

## IMPACT OF DIGITALIZATION ON THE COMPETITIVENESS OF ENTREPRENEURIAL BUSINESS

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### *Abstract*

*Competitiveness is important for the business positions in the market. Various factors, such as technological development affect the increase of business competitiveness. The digitalization is established as one of the significant factors for building competitive advantages and achieving high competitiveness. The implementation of digital technologies is related to the innovative behaviour of the entrepreneurial business and, on this basis, is an important factor for the growth of the company's competitiveness.*

*The article aims to explore the impact of digitalization on the competitiveness of the entrepreneurial business. In relation to the achievement of the goal, based on the analysis of literary sources, it reveals the theoretical aspects of competitiveness and the influence of digitalization on the competitiveness of the entrepreneurial business. The results of the conducted survey of the Bulgarian enterprises to determine the degree of their digitalization and its impact on their competitiveness are analyzed with the help of statistical methods.*

*Based on the theoretical analysis, the indisputable importance of digitalization for the formation of a new type of competitive advantage and the growth of the competitiveness of the entrepreneurial business is established.*

*The practical analysis reveals that the studied companies have insufficiently implemented modern information technologies in their activities. In conclusion, it is necessary to respond to the rapid progress of digitization in all processes on a global scale and to take action in these enterprises for the accelerated implementation of digital technologies in more activities to ensure higher competitiveness.*

**Keywords:** *entrepreneurial business; competitiveness; digitization; impact; competitive advantages*

**JEL Codes:** *L26; M21; O33*

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### **Introduction**

The competitiveness of enterprises is raised by different factors. In the conditions of accelerated technical and technological development, the application of digital technologies is increasingly being established as one of the main factors forming competitive advantages and acquiring higher competitiveness. They are essential for any business, especially the entrepreneurial one. Digitization is one of

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the modern manifestations of the innovative behaviour of economic entities, which is a significant factor in increasing competitiveness. The question rests on the need, desire, internal forces, resources and ability of the enterprise to develop competitive advantages based on its multifaceted digitalization and, as a consequence, to acquire high competitiveness.

The purpose of this article is to reveal the impact of the digitalization of the entrepreneurial business on its competitiveness.

The research methodology includes an analysis of literary sources on the issue and a survey of Bulgarian companies to determine the practical state of the digitization process and its impact on competitiveness. Statistical methods such as statistical distribution, calculation of relative shares, graphical and tabular methods were used to establish the survey results.

### **Theoretical aspects of competitiveness**

Competitiveness is a multifaceted economic category. It is defined as the ability to create wealth based on the production of goods and services tested in an unrestricted market and demand under normal conditions, and on the other hand, based on the relationship between high-demand markets, leading firms and permanent investment in human capital (Nikolov, 2013, p. 560). At the macro level, it manifests itself as the competitiveness of nations, at the meso level - as the competitiveness of a separate region, industry, or inter-industry complexes, and at the micro level - as the competitiveness of individual enterprises (Dimitrova, 2015, p. 17). At the same time, competitiveness is also considered at the object level, such as competitiveness of the product, of the technologies, of the infrastructure, etc. (Dimitrova, 2015, p. 17).

As well-known, Porter links the competitiveness of nations with national productivity (Porter, 1990). Also, according to him, competitiveness is the capacity for continuous sustainable growth of productivity, through which a higher standard of living is achieved. In his "Diamond" of competitive advantages, Porter identifies the main determinants of national competitiveness - factor conditions, demand conditions, related and supporting industries, and firm strategy, structure and rivalry (Porter, 1990).

Similarly, according to Chikán (2008), national competitiveness expresses the ability of a national economy to guarantee an increase in the welfare of the population based on a sustainable increase in factor productivity. For this purpose, it is required to maintain an environment for companies from the national economy, supporting the creation, use and sale of goods and services that are adequate to the requirements of the competition in global markets and changing social norms (Chikán, 2008). Another opinion defines national competitiveness as favourable positions of the national economy in the system of international relations, specifically in the field of trade and as an expression of the possibilities for successful counteraction of competitive foreign goods and services on the domestic and foreign markets (Nikolov, 2013, p. 563).

At the business micro-level, competitiveness generally reflects the market position of the company and its products. Chikán (2008) defines company competitiveness as the company's ability to unyieldingly fulfil its goal - on the one hand, to satisfy customer requirements, and on the other hand, to generate profit. To achieve this goal, the goods and services offered on the market should be valued higher than those of competitors (Chikán, 2008). According to Cetindamar and Kilitcioglu (2013), competitiveness refers to the firm's ability to compete in every market, increase its market share, export its products to international markets and achieve sustainable growth and profitability.

The competitiveness of companies is defined as a comparison with their competitors by the degree of satisfaction of market needs with the offered goods and by the efficiency of their activity, and also as an opportunity to create and realize products with more attractive price and non-price characteristics for customers in comparison with those of competitors (Nikolov, 2013, pp. 562-563).

Dimitrova (2015) links the competitiveness of the enterprise with continuous renewal and improvement. They are the basis of the creation and sustainable maintenance of competitive advantages for achieving high results over a long period.

Competitiveness is manifested through the competitive advantages created at the corresponding level. In this regard, Porter's hypothesis is that in order to achieve an advantage over its competitors, the company must possess a quality that distinguishes it from them, which can be preserved, and to create a competitive advantage, he suggests applying a competitive strategy (Porter, 1990).

Kotler (1996) emphasizes that competitive advantage is gained by offering greater value to customers, selling products at lower prices, or providing more benefits that justify higher prices compared to competitors. In the scientific literature, competitive advantage is defined as a specific activity, strategy and ability that companies possess to obtain a greater profit compared to their competitors, as well as to quickly read the market conditions and implement the right marketing plan (Adisaksana, 2022; Distanont & Khongmalai 2020). It is expressed in superiority over the competitor in the market or a market segment. It provides an opportunity for the company to achieve the expected level of profit and have stable market positions (Nikolov, 2013, p. 566).

### **Impact of digitalization on the competitiveness of entrepreneurial business**

Various factors influence competitiveness. It is important to note that the technical and technological development and continuous innovation in terms of products, improvement of processes and organization, are related to the degree of company competitiveness. Kotler (2001) points out that as a result of the accelerating pace of change, companies must be aware of the influence of global forces, technological developments and the trend towards deregulation of the economic sector, which offers endless opportunities. In this sense, he reveals that technology as one of the most powerful forces changes human life, markets and people's needs.

Therefore, along with the technological changes companies have to consider the opportunities for innovation (Kotler, 2001).

Porter and Drucker also highlight the role of technology and innovation in the development of companies and their market positions. Porter (1990) emphasizes that national competitiveness depends on the potential of its industrial sector for innovation and technological development. Drucker distinguishes the importance of innovation for the creation of competitive potential of the entrepreneurial business based on existing or new resources and knowledge (Drucker, 1994) and points out that it is the innovation that allows businesses to respond creatively to competitive threats and opportunities (Drucker, 1985).

An indisputable fact is that in the conditions of ever-increasing competition, one of the main sources of enterprises' competitiveness is innovation. It plays a pivotal role in preserving and improving the market positions of companies. The digitalization of business as a product of the third and especially fourth industrial revolutions is the latest generation of innovation. Back in 2001, Kotler reveals the defining role of the Internet in facilitating the process of entry of new types of competitors in the market and intensifying competition in many markets and in many industries to extremely large proportions (Kotler, 2001).

Digitalization with its characteristics contributes to the continuous increase in competitiveness at various levels - national, regional, company, and also in terms of the product. In this regard, Adisaksana (2022, p. 622) points out that the creation of a competitive advantage in the era of Industry 4.0 must be accompanied by digital transformation.

The progressive introduction of artificial intelligence defines the beginning of the fifth industrial revolution and brings new challenges for entrepreneurial companies. The rapid technological development leads to such a transformation in business, which necessitates the need to react quickly and use the advantages of digital technologies and artificial intelligence for the overall improvement of company activities and to increase competitiveness. The experience so far shows that the companies that were able to react promptly and switched to the application of digital technologies, formed new advantages - technological and economic. The acquired technological superiority based on digitalization is a major factor in the formation of companies' competitive advantages. Taking this fact into account, the documents of the European Committee promote digitization as an important tool for increasing the business competitiveness in the global economy and approve a toolkit for assessing the degree of application of digital technologies in business - the DESI index (Digital Economy and Society Index). This index monitors the progress of the EU countries in digitization, and on this basis, they can identify the priority areas and actions in the implementation of the digital policy.

The review of the scientific literature shows considerable interest in the issue of the impact of digitalization on competitiveness and competitive advantages both at

the macro-level, at the meso- and micro-level. For example, Adamik and Sikora-Fernandez (2021) reveal the relationship between digitization and national competitiveness in the context of the fourth industrial revolution. Nikolov, Boevski et al. (2022) and also Shehadeh, Almohtaseb et al. (2023) specify the problem for a separate industry. Other authors, such as Clemons (2019), Dragičević and Bošnjak (2019), Lionand da Silva (2021), Winarsih and Fuad (2021), Marx, de Paula and Uebernickel (2021), Xue, Zhao and Tan (2022), Yuliantari and Pramukki (2022), Kyurova, Zlateva et al. (2023), Tana and Chai (2023) examine firm competitiveness.

Some researchers state in their works the positive impact of digital transformation on competitive advantages. In this regard are the publications of Schwertner (2017), Adamik and Nowicki (2018), Clemons (2019), Adamik (2019), Marx, de Paula and Uebernickel (2021), Deszczyński (2022), Alabdali and Salam (2022), Kyurova (2022), Xue, Zhao and Tan (2022), Yuliantari and Pramukki (2022), Faraj and Leonardi (2022), Adisaksana (2022), Shehadeh, Almohtaseb et al. (2023), Masoud and Basahel (2023), Kyurova, Zlateva et al. (2023), Okorie, Russell et al. (2023), Agustian, Mubarok et al. (2023); Tana and Chai (2023) and other authors.

The cited authors examine the relationship between digital transformation and competitiveness, as well as the construction of competitive advantages from various aspects, related to innovation, entrepreneurial orientation, achieving sustainability, business performance and expansion, internationalization and globalization, strategies, methods, resources, the tools, techniques, methods of creating competitive advantages, business models, internal processes and human resources.

Innovations in the area of digital technologies are cited as the basis for achieving high competitiveness and creating competitive advantages in the developments of Shehadeh, Almohtaseb et al. (2023), Leão and da Silva (2021), Agustian, Mubarok et al. (2023), Masoud and Basahel (2023) and other authors. More specifically, Leão and da Silva (2021) reveal the positive impact of business digitalization on its competitiveness, putting innovation in the first place in the spheres of this impact. Shehadeh, Almohtaseb et al. (2023) also consider that innovation is a linking element between digitization and competitive advantage. The same authors, based on their research, conclude that digitalization also affects entrepreneurial orientation, which also binds digital transformation and competitive advantage. Agustian, Mubarok, et al. (2023) emphasize that competitive advantage is a product of innovation and, at the same time, a result of the transformation of applied operating models, which provides flexibility and foresight in the conditions of digitization. Masoud and Basahel (2023) prove that digital transformation and IT innovations positively affect the company's performance and have a significant role in achieving business goals, obtaining differentiation and competitive advantage.

The analysis of the studied literary sources shows that the achievement of business sustainability based on digitalization and its positive impact on competitiveness and on the formation of competitive advantages is the subject of the

developments of Adamik and Sikora-Fernandez (2021), Xue, Zhao and Tan (2022), Okorie, Russell et al. (2023), Kyurova, Zlateva et al. (2023). Adamik and Sikora-Fernandez (2021) analyze the possibilities of intelligent organizations to be a source of competitiveness and sustainable development of nations within the framework of Industry 4.0. - more specifically to EU member states and the EU itself, in response to the 17 objectives of The United Nations in The 2030 Agenda for Sustainable Development (2015), as well as the challenges and requirements for them. Xue, Zhao and Tan (2022) examine the relationship between digitization and the sustainable competitive advantage of enterprises. Okorie, Russell et al. (2023) draw attention to the role of digital technologies in achieving net zero production emissions and a circular economy (CE) and building a sustainable resource-based competitive advantage for manufacturing enterprises (RBV). Kyurova, Zlateva et al. (2023) also emphasize the key importance of digital technologies for achieving competitive advantages, high competitiveness and long-term business sustainability in the conditions of unpredictability of the business environment and global competition.

In the context of digitalization and competitiveness, Schwertner (2017) examines the possibilities for business expansion, internationalization and globalization. According to him, companies that make progress in digitalization strive for a new level of competitive advantage, realize greater revenues and have a higher market valuation compared to competitors without a vision in this direction. The same author points out that the digitization of production processes provides opportunities for expanding business internationalization and globalization in traditional sectors of the economy, and for maintaining competitiveness in local and international markets.

The researched sources also emphasize the strategies, tools, techniques, business models, resources, internal processes and methods for creating competitive advantages based on digital transformation. These questions are addressed by Dragičević and Bošnjak (2019), Adamik (2019), Clemons (2019), Adamik and Nowicki (2019), Mironova and Galyarsky (2020), Winarsih and Fuad (2021), Masoud and Basahel (2023), as well as by Agustian, Mubarak, et al. (2023). It is highlighted that the new requirements for companies in the era of the Fourth Industrial Revolution (4.0.) are related to them. In this connection, Adamik (2019) focuses attention on the most effective methods for creating competitive advantages adequate to the new reality. Digitalization is also seen as a particularly significant challenge for companies to discover the best way to build competitive advantages, and basic requirements for the formation of these advantages are derived (Adamik, Nowicki, 2018).

Dragičević and Bošnjak (2019) reveal the positive changes occurring in business entities as a result of digital transformation, including the technologies used to change strategies, value streams, operations and business models. Clemons (2019) describes information-based business models for achieving competitive advantage, maintaining the competitiveness of companies and creating profitable businesses in the conditions of digital transformation. According to Mironova and Galyarsky

(2020), digital transformation contributes to the optimization of internal company processes, to the reduction of costs through the introduction of automation and to the satisfaction of personnel. Winarsih and Fuad (2021) state that as a result of digitalization, business processes will become efficient and entrepreneurs will be facilitated in making strategic decisions. Masoud and Basahel (2023) highlight the importance of digitalization for developing an effective competitive strategy. The importance of digital transformation in the process of creating competitive strategies, the way companies work and the establishment of more efficient and flexible internal processes is also a focus of Agustian, Mubarak et al. (2023).

In the context of the above, the impact of digitalization on competitiveness in terms of solving some problems of competitiveness management is highlighted. Nikolov, Boevski et al. (2022) reveal that digitization and artificial intelligence can make a significant contribution to solving issues in this area such as increasing productivity, realizing economies of scale, increasing the quality of manufactured products, creating new values along the chain (new business models), increasing profitability, promoting innovation and marketing activities, technological transfer, valuing new knowledge, obtaining objective information about market trends when planning activities, easier forecasting of market prices for both production resources and the final product, minimizing the cost of input resources for production, as well as reducing the impact on the environment.

Another aspect of digitalization's impact on competitiveness and competitive advantage is related to customer needs and customer attitudes. In this sense, the publications of Adamik (2019), Dragičević, Bošnjak (2019), Mironova, Galyarsky (2020), Winarsih, Fuad (2021), Deszczyński (2022), Agustian, Mubarak et al. (2023). In the context of increasing company competitiveness, the mentioned authors emphasize the importance of digital transformation to establish and better understand the needs of customers (Dragičević, Bošnjak, 2019; Adamik, 2019), to import the changes in the methods and approaches of companies' work with customers, to respond to consumer dynamics imposed by the rapid introduction of new technologies and their impact on the behaviour of consumers, who are increasingly looking for information about products online (Agustian, Mubarak, et. al., 2023) and also to increase their satisfaction (Winarsih, Fuad, 2021).

In some of the analyzed sources, the question of creating competitive advantages in the supply chain and public procurement based on digital transformation is also considered. In this sense, Alabdali and Salam (2022) prove the existence of a significant influence of digitalization to create a competitive advantage throughout the supply chain. Tana and Chai (2023) reveal that Industry 4.0 provides an opportunity for companies to be proactive in the supply chain. They explore the relationship between supply chain concentration, digital transformation and corporate competitive advantage and substantiate the moderating role of digital transformation in this relationship, which is a prerequisite for improving firms' competitiveness.

Some of the studied developments are dedicated to the relationship between digital transformation and competitiveness in small and medium-sized enterprises (SMEs) (Winarsih, Fuad, 2021; Marx, de Paula, Uebernickel, 2021; Kyurova, 2022; Yuliantari & Pramukki, 2022; Adisaksana, 2022). Based on the crisis as a result of Covid 19, Winarsih and Fuad (2021) point out that SMEs need to bring a technological transformation to business management, as digitalization will enable them to compete intensively and guarantee competitiveness. Yuliantari and Pramukki (2022) also present digitization as the best solution for increasing the competitiveness of SMEs in the context of the Covid 19 pandemic.

According to Marx, de Paula and Uebernickel (2021), digital transformation is a strategic imperative for the competitiveness of SMEs in the modern conditions of continuous changes in the business environment. The authors prove the existence of a connection between the dynamic change capabilities of companies and their digital maturity and reveal their importance for the formation of competitive advantages and the increase of competitiveness. According to Adisaksana (2022), competitive advantage depends on the degree of digitization and digital transformation will contribute to the superiority of the enterprise over competitors. Kyurova (2022) emphasizes the importance of digital transformation for the construction of sustainable competitive advantages and the adaptation of small and medium-sized companies to changes in technological development and the environment.

### **Conclusions from the analysis of literary sources**

From the analysis of the opinions in the cited literary sources, it is evident that digitization as a new phenomenon in the current stage of globalization and rapid entry of new technologies into business plays a decisive role for its competitiveness. Considering that innovation is what defines entrepreneurship, in our opinion, it can be pointed out that the application of digital technologies is one of its main advantages in the era of accelerated digitalization.

For the achievement of higher competitiveness and the creation of sustainable competitive advantages, such characteristics of the company, formed based on digital transformation, are important, such as: the increase in productivity, efficiency and quality; the development and use of new types of business models; the formation of innovative thinking and striving for the implementation of innovations; the new look at strategies, work methods and tools used; improved communications within the company and with its counterparties and clients; the saving of time for the execution of internal company processes and operations and for the implementation of the relationship with customers; new methods and approaches for contacting customers and, on this basis, reaching a wide range of customers and markets; the implementation of digital products and the improvement of the company's products as a result of the application of digital technologies; the positioning of the company, apart from the national, also on the international and global markets and the improvement of its market positions in these markets; the increased flexibility and



adaptability to dynamic changes in the unpredictable economic and political environment, as well as to the accelerated processes of technological development, etc.

### Analysis of survey results

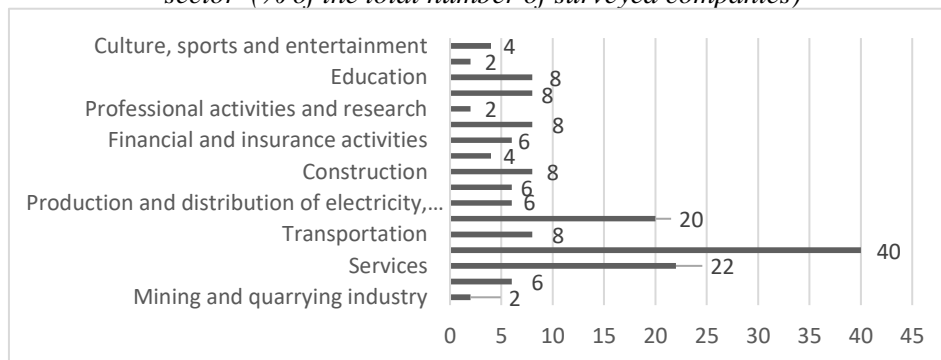
For the practical establishment of the impact of digitization on the competitiveness of the entrepreneurial business, a survey was conducted using the respondent method. In a three-month period (from December 1, 2023 to February 29, 2024), information was collected on 85 Bulgarian companies of different sizes. Statistical methods were used to study the impact of the digitization of company activity on the competitiveness of companies and their products.

In the process of analyzing the results of the survey to clarify the profile of the investigated enterprises, a statistical distribution was made according to the following indicators: size based on the number of people employed; the sector in which they operate; and place of company's registration. On this basis, the following profile of the researched companies was determined:

- Size of companies according to the number of employees: 22% of the companies are in the group of micro-enterprises with up to 9 employees, 32% are small companies with 10 to 49 employees, 26% are medium-sized companies with 50 to 249 employees and 20% are in the group of large companies with over 249 employees.

- Sector in which companies operate: According to the survey data, some of the surveyed companies operate in several sectors. The results show that the largest share of surveyed enterprises is from the trade sector (40%), followed by the "Services" (22%) and "Tourism, hospitality and catering" sectors (20%). The lowest share in the total number of observed enterprises is those from the spheres of "Health care and social work", "Professional activities and scientific research" and "Mining and quarrying industry" (all with 2% each) (see figure 1).

*Figure 1. Relative shares of the surveyed companies according to the economic sector (% of the total number of surveyed companies)*



Source: Own survey and calculations.

*Note:* Some of the surveyed companies gave more than one answer because they operate in several economic sectors.

- Registration of companies: The studied companies are located in four out of a total of six statistical regions of Bulgaria. The largest part of them are registered in the South-West region - 70% of all companies, followed by those from the North-West region - 18%. 8% of the total number of companies are registered in the North-East region and 4% in the North-Central region.

The main topic of the survey is the impact of digitalization on the competitiveness of the enterprise and its products. In order to clarify that, questions related to establishing the state of digitalization in the enterprise, the applied strategies to increase competitiveness and the competitive advantages of the company are posed.

The following approach was adopted for the analysis of the obtained results:

- first, based on the total number of researched companies, the relative shares of the evaluations for the specific indicator were calculated and presented graphically in the relevant figures, which makes it possible to establish the general state of the problem;

- second, to achieve greater detail for each of the indicators based on a statistical distribution of the obtained results, the relative shares of the assessments for the enterprises according to their size were determined.

The state of digitalization in the surveyed companies is evidenced by the results of the survey, which reveal the degree of computer security for the implementation of company activities (see Fig. 2).

*Figure 2. Relative shares of assessments of the state of digitalization in the studied enterprises (%)*



*Source:* Own survey and calculations.

*Note:* For some of the indicators, more than one answer was received, since the availability of computer equipment and information technologies imply their use in several areas.

The analysis shows that out of all 85 monitored enterprises, only 4% do not have computers and do not use information technology. They belong to the category of micro and small enterprises, while all large companies have computer equipment and use information technology.

Figure 2 shows that there are enterprises in which computers were purchased only for the administrative team - they are 28% of the total number of surveyed enterprises. Based on the number of companies in the group, micro-enterprises (with up to 9 employees) have the lowest degree of implementation of information technologies in their activities - 43%. The lagging behind is also significant for small companies - in 29% of them, computer equipment is provided only for the administrative staff. As the size of the enterprise increases, the result improves, as the share of companies provided with computers only for administrative activities decreases - respectively 21% for medium-sized companies and 7% for large ones. This result shows a better understanding of the need and benefits of digitalization of company activities in these groups of enterprises and provision of a wider range of activities with information technology.

The assessment of the state of digitalization shows that in 30% of the enterprises, systems have been introduced to serve the activities of some of the departments - financial and accounting, production, warehousing, transport and logistics, etc. The distribution of companies according to their size in relation to the number of enterprises in this group shows the following: 7% are micro-enterprises, 33% - small enterprises, 40% - medium and 20% are large enterprises.

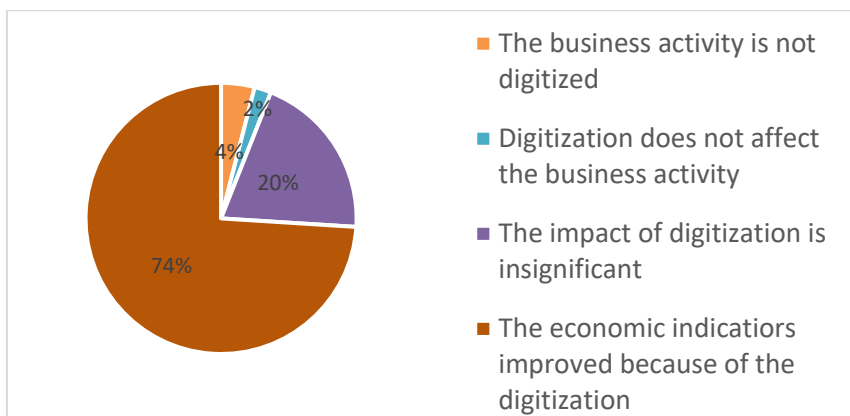
In 28% of the companies surveyed, a network system is used to facilitate coordination between employees. According to their size, 14% of them are micro-firms, 29% - small, 36% - medium and 21% - large firms.

A significant part of the enterprises has digitalized their activities due to the fact that they carry out online trade - they make up 66% of their total number. The analysis shows that online trade is most prevalent in small businesses - 36.4% of those making such sales are from this category. Of the remaining enterprises carrying out online trade, 30.3% are medium-sized, 21.2% - large companies, and last in this ranking are micro-enterprises - 12.1%.

As can be seen from Figure 2, part of the companies (28%) is high-tech and their activities are fully digitalized. This trait is most pronounced in large firms, which make up 42.8% of high-tech firms. From the same group, 28.6% are in the category of medium-sized enterprises, while in small and micro-enterprises high technologies are poorly represented - these companies each have a 14.3% share in the number of enterprises with high technologies.

As part of the study, an assessment of the impact of digitalization on the state of the enterprise was also made (see Fig. 3).

*Figure 3. Relative shares of assessments of the impact of digitalization on the state of the enterprise (%)*



Source: Own survey and calculations.

The assessment of the impact of digitalization on the state of the enterprise reveals that a significant part of the received answers shows the positive role of digital transformation on the activity of enterprises and the improvement of economic indicators - 74%. It has the greatest importance for small enterprises, whose relative share based on their total number according to the assessment is 29.8% and for medium-sized enterprises - 27%. They are followed by micro-firms and large enterprises with equal relative shares of positive evaluations (21.6% each).

The share of responses according to which digitalization has no impact is insignificant - 2%. The estimate is higher, revealing the presence of an influence, which, however, is not of significant importance for the company's activity, since only some of the activities are digitalized - it is characteristic of 20% of the investigated enterprises.

At the same time, the results show that in 4% of the companies the activities are not digitalized. They belong to the group of micro-firms and small enterprises, and their shares correspond to enterprises that do not have computers and do not use information technology, which is the main reason for the lack of digitalization of activities.

The analysis of the survey results shows that digital transformation is indicated as one of the significant strategies for increasing competitiveness for 36% of the companies. It ranks third in responses after the strategy aimed at satisfying customers (76%) and that of achieving high quality (70%). Following it with lower values are

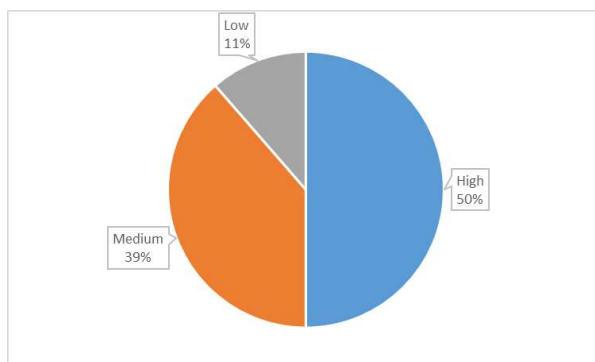
the estimates for the strategies related to offering specialized products (36%), low prices (34%) and cost minimization (12%).

According to the obtained estimates, the digitization strategy is most important for medium-sized enterprises (39% of the estimates). Micro-firms and large enterprises have equal shares (22% each), and small firms have a relative share of 17%.

In order to establish the influence of digitalization on competitiveness, an assessment was made according to the indicators "competitive position in the domestic market as a result of digitalization" and "competitive position in the foreign market", and three degrees were defined - low, medium and high market position (see figures with numbers 4 and 5).

Figure 4 reveals a significantly predominant share of high and medium scores for the indicator "competitive position in the internal market as a result of digitalization" compared to a relatively small percentage of low scores.

*Figure 4. Relative shares of assessments of the competitive position of companies in the domestic market as a result of digitalization (%)*



Source: Own survey and calculations.

Table 1 shows the relative shares of the obtained evaluations for the competitive position of the companies in the domestic markets depending on the size of the enterprises and based on their total number according to the individual degrees of the evaluation scale.

*Table 1. Relative shares of the estimates for the competitive position on the domestic market according to the size of the enterprises - %*

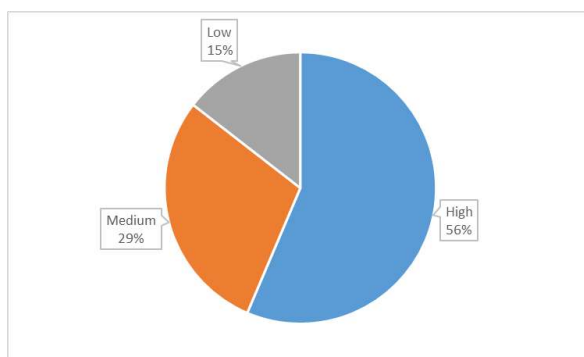
Assessment	Size of the enterprise				Total %
	Micro (%)	Small (%)	Average (%)	Large (%)	
High	22,7	22,7	36,4	18,2	100
Average	23,5	41,2	23,5	11,8	100
Low	-	-	20	80	100

Source: Own survey and calculations.

The results of Table 1 show that, according to the obtained distribution, the share of high ratings is the largest for medium-sized enterprises, and the largest share of average ratings is for small companies. Micro-firms and small enterprises did not receive negative evaluations on this indicator. Low scores on the indicator are distributed among medium-sized and large enterprises.

The results presented in Figure 5 for the evaluations of the competitive position of the firms in the foreign market as a result of digitalization show a distribution revealing a significant preponderance of high evaluations over medium and especially over low evaluations.

*Figure 5. Relative shares of assessments of the competitive position of companies in the foreign market as a result of digitalization - %*



Source: Own survey and calculations.

The distribution of the relative shares of the evaluations for the competitive position in the foreign markets as a result of digitalization according to the size of the enterprises and based on the total number of enterprises according to the corresponding level of the evaluation scale is presented in Table 2.

*Table 2. Relative shares of assessments for the competitive position on the foreign market according to the size of the enterprises (%)*

Assessment	Size of the enterprise				Total %
	Micro (%)	Small (%)	Average (%)	Large (%)	
High	16	32,3	19,4	32,3	100
Average	18,7	37,6	18,7	25	100
Low	25	12,5	37,5	25	100

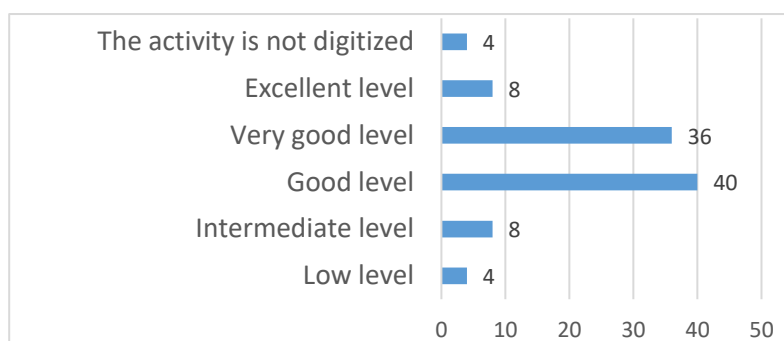
Source: Own survey and calculations.

The data from table 2 reveals that based on the total number of companies that received a high rating, the values for small and large companies, which have equal

shares, are relatively high. At the same time, a greater part of small companies are evaluated with the average degree of the scale, and the share of negative evaluations is the largest for medium-sized companies.

The results of the survey allow to establish the level of competitiveness of the enterprises' products as a result of digitalization (see figure 6). There are five evaluation levels for this indicator – low, medium, good, very good and excellent level. 4% of enterprises whose activities are not digitized are also reported.

*Figure 6. Relative shares of assessments of the level of competitiveness of enterprise products as a result of digitalization (%)*



Source: Own survey and calculations.

The analysis of the assessments shows that 4% of the micro and small companies are characterized by a low level. From the figure, it can be seen that the most are the enterprises that are evaluated with a good level of competitiveness of their products as a result of digitalization. Among them, the largest share of assessments is for small enterprises - 45%. The next position of 30% is given to medium-sized companies. With smaller shares are good ratings for large companies (15%) and for micro-enterprises (10%).

Firms assessed as having a very good level of product competitiveness are distributed according to their size as follows: the largest share is small enterprises (38%), 28% are large enterprises, and 17% are micro- and medium-sized enterprises companies.

Relatively smaller are the relative shares of enterprises with average and excellent evaluations of the level of competitiveness of products. The level of the indicator for 25% of micro-enterprises, 25% of medium-sized companies and the same percentage of large companies is defined as average. 50% of medium-sized enterprises and 25% of micro- and large companies are characterized by an excellent rating.

## **Conclusions from the analysis of the survey results**

The analysis of the results of the survey reveals that, despite the small share of companies that do not have computers, the level of introduction of modern information technologies in company activity is still not high enough. There is a considerable share of those companies that have introduced and use computers only for the administrative staff and for the activities of some of the departments. This finding is particularly important for micro-enterprises, which are significantly lagging behind. The situation is similar in relation to network connectivity, facilitating communications in companies, which should also be the focus of entrepreneurs' attention. In contrast to large companies, which have the largest relative share in terms of the use of high technologies and, on this basis, fully digitized activity, in the other categories of enterprises (micro-, small and medium) high technologies are poorly represented. This lagging also leads to a weaker digitization of the activity and, accordingly, to lower competitive positions and economic results.

Considering these results, in our opinion, entrepreneurs from all categories of enterprises should pay serious attention to the process of wide introduction of modern information and communication technologies and provide conditions for digital transformation of company activities. This step is extremely important for the better organization of the activity, the optimization and increase of the flexibility and efficiency of the processes in the companies, the implementation of new business models, the achievement of long-term sustainability, the increase of quality, the improvement of financial and economic indicators and ultimately the achievement of entrepreneurial business goals. Moreover, the survey proves in practice the indisputable positive role of digital transformation for the development of entrepreneurial business and the improvement of its economic indicators. It is also evaluated as an important strategy for increasing the competitiveness of companies, and therefore we believe that the digitalization strategy should become part of the strategic approaches of companies as a priority.

The importance of online trade is also visible from the analysis. It is an important part of the marketing strategies of small businesses and to some extent medium-sized enterprises, while large and micro-enterprises still lag behind in this regard. With a view to better perform on the domestic and foreign markets and as a valuable element of the means to improve competitive advantages and competitive positions, we consider it necessary for e-commerce to find a wider application in the marketing activities of the investigated companies.

The results for the evaluations of the indicators "competitive position in the domestic market" and "competitive position in the foreign market" as a result of digitalization reveal that the digitalization of company activity has played a significant role in increasing the competitiveness of the studied companies, but the best competitive positions of internal markets as a result of digitization have medium-sized enterprises, and external markets have small and large enterprises.



The analysis reveals that regarding the level of competitiveness of products as a result of digitization, good and very good ratings prevail. This result highlights the aspiration of a significant part of the surveyed enterprises to offer the national and global markets quality and innovative products based on digital technologies, capable of competing in the conditions of global digital transformation. At the same time, the presence of companies with lower ratings is an indicator of the need to accelerate digital transformation processes in order to increase product competitiveness.

The general conclusion is that the digitalization of the company's activity has not yet been sufficiently accepted by the studied enterprises as an important condition for the improvement of the company's indicators and hence for their presentation on the national and global markets. For this reason, in connection with the increasingly accelerated advance of digitalization in all processes and spheres of activity on a global scale, in our opinion, the necessary measures should be taken in these companies to expand the implementation of digital technologies in more activities with a view to ensuring a higher competitiveness.

### **Conclusion**

Based on the analysis of the literary sources and the results of the conducted survey, it can be concluded that in the modern conditions of accelerated technological changes and rapid introduction of digital technologies in all spheres of socio-economic life, the digitalization of business is one of the most the important factors for increasing its competitiveness. It acquires an important strategic importance for the development of entrepreneurial companies. Thanks to it, they gain significant superiority over competitors, achieve stability and get the opportunity to realize higher results from their activities.

With the advent of artificial intelligence and the gradual entry of society into the era of the fifth industrial revolution, the horizons and opportunities of companies are expanding even more. However, this, in turn, imposes the need for business to be transformed in such a way that it can even more skillfully take advantage of the benefits that digital technologies provide for the acquisition of a new type of competitive advantages and higher competitiveness.

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