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DIGITAL TRANSFORMATION AND INDUSTRY 4.0 AND ITS IMPACT ON SME BUSINESS

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ABSTRACT

This research addresses the following guiding question: Do Industry 4.0 and digital transformation inherently drive the progress of small and medium-sized enterprises (SMEs)? Starting from this assumption, the authors proposed a hypothesis suggesting that digital transformation has a direct impact on improving innovation and operational efficiency within small and medium-sized enterprises. The focus of this study is the digital transformation and Industry 4.0 adoption among SMEs in the Republic of Srpska, one of the two entities of Bosnia and Herzegovina. The study combined desk-based literature analysis with a practical component that involved organizing panel discussions featuring representatives from all three pillars of the Triple Helix model: representatives of the academic community, business companies, and state institutions. The empirical research was organized in the period from November 2023, to June 2024. Findings from the research indicate that digital transformation plays a significant role in enhancing business processes and fostering the growth of small and medium-sized enterprises, while also highlighting the importance of effectively motivating employees to embrace organizational change. Organizational culture, employees who are affirmative in acceptance changes allow them to change indeed events. Digital transformation by itself represents tools that can improve business, but employees are key part of changes.

KEY WORDS: innovation, digital transformation, entrepreneurship, SMEs, sustainability, management

JEL CLASSIFICATION: L26, M15, M21, O33

1. Introduction

The development of industry and successive industrial revolutions have influenced nearly all aspects of human life. On one hand, they have driven economic progress, enhancing business

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performance, raising living standards, and contributing to national prosperity. On the other hand, they have profoundly impacted the educational sphere by creating a continuous need for learning, upskilling, and acquiring new competencies. These changes also highlight the growing demand for employees to possess a broader and more diverse knowledge base (Bielińska-Dusza & Hamerska, 2021; Novaković et al., 2024).

As new technologies emerge, they give rise to innovative business models, accompanied by a noticeable transformation in customer behavior. These shifts compel companies to anticipate and swiftly adapt to ongoing changes within their operations. Particularly with the advancement of Industry 4.0, significant transformations are anticipated. Modern economic thought increasingly highlights the knowledge-based economy as a model in which knowledge constitutes the primary driver of both societal advancement and economic development. Industry 4.0 leverages cutting-edge technologies to address global challenges and elevate industrial performance.

Companies have recognized the strategic importance of talent development and investment in employee knowledge. There is a growing emphasis on encouraging continuous education, professional development, and the promotion of lifelong learning. In both the United States and Europe, the most successful enterprises are those that ground their business strategies in knowledge, acknowledging it as a renewable resource that ensures sustainable profit (Novaković et al., 2019).

In the 21st century, science and technology have become the primary drivers and fundamental pillars of economic and social development. As information and communication technologies (ICTs) continue to advance and the Fourth Industrial Revolution unfolds, digital tools are becoming an integral part of routine business operations. The development of ICT has the potential to drive profound societal change by strengthening interconnectivity and fostering collaboration among diverse societal stakeholders (Novaković et al., 2019).

Although the importance of technology is widely acknowledged, technology alone does not provide a complete solution. Instead, effective digital transformation requires the interaction between policy frameworks, managerial practices, and technological capabilities (Gil-Garcia et al., 2019). The development of digital technologies began in the 1960s with the emergence of computers, software, and application solutions for automated data processing - marking the early stages of digital transformation. This shift had a profound impact on productivity and global economic development. Today, digital transformation has evolved significantly. Organizations now leverage information technologies not merely as supportive tools, but as enablers of entirely new business models, products, and services. These technologies facilitate fundamental changes in existing processes and value chains, thereby reshaping the competitive landscape (Novaković and Jakupović, 2023).

This paper investigates whether Industry 4.0 and digital transformation inherently lead to improved business performance in SMEs. Accordingly, the authors propose the hypothesis that digital transformation independently enhances innovation and operational efficiency in SMEs.

This study explores the themes of digital transformation, Industry 4.0, and the role SMEs within the Republic of Srpska (part of Bosnia and Herzegovina). Employing a mixed-method research design, the study integrates a comprehensive literature review with a series of panel

discussions that engaged representatives from academia, the business sector, and governmental bodies, reflecting the Triple Helix model. The empirical segment of the research was carried out from November 2023 to June 2024.

The main objective of this paper is to examine the extent to which digital transformation and the principles of Industry 4.0 independently contribute to the improvement of innovation and operational performance in small and medium-sized enterprises (SMEs).

In line with this objective, the study aims to answer the following research questions:

- To what degree does digital transformation stimulate innovation within small and medium-sized enterprises?
- In what ways does the adoption of Industry 4.0 principles influence the operational performance of SMEs?
- Which organizational and human resource factors play a critical role in determining the success of digital transformation initiatives in SMEs?
- How do stakeholders from academia, the business sector, and government - reflecting the Triple Helix framework - perceive the opportunities and challenges associated with digital transformation in the SME sector?

The results indicate that digital transformation contributes significantly to the improvement of business processes and SME development. However, the successful implementation of these transformations depends on organizational culture and the proactive engagement of employees. While digital tools are essential enablers of change, employees are the key drivers of successful digital transformation.

The application of digital technologies transforms the way of working, changing the consciousness of employees, but nowadays it also plays a significant role in the process of changing the entire society (Novaković et al., 2024). In the literature, you can find a whole range of different definitions of the term. Digital transformation encompasses several fundamental components, including digitization, organizational transformation, enhanced collaboration, shifts in organizational culture, modifications within the value chain, and the development of new business models (Slabic, 2024).

2. Chronology of industrial revolutions

For the development of society during the economic development, the industrial revolutions were crucial and were transferred to other spheres of economic and economic life. The development of society leads to the socialization of production, the lowering of labour costs, which leads to an increase in the volume of production, which causes the division of labour. With the modern scientific and technical revolution, production is automated, which makes production narrowly specialized, the market expands, and there is an increase in mass production.

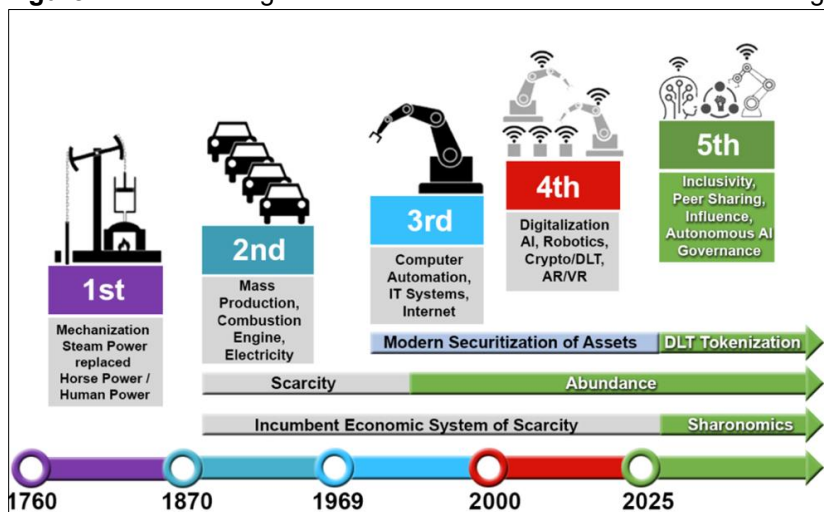
The development of the world market and infrastructure facilities (roads) leads to the internationalization of production (Novaković, 2021). At the same time, the development of technology and the transfer of technology leads to the integration of the world economy. Through the mobility of capital and the connection of national economies, the entire economic process is becoming globalized. Historically, the development of technology leads to the development of society. More significant scientific discoveries that lead to the use of new

production processes are associated with the term industrial revolution (Castelo-Branco et al., 2019). At the end of the eighteenth century the first industrial revolution began in England, with the invention of the steam engine. James Watt patented the steam engine in 1763. It brings with it great social changes. Hand tools were replaced by machine tools, i.e. there is a shift from manual to machine production, mining, transport and other industrial plants are developing (Novaković, 2021).

The second industrial revolution lasted between 1870. and 1914. This industrial revolution is also called the technological industrial revolution. It is marked by the invention of electricity and mass production. The third industrial revolution, the digital revolution, took place in the sixties of the twentieth century and was marked by the transition from analog and mechanical electronics to digital electronics. This revolution marks the beginning of digitization and the information society (computers, mobile phones, internet).

The contemporary business landscape is shaped by the Fourth Industrial Revolution, which centers on gaining competitive advantage through the reconfiguration of processes and overall business operations, enabled by digitization, the Internet of Things, cloud technologies, and advanced data analytics (Castelo-Branco et al., 2019). Industry 5.0 envisions a future where industries go beyond just efficiency and productivity, focusing on worker well-being and using technology for broader prosperity while respecting planetary limits (Figure 1). The focus shifts from automation and efficiency, which are characteristic of Industry 4.0, to a greater appreciation of the human factor, personalization, sustainability and resilient production systems. Industry 5.0 and Marketing 5.0 both emphasize the seamless integration of human capabilities and intelligent machines, facilitated by advanced technologies such as artificial intelligence (AI), collaborative robots (cobots), and the Internet of Things (IoT) (European Commission, 2024; Directorate-General for Research and Innovation, 2024).

Figure 1 A chronological overview of industrial revolutions through the lens of economic growth



Source: Raheman (2022).

The technologies that make up the fourth industrial revolution direct the industry to a rapid digital transformation of processes. The transformation is based on intelligent device networking using advanced information and communication technologies, with the aim of

enabling autonomous communication between devices, analysing and collecting a large amount of data, autonomous decision-making, monitoring assets and processes in real time, creating added value, and vertical and horizontal integration (Novakovic and Jakupovic, 2017).

3. Industry 4.0 and Digital Transformation

The term Industry 4.0 is widely present across various fields of scientific research, including legal studies, economic theory, and particularly information and communication technology. A review of the relevant literature reveals that one of the most prominent concepts associated with Industry 4.0 is smart manufacturing (Klingenberg et al., 2022) including integration production process in the factory with activities procurement (Dalenogare et al., 2018). Industry 4.0 encompasses a vast network of advanced technologies integrated across the entire value chain. Innovations such as smart services, automation, robotics empowered by artificial intelligence, the Internet of Things, and additive manufacturing are collectively heralding a new era in industrial production. The term „Industry 4.0“ was originally introduced by the German government to denote a broad spectrum of technological transformations in manufacturing, with an emphasis on establishing a coherent policy framework aimed at preserving the global competitiveness of German industry (Smit et al., 2016).

Technological advancements have significantly reshaped various professions, compelling employees to acquire new competencies in order to perform daily tasks more effectively. The emergence of new technologies has enabled the integration of smart machines, human resources, physical infrastructure, and both production and organizational processes, all with the aim of creating new value chains. These technological shifts enhance the relative marginal productivity of capital by fostering workforce education and training, encouraging investment in research and development, and supporting the formation of new managerial structures and work organizations.

In this context, business digitization has become a critical factor for success in today's dynamic business environment. It allows companies to respond more rapidly to market changes, achieve greater operational efficiency, reduce costs, and unlock new opportunities for innovation and the development of modern business models (Milovanović et al., 2024).

The key benefits of digital transformation include enhanced process automation, more efficient data management, improved communication, and increased overall competitiveness in the global market (Agić et al., 2024). Analytical studies on debt and long-term economic growth indicate that, during the 20th century, human capital emerged as the most rapidly growing factor contributing to production (Hötte et al., 2023). The main concept of Industry 4.0 is the use of advanced information technology for the application of IoT services (Novakovic and Jakupovic, 2017).

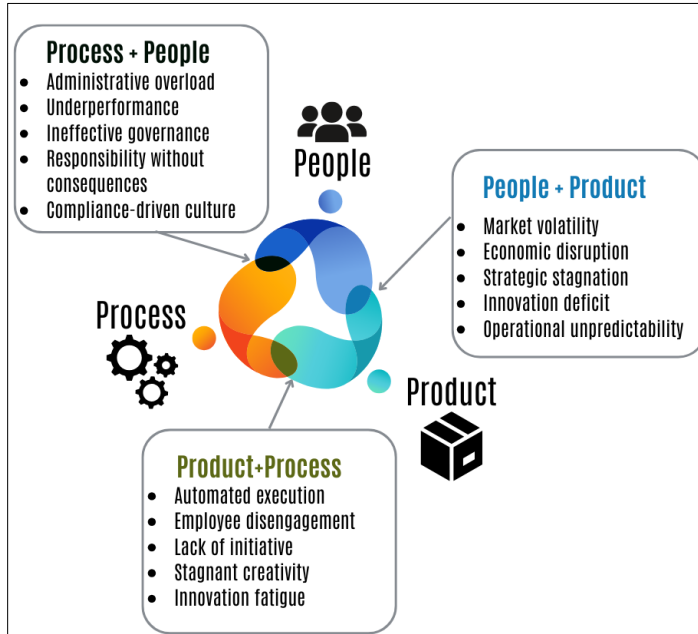
By integrating engineering knowledge, production can run faster and smoother with minimal downtime. Because of this, the product will be of better quality, production systems are more efficient, easier to maintain and achieve savings (Mrugalska and Wyrwicka, 2017). The comprehensive definition of Industry 4.0 is based on the role of company strategy and this definition was presented by Piccarozzi et al. "Industry 4.0 refers to the integration of the Internet of Things into industrial value creation and enables manufacturers to take advantage of fully digitized, connected, smart and decentralized value chains. Thus, created value chains can

provide greater flexibility and competitiveness of companies and enable them to build flexible and adaptable business structures, to deal with the changing business environment as a result of a planned strategy implemented over time". It means that the introduction of Industry 4.0 must be targeted in the organization and strategically combined to produce positive results (Piccarozzi et al., 2018).

The available literature identifies a core set of technologies that form the foundation of the digital ecosystem underpinning Industry 4.0. This paper highlights the most significant among them: Big Data, Cloud Computing, Artificial Intelligence, Cybersecurity, Mobile Technologies, and the Internet of Things (IoT). The IoT, in particular, serves as a critical enabler for connecting a wide array of devices-both personal and industrial-via the Internet. In doing so, it creates a digitally connected world involving billions of users and unlocks new opportunities for knowledge generation, data processing, and information exchange (Novaković and Jakupović, 2017).

The review of relevant literature highlights key aspects of digital transformation and its impact on small and medium-sized enterprises (SMEs), forming the basis for the research framework of this study. Works by Gil-Garcia et al. (2019), Novaković and Jakupović (2017), Novaković and Jakupović (2023), as well as Milovanović and colleagues (2024), emphasize the importance of the interaction between technology, management, and organizational culture, stressing the need for a comprehensive approach to digital transformation. These findings guide the choice of a methodology that combines quantitative and qualitative methods, allowing for an in-depth analysis of the influence of technology and organizational factors on innovation and SME operations. Regarding digital transformation concept literature provides a wide spectrum of different approaches and definitions of it. Authors define digital transformation as a change in how a firm employs digital technologies, to develop a new digital business model that helps to create and appropriate more value for the firm (Verhoef et al., 2021). The basis is the integration of information technologies with operational activities, which leads to a stronger production organization. Digital transformation leads to increased profits, reduced costs, improved customer experiences, and innovation. This is only on the condition that it exists coordination of the key 3Ps: process, people, product (Figure 2).

Figure 2 Process, Product, People – 3 P’s of Organizational Success



Source: Author’s illustration.

For completely understanding digital transformations, it is necessary to understand the difference between the basic concepts authors encountered in the literature regarding digitalization. The table below shows how authors (Gong et al., 2024) are presented the difference.

Table 1 The difference between the basic concepts

Terms	Etymologies
Digitization	The term " digitization " originates from the modern verb " digitize " a combination of "digit" and the suffix "-ize" which emerged around 1954 in the context of computer programming. It refers to the process of converting information into a digital format, particularly into binary digits, for use by computers (Merriam-Webster, n.d.).
Digitalization	The term " digitalization " originates from the adjective " digital " which derives from the Latin digitus (meaning "finger" or "toe") and later the modern Latin digitalis. It has been used in the context of "using numerical digits" since 1938, with more specific references to computers processing data in digitized form emerging around 1945, and its application to recording and broadcasting technologies appearing by 1960 (Online Etymology Dictionary, n.d.).
Transformation	The term " transformation " originates from the Old French transformation (14th century) and directly from the Latin transformātiō (nominative), meaning "change of shape." It is derived from the verb transformare, which combines trans ("across, beyond") and formare ("to form"). While originally used in a transitive sense to denote changing the shape of something, its intransitive use meaning

	"to undergo a change of form" emerged around the 1590s (Online Etymology Dictionary, n.d.).
Digital transformation	The concept of digital transformation is composed of two distinct terms: "digital" and "transformation". The naming strategy that combines these words leverages the halo effect of each term's meaning in everyday language, thereby generating a new interpretation within scientific discourse (Dumez, 2011). However, the absence of a universally accepted, seminal definition of digital transformation in the academic literature has led to conceptual ambiguity. This confusion is compounded by the merging of two terms that carry strong but distinct connotations in both common and specialized usage. While the meaning of "transformation" is relatively stable and well-understood across both practitioner and academic contexts, the term "digital" introduces significant uncertainty. A review by Mertens et al. (2017) identified over 2,500 different terms associated with "digital" in recent scientific and financial publications spanning nearly every aspect of modern social and economic life.

Source: Gong et al. (2024).

It is also necessary to clarify the definition of a business model, which fundamentally describes the value a company delivers to its customers and partners. A business model consists of multiple interconnected components, including target customer segments, distribution channels, customer relationship strategies, as well as the products, services, and value propositions offered. Additionally, it incorporates key resources, strategic partnerships, and networks, along with financial elements such as revenue generation mechanisms and cost structures. The primary objective is to structure these elements in a way that they reinforce one another, thereby ensuring business stability and financial growth in a manner that is difficult for competitors to replicate.

The concept of the value chain, introduced by renowned Harvard professor Michael Porter in his 1985 work *Competitive Advantage*, was developed as a strategic tool for identifying opportunities to enhance customer value. Rooted in the study of competitive strategy and organizational advantage, this framework remains widely applicable even decades after its inception. Figure 3 illustrates Porter's Five Forces model, a well-established analytical tool that organizations employ to evaluate the competitive dynamics of their environment and support strategic decision-making.

Figure 3 Porters Model of Five Forces

Source: Author's illustration.

Therefore, digital transformation should be considered in the context of the entire business model, encompassing both individual components and the overall structure, including value chains and the networking of various stakeholders. Digital transformation existing one's system in the fourth industrial revolution (Industry 4.0) represents strategic and long term the undertaking for which they are necessary big capital investments, training employees and change environment and cultures on to all levels chain values. For success digital transformations, it is necessary to change awareness employees and execute capital investments in their education, to be ready for set up challenges (Kulaš Mirosavljević et al., 2023).

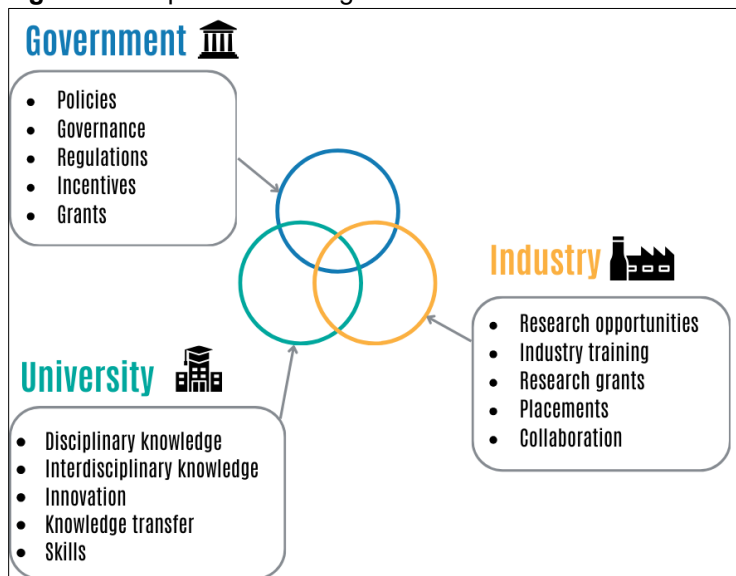
It is evident that the transformation of the business ecosystem can be successful only if it is underpinned by a robust informatics culture within organizations - characterized by a high level of digital literacy, the effective utilization and integration of emerging technologies, and the modernization of business processes. The deployment of new products and services grounded in digital technologies is essential for sustaining competitive advantage. However, in parallel with the implementation process, companies must continuously assess and adapt their marketing strategies in order to fully exploit the opportunities afforded by the evolving digital ecosystem.

4. Methodology

In order to answer the problem, the authors defined: "Does industry 4.0 and digital transformation a priori bring progress to the performance of small and medium-sized enterprises". To prove or refute the hypothesis "The digital transformation of small and medium-sized enterprises improves innovation and performance of small and medium-sized enterprises", the authors conducted research based on the Triple Helix model and panel

discussions. The Triple Helix model, which emphasizes the dynamic interaction between academia, industry, and government, is particularly well-suited for studying digital transformation in SMEs because it captures the multifaceted relationships and collaborations necessary for innovation and sustainable development. This model allows for an integrated analysis of how these three key sectors influence and support each other in adapting to and implementing new technologies.

Panel discussions complement this approach by facilitating rich, qualitative insights from diverse stakeholders representing different sectors. They enable the collection of experiential knowledge, perspectives, and real-world challenges related to digital transformation. Through moderated dialogue, panel discussions encourage active exchange and reflection, helping to identify practical solutions and strategic directions. Together, the Triple Helix model and panel discussions provide a comprehensive methodological framework that addresses both the systemic interactions shaping digital transformation and the nuanced experiences of the actors involved. This combination enhances the depth and relevance of the research findings, making it an appropriate choice for examining the complex process of digital transformation in SMEs. The Triple Helix model fully leverages the potential of all participants, extending beyond those confined to each individual organizational system. It fosters collaboration and knowledge exchange among academia, industry, and government, enabling a more holistic and integrated approach to innovation and digital transformation. Mutual relations shown in Figure 4 (Leydesdorff, 2012).

Figure 4 A Triple Helix Configuration

Source: Adjusted to Leydesdorff (2012).

The Triple Helix model serves as a contemporary theoretical framework for analysing and fostering innovation and sustainable economic development through dynamic and interactive collaboration among the three core pillars of society academia, industry, and government. Within this model, universities play a pivotal role in generating and disseminating knowledge through research and education; the private sector operationalizes this knowledge by developing products, services, and market applications; while the public sector, through regulatory policies, financial instruments, and strategic support, establishes the enabling environment necessary for the effective implementation of innovation processes (Etzkowitz and Leydesdorff, 2000).

The core premise of the Triple Helix model is to transcend traditional boundaries among academia, industry, and government by fostering collaborative initiatives, technologies, and policies. This approach not only promotes innovation but also cultivates a sustainable ecosystem in which academic knowledge is effectively transferred to the economic sphere, supported by state-driven incentives such as subsidies, tax relief, grants, and regulatory reforms (Lawton Smith and Leydesdorff, 2014; Leydesdorff, 2017). The special significance of this model is reflected in the possibility of developing start-ups and knowledge-based enterprises, which contribute to strengthening the competitiveness and technological independence of the national economy. In practical application, the Triple Helix model is the basis for creating regional innovation strategies, developing technology parks and clusters, in which all three spheres actively participate in shaping a modern innovation society. As such, this model is increasingly recognized as a key instrument in modern digital transformation and smart specialization policies.

Due to all the advantages of the Triple Helix model, the authors decided to organize panel discussions in order to obtain responses to pre-defined questions from representatives of institutions in the Government of Republic of Srpska, representatives of the economy and representatives of universities at the same place.

During the research, panel discussions were held two times. Two panel discussions were organized in a way that is implemented in cooperation with the representative of small and medium-sized enterprises, representatives of the authorities and higher education institutions of the Republic of Srpska.

The first panel discussion was held in November 2023. The participants of this panel were representatives of the Ministry of Economy and Entrepreneurship of Republic of Srpska, the Department for the Development of Small and Medium Enterprises and Entrepreneurship, the Chamber of Commerce, the Centers for Digital Transformation of the Chamber of Commerce of Republic of Srpska, the Agency for ICT of Republic of Srpska, the Innovation Centre Banja Luka and representatives of 6 companies from the "Klaster Drvo" and teaching staff of the Faculty of Business Economics of the Pan-European University. The panel discussion participants discussed and expressed their opinions on the basic topic: the role and importance of digitalization in manufacturing companies.

During the panel discussion, the following topics were initiated:

- Opinion of the representatives of the participants on the role of digitalization in improving the business results of companies,
- The importance of digitalization in manufacturing companies,
- Willingness of employees to accept the changes brought by the digitalization of business processes in companies,
- What incentive measures are necessary from the point of view of small and medium-sized enterprises and what measures are taken by representatives of the Government of the Republic of Srpska.

The second panel discussion was held in June 2024, in Banja Luka. The second panel discussion was entitled: "Raising the company's performance through digital and business transformation - Innovation, reactive and creative models of the behaviour of production companies and creating added value". The participants were representatives of the 5 real sector and companies, which successfully implemented digital innovations in their business, teaching staff of the Faculty of Business Economics of the Pan-European University, representatives of the City Development Agency of Prijedor and the Ministry of Economy and Entrepreneurship. A total of thirteen panellists participated in the discussion. Throughout the panel, each participant responded to all questions posed, ensuring the inclusion of perspectives and insights from representatives of government institutions, the business sector, and academia. The following questions were presented to the panellists:

- does digitalization contribute to improving the business of companies in the economy of Republic of Srpska,
- what obstacles were faced by company representatives when they started digitizing business processes,
- did employees resist changes, to what extent is the institutional framework suitable for digitalization in the economy?

The panel discussions were led by the author of this paper who asked all participants to give an answer to each of the questions asked, to have the answers and opinions of representatives of institutions, businesses and universities.

5. Results

Participants shared valuable experiences and suggestions on enhancing business performance through the use of digital technologies. Based on the questions raised and the discussions held during the panel sessions, the following key conclusions were drawn:

- **Digitalization and Efficiency:** According to the panelists, digitalization plays a crucial role in boosting operational efficiency, minimizing costs, and enabling timely and data-driven decision-making.
- **Continuous Learning:** The necessity for continuous learning was highlighted - both for employees directly engaged in production processes within SMEs, as well as for top management - particularly in relation to digital transformation competencies.
- **Employee Readiness:** The readiness of employees to embrace digital transformation largely depends on prior training and effective internal communication.
- **Manufacturing Sector Tools:** The role of digital tools in manufacturing companies was particularly emphasized, where process automation can lead to improved product quality and competitiveness.
- **Strategic Planning:** For SMEs, it is essential to develop comprehensive development strategies, roadmaps, and digital business models to successfully implement digital transformation.
- **Legislative Adaptation:** The legal and regulatory framework must be aligned with emerging trends and technologies (e.g., online commerce, blockchain) to ensure their applicability within small and medium-sized enterprises.
- **E-Government Acceleration:** Efforts should be intensified to accelerate the implementation of e-government services, as they can facilitate and support the digital transformation of SMEs.
- **Triple Helix Collaboration:** Participants agreed on the importance of strengthening collaboration between the private sector, educational institutions, and government bodies to foster a sustainable and inclusive digital ecosystem.
- **Cybersecurity Emphasis:** Cybersecurity was identified as a critical area of concern, particularly for SMEs and public sector entities, due to increasing risks in the digital environment.
- **Organizational Culture:** Establishing a supportive organizational culture that is open to change was recognized as essential for the successful adoption of digital transformation initiatives.
- **Strategic and Cultural Dimension:** The conclusion underscored that digital transformation is both a technological and cultural endeavor, requiring coordinated strategic efforts and active engagement from all key actors within the organization.

6. Conclusion

By synthesizing the findings of both desk research and empirical studies, the authors concluded that the development of information and communication technologies (ICT) and the emergence of Industry 4.0 have brought about a pervasive digital transformation across all segments of society. The advancement of ICT and the onset of the Fourth Industrial Revolution have profoundly influenced key sectors, including industry, education, and public administration, each undergoing significant changes driven by the wave of digitization (Novaković et al., 2022). Based on insights shared by participants during the panel discussions, it is evident that industrial revolutions and ongoing digitization represent significant milestones in the development of small and medium-sized enterprises (SMEs).

Consequently, the authors conclude that the hypothesis - *Digital transformation of SMEs improves innovation and operations of small and medium-sized enterprises by itself* - is only partially confirmed. Beyond the imperative of digitalizing business processes, there is a crucial need for organizational culture within companies to adapt and embrace these changes. A key aspect of successful digital transformation lies in relationship management and the role of employees, alongside the development of organizational cultures that are receptive to change. An adaptive organizational culture and a workforce that affirms and embraces change are essential for enabling meaningful transformation. While digital tools can enhance business processes, it is the employees who constitute the core drivers of change. Based on the insights gathered from panel discussions, a key recommendation for future research is the development of improved solutions aimed at fostering more effective organizational cultures. Given that leadership plays a crucial role in the success of digitalization and in shaping employees' acceptance of new business models, future studies should focus on the transformation of small and medium-sized enterprises (SMEs) toward sustainable business practices. In particular, research should explore how SMEs can align with Environmental, Social, and Governance (ESG) standards not solely pursuing profit, but operating in accordance with the European Commission's directives on sustainability.

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