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DETERMINANTS OF DIGITIZATION IN SMES*

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Abstract. The aim of the study is to present the conditions for introducing digitization in enterprises of the Polish SME sector, with particular emphasis on the changes brought about by the pandemic. The study analyses the degree of digitization which has taken place in the Polish economy in comparison with the EU average, with particular emphasis on SMEs, by making recourse to the Digital Economy and Society Index (DESI). This study presents the results of my own research on the determinants of digitization in enterprises. The subject of the research was a group of enterprises classified as SMEs in Poland. The survey was conducted in March 2021 using electronic tools in the form of an online survey. After substantive and logical verification, 120 questionnaires were selected for further analysis. The analysis of enterprises from the SME sector showed that over 44% of enterprises operate on the basis of action plans not exceeding one year. This type of planning was particularly common in micro-enterprises employing up to 10 people and running a service activity. Digitization acted as an important process in the activities of the analysed enterprises. Every fifth surveyed enterprise had plans to invest in software and digital solutions for enterprises; and wanted to implement these plans within the next year. The most common area of activity and implementation of digital solutions was sales and distribution. This was due to the need during the pandemic to build new distribution channels for products or services through the increasingly important e-commerce market. Research has shown that the Covid situation has led to significant changes taking place in the economy of enterprises. More than half of the analysed enterprises indicated a lack of financial resources as a barrier when introducing cloud solutions.

Keywords: outsourcing; sustainable development; core competencies; company management

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1. Introduction

Given the changing economic environment, enterprises have had to adapt to the standards of new digital reality. In order to make decisions, they require digital tools that are essential for managing an ever-increasing amount of data and the carrying out of analysis. The new business support tools are mainly digital (Villa & Taurino, 2019; Oliveira et al., 2021). This means that enterprises must become familiar with digital solutions, as over time they will not be able to communicate in a fluid and effective manner with either suppliers or customers (Genest & Gamache, 2020; Ardito et al., 2021).

Many enterprises are still operating in a state of uncertainty; and postponing decisions when it comes to digitalisation expenditure, so it is worth stressing the necessity and benefits of digitization over the long term (Doyle & Cosgrove, 2019; Zheng et al., 2019). Enterprises must move from the old order of information flow in the physical dimension in the form of cash, checks, invoices, consignment notes, reports, meetings, calls to the new economic order, where information in all its forms is digital (Siedler et al., 2019; Ballestar et al., 2020). The modern economy is increasingly a digital economy that allows people to communicate with each other in order to optimize their potential (Gamache et al., 2019; Bouwman et al., 2019).

The current pandemic has shown how important digital resources are for a country's economy. Networks, connectivity, data exchange, artificial intelligence as well as basic and advanced digital skills support the economy and facilitate the functioning of enterprises. One of the few positive economic effects of the pandemic has been the increased awareness of the importance of digitization on the part of SMEs (Gavrila Gavrila & de Lucas Ancillo, 2021). Among the enterprises able to prosper during the pandemic have been those related to the use of digital technology. For most SMEs, the organization of work with the use of online tools has been of key importance (Oliveira et al., 2021). Even in industries that have been hit hard by the pandemic, such as transport and the entire automotive and service industries, digitization processes have accelerated, revealing new opportunities for business development by way of remote work organization. This has created a huge demand for products and services related to the digitization of processes (Ardito et al., 2021).

Digitization also has an impact on sustainable development (Bai et al., 2021; Oliveira et al., 2021; Kayikci, 2018; Korsakienė et al., 2014; Tvaronavičienė et al., 2020). Thanks to digitization, it is possible to smoothly transfer to work remotely from home in critical situations. Such challenges are created by the current epidemic situation. This affects the limited number of commuting, and thus reduces carbon dioxide emissions. In the business environment, digitization reduces the use of paper and reduces the use of chemicals related to document printing. It is then that the ecological awareness grows (Ghobakhloo, 2020; Vásquez et al., 2018; Isensee et al., 2020).

The aim of the study is to present the conditions for introducing digitization in enterprises of the Polish SME sector, with particular emphasis on the changes brought about by the pandemic. The study analyses the degree of digitization which has taken place in the Polish economy in comparison with the EU average, with particular emphasis on SMEs, by making recourse to the Digital Economy and Society Index (DESI). The results of my own research were also used in the carrying out of this analysis.

Information from the literature on the subject and a preliminary analysis of the available data of mass statistics provide the basis for the formulation of the following research hypothesis: that the crisis caused by the pandemic revealed a need to accelerate the digitization of enterprises, in spite of the fact that the crisis had restricted the financial resources required for its implementation.

The conducted research will significantly contribute to our perception of the low level of digitization of Enterprises in the SME sector in Poland. The findings here can be a useful source of information for developing effective business development strategies.

2. Literature review

The concept of digitization has been treated in various ways. It is a vague concept, defining various areas of social life, focusing on digital media and electronic communication. In the literature on the subject C. Dellarocas, consider digitization in terms of three features: creating value at the new frontiers of the business world; optimizing processes that directly affect the sum of customer experiences gained from contact with the enterprise or product; and building foundations supporting all business activities (Dellarocas, 2003). According to R.A. Schallmo and G. Williams, digitization means fundamental changes in the way that business operations are carried out and business models function, implemented on the basis of new knowledge acquired by digitization activities (Schallmo, Williams, 2018). On the other hand, M. Moore points out that the goal of digitization is to create and offer new value to customers, and not only to improve on, or ameliorate, that what they have already been in receipt of in terms of delivery (Mazurek, 2019; Balagué & Valck, 2013).

At the same time, the literature on the subject recognizes the potential of digitization, considering it a phenomenon that is able to revolutionize markets at the level of entire industries or sectors. And yet, as L. Zacher points out, digitization is a process that is bringing about radical changes at the level of tasks, professions, processes, organization; and the lives of people (Bartosik-Purgat, 2017).

Digitization conveys many benefits. It influences the efficiency, quality and stability of implemented processes, thus achieving a higher level of delivery. It also enables better control over operational activities and the effects of these activities. The benefits in the area of interaction with external stakeholders also include shorter response times and better customer service (Mazurek, 2019).

The digitization of enterprises is a means of achieving a more flexible and competitive production, one that is adjusted to the modern realities of the emerging digital world. This digital transformation is defined as the exploitation of new technology aimed at radically improving production and increasing the expansiveness of the enterprise (Emara & Zhang, 2021; Brozzi et al., 2021).

Although the digitization of enterprises is technology based, the concept of digital transformation is not so much about technology as it is about people. The conditions for a successful digital revolution in Polish SMEs has entailed changes in the following areas: infrastructure, business environment and digital competences of entrepreneurs and employees (Śledziwska et al., 2015).

R. Sobiecki draws attention to the interdependence of the digitization of enterprises with the fourth industrial revolution (Poniatowska-Jaksch & Sobiecki 2016). It is also referred to as Industry 4.0 and it has contributed to the introduction of enormous changes in technologies that form the basis of the activity of a modern enterprise. Whereas R Sobiecki confers on the structure of Industry 4.0 such elements as: cloud computing, Big Data, the Internet of Things, and various types of autonomous solutions. One of the key building blocks of the Fourth Industrial Revolution, however, has been digitization (Poniatowska-Jaksch & Sobiecki 2016).

Research conducted by Deloitte shows that there has been a shift from the traditional approach to the Enterprise as a closed entity with a rigid organizational structure, towards the development of organizational systems and networks that will be both flexible and agile. This has been done by replacing rigid, hierarchical structures with networks of teams authorised to take action (Deloitte, 2017).

According to D. Tapscott, changes in management methods caused by digitization, accompanied by the development of information technology and computer networks, trigger a multi-layer transformation of the economic landscape, taking place in five main areas: accessibility of partners, new interdependencies, inter-organisational metabolism, cooperative competencies, inter-organization value creation (Tapscott, 1998).

K. Bondyra has noted that micro, small and medium-sized enterprises in Poland, which constitute the backbone of the economy, have not developed enough to implement profitably industry 4.0 solutions, to include process automation (Kolla et al., 2019; Bondyra & Zagierski, 2019). Due to a lack of human resources, SMEs are often lacking in terms of financing, planning, control, training and the adaptation of information systems (Eller et al., 2020; Kumar et al., 2020; Amaral & Peças, 2021).

According to K.C. Laudon and J.E. Laudon, the ongoing digital transformation of enterprises is all about remote work opportunities (employee mobility), online activities (e-business, e-commerce), low transaction costs, and coordinated activities; all enabled by the digitization of the information sent and the possibility of providing services by electronic means (e-payments), not to mention the possibility of confirming the trustworthiness of documents (Laudon & Laudon, 2000; Vásquez et al., 2018).

The importance of digital techniques in the case of enterprises is also emphasised by C.K. Prahalad and M.S. Krishnan, according to whom, the transformation brought about by digital technologies, ubiquitous connectivity and globalization has radically changed enterprises, particularly in terms of the way they create value. This has necessitated the use of resources from various sources of the global ecosystem. This means that accessing resources, and not having them, has become the focus (Prahalad & Krishnan, 2008). The size of an enterprise and the size of its possessed resources are no longer decisive. Network affiliation is now of key significance.

There is a gap in the currently available literature concerning the determinants of digitization in enterprises during the Covid 19 epidemic. This situation makes it necessary to adapt to new requirements both on the part of enterprises from the SME sector and organizations cooperating with them.

3. Material and methods

Analysing the literature on the subject and numerous publications, reports and studies, one can find many ways for researching and evaluating the digitization of the economy. Proposed methodologies are varied, with differing research needs. Further considerations should be led by those measures that are used in cyclical research with the use of the DESI index (Rafael et al., 2020).

The DESI index measures and evaluates five categories of the digital economy: connectivity, human capital, citizen use of internet services, digital technology integration by businesses and digital public services, with a total of 34 indexes. Their compilation in the form of a report allows for the identification of priority areas of the digital economy of the EU states that require specific actions and investments. (Ulas, 2019; Khayer et al., 2020). To achieve the goal of this study, it is important to analyse the results in the field of digital technology integration, which assesses the degree of digitization of enterprises and e-commerce. The measured area of DESI digital technology integration covers in detail:

- electronic information exchange (% of enterprises),
- social media (% of enterprises),

- Big Data (% of enterprises),
- cloud (% of enterprises),
- SMEs selling online (% of SMEs),
- e-commerce turnover (% of SME turnover),
- cross-border online sales (% of SMEs) (DESI Report, 2020).

This study presents the results of my own research on the determinants of digitization in enterprises. The subject of the research was a group of enterprises classified as SMEs in Poland. The criterion for the selection of objects was the fact of running an enterprise classified as an SME and the willingness to fill in the questionnaire. The survey was conducted in March 2021 using electronic tools in the form of an online survey. The survey questionnaire consisted of single or multiple choice questions. For some questions, it was also possible to provide a comment on the question posed. After substantive and logical verification, 120 questionnaires were selected for further analysis. The enterprises were represented by persons holding managerial or specialist positions.

The studied group was diversified in terms of the number of employees. The group of micro-enterprises employing up to 10 people was the most numerous, constituting 52.5% of all respondents. Enterprises employing from 11 to 50 people accounted for 28.3%. The relatively smallest group were enterprises employing 51 to 250 people, constituting 19.2% of all respondents. This was due to the similar structure of individual enterprises in the SME group in Poland.

Another factor differentiating the surveyed entities was the type of business. The dominant group were entities running service activities – it constituted 64.2% of the surveyed entities. Processing activity was conducted by 18.3% of the analysed entities. The group of entities conducting industrial activity was only slightly smaller – it accounted for 17.5% of all analysed entities.

When analysing the entities according to the location of the enterprise's offices, one can notice a clear advantage enjoyed by entities operating in cities of up to 100,000 residents. They constituted 55.0% of all surveyed enterprises. The share of enterprises located in cities with a number from 100,000 to 500,000 residents accounted for 20.0% among analysed entities. 14.2% of enterprises were located in rural areas. The least numerous was the group of enterprises with their headquarters located in cities with more than 500,000 residents. Their share was 10.8% of all surveyed entities.

4. Results and discussion

The DESI Index allows for a comparison of the digital maturity of individual EU States. Their progress with regard to digitization using this index in 2015-2020 is shown in Figure 1.

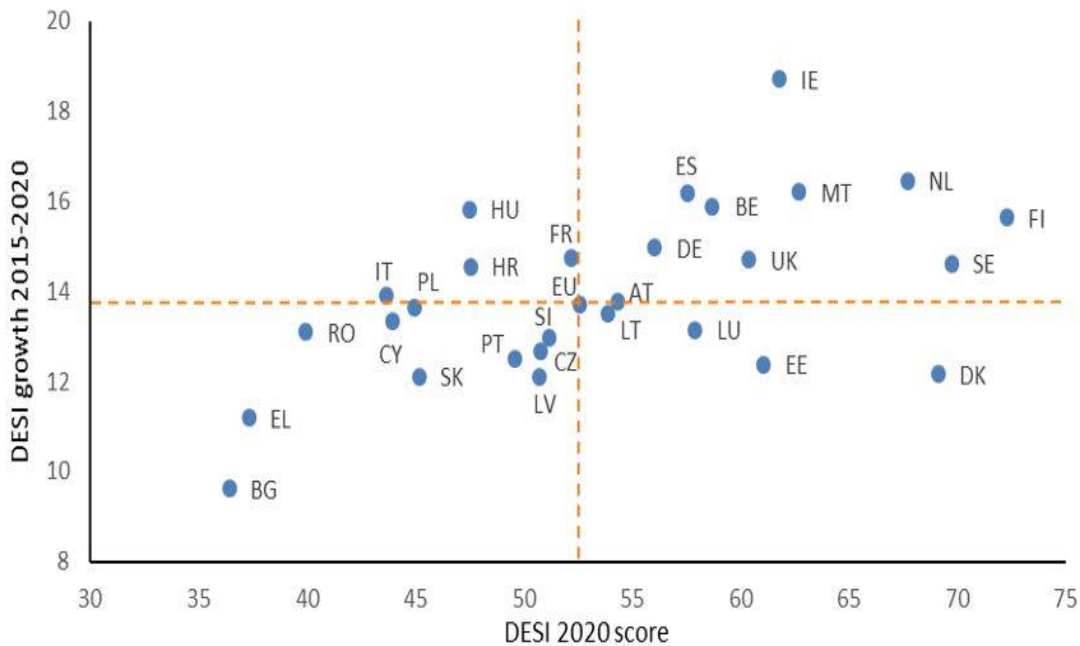


Fig. 1. Index of Digital Economy and Digital Society – Progress Made by Member States in the years 2015-2020
 Source: The Digital Economy and Society Index (DESI) 2020, European Commission, [in:] <https://ec.europa.eu/digital-single-market/en/desi>

The most significant progress has been made in Ireland, followed by the Netherlands, Malta and Spain. These countries also perform well above the EU average as measured by the DESI score. Finland and Sweden are leaders in the overall digital performance of economies and societies, but in terms of the progress made over the past five years, they are slightly above average, as are Belgium and Germany. Denmark, Estonia and Luxembourg show relatively low levels of digitization progress in the last five years, despite remaining among the group of EU states with high scores in the overall DESI ranking.

Poland belongs to the group of countries with low scores in the Digital Economy and Society Index, despite the fact that expenditure on digitization in Poland has increased by 100% over the course of the last decade. In 2020, Poland achieved a score of 45.0 points, higher than that achieved in 2019. However, this result is still below the European average of 52.6 points. Achieving a higher score resulted a jump of two ranking places, from 25th to 23rd position (Table 1).

Table 1. Digital Economy and Society Index for Poland in the years 2018-2020

Year	Place	Score	UE Average
2020	23	45,0	52,6
2019	25	40,7	49,4
2018	24	37,7	46,5

Source: Author’s research based on DESI Poland (2020)

With regard to the integration of digital technology in business operations, Ireland, Finland and Belgium scored the highest. The lowest was Hungary, Romania and Bulgaria. In this ranking of 28 countries, Poland ranks 25th and is below the EU average (Figure 2).

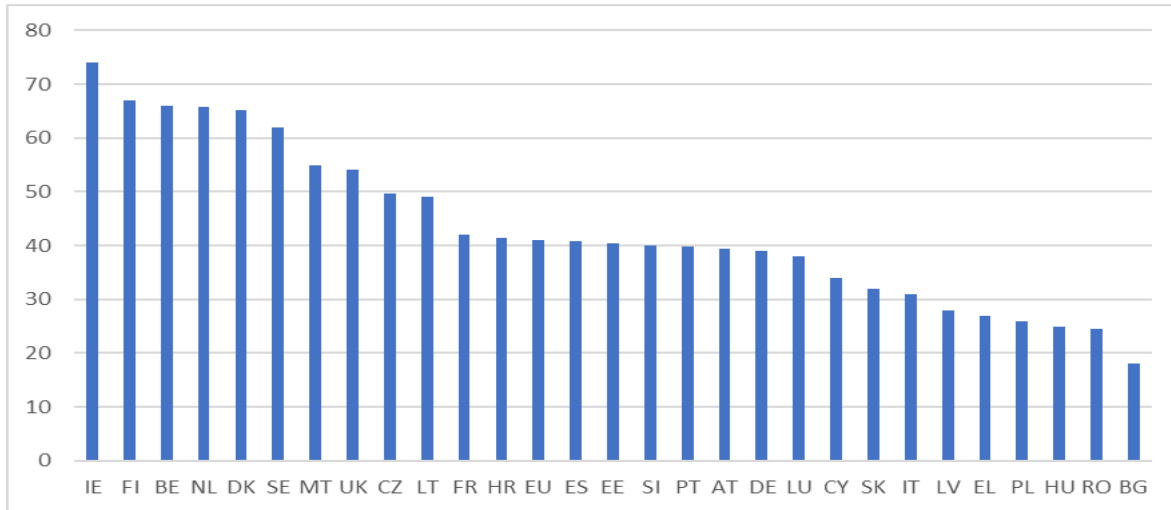


Fig. 2. Digital technologies integration for European Union based on DESI Report for 2020
Source: DESI Report (2020).

According to the DESI report, data on the integration of digital technologies by European Union enterprises varied widely depending on the size of the enterprise, sector and EU state. In 2020, 38.5% of large enterprises relied on advanced cloud computing services, and 32.7% used Big Data solutions. The vast majority of SMEs declared that they did not use these solutions. 17% of SMEs use cloud services and 12% use Big Data. According to the report, 17.5% of SMEs sold their products on the Internet (an increase of 1.4% when compared to 2016).

Table 2 depicts the digitization process results achieved by the Polish SMEs in the years 2018-2020.

Table 2. Digital technology integration according to DESI for Poland in the years 2018-2020

Year	Place	Result/Score	EU average
2020	25	26,2	41,4
2019	26	23,5	39,8
2018	26	21,0	37,8

Source: Author’s research based on DESI Poland (2020)

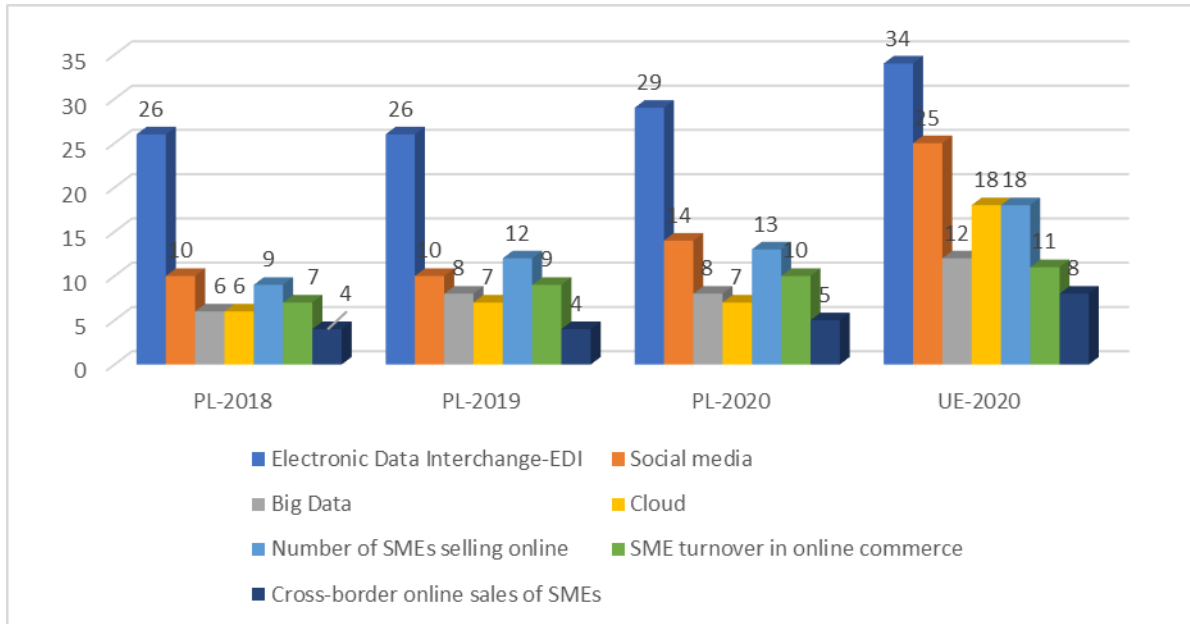


Fig. 3. Dynamics of changes in digital technology integration by DESI for Poland (compared to the previous year in %)
 Source: Author’s research based on DESI Poland (2020)

Polish enterprises are increasingly taking advantage of the opportunities offered by e-commerce (Figure 3). As the report indicates, 13% of SMEs sell online, which is an increase compared to the previous year, but still places Poland below the EU average of 18%. Only 5% of all SMEs sell abroad online to customers in other EU countries. 14% of enterprises use social media (the EU average is 25%), 7% use cloud services and 8% analyse Big Data.

This means a need for significant improvements in the area of digitization, especially in the field of electronic data sharing, the use of social media, the use of Big Data solutions, as well as analyses and solutions based on the data cloud. By using digital technologies, businesses can increase efficiency, achieve lower costs and better engage with customers and business partners (Milisavljevic-Syed et al., 2020; Khayer et al., 2020)

When introducing digitization to an enterprise, the timeline for preparing development plans is important. It is only with several years of planning that we can speak of a proper assessment of the effects of digital solutions. The research carried out in March 2021 showed that the approach of enterprises to planning further development is varied. Generally, most of the analysed enterprises prepare their development plans with projections for 6-12 months (29.2% of indications). Less frequently, plans refer to development planned for 1-2 years or 2-5 years (21.6% and 20.8% of indications, respectively). The share of enterprises planning their activities well in advance (over 5 years) is only 14.2%. The same share concerned enterprises that operated based on ongoing planning for a maximum period of up to 6 months. This situation varied depending on the size of the enterprise (Figure 4).

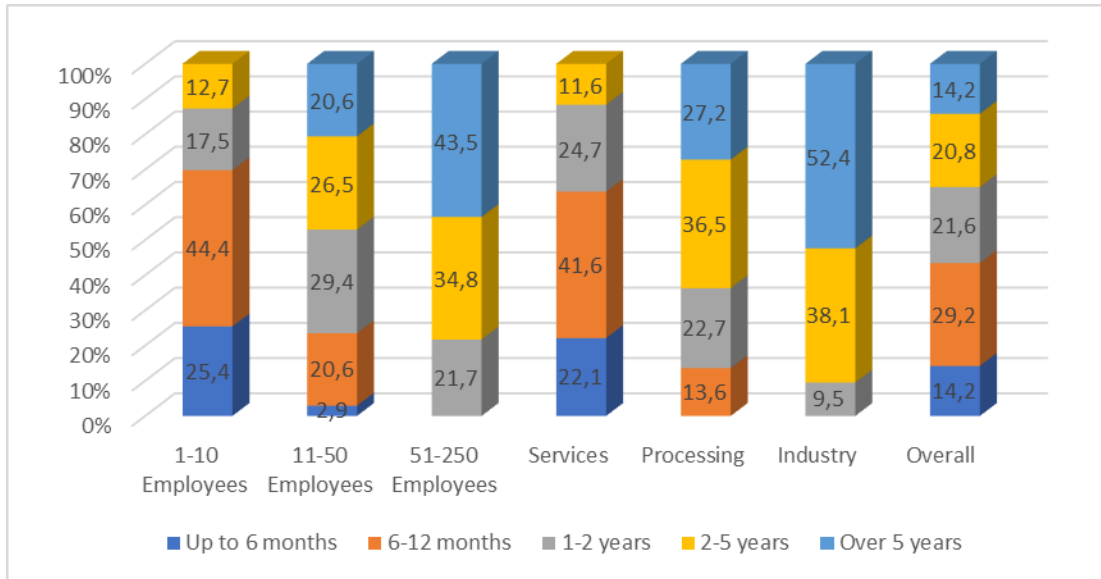


Fig. 4. Outlook on Enterprise development planning.
Source: Author's own-study based on research outcomes

Micro-enterprises employing up to 10 people in development activities focused on the short term timeline. Over 69.8% of enterprises belonging to this category planned development activities within one year. There were no enterprises within this group planning for more than 5 years. In relation to the analysed enterprises, a correlation was observed that with the increase in the number of people employed, the period of drawing up development plans was longer. In the group of enterprises employing 11-50 people, planning for over 5 years was the share of 20.6% of economic units. The same type of relationship in the case of enterprises employing 51-250 people was to be seen in 43.5% of enterprises.

Another factor that differentiated the planning period was the type of business. In service enterprises, short-term planning of up to one year prevailed. This type of approach was characteristic for 43.7% of enterprises. Processing enterprises planned the development over the longer term. For this group the share of enterprises planning their development for more than two years was 63.7%. An even greater share of this form of planning took place among industrial enterprises, constituting 90.5% of entities.

Realistic plans for investments in software for enterprises in the coming year were also assessed (Figure 5).

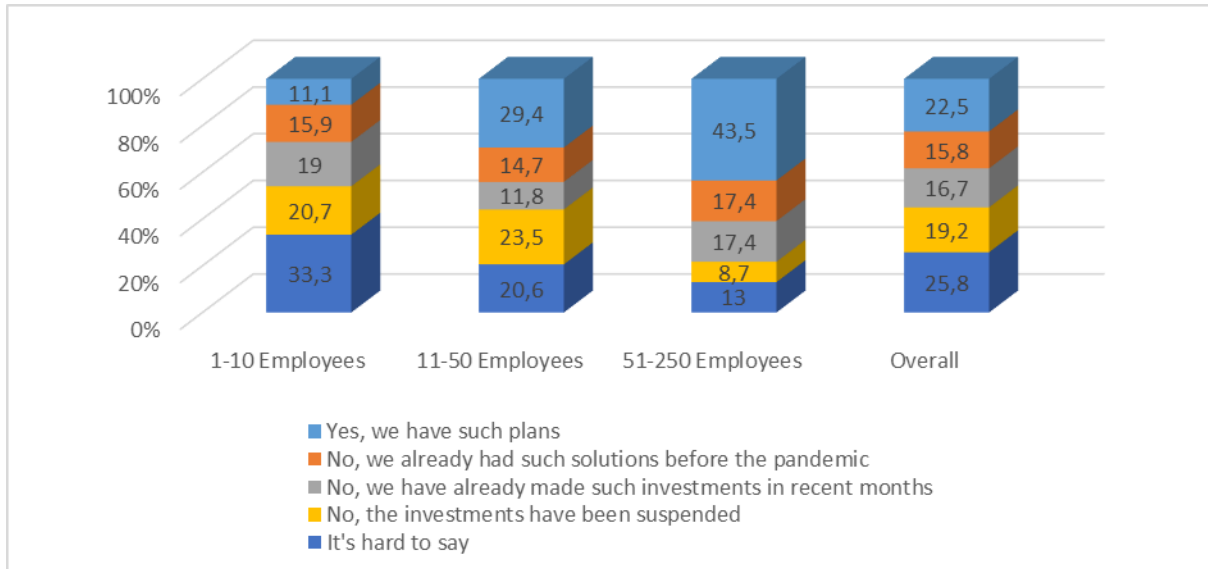


Fig. 5. Plans for investments in digitization for companies in the coming year

Source: Author’s own-study based on research outcomes

Digitization has acted as an important process in the activities of the analysed enterprises. Every fifth (22.5%) surveyed enterprise had plans for investments in software and wanted to implement them within the coming year. 15.8% of enterprises declared that they had implemented such plans even before the coronavirus epidemic. For 16.7% of enterprises, digitization turned out to be a great help during the epidemic and it was the factor that contributed to investments in this area. At the same time, every fourth enterprise did not yet have specific plans for introducing digitization into the sphere of their operations, but did not make any reservations that it is against such activities. For 19.2% of enterprises, the effects of operating in the new economic realities were so severe that they were forced to suspend investments in the area of digitization.

The relatively most common sphere of investment in digitization is that of enterprises with 51 to 250 employees. Over 78% of this group of enterprises has either already made such investments or planned to carry them out within the next/coming year. Such an attitude to digitization was shared by over 55% of enterprises employing from 11 to 50 employees, and in almost 40% in the case of micro-enterprises.

The research results published in the report "Enterprises in the pandemic era" confirm that Polish entrepreneurs rely on digital tools to meet the current and upcoming challenges. According to these studies, 70% of enterprises in Poland have already made plans or plan to purchase software for enterprises in the coming months. However, 27% had this kind of software before the pandemic broke out. Of these, 15% bought software/technological solutions in recent months, and 28% plan to make such purchases in the near future (Report: Enterprises in the pandemic era, 2021).

Respondents from enterprises that have already invested in digitization or are planning to do so in the future were asked about the directions of their activities (Figure 6).

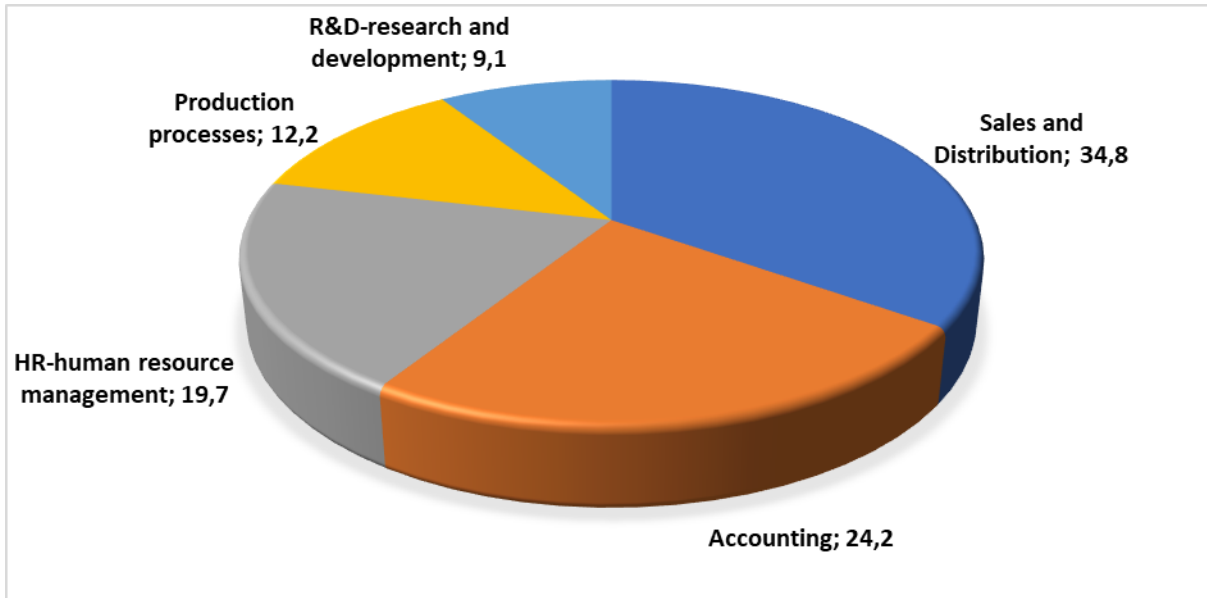


Fig. 6. Spheres of occurrence and implementation of digital solutions (% share)

Source: Author's own-study based on research outcomes

As the analysis of the surveyed enterprises showed, the most common area of digital applications was sales and distribution (34.8% indications). The coronavirus epidemic made it necessary to build new distribution channels for services or products through the increasing importance of the e-commerce market. This form of digitization was chosen most often by manufacturing and service enterprises employing less than 50 people. The second and third place among the areas of digital activity was taken by accounting (24.2% of responses) and human resources management (19.7% of responses). Production processes and research and development areas turned out to be much less frequently chosen areas in terms of the occurrence and implementation of digital solutions. The share of responses amounted to 12.2% and 9.1%, respectively. This type of activity was indicated mainly by processing and production enterprises employing over 50 people located in large urban centres.

An important issue was also the analysis of the benefits of introducing digital solutions to enterprises (Figure 7). Here, a maximum of two answers could be given.

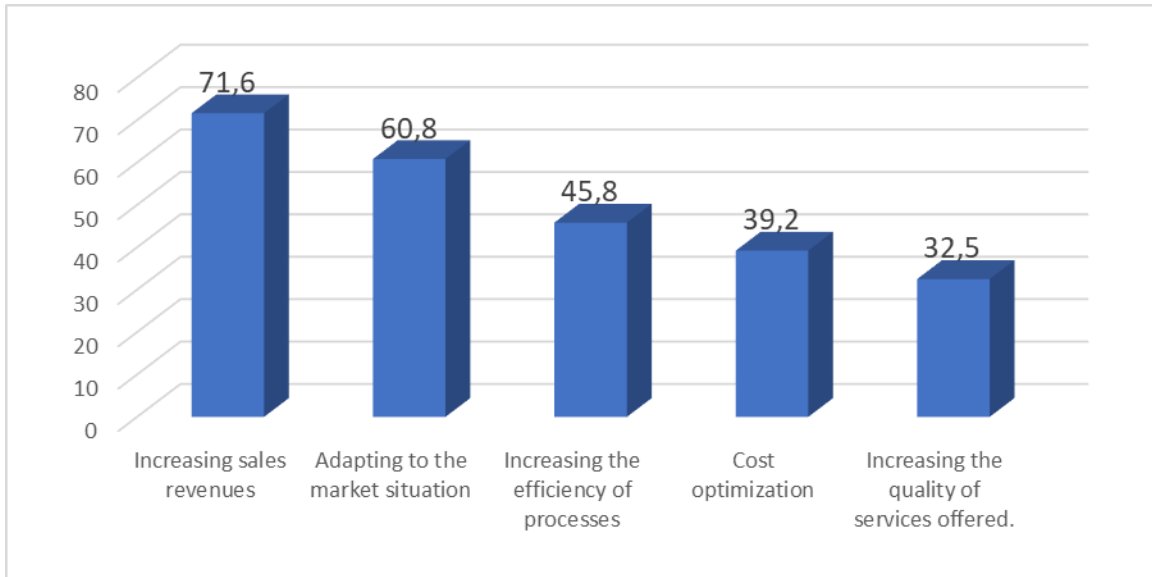


Fig. 7. The benefits of introducing digital solutions.
Source: Author's own-study based on research outcomes

Business decisions about the expected benefits of digitization have been very practical and in the main closely related to economic conditions. The main benefits include striving to increase the enterprise's revenues (71.6% of responses). The willingness to adapt to the market situation turned out to be an equally important benefit. This type of conditions was directly related to the epidemiological situation in 2020 and the drive to transfer significant areas of activity to the Internet. The increase in the efficiency of processes, mainly in processing and production enterprises, was also given as a significant reason for introducing digitization (45.8% of responses). The next places in the hierarchy of importance are cost optimization and increasing the quality of the products and services offered. The last indicator in particular translates into an increase in customer service standards and an improvement in customer relations (Mittal et al., 2018; Niemeyer et al., 2020).

Decisions regarding investments in digitization in 2020 were significantly influenced by changes in the volume of revenues (Figure 8).



Fig. 8. The scope of changes in the enterprise's revenues in 2020
 Source: Author's own-study based on research outcomes

The epidemic period brought about significant changes in the volume of revenues of the analysed enterprises. As research has shown, in every fourth of the analysed enterprises, revenues dropped by more than 20%. The decrease in revenues up to 20% occurred in 28.3% of enterprises. The unchanged value was recorded in 22.5% of entities. Only 10.8% of the analysed enterprises indicated increases in revenues by more than 20%.

The size of the enterprise influenced the shaping of the economic situation. In entities employing from 51 to 250 people, a decrease in revenues by more than 20% occurred in 8.7% of enterprises. The same situation in the group employing 11-50 people occurred in 11.8% of entities, and in the case of micro-enterprises in as much as 38.1% of enterprises. This had a direct impact on the investment situation in the Digital economy as well.

Research conducted by the Humanites Institute also points to the relationship between the level of digitization of business processes and the generation of revenues (Report: Barriers and Trends. Technological Transformation of Enterprises in Poland, 2021).

They indicate that among enterprises with a high level of digitization, 27% declared an increase in revenues, whereas 49% declared a decrease. In enterprises not particularly advanced in this area, 66% of enterprises declared a decrease in revenues, and an increase was noted by 20%.

Cloud solutions are a specific area of digitization investments (Peillon & Dubruc, 2019; Ranke et al., 2020). Here, however, there are barriers, and they are of a varied nature (Figure 9).

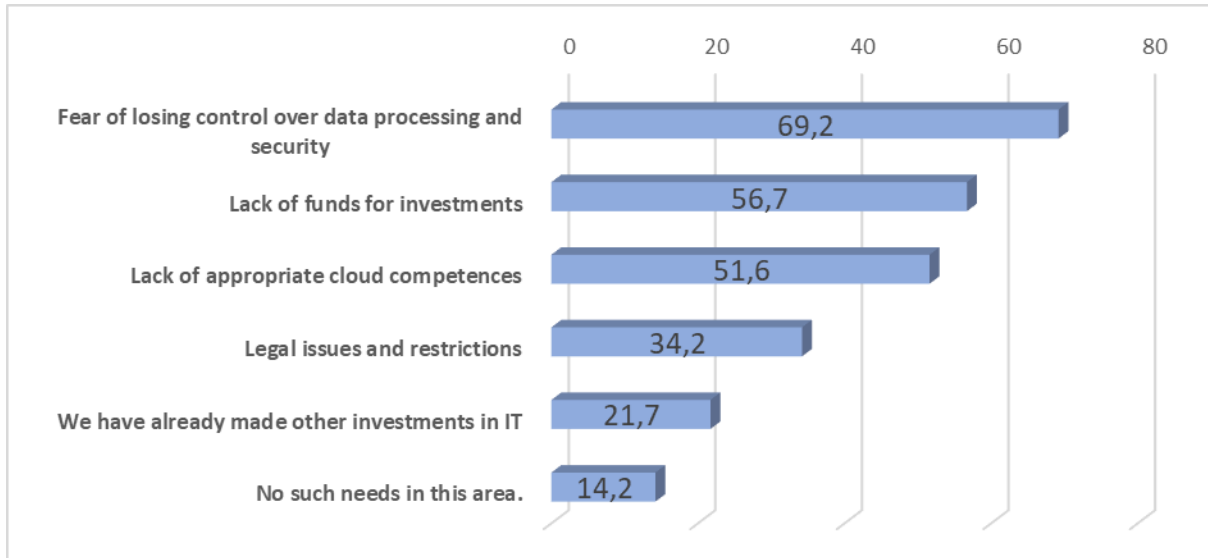


Fig. 9. Reasons for the lack of investments in cloud solutions

Source: Author's own study based on research results.

Among the reasons for the lack of investments in cloud solutions, the respondents most often indicated a fear of losing control over the transmitted data. Such a situation was indicated by as many as 69.2% of respondents. An equally important reason was the lack of funds for investments (56.7% of responses). Only 21.7% of the analysed enterprises admitted that they had already made such investments.

Despite the above-mentioned limitations in terms of investments in cloud solutions, the authors of the report "Digitization, cloud and new technologies. SMEs on the way to digital transformation," indicate that the process of cloud adaptation among small and medium-sized enterprises has clearly accelerated, and 36% of enterprises from the SME sector have successfully completed the implementation of such solutions. The most important benefit of the cloud has been enterprises' ability to focus on their core business and achieve access to new, innovative technologies, without the need of investing in their own IT infrastructure (Report: Digitization, cloud and new technologies. SMEs on the way to digital transformation, 2021).

The same research showed that 23 % of polish enterprises from the SME segment want to increase expenditure on IT, and as much as 41 % plans to maintain the current budget for digitization. 1/3 of enterprises define their transformation towards the network as advanced, whereas every fifth entity is already in the phase of implementing digital solutions.

Conclusions

The analysed DESI indicator shows that Poland needs to accelerate its efforts so that enterprises may start availing of the possibilities of digital technologies. In the long term, the measures taken should have positive effects through better connectivity, the higher digital skills of society and workers, and the greater involvement of businesses in the digital economy. Unfortunately, Poland is still lagging behind in this field, although there has been a stable increase in this area as compared to the EU average.

In the coming years, this area requires further development and must be integrated with other dimensions, e.g. with the availability of high-speed Internet connections, affordable devices and services of professionals from the ICT sector, and also be supported by development activities stimulated at the national level by public administration.

The analysis of enterprises from the SME sector showed that over 44% of enterprises operate on the basis of action plans not exceeding one year. This type of planning was particularly common in micro-enterprises employing up to 10 people and running a service activity. This was partly due to the specific conditions in which economic entities had to operate and the need for quick adjustments to the changing situation.

Digitization acted as an important process in the activities of the analysed enterprises. Every fifth surveyed enterprise had plans to invest in software and digital solutions for enterprises; and wanted to implement these plans within the next year. In the group of enterprises employing from 51 to 250 people, over 75% entities have either already made such investments or plan to carry them out over the course of the coming year.

As shown by the analysis of the surveyed enterprises, the most common area of activity and implementation of digital solutions was sales and distribution. This was due to the need during the pandemic to build new distribution channels for products or services through the increasingly important e-commerce market. The benefits were very practical, and in the main closely related to economic conditions. Among the benefits of using digitization, the most frequently mentioned were the desire to increase the enterprise's revenues and a willingness to adapt to the market situation. These types of conditions were directly related to the epidemiological situation in 2020 and the drive to transfer significant areas of activity to the Internet.

Research has shown that the Covid situation has led to significant changes taking place in the economy of enterprises. In every fourth of the analysed enterprises, revenues dropped by more than 20%. An up to 20% decrease in revenues occurred in 28.3% of enterprises. This must have had a negative impact on investments also in the area of digitization. More than half of the analysed enterprises indicated a lack of financial resources as a barrier when introducing cloud solutions. This confirms the hypothesis presented in the introduction.

The COVID-19 outbreak has resulted in a sharp and significant decline in transport, production and consumption. At the same time, thanks to the development of digitization, it has become possible to work and learn remotely. It turned out in practice that information and communication technologies (ICT) play an important role in the life of modern people. These technologies become an inseparable part and accompany him in every area of life. They also affect the replacement of energy-consuming working methods and lifestyles with more ecological ones, in line with the idea of sustainable development.

It is to be hoped that the research and analysis of issues related to the functioning of digitization in enterprises from the SME sector will allow at least a part to fill the existing gap in the literature. Aspects related to the use of digitization introduced in the era of the Covid 19 epidemic should be permanently included in the strategies of operations of enterprises from the SME sector. Increasing the support for new digital and innovative business models, and the further encouraging of digitization, would help enterprises to enhance efficiency, as well as enabling SMEs to become both more efficient and more competitive.

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