

EXTERNAL AND INTERNAL FACTORS FOR INCREASING THE USE OF ELECTRONIC COMMERCE IN THE SME SECTOR IN LATVIA

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Abstract. Several studies have found that e-commerce can have a positive impact on any type of business. Some surveys show that the use of e-commerce in Latvia is a problem for most companies in the SME sector; however, there is still a lack of in-depth research to justify the directions of action contained in strategic policy documents. The purpose of the article is to provide analysis of external and internal factors that affect the use of electronic commerce in the SME sector. The Analytic Hierarchy Process (AHP) was used to identify the factors that most positively and negatively affect the e-commerce development of companies. Data from the expert survey were used to conduct the analysis with the AHP method. 17 experts from the state administration, academia and the business environment participated in the survey, who assessed the impact of various internal and external factors on the use of e-commerce in companies. Since the application of e-commerce in companies is one of the measures for faster recovery of the state of the national economy, including developing the export of the SME sector in the post-COVID-19 pandemic period, recommendations have been prepared for public and commercial organizations to have a positive impact on the use of e-commerce in SMEs.

Key words: digitalization, e-Commerce, SMEs, support policy.

JEL code: E32, L20, L50, L81, O33

Introduction

Research indicates that the use of digitization in companies is an important factor of sustainable development and promotes national competitiveness (Boikova, T. et al., 2021; Stankovic, J. J. et al., 2021). For companies, this means the need for digital transformation, especially in the post-COVID-19 period, which exposed business bottlenecks and led to the transformation of business models (Beizitere I. et al., 2022; Belitski M. et al. 2022; Corvello V. et al., 2022; Fjellström et al., 2020; Zeverte-Rivza S. & Gudele I., 2021). Companies are advised to evaluate their business processes and identify what can be improved in them by using digitization solutions, for example, remote communication in the internet environment, usage of e-signature, big data, data storage in cloud infrastructure, service provision and e-commerce, etc. For many trade and service providers, e-commerce is a way to maintain their competitiveness in the market and reach business partners and customers (Rivza S. & Gudele I., 2021; Sheng J. et al., 2021).

The existence and sustainable development of entrepreneurship is vital for the economy of Latvia, since the number of SMEs has reduced during the COVID-19 pandemic. The decrease in the number of SMEs at the end of 2021 was 7.4% compared to the end of 2019 (Official Statistics Portal..., 2022). Thus, it is important to identify the factors that contribute to the development of the SME sector. Since e-commerce has great potential for positive impact on business (e.g. Andonov A. et al., 2021; Iuga I.C., 2021), the purpose of the article is to provide analysis of external and internal factors that affect the use of electronic commerce in the SME sector.

E-commerce is generally understood as the sale or purchase of goods or services between businesses, households, individuals or private organizations using electronic transactions conducted over the Internet or other computerized (online communication) networks. According to these characteristics, data about e-

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commerce is gathered, e.g. Eurostat (2019). In the scientific environment, the term "e-commerce" is broader, because e-commerce began to cover more and more functions in internet and contributed to the digital transformation in business. Consequently, the understanding of the term was supplemented. For example, Chaffey D. (2003) defined e-commerce simply and according to the processes currently taking place in the digital environment: "Any information transaction in the electronic environment is e-commerce". Taking into account the understanding of the term "e-commerce" mentioned in various sources, the authors of this article did not always separate the narrowly understood classification of e-commerce from the broader understanding, characterized by the term "digitalization" in many sources.

The following research methods were used: discussions on the creation of e-commerce, monographic and descriptive methods, analysis and synthesis methods were used to study the elements of the problem, the induction method was used to identify causal relationships and make scientific assumptions based on for individual facts or elements, the deduction method was used to systematize and use empirical data, statistical analysis (central tendencies and location indicators) was used. EU and national statistical data on digitization and including electronic commerce, the Analytical Hierarchy Process (AHP) was used to identify the factors that most positively and negatively affect the development of e-commerce in Latvia. The expert survey data was used to perform the analysis with the AHP method. 17 experts from different Latvia regions and sectors of IT industry participated in the survey. The survey started at the beginning of 2022 and finished in three months. The experts were chosen to represent the leading associations dealing with internet communication (Latvian Internet association, Information and communication technology association), regional business sector, specialists of higher education institutions preparing IT students and companies dealing with digital transformation, representatives of public government.

Data from Central Statistical Bureau, the Register of Enterprises and several ministries, and data collected during the projects implemented by the State Research Program reCOVery.LV for the period from 2020 to 2022 were used to characterize the use of e-commerce in Latvia. All collected data analysis was compared with DESI Index provided by Eurostat. Timely and state-adaptive national strategic planning as an important external factor for SMEs plays a vital role in the digital transformation of the state (Alam K. et al., 2018; Kääriäinen J. et al., 2021). The findings of the survey could serve policy makers for making strategic decisions, specifically in the field of e-commerce, which aims to improve the country's digital competitiveness.

Theoretical Background

Summarizing the findings of several previous studies SMEs, it is necessary to highlight groups of more frequently mentioned factors that have influenced digitalization and e-commerce in SMEs. The group of technological factors (Corvello V. et al., 2022) is the most important because without them the development of the digital environment is not possible at all. The next most important group of factors influencing the development of the digital environment and the development of e-commerce is economic factors (Audretsch D. B. & Belitski M., 2021). The group of organizational factors is important for the development of the digital environment and e-commerce (Choshin M. & Ghaffari A., 2017). In order to make e-commerce more sustainable, decisions and actions need to consider social, environmental and economic aspects as a core element in the group, not separately (Olah, J. et al., 2019; Vide, R. K. et al., 2022). The factors group of public policies could make a positive or negative impact on the development of the digital environment and e-commerce. These, in turn, are related to regulatory factors that regulate digital processes in the company. The group of social factors determines how and to what extent members of society can use the advantages of the digital environment and e-commerce.

Psychological factors that explain consumer and stakeholder acceptance of e-commerce should also be considered (Gudele I. & Jekabsone I., 2020).

Regarding the factors that significantly influence the use of electronic commerce in the SME sector, the researchers emphasize the diversity of factors depending on the characteristics of enterprises. For example, firm size and financial health matter, the brick-and-click strategy favours survival of company (Cuellar-Fernández B. et al., 2021). The lack of budget, skills and resources that would significantly affect the company's sustainability are mentioned most often (Corvello, V. et al., 2022; Costa, J. & Castro, R., 2021). The richness of social commerce features positively affects the website stickiness (Friedrich T. et al., 2019). Research reveals that human factors such as lack the necessary skills, technological factors such as cybersecurity are among the main barriers to SME for e-Commerce development (D'Adamo I. et al., 2021).

The implementation of digital technologies in the organization causes changes in work methods and business offer. In-depth research reveals the nuances of e-commerce. For example, the brick-and-click strategy favours survival of company (Cuellar-Fernández, B. et al., 2021). In order to introduce an e-commerce model suitable for its business in the enterprise, an assessment of the level of digitization and the relevant business objectives is initially required (Kääriäinen J. et al., 2021; Kilimis P. et al., 2019; Li L., 2018). The benefits of e-commerce in terms of increased sales are more pronounced when businesses use commercial websites and online marketplaces. On the other hand, the interaction between e-commerce and search engines has a negligible effect on the company's performance (Sakovic Jovanovic J. et al., 2020).

There is a need for the involvement of public institutions, research guidelines, tools and case examples to help SMEs better understand and use the opportunities provided by the improved ecosystem and platform (Kääriäinen et al., 2021). Also, other authors (Rupeika-Apoga R. et al., 2022) believe that the creation of a company's digital readiness assessment model should become the first step towards effective support for digital transformation of SMEs.

According to the EU strategy for a sustainable and digital Europe, relevant policy documents have also been prepared in Latvia and the transformation of digital business ecosystems is promoted. Latvia's Digital Transformation Guidelines 2021-2027 define a comprehensive national digital transformation strategy (Ministry of Environmental Protection..., 2021). The guidelines cover the following areas: Internet access, ICT education and skills, modern and efficient public administration, e-services and digital content for the public. The guidelines established the development of digital skills as a national priority, aiming to achieve the Digital Decade aims. The guidelines state that for the full use of the opportunities of the digital economy, it is necessary to promote awareness and understanding of the use of digital opportunities by merchants, to provide consultative support to merchants for the practical use of digital opportunities, incl. to promote the use of e-commerce.

Support directions and measures are dedicated to digital transformation in other policy documents. The Education Development Guidelines 2021–2027 aim to promote human digital skills and modernise science, technology, engineering and maths (STEM) studies, to use ICT in the learning process, and to develop teachers' digital skills (Ministry of Education..., 2021). Recognizing that Latvian companies lag behind in the field of digitization, the Latvian National Industrial Policy Guidelines 2021–2027 prioritises the promotion of innovation and digital transformation of businesses (Ministry of Economics..., 2021).

Research results and discussion

1. The main trends in e-Commerce of SMEs in Latvia

The achievements of countries in the field of digitization are evaluated with various international indices. The aim of introducing the Digital Economy and Society Index (DESI) is to help the EU member states identify areas where priority investment and action is needed to create a Digital Single Market. In 2022, the DESI reflects four main policy areas (Connectivity, Human Capital, Integration of Digital Technology, Digital Public Services) to be assessed, representing a total of more than 30 indicators, including the digital transformation of SMEs (European Commission, 2022d). In 2022, Latvia showed a drop in the overall DESI rating and got 17th rank out of 27 EU Member States compared to 2021, when it was in 15th place (European Commission, 2022a).

Another index that shows the state of e-government development of United Nations member states is the E-Government Development Index (EGDI). It provides an assessment of website development patterns in a country and includes access characteristics such as infrastructure and education levels to reflect how a country uses information technology to promote access and inclusion. The EGDI is a composite index of three important dimensions of e-government, namely: online service delivery, telecommunications connectivity and human capabilities. In 2022, Latvia showed a significant improvement in the EGDI evaluation, reaching 29th place compared to the 49th place obtained in 2020 (UN E-Government Knowledgebase, 2022).

A comparison of the ranks of the indices obtained by Latvia in the field of digitization with neighbouring countries from Northern Europe is given in Table 1.

Table 1

The place of Northern Europe countries in the international indices of the degree of digitization, 2022

Country Index	Denmark	Estonia	Finland	Latvia	Lithuania	Netherlands	Sweden
DESI	2	9	1	17	14	3	4
EGDI	1	8	2	29	24	9	5

Source: authors' construction based on data of reports (European Commission, 2022d; UN E-Government Knowledgebase, 2022)

In 2022, Latvia's very low DESI rating among EU Member states was influenced by the ranking of the "E-commerce" sub-index (Table 2).

Table 2

Latvian DESI sub-index "eCommerce" ranking in 2022

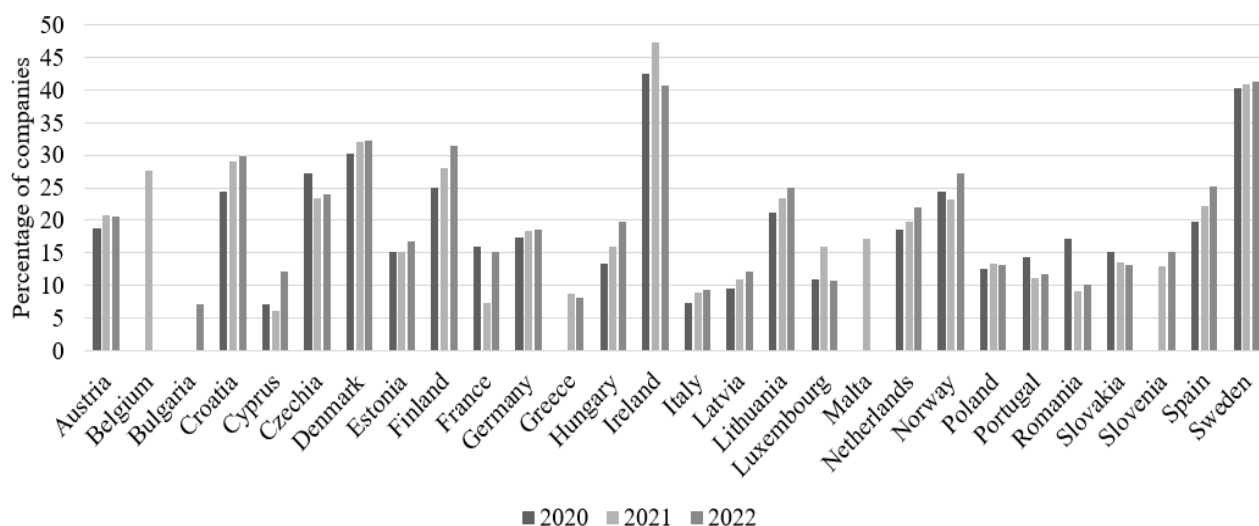
No	Indicator	Breakdown	Unit	Rank
1.	Ordering goods or services online	All individuals	% of internet users (last 12 months)	22
2.	Selling online (e.g. via auctions)	All individuals	% of internet users (last 3 months)	23
3.	Turnover from e-Commerce	Large enterprises	% of turnover	21
4.	Turnover from e-Commerce	SMEs (10-249 persons employed)	% of turnover	18
5.	Enterprises exploiting B2C opportunities of web sales	SMEs (10-249 persons employed)	% of enterprises	17
6.	Enterprises selling online	Large enterprises	% of enterprises	22
7.	Ordering goods or services online	All individuals	% of individuals	19
8.	Enterprises selling online	SMEs (10-249 persons employed)	% of enterprises	20

Source: authors' construction based on DESI data (European Commission, 2022c)

The COVID-19 pandemic significantly changed shopping habits, and as a result, entrepreneurs had to rethink their sales channels, developing and investing in e-commerce platforms as well. Data from the business register in Latvia showed that the number of e-commerce structural units increased significantly starting in 2016, and due to the COVID-19 pandemic, their number grew even faster. However, during 2021, their number decreased again. The data show that in October 2021, less than 18.6 thousand such structural units were registered, while in October 2022, their number decreased to 15.7 thousand (Lursoft, Ltd, 2022).

The transition to digital technologies in companies can improve their performance in the provision of services and products, as well as increase their competitiveness. In 2021, a total of 56% of EU companies reached the basic level of digital intensity. The basic level is characterized by the fact that the company must use at least four of the twelve selected digital technologies (for example, using any AI technology; e-commerce sales make up at least 1% of the total turnover etc.). Among SMEs, 55% achieved a basic level of digital intensity, compared to 88% of large companies in 2021. In accordance with the objective of the digital transformation of companies of the EU Digital Decade policy program, more than 90% of EU SMEs should achieve at least a basic level of digital intensity by 2030 (European Commission, 2022b). The majority of SMEs in the EU had a low (34%) or very low (45%) level of digital intensity. SMEs in Latvia had a low (around 23%) or very low (around 64%) level of digital intensity, and only around 12% had a high or very high level (Eurostat, 2022a). In Latvia, in 2022, the number of companies with a high or very high level of digital density has significantly increased, reaching 21.7%, compared to the average number of companies in the EU that reached this level - 32.3% (Eurostat, 2023b).

The percentage of companies whose e-commerce sales amount to at least 1% of turnover is given in Figure 1. On average, the proportion of such companies in the EU in 2022 was 17%, as opposed to 12.2% in Latvia. Latvia lags behind its neighbouring countries Lithuania and Estonia, where the share of e-commerce companies was 25.1% and 16.7%, respectively in 2022.



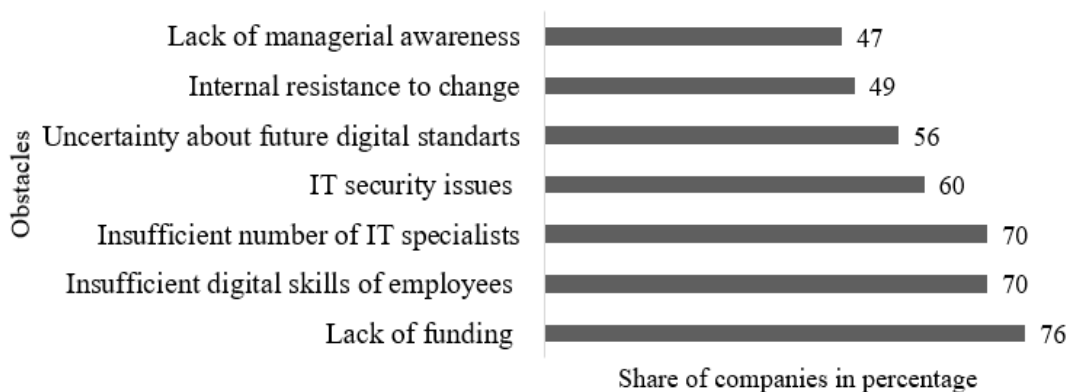
Source: authors' construction based on data of Eurostat (2023c)

Fig. 1. Share of companies with e-commerce sales of at least 1% of turnover in Europe, 2020-2022

The frequency of usage of e-commerce by Latvian SMEs in 2021 is characterized by the following data: 20% of SMEs were not involved in the electronic purchase or sale of goods in online services or on the Internet, approximately 50% of SMEs engaged in e-commerce and only 6% fully participated in e-commerce (Rupeika-Apoga, R. & Bule, L., 2021).

Regarding the Internet usage habits and e-commerce in Latvia, the situation is characterized by the data: 98.7% of all registered and active companies in Latvia use the Internet, and 62.9% of companies have their own website. In 2022, 79% of Internet users have made purchases on the Internet, most often buying tickets for entertainment events on Latvian e-commerce sites, and clothes and accessories in foreign Internet stores. On average, only 12% of Latvian companies use websites to sell goods and services (Kebbe, E., 2023). Thus, Latvian SMEs do not take advantage of the potential provided by the digitalization of business processes and citizens' online habits.

In the 2021 survey, Latvian SMEs mentioned a number of obstacles for the company to carry out digital transformation, including the implementation of e-commerce, see Figure 2. SMEs considered insufficient financial resources, the availability of qualified IT specialists, as well as insufficient digital skills of employees as the biggest barrier.



Source: authors' construction based on survey data, Rupeika-Apoga, R. & Bule, L. (2021)

Fig. 2. The main obstacles perceived by companies to the digital transformation in Latvia, 2021

The obstacles to digitization mentioned in the surveys and the necessary support to overcome them allow to identify factors that also affect electronic commerce. Internal factors include: insufficient digital competences of employees, lack of IT specialists, insufficient resources. External factors are related to state support for staff training, investments in the company, ensuring the safety of internet environment and clarity of legislation on business digitalization (Rupeika-Apoga, R. & Bule, L., 2021).

2. Data from the expert survey

To identify the strengths and weaknesses as well as opportunities and threats of e-commerce for the SME sector in Latvia, the author, based on the surveys of businesspersons and 16 experts (businesspersons from various regions of Latvia, academics and NGOs) as well as in-depth interviews with 17 experts (IT companies engaged in the development of e-commerce services and systems), performed a SWOT analysis (Table 1).

Table 1

SWOT analysis of the use of e-commerce by the SME sector in Latvia

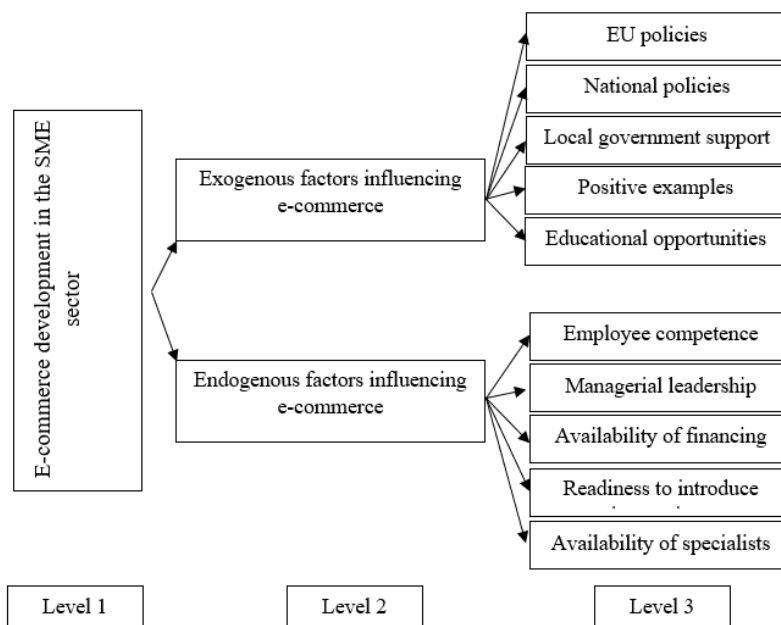
Strengths	Weaknesses
- Well-developed data transmission infrastructure - Well-developed use of technologies in general - There are some success stories of using e-commerce in the SME sector - Provided resources for training of company employees	- In Latvia, only a small segment of SMEs uses e-commerce in their operation - Insufficient competence of employees in the development of e-commerce - Latvia has not designed a state policy for the development of e-commerce in companies - No financial and marketing programs to promote the use of e-commerce
Opportunities	Threats
- E-commerce development programs elaboration for the SME sector - Co-funding from the EU Structural Funds and EC programmes - Incorporation of e-commerce courses in training programs to improve the competencies of company managers and employees	- Bureaucratic barriers - Lack of administrative capacity for e-commerce implementation - Problems with acquiring financing - Lack of IT specialists in Latvia

Source: authors' construction based on the survey of experts, number of respondents – 17; survey period: January 2022 - March 2022

In view of the strengths and weaknesses there are wide opportunities for the development of e-commerce. For example, it would be necessary to develop an e-commerce development programme for SMEs. The implementation of the opportunities would facilitate creation of new jobs, optimization of business processes, competitiveness of enterprises, development of the export capacity of enterprises, entrepreneurial activity.

However, it should also be considered that the development of e-commerce in the SME sector in Latvia could be threatened by various bureaucratic barriers for businesspersons to use e-commerce, a lack of ICT specialists and poor opportunities to acquire financing.

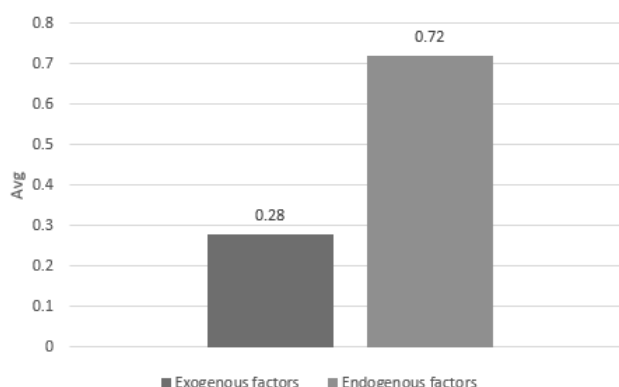
The expert survey data were used to perform an analysis by employing the AHP method. As prescribed by the AHP method, the authors first created a hierarchy (Figure 3.), with the main goal being defined at level 1, namely, the development of e-commerce in the SME sector. Next, the author defined groups of criteria, which represented level 2 of the hierarchy. In this case, there were two groups of criteria: exogenous factors influencing e-commerce and endogenous factors influencing e-commerce.



Source: authors' calculations based on the survey of experts; number of respondents – 17; survey period: January 2022 - March 2022

Fig. 3. Hierarchy scheme for e-commerce development in the SME sector

According to the experts' opinions and studies of literature, the following exogenous factors were identified – EU policies and national policies, since they provide the overall framework of the e commerce development. Local government support is of additional importance, since the e commerce development among the SMEs in different regions is different. Positive examples are a very important factor, as it allows learning the success stories from other companies. Finally, the education opportunities are of a great significance. The following endogenous factors have been defined – employee competence that can be one of the most crucial factors for developing the e commerce in SMEs, however the management leadership is of a similar importance, taking into account the openness to innovations. Readiness to introduce new measures, availability of financing and availability of specialist were also defined as very important factors, since introduction of e-commerce requests digital solutions. The ratings by the experts were processed by calculating the arithmetic mean and standard deviation for each rating. For example, the experts rated the group of endogenous factors much higher than that of exogenous factors. However, the opinions of the experts on both groups of criteria differed, which was shown by the relatively high dispersion (Figure 4).



Source: authors' calculations based on the survey of experts; number of respondents – 17; survey period: January 2022 - March 2022

Fig. 4. Expert rankings of criteria groups for e-commerce development scenarios in the SME sector

An analysis of the expert assessment on the impact of exogenous and endogenous factors on the development of e-commerce highlights very clearly that endogenous factors in companies are more relevant to enabling to take advantage of all the benefits of e-commerce than factors that affect companies from outside.

Conclusions, proposals, recommendations

- 1) The main external factors that affect the use of e-commerce in the SME sector: EU policies, national policies, local government support, educational opportunities.
- 2) The main internal factors that affect the use of e-commerce in the SME sector: employee competence, managerial leadership, availability of financing, readiness to introduce, availability of specialists. Endogenous factors in SMEs are more relevant to enabling to take advantage of all the benefits of e-commerce than factors that affect companies from outside.
- 3) Overall, the regulatory and policy regulatory framework is well defined and conducive to e-commerce and digitalization. However, it is important that SME managers take advantage of the opportunities offered.

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