitate the acceleration of skills development for the working-age population, their technical vocational education and training, the development of broadband connectivity, and digital skills (Whiting, 2022). Namely, business procedures are changing significantly under the impact of increasingly sophisticated digital technologies, such as AI, so it is imperative that workers, especially those whose workplaces have a high probability of automation, actively prepare for upskilling and reskilling for future work (Huang et al., 2021). While upskilling focuses on learning new skills to improve performance or gain advancement in the same profession, reskilling requires learning completely new skills for career changes or role changes in response to technological innovations or organizational changes (Lout, 2020).

Reskilling and human capital development are the major socio-economic strategy for modern business world leaders worldwide (Penalva et al., 2022). In order to commence its workers' reskilling, every organization should analyze both the existing gap in available skills and the trends in dynamic technological advancements (Sasmita et al., 2018). In 2017, the McKinsey Global Institute estimated that as many as 375 million workers - or 14 percent of the global workforce - would have to switch occupations or acquire new skills by 2030 because of automation and artificial intelligence (Manyika et al., 2017). In a recent McKinsey Global Survey, 87 percent of executives said they were experiencing skill gaps in the workforce or expected them within a few years (McKinsey, 2020). According to Diaz (Diaz et al., 2021) society is no longer asking simply for leaders and managers who can "run the world" but for insightful, connected, and empowering agents and ambassadors who create change in the world themselves.

The focus of this work is on the analysis of reskilling and human capital development in the countries of the Western Balkans in order to assess the existing level of awareness of the importance of a quality workforce for the development of this region and determine the activities started in this domain. Literature on this topic is present in all countries of the region, but additional comparative analysis can contribute to a better understanding of the situation related to the development of the workforce and be the basis for making the right decisions, so the authors hope for such a contribution arising from their work.

This paper consists of four main sections (excluding the Introduction and Conclusion). First, a Theoretical background explains the importance of an educated workforce for modern digital economies and analyses the following questions: how digital technologies are radically transforming the working environment; the problem of youth education and employment; the necessity for upskilling, reskilling, and lifelong education. Next, the Research methodology outlines the research phases, studies evaluated, as well as the limitations and advantages of this methodological approach. The third section presents the results of the conducted analyses divided into topics such as Western Balkans countries' experiences in adult training and educational activities; adult education categories; reasons for not participating in supplementary education; gender structure of participants in educational processes; the role of companies in adult and employee education and training in the Republic of Serbia. All findings are accumulated in the Research results overview and Research results analysis. And finally, the fourth section comprises the Discussion with comments

particularly related to the situation in Serbian companies concerning the developed awareness of the need to innovate knowledge and skills and whether domestic companies recognize the importance of possessing digital skills and green skills.

THEORETICAL BACKGROUND

Securing an educated workforce equipped with the skills necessary for the modern workplace and business environment is becoming an increasingly complex task due to several factors that have dramatically changed both the ways of conducting work and working conditions, as well as the very functioning of educational systems and the labor market. The world is constantly changing on the wheels of technological progress that requires the continuous development of human capital and the acquisition of relevant work skills (Adepoju, 2022). The reskilling of the workforce and potential employees is becoming increasingly relevant with the rapid pace of development and the introduction of new technologies (Sawant et al., 2022). The key challenge for companies thus becomes the reskilling of current and future workers that would empower them to use new technologies and work on their further development (Albrieu & Rapetti, 2019). This analysis will include an overview of only some of the most important factors that impact skill requirements and employment possibilities: the effects of digital technologies on the conduct of work and the functioning of the educational system, the problem of youth education and employment, the necessity of improving the knowledge of the existing workforce as well as their reskilling and upskilling in the context of lifelong education.

What have digital technologies changed?

The entry of digital technologies into all areas of work and business has eliminated many jobs, and transformed some, but also opened up the need for new jobs and tasks. Digital technologies are radically transforming the working environment and the skills demand, with some jobs being automated and others requiring the mastery of new digital techniques (Stephany, 2021). All this asks for a workforce redesign, that is, a new workforce with higher levels of education and different types of qualifications and work skills. According to the OECD, 1.1 billion jobs will be radically transformed by technology in the next decade, and with outdated learning programs, the skills mismatch is expected to further worsen in the future (OECD, 2022).

The potential of digital technologies and rapid technological changes have definitely and significantly affected the supply and demand relationship in the labor market. On the demand side, there are evident shifts in the demand for workers with routine and low skills to a workforce with higher education and digital skills who can meet the challenges of new jobs. The growth in demand for qualified workers directly means higher wages for workers with adequate skills and a decline in wages or job loss for workers with low education. Another consequence of this shift in demand in the labor market is related to the fact that the lack of educated workers in numerous companies hinders the faster implementation of digital innovations and contributes to the slower growth of their productivity (Stansbury & Summers, 2018). According to research in the USA, companies are realizing that the adoption and successful integration of digital technologies into their business models has significant barriers such as 1) skills gaps in local labor markets, and 2) skills gaps in leadership. More than one-third of US companies believe that skills gaps are similarly large in global labor markets, intensifying the barriers to technology adoption, given the scarcity of skilled talent in the market overall (WEF, 2019).

Such dramatic changes were further complexified by the emergence of the COVID-19 pandemic, which has affirmed both the possibility and the importance of remote work and the necessity of digital competencies for workers who perform their work tasks and duties from home via the Internet. In that way, remote working was gaining currency before the crisis, but the pandemic has shown that telecommuting is here to stay. A recent Gartner CFO survey (Gartrner, 2020) revealed that almost three in four CFOs plan to "shift at least 5 percent of previously on-site employees to permanently remote positions post-COVID-19." In addition to direct competition from a provider of labor services thousands of kilometres away, the modern worker increasingly encounters machines as a competitor. This opens the question of a further advancement in the man-machine or robot-machine relationship which is profiled in the industry 5.0 concept and requires openness and willingness to accept the change in the role of the production worker and his direct cooperation with the robot as a partner. Cooperation between robots and humans will enable joint work in production in many places where it has

been risky or questionable for various reasons (Vidas-Bubanja et al., 2022). In addition, the coefficient of artificial intelligence and robots is expected to grow at an annual rate of 1-1.5 IQ points, which means that in ten years, robot intelligence will be higher than the intelligence of 90% of the human population (Nikolić, 2018, pp. 28-38).

Employers have been raising a red flag for a long time about a widening gap between the skills demanded and the skills workers actually have – while governments stress the need to encourage more technical talent if countries are to be globally competitive. A report published by Deloitte estimates that 2.4 million jobs in the manufacturing sector alone could go unfilled between 2018 and 2028, with a potential economic impact of $2.5 trillion. Without adequate modifications to the educational and training system, this gap will only widen especially in emerging technology areas (WEF & PwC, 2021). According to Bashynska (Bashynska et al., 2021), companies that want to be leaders in the industry should adopt a meaningful attitude towards employment, training, work, and reskilling. Furthermore, the World Economic Forum points to the fact that the world is entering a period of development that will only be sustainable with an urgent workforce reskilling (Tripathi & Tandom, 2022).

The European Commission is resolute to address the lack of digital skills and promote projects and strategies to improve the level of digital skills in Europe (European Commission, 2022a). The Digital Economy and Society Index shows that 4 out of 10 adults and every third person working in Europe do not possess basic digital skills (European Commission, 2022b, 2022c).

This brings us to the importance of an all-level educational system transformation and its adjustment to the new digital challenges of the modern era. Educational institutions must face the exigency to improve their curricula and include digital competencies and content that will more closely abide by the requirements of the modern digital age and business. On the other hand, especially after the outbreak of the COVID-19 pandemic, educational institutions were impelled to change their mode of operation by digitizing the educational content offered. The need for the creation of high-quality digital educational content and the implementation of distance learning was clearly recognized (Vidas-Bubanja et al., 2022). Digital technologies and the COVID-19 pandemic have significantly changed the educational system and opened up opportunities for different, more advanced, and efficient methods of learning and imparting knowledge. Digital technologies offer entirely new answers to the question of what people learn, how they learn, and where and when they learn (Vidas-Bubanja, et al., 2019).

The problem of youth education and employment

While studies emphasize the importance of an educated youth workforce for overcoming multiple world economic crises and achieving its future growth dynamics, statistics attest to a still low level of awareness in most countries and governments of the need for greater investment in modern youth education and employment. This is particularly evident in less developed and developing countries in transition that do not have sufficient financial and educational resources to provide young people with equal opportunities to access educational content and employment. Only 1 in 4 young people in the world has the opportunity to learn the skills he or she needs to get a job – either through education, employment, or training (WEF, 2022). Statistics show that the number of young people between the ages of 15 and 24 in the world has reached 1.21 billion (15.5% of the world population) with projections to reach 1.29 billion by 2030 and nearly 1.34 billion young people by 2050 (UN, 2020).

Table 1: Key facts about the youth skills gap in 2022

1. The number of young people without secondary education, according to the World Skills website, is larger than 736,971,000
2. It is estimated that 12.63% of young people in the world do not possess digital skills
3. Youth employment fell in 2020 by 39 million, while 24 million young people are still at risk of not returning to school. Young people lost their jobs faster than other age groups in the first few months of the COVID-19 pandemic because they were overrepresented in the hardest-hit sectors or had part-time contracts.
4. According to the World Economic Forum report, Catalysing Education 4.0., the potential gain in global GDP from investing in skills and education, especially for young people, is estimated at $2.45 trillion (2019)
5. Estimates say that 8,600 million jobs need to be created in the next 15 years to meet youth employment needs.

Source: (Whiting, 2022)

Although the basic literacy rate is increasing worldwide, many countries cannot provide their young population with quality education and the skills they need for the world of work. With the growth of the global youth population, greater investment is needed to improve opportunities for their education and employment to thus take advantage of this precious human and labor potential (Table 1). According to UNICEF to thrive in today's world, youth will need a full range of skills. In addition to foundational skills such as basic literacy and numeracy, young people will need transferable skills, also known as 'life skills' or 'socio-emotional skills'; digital skills, which allow them to use and understand technology; job-specific skills, which support their transition into the workforce; and entrepreneurial skills, which support business and social entrepreneurship (UNICEF, 2022).

In addition to the primary role of educational systems, training programs prove to be an important tool for bridging the youth skills gap and opening new opportunities for young people to acquire knowledge that meets the requirements of modern workplaces. These programs are usually organized and delivered by governmental, non-governmental, and international organizations, and they mostly include targeted vocational training programs. Most of the work is done on training programs that aim to provide young people with life skills with a focus on effective communication and negotiation, decision-making and problem-solving, leadership, managing personal finances, and critical thinking. The best programs are developed in coordination with employers from the private sector because this approach ensures alignment with market needs and can facilitate youth employment upon program completion (UN, 2020).

Competencies and skills in the field of digital technologies are of particular importance in youth education. In order to meet the demands of the modern workplace, young people must acquire digital literacy and skills, especially in natural sciences, technology, engineering, and mathematics (STEM – science, technology, engineering, and mathematics) from an early age. According to projections by the US Department of Labor, many of the most desirable jobs and most of the 20 fastest-growing occupations in the period between 2016 and 2026 require, in addition to the necessary digital skills, a proper understanding of mathematics and science (WEF, 2020).

All the actors have an equal role in regulating the important area of youth education and employment. Firstly, educational systems worldwide need to undertake structural changes to be properly equipped to provide young people with the flexibility, adaptability, problem-solving skills, and entrepreneurial mindset they will need to compete in a rapidly changing work environment (Gürdir Broo et al., 2022). Many jobs that young people used to count on, especially those involving routine and non-cognitive tasks, can be easily replaced by technology (Lekfuangfu & Nakavachara, 2021). According to Schlegel and Kraus (Schlegel & Kraus, 2021), young people must be aware of the need to possess digital skills and competencies for the digitized world. The G20 Young Entrepreneurs Alliance (Albrieu & Rapetti, 2019) produced a report on how to accelerate skills in the age of intelligent technologies. Their findings revealed three key areas: 1) to speed up experiential learning through hands-on application; 2) to shift focus from institutions to individuals; 3) to empower vulnerable learners - workers who are vulnerable to changes in technology advancements (Paullet et al., 2020). In addition, in recent years, many studies have emphasized the importance of non-technical skills and competencies for recruiting new workers. On the other hand, state regulators, trade unions, and the private sector must think more about how to adapt labor market regulations to the new environment and how best to protect the interests and rights of all workers, especially the young ones.

Meanwhile, the youth unemployment rate is very high and, on a global level, the scale depending on the country, it affects as many as 75 million young people who are trained but remain without work or belong to the group of 621 million young people who are not covered by any form of education, employment or training (NEETS – not in employment, education or training) (Markowitsch, 2022). According to OECD, the pandemic has also affected jobs. At the end of 2020, around 22 million jobs had vanished in the OECD compared to 2019. And globally 114 million jobs had disappeared (OECD, 2021). Precisely because of this situation, especially in developed economies, the youth labor market is one of the key indicators for the development of a healthy economic system, the reduction of inequality, and the mitigation of societal and social consequences.

One of the important lines of activity in this context is related to interventions designed to empower

young people to start their own businesses. Entrepreneurship is seen as a means of engaging ambitious young people in creating their own employment opportunities. Approaches to promoting and supporting youth entrepreneurship may be encountered worldwide (UN, 2020). Putting the skills and talents of young people to productive use contributes to economic prosperity and the reduction of poverty and inequality – all key sustainable development goals of the United Nations 2030 Agenda (EU, 2020).

Upskilling, reskilling, and lifelong education

The existing workforce is faced with numerous challenges today, be they related to technological shifts or job changes, fundamental disruptions in the labor market, or different career paths and developments throughout one's working life. The need for lifelong learning is becoming manifest – at all ages, both inside and outside of traditional schools and even upon completion of one's formal education. Adult training and aiding employees in acquiring new skills is vital and becoming a keyway to alleviate unemployment, address unequal access to resources, and engage older people fit for work. On average, in 2020, companies estimated that about 40% of workers require a six-month or shorter reskilling period, and 94% of business leaders expect employees to acquire new skills for their work performance (WEF, 2020).

Skills decline when not used. Accurate mapping of the typical skills life cycle is a key to assessing the points at which people are likely to update their competencies – be it a simple career change, re-entering the workforce after caring for a family member, or following a long illness. According to Wahab (Wahab et al., 2021), employee knowledge and skills should be updated and there should be a permanent exploration in search of new things to remain competitive in the current work environment. Ideally, by working together with the private sector, governments, and educators could potentially develop the necessary infrastructure to provide learning and training opportunities.

Research conducted by the WEF and PvC shows that widespread investment in reskilling and upskilling has the potential to increase GDP by $6.5 trillion by 2030 (WEF & PwC, 2021). This is why the world needs the Reskilling Revolution which carries the potential to position education at the core of economic recovery by updating teaching and educational systems so that they effectively prepare today's students for the future economy and society (WEF, 2022). The importance of knowledge and skills, particularly the transferability of skills, can be seen in the coinage of the term "Skills Economy", which emphasizes the importance of flexibility and knowledge transfer for the future economy in which jobs will be created or eliminated with each new technological wave (Vidas-Bubanja et al., 2022).

METHODOLOGY

The research in this paper is based on the application of primary and secondary sources of data. In the first part, secondary data are used, which were taken from Adult Education Survey studies prepared by the Statistical Offices of selected countries of the Western Balkans that were included in the research sample (Serbia, Croatia, Bosnia and Herzegovina, North Macedonia, Slovenia). The aim was to single out the relevant parameters that are monitored and compare the situation in selected countries of the region regarding the activities of adult education and supplementary education of the already employed workforce. The second phase of the research is based on primary data obtained based on a survey conducted through an online questionnaire and focused on the situation in companies of the Republic of Serbia regarding their level of awareness of the importance of an educated workforce and the activities they carry out in the field of training workers to acquire digital and green skills. The research comprised 4 phases: designing the questionnaire, conducting the research, and collecting and processing the questionnaire. The research questions are based on the contemporary practice in the field of acquiring skills, competencies, and qualifications of the workforce provided in the International Labour Organization (ILO) publication “The Global Framework on core skills for life and work in the 21st Century". There are several limitations to the study. The first limitation refers to the structure of the sample, that is, a greater representation of medium-sized enterprises is necessary concerning this research. The second limitation relates to the requirement for a larger sample size in the industry sector, and it should include, in addition to Belgrade, other major cities of the Republic of Serbia such as Novi Sad, Niš, Kragujevac, etc. The advantage of the research is related to the fact that there have not been many similar research studies of this kind in the domestic literature so far, which represents an encouraging inspiration for future research.

RESULTS

Adult education is defined a long time ago by Lindeman (1925) in the book "What is Adult Education". In a 1970 report, the National Institute of Adult Education (England and Wales) defined adult education as "any kind of education for people who are old enough to work, vote, fight and marry and who have completed the cycle of continuous education, [if any] commenced in childhood (Encyclopedia Britannica, 2023).

Adult education is usually carried out in three ways: formal education, non-formal education, and informal education. Formal education and training are defined as "education that is institutionalized, intentional and planned through public organizations and recognized private bodies and – in their totality - constitute the formal education system of a country. Formal education programs are thus recognized as such by the relevant national education or equivalent authorities, e.g. any other institution in cooperation with national or sub-national education authorities" (Eurostat, 2023). Non-formal education is institutionalized, intentional, and planned by the education provider. The defining characteristic of non-formal education is that it is an addition, alternative, and/or supplement to formal education within the lifelong learning process of individuals (UNESCO, 2012). Informal learning is defined as "learning from experience that takes place outside of formally structured, institutionally sponsored activities in the classroom". In 2016, a review of informal learning found that online networks and communities are an important method of professional development (Macià & García, 2016).

The Western Balkans countries' experiences in adult training and educational activities

Developed economies and their enterprises have vaster resources for the organization and support of worker reskilling and adult training, and their awareness of the necessity for such types of education is at a much higher level. On the other hand, the modern, dynamic, and demanding business environment does not leave much space for smaller and less developed countries to leave such activities for a later date, considering the dynamics of jobs and skills shifts that the modern labor market is looking for. In this sense, the experiences of the Western Balkans countries, mainly countries in transition at a similar, although not the same level of development, can be interesting. In addition to Serbia, Slovenia, Croatia, the Federation of Bosnia and Herzegovina and North Macedonia have been included in this analysis.

Table 2 exhibits a comparative overview of the adult education participation rates in the mentioned countries, showing differences among them, ranging from 8% to almost 50%. In terms of adult education, two countries in the region, full members of the Union stand out, Slovenia with 46.6% of adult education participation, which is above the EU average (45.1%), and Croatia with 30.2%. Other analyzed countries of the Western Balkans still have a low rate of adult education participation, between 8% and 20%. In Serbia in 2016, 19.8% of adults were involved in the education process, which compared to the previous survey of adult education from 2011 (16.5%), shows a 3.3% growth (19.8%). Despite this increase, the percentage of around 20% is still insufficient in terms of the challenges domestic companies face in the market.

Table 2: Adult education participation rates (2016)

Country	%
Serbia	19,8
Croatia	30,2
Federation of Bosnia and Herzegovina	8,07
North Macedonia	12,7
Slovenia	46,6

Source: (Official Gazette of the Republic of Serbia, 2021; State Statistical Office of the Republic of Macedonia, 2016; Statistical Office of the Republic of Slovenia, 2016; The Croatian Bureau of Statistics, 2017; The Institute for Statistics of FBiH, 2017)

By introducing the criteria such as categories of adult education, reasons for not including adults in educational activities, and the participant gender structure, more in-depth insight into adult training and education activities in the Western Balkans countries was attempted.

Adult education categories

The Adult Education Survey publication allows for the analysis of the research sample structure in the areas of lifelong education and various forms of formal and non-formal education. The situation in the Western Balkans region is shown by country in Table 3.

Reasons for not participating in supplementary education.

In Serbia, of the total number of respondents, 47% were not able to take part in any form of education for the following reasons: lack of financial resources, inadequate training offers, inability to coordinate training dates with working hours, and family reasons (Official Gazette of RS, 2021).

Table 3. Adult education categories in selected countries of the Western Balkans

Serbia – In the Republic of Serbia, almost 80% of respondents did not participate in any form of formal or non-formal education. – The Adult Education Survey has shown that informal learning as a model of education is exceptionally popular among respondents. The highest number of participants in this type of education use the following sources of educational content: computer (65.8%); help from family members, friends, or colleagues (63.6%); television/radio, video, about 60%; printed materials (57.5%).
Croatia – Of the total number of participants undertaking some form of education or learning, the majority of respondents in the Republic of Croatia were involved in the following: non-formal education 28.3% and formal education 3.6%, while 69.8% of respondents attended neither formal nor non-formal education activities. In the analyzed period all participants (91.2%) tried to learn something to improve their skills and knowledge (informal education). – Non-formal education is dominant for people aged 35-44 and 45-54 (33.1%). The participation of employed respondents in non-formal education was as follows: courses (31.4%), workshops or seminars (35.9%), practical training (21.7%), and private training (1.3%). – Formal education is most represented in the 25-34 age group, with courses (27.3%) taking precedence over other forms of education.
B&H – 2.2% of adults have been engaged in formal education, and 6.2% of adults have taken part in non-formal education. In the 12 months preceding the survey, 75.47% of the people have been involved in informal learning.
North Macedonia – Formal education was cited by 47,082 respondents. Employees represented in this category amounted to 26,732 respondents. – A total of 122,568 respondents attended non-formal education. Activities in non-formal education included courses (34,389), workshops and seminars (69,480), and training for the workplace (41,483). – 759,089 respondents attended informal education. Employees, amounting to 523,195 participants, were interested in this form of training.
Slovenia – Out of the total number of respondents, 11.1% stated that they participate in formal education. – More respondents participated in non-formal education (40.3%). The preliminary findings of the survey have also shown that in the last 12 months preceding the survey, 63% of people aged 18 to 69 in Slovenia were receiving non-formal education, which means that they intentionally acquired or improved their knowledge, either from family members, reading books, newspapers, via the Internet, watching television, visiting learning centers, etc.

Source: (Official Gazette of the Republic of Serbia, number 20, 10.3.2021, Adult education survey, 2016, First release, (2017), The Croatian Bureau of Statistics, number 8.1.13, Zagreb, Adult education survey, 2017, First release, (2018), the Institute for Statistics of FBiH, number 24.1, Sarajevo, Adult education survey, 2016, (2017), State statistical office of the Republic of Macedonia, Skopje, Adult Education Survey, Slovenia, 2016, (2017), Statistical Office of the Republic of Slovenia, http://www.stat.si./StatWeb/en/News/Index/6786)

According to research in Croatia, the factors that negatively influence respondents' decision for supplementary education are family obligations 72.9% (for women) and unsuitable education or training programs 61.8% (for men) (The Croatian Bureau of Statistics, 2017). Of the reasons stated that prevented respondents in the Federation of Bosnia and Herzegovina from acquiring education and training, 2/3 of women cited distance (63%) and ill-suited education or training programmers (63%), while for men it was old age (55%) and lack of employer's support (60%) (The Institute for Statistics of FbiH, 2017, p. 2). The main problems encountered in the permanent education of respondents in North Macedonia were schedule (73.4%), necessary prior knowledge (72.1%), and health (64.2%) among men. Female respondents stated different reasons: family obligations (78.9%),

distance (56%), lack of support from the employer, or lack of support from public services 51.7% (State statistical office of the Republic of Macedonia, 2017, p. 30). Interestingly, similar findings by the author Horrigan are indicated in the USA labor market. A large majority of Americans seek extra knowledge for personal and work-related reasons. Digital technology plays a notable role in these knowledge pursuits, but place-based learning remains vital to many, and differences in education and income are a hallmark of people s learning activities (Horrigan, 2016).

Gender Structure of Participants in educational processes

Since data related to adult education in Serbia are not up to date, the Adult Education Survey (AES) has been used for the analysis of adult education in the Republic of Serbia. This research is carried out under EU regulations and the prescribed Eurostat methodology and is conducted every five years (2011, 2016). Due to the COVID pandemic, the next research is to be undertaken in 2022 on the market of the EU and associated member countries, including the Republic of Serbia.

A survey conducted in 2016 (Official Gazette of RS, 2021) has shown that women (21.4%) were represented more than men (18%) in some forms of education and training in the 12 months preceding the survey. The participation rate was highest among the population aged 25–34 (29.2%).

Women in Serbia aged 25 to 34, with a higher education degree, employed and residing in town areas represent the dominant group in the field of lifelong education. Furthermore, employed persons (32.5%) represent the group that most often participates in training. Highly educated respondents represent the group where most participants of workshops, courses, or private lessons come from. The research has indicated that non-formal education is mostly connected to the activities of the company where the respondent works, while the reason for attending this type of education has to do with keeping the current job, getting a promotion, or landing a new job.

The situation in the other observed countries of the Western Balkans in terms of the gender structure of adults participating in education is as follows:

1. North Macedonia – 47,082 respondents are encompassed by formal education, of which 26,043 are men and 21,039 are women. A total of 122,568 respondents participated in non-formal education, of which 66,008 were men and 56,560 were women. Informal education was attended by 759,089 respondents, 413,419 men and 381,671 women (State statistical office of the Republic of Macedonia, 2017, p. 18);
2. Slovenia – of the total number of respondents, 11.1% stated participation in formal education, of which 11.9% are women and 10.3% are men. More respondents participated in non-formal education (40.3%), but women are also more represented here with 41.5%, compared to men at 39.2% (Statistical Office of the Republic of Slovenia, 2016).

To sum up the data from the survey on adult education (AES) in the countries of the Western Balkans, it may be stated that non-formal and informal education are the more prevalent forms of education and that there is still room for an increased interest by companies and potential participants. The research results have shown that women are more interested in improving their knowledge and skills than men. There are several reasons for this ratio of women's representation, but the main one is that due to gender discrimination, women are forced to undergo more frequent training and reskilling. The good news is that employees in all the countries analyzed are most interested in additional education. What is necessary is that in the countries of the region, except for Slovenia, which is a positive example, the education support mechanism for employees should be developed even more. This implies support for employees from companies and their management, but also from the institutions involved in adult education. In accordance with the intensive application of information and communication technology (ICT) in business practice, adult training programs should also be adapted to the challenges of new technologies and thus provide employees with wider training opportunities.

The role of companies in adult and employee education and training in the Republic of Serbia

In adult and employee training aimed at acquiring new skills, companies play a particularly important role, as in this way they secure higher-quality staff and ensure more efficient and productive operations. That domestic companies are not so active in this area has also been confirmed by the findings on the decline in the competitiveness of the economy of

the Republic of Serbia according to the World Economic Forum Report from 2019. Namely, this report, which included 141 countries worldwide, ranked the Republic of Serbia 72nd in the world in terms of competitiveness, which is a seven-place drop (65) compared to the previous year. The annual World Economic Forum Report covers the biggest problems of the domestic economy that affect its level of achieved competitiveness, one of the most significant being the intensity of employee training. The report itself presents indicators on the intensity of employee training that points to insufficient activities of domestic companies (104th place). The long-standing business practice of domestic companies in employee training was financial support for training, but it was mostly attended by middle and lower-level managers. Executive management has not yet developed an awareness of the importance and needs for improving their knowledge and skills and avoids any kind of engagement in this area.

In terms of adult education trends, ICT education is worth mentioning, as it is one of the three priority areas of the Europe 2020 strategy, covered by the section entitled Smart Growth. According to the data obtained from the 2011 census, in the Republic of Serbia, as far as computer literacy is concerned, out of 6,161,584 citizens over the age of 15, 34.21% are computer literate, 14.78% are partially computer literate, and 51.01% are computer illiterate (Official Gazette of RS, 2021).

Non-formal adult education training programs aimed at the acquisition of professional competencies are created based on the following data: analysis of the labor market in the Republic of Serbia, planned employers' needs, and priorities defined by the national strategy. All accredited training programs planned in the field of non-formal education are implemented by institutions working in this field. The training participants receive a certificate as proof of the acquired professional competencies. A prerequisite for the realization of the adult education process is the creation of an environment in which the application of new knowledge and skills in business represents a comparative advantage over the competition. Furthermore, there is a need for higher education to follow trends in the labor market and to align its study programs with new business trends characterized by the intensive application of digital technologies, as well as areas related to sustainable development (Vidas Bubanja et al., 2022).

In March-May 2021, the Statistical Office of the Republic of Serbia conducted a Survey on Continuous Professional Development (CPD) on the territory of the Republic of Serbia without Kosovo and Metohija, which included a sample of 4,697 companies. The goal of the research was to collect information about the investments companies made in the area of continuous professional training of their employees. According to the results obtained (Statistical Office of the Republic of Serbia, 2022), almost half of the companies in the Republic of Serbia (49.2%) implement some form of continuous professional development for their employees, while 40.8% of companies participate in CPD. According to participant gender, women (40%) are more represented in training than men (35%) in all companies that conduct courses. Women are also in the lead when looking at the grouped sectors of activity and the size of the company. The share of companies that have conducted some type of training for their employees is the lowest among small companies (43.4%), and the highest among medium-sized companies (66.1%). The participation of companies in the courses is about 41% of the total number of companies. The average cost of courses within the CPD in companies that conduct training is 45 euros per employee. The total share of costs for the organization of the seminar about the total costs of work amounted to 19%. The largest investments in CPD were in the Information and Communication Financial Activities and Insurance sectors. Direct costs amounted to about 70 euros per employee, while labor costs amounted to over 110 euros per employee who participated in CPD. Small businesses invested the most funds per employee in CPD. Their direct costs amounted to about 86 euros per employee, while labor costs amounted to over 105 euros per employee who participated in CPD.

According to Bakator (Bakator et al., 2022), companies will face different challenges on a global level in the coming years. That is why the issue of adult education is one of the key issues that a company must address if it wants to remain competitive both in the domestic and foreign markets.

RESEARCH RESULTS OVERVIEW

In order to assess the level of domestic companies 'awareness of the need for employee training and acquiring new skills, in the period from February to April 2022, a survey was conducted on the territory of the Republic of Serbia, using a sample of 50

companies. The survey was carried out via an online questionnaire titled "Analysis of companies' attitudes on the needs for the application of employees' new skills and competencies". Of the total number of surveyed companies, as many as 94% were privately owned. The majority of the respondents (56%) were owners of 38% and directors of 18% of the companies, while sector executives and managers were equally represented (16%). According to company size, the most represented companies were companies with up to 10 employees (46%), and equally represented were companies with up to 50, up to 250, and over 250 employees, with 18%.

According to the activity of the surveyed companies, the most represented were companies dealing in transport and storage activities with 30%, followed by other companies from the following fields: agriculture, forestry, and fishing (22%), information and communications (12%), financial activities and insurance activities (10%) and processing industry (6%).

The research aimed to assess the attitudes of domestic companies on the need to apply new competencies and skills and how these were implemented in the employment policy. A special segment of the research was dedicated to the acquisition of new skills of employees in the field of digital and green skills. In this sense, the study has set the following research questions:

Q1: To what extent do domestic companies have a developed awareness of the need to innovate knowledge and skills?

Q2: How fast do domestic companies include new skills in employment criteria and personnel policy?

Q3: How do domestic companies recognize the importance of having digital skills and green skills?

By providing answers to these research questions, the authors wanted to indicate certain skills specificities that domestic companies recognize as important for the process of modern business practice, but also to point out the fact that supplementary employee education, be it formal, non-formal or informal is introduced late and at a slow pace in domestic companies. In this way, the question related to the development of awareness among domestic companies and employers about the importance of supplementary education and diverse additional skills was also answered.

Results analysis

The research "Analysis of companies' attitudes on the need for the application of employees' new skills and competencies" has shown that 74% of the surveyed organizations provide professional training for employees, mostly in the following areas: technical and technological development (application of digital technologies) (42.5%) and management training (teamwork, problem-solving, business decision-making, critical thinking, creativity, interpersonal communication) (27.5%).

Respondents who mostly come from the category of managers and executives base this orientation of their companies on the view (85.7% of respondents) that employee reskilling programs enable faster and more efficient adaptation to new business conditions. However, only 18% of respondents stated that they personally need reskilling, which is an indicator of insufficient awareness of the managerial structures themselves about the need for improving their knowledge.

However, this awareness of the need for employees of domestic companies to acquire new knowledge and skills is very slowly introduced into their personnel policy and criteria when hiring a new workforce. This research question is confirmed by the opinion of the majority of respondents (52%) that in the last five years, companies have not made changes to the structure of required skills and knowledge of employees in their personnel policy.

The research offered respondents the opportunity to answer questions from the field of the application of digital technologies in business. Respondents thought that having digital skills is an employment requirement (75.5%) and all their employees were digitally literate (82%). These indicators, although based on a small sample, reveal a positive trend that should be followed by all domestic companies. However, research has shown that the latest sophisticated digital technologies were scantily represented in the training delivered. About 60% of respondents do not provide sufficient employee training in technologies, such as artificial intelligence, the use of different platforms, analytics, and data security.

Green skills that include environmental awareness, waste reduction and waste management, energy and water efficiency, and similar, were not included in their employment criteria, training topics, and

overall personnel policy by 62% of companies. Namely, 38% of respondents have integrated green skills into their personnel policy, but as many as 71.8% of them do not provide additional training in green skills for their employees. For domestic companies, in the forthcoming period, having employees with green skills will be one of the personnel policy imperatives, since end users, foreign business partners, and markets of developed economies will require green skills as a prerequisite for doing business. When it comes to the hiring process, domestic companies prioritize professional experience as the dominant criterion, 48%, as may be seen in Table 4.

Table 4: *Which of the following criteria is most important to you when hiring new employees?*

Criterion	**%**
Education	14
Professional experience	48
Evidence of continuous improvement	8
Recommendations by colleagues and associates	24
Other	6

Base: All Respondents (50)

Employers cite the recommendation of colleagues and associates as the second criterion (24%), while proof of continuous improvement (8%) ranks only 4th in terms of importance when hiring new staff. In addition, the research has also covered the skills an employee should have at recruitment (Table 5). Respondents could give multiple answers to this question.

Table 5: Which of the listed skills are required for an applicant?

Skill	**%**
Communication skills	52
Organizational skills and competences	54
Teamwork	72
Punctuality	56
Critical thinking	46
Appropriate social behavior	38
Creativity	38
Interpersonal communication	24
Adaptability	58
Kindness, approachability, and appropriate community participation	62

Base: All Respondents (50)

In the sample analyzed, the skills that cover the field of management and represent the basic skills for successful business operations are especially highlighted. Teamwork (72%) as a skill is dominant concerning other skills. However, the insufficient representation of skills such as critical thinking (46%), creativity (38%), and interpersonal communication (24%) may raise concerns. Without these skills, it is not possible to establish a company environment conducive to efficient problem-solving and competitive business.

According to Dordjević, this spectrum of skills is crucial for modern business operations. Business organizations at the micro level of personal activities need to form new models of behavior in relation to observed and expected changes, all in order to maintain competitive ability in the long run and ensure constant growth dynamics (Đorđević et al., 2016).

DISCUSSION

Numerous experiences from the global market, especially during the period of the COVID pandemic, have shown that only companies with a trained and high-quality workforce were flexible enough and capable of quickly adapting their business to crisis changes in the market. In this adjustment process, digital technologies and environmental awareness are of growing importance, but based on the conducted research, these are not sufficiently represented in domestic companies.

According to Bešić (Bešić, et al., 2021), the experiences of companies that managed to somehow mitigate the effects of the decline in economic activities during 2020 point to the need for creative thinking in solving problems, flexible market action, and above all, good human resources management, etc. Đorđević (Đorđević et al., 2021) believes that modern business philosophy should enable managers to move away from the conventional way of thinking and turn to the creation of value propositions for all relevant stakeholders. The new business paradigm includes project thinking, the logic of service dominance, and digitization.

When it comes to the Republic of Serbia, previous research has shown a lack of motivation among employees to participate in supplementary educational programs, be it informal, non-formal, or formal education. Were employees to decide to build and develop new skills and competencies, they would more often choose non-formal and informal education, which is confirmed by the results of the conducted analysis and is in line with the results of the previously conducted Adult Education Survey (2016). In this sense, individuals rely on the computer, media, and close friends.

How fast do domestic companies introduce new skills in employment criteria and personnel policy? – The analysis has shown a lack of awareness when it comes to personal employee upskilling, although most of the companies that participated in the research emphasize training programs and upskilling as something that is being continuously worked on. A special problem is that in the local circumstances, the concept of reskilling is mainly associated with unemployed staff who need to undergo additional training and acquire new competencies and skills to get a job or is related to the fact that the privatization process requires that employees be educated for performing new jobs. Reskilling, the acquisition of additional knowledge and skills is not an integral part of employees' awareness, most of whom do not consider that the process of lifelong training is something that should be introduced, fulfilled, and accepted. This is best confirmed by the fact that more than 50% of respondents have not recently made changes to employment criteria that would consider additional worker knowledge and skills, which provided an answer to the question related to the slow inclusion of new skills in the personnel policy of domestic companies.

How do domestic companies recognize the importance of possessing digital skills and green skills? – It has been proven that the potential of digital technologies and rapid technological changes have significantly affected the supply and demand ratio in the domestic labor market as well. With the COVID-19 pandemic, domestic companies have become aware of the importance of a workforce that cultivates digital skills and possesses knowledge in the field of ICT. The modern business environment increasingly relies on digital tools and doing business in the online sphere, so additional knowledge in this area has become an integral part of business practice.

The problem faced by domestic companies is the development of green skills that are in line with modern norms and the business environment, which entails the development of ecological awareness and sustainable development. The potential that comes with the green business, the development of green products, and meeting the needs of green customers remains untapped on the domestic market. It is only 38% of domestic companies recognize the importance of green skills and includes them in their personnel policy, yet around 42.5% of companies include digital skills in the training offered to their employees, and most of them declare themselves digitally literate at the start. We have thus answered the question that refers to the fact that domestic companies recognize digital skills as important for a successful business, unlike green skills.

To what extent do domestic companies have a developed awareness of the need to innovate knowledge and skills? – The research data providing answers to the previous two questions, as well as the fact that over 70% of the companies that participated in the research provide some kind of training for their employees, indicate a developed awareness of the need to innovate knowledge and skills in domestic companies. Training programs mostly cover the areas of teamwork, effective communication, and negotiation, and working in an online environment.

CONCLUSION

Technological changes, the COVID-19 pandemic, the green transition, geopolitical global changes, and risks have further complexities in the work and business environment on the global market. Employee knowledge and skills become the companies' key support, as the present circumstances compel them to react quickly and adapt flexibly to new business challenges. Education, training, and employee skills improvement aligned with new technological waves and changed work procedures are becoming prominent aspects of modern business. The most relevant question for companies, governments, and individuals is not to what extent automation and the application of digital technologies will affect the current number of employees, but the question of improving the education and training systems that will ensure the enabling of the young and already employed workforce to participate equally in the new division of labor among humans, robots and algorithms.

Developed countries and large companies have far more capacity and financial resources for the realization of the educational processes, but also for lifelong education aimed at adults and the employed workforce. The intensity of changes in business and working conditions for less developed countries and small and medium-sized enterprises leaves no room for postponing the activities of improving workers' knowledge and skills. In this sense, the comparative analysis carried out on the example of selected

countries of the Western Balkans has shown that even small countries in transition are working on the implementation of different forms of formal, non-formal, and informal education, but that there is still plenty of room for improvement. The analysis data have demonstrated that the percentage of adults participating in educational processes is still insufficient (8-20%), except for Slovenia (46.5%) and Croatia (30.2%).

A particularly significant role in the implementation of the process of improving employee and adult knowledge is played by the business sector, which sees this as a chance to ensure a trained workforce for new business processes and challenges. The experiences of domestic companies show that there is an awareness of the need to train workers to improve their knowledge, given that in the research, over 70% of respondents confirmed the presence of training courses. The fact that worries is that the managers improve their own knowledge by a modest percentage, and the employment criteria of domestic companies still do not recognize supplementary training and knowledge as a relevant indicator of worker quality. Digital technologies are significantly present as the focus of the training process, while green technologies are still not on the list of relevant and necessary competencies for the domestic workforce.

The contemporary moment requires that business leaders, governments, and public policyholders make joint efforts to improve access to and delivery of employee reskilling and upskilling, to support processes of redeployment and re-employment of trained workers, as well as to encourage reform and the growing role of education in the process of creating the workforce for jobs of the future. To address these significant challenges facing the labor market today, governments must strive for a holistic approach, creating active links and coordination between providers of education and skills, workers and employers, and ensuring effective collaboration between employment agencies, regional governments, and the national government.

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UPRAVLJANJE REVOLUCIJOM PREKVALIFIKACIJA ZA DIGITALNO DOBA (STUDIJA SLUČAJA-ZEMLJE ZAPADNOG BALKANA)

Tehnološke promene, pandemija COVID-19, zelena tranzicija, geopolitičke promene i rizici usložili su uslove rada i poslovanja na globalnom tržištu. Znanje i veštine zaposlenih postaju ključni oslonac kompanija koje u ovakvim uslovima treba da reaguju brzo i prilagode se novim poslovnim izazovima. Pitanja obrazovanja, edukacije i unapređenje veština zaposlenih u skladu sa novim tehnološkim talasima i promenjenim radnim procedurama postaju značajan aspekt savremenog poslovanja. Analiza sprovedena u ovom radu obuhvata samo neke od faktora uticaja na promenu veština zaposlenih poput: efekata digitalnih tehnologija na obavljanje posla, problem obrazovanja i zapošljavanja mladih, neohodnost unapređivanja znanja postojeće radne snage i njihove prekvalifikacije i dokvalifikacije u kontekstu celoživotnog obrazovanja. Sprovedno istraživanje imalo je dva cilja. Realizaciju komparativne analize sprovodjenja dopunskog obrazovanja odraslih i zaposlenih u odabranim zemljama Zapadnog Balkana. Drugi cilj je bio fokusiran na domaće tržište rada kako bi se pokazalo da domaća preduzeća imaju razvijenu svest o potrebi inoviranja znanja i veština, ali i skrenula pažnja na specifičnosti tog procesa uz poseban fokus na digitalne i zelene veštine kao veštine koje su neophodne za proces savremenog poslovanja. Rezultati istraživanja pokazuju da su srpske kompanije postale svesne značaja radne snage koja neguje digitalne veštine i poseduje znanja iz oblasti IKT. Analiza je pokazala nedovoljno izraženu svest kada je u pitanju lično usavršavanje zaposlenih, iako većina kompanija koje su učestvovale u istraživanju navodi da su programi obuke i usavršavanja nešto na čemu se kontinuirano radi.

Ključne reči: Savremeno poslovanje; Obrazovanje odraslih; Digitalne veštine; Digitalne tehnologije; Prekvalifikacija; Održivi razvoj.