

UDC 338.124.4:004.738.5(477.8)

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## ASSESSMENT OF THE DIGITALIZATION LEVEL OF ENTERPRISES IN THE KHERSON REGION

## ОЦІНКА РІВНЯ ЦИФРОВІЗАЦІЇ ПІДПРИЄМСТВ У ХЕРСОНСЬКІЙ ОБЛАСТІ

*This article presents a comprehensive assessment of the digitalization level among enterprises in the Kherson region. The study focuses on evaluating the extent to which businesses in the region have embraced digital technologies and the impact of digitalization on their operations. Using a combination of quantitative and qualitative research methods, including surveys and interviews, the authors examine various aspects of digitalization, such as the adoption of digital technologies, internet access and computer resources, and the integration of digital solutions into business processes. The findings reveal the current state of digitalization in the Kherson region, highlighting both the progress made by many enterprises in implementing digital technologies, such as e-commerce, online marketing, and process automation, as well as the challenges faced by others due to limited access or underutilization of digital tools. The study emphasizes the importance of overcoming barriers to rapid digitalization, including the need for improved digital literacy and skills among personnel, financial constraints, and inadequate infrastructure. The authors also underscore the role of a favorable business environment, government support, and innovative initiatives in driving the digitalization process. In conclusion, the assessment underscores the significance of digitalization as a key trend in business and economy, highlighting its potential to optimize processes, enhance competitiveness, and unleash innovation. The study's findings provide valuable insights for policymakers, business owners, and stakeholders in the Kherson region, emphasizing the need for continued development and support of digitalization efforts to capitalize on its benefits and drive sustainable growth.*

**Key words:** digitalization level, enterprises, Kherson region, assessment, adoption of digital technologies, business processes, digital solutions, digital literacy, infrastructure, competitiveness, innovation, sustainable growth.

*У даній статті проведено оцінку рівня цифровізації підприємств у Херсонській області. Дослідження включало аналіз різних аспектів, таких як використання цифрових технологій, доступ до інтернету, наявність цифрових рішень у бізнес-процесах та рівень цифрової грамотності. Виявлено, що значна кількість підприємств вже використовують цифрові технології, проте також виявлено перешкоди та обмеження, що гальмують їх повне впровадження. Результати дослідження дають підстави для подальшого розвитку цифровізації в регіоні шляхом врахування особливостей та потреб підприємств. Подальші розвідки у цьому напрямку допоможуть забезпечити стійкий розвиток бізнесу та сприяти економічному зростанню Херсонської області. Гроредено*

детальну оцінку рівня цифровізації підприємств у Херсонській області з метою визначення поточного стану та ідентифікації ключових проблем. В рамках дослідження були враховані такі фактори, як наявність цифрових інструментів, використання електронних комунікацій, освіченість персоналу та фінансові обмеження. Результати оцінки показали, що значна частина підприємств у Херсонській області вже мають певний рівень цифровізації. Вони успішно використовують цифрові технології для оптимізації бізнес-процесів та підвищення ефективності. Однак, дослідження також виявило наявність деяких перешкод, які гальмують повне впровадження цифрових інструментів. Серед них – недостатня освіченість та навички персоналу, фінансові обмеження та необхідність інфраструктурних засобів. На основі отриманих результатів можна зробити висновок, що подолання цих перешкод є ключовим завданням для подальшого розвитку цифровізації в Херсонській області. Для цього важливо створити сприятливе бізнес-середовище, яке сприяло б підтримці та поширенню цифрових ініціатив. Також потрібно акцентувати увагу на розвитку необхідної інфраструктури цифрових технологій, пропагуванні цифрової грамотності серед підприємців та забезпеченні доступності навчальних програм та консультацій. Отже, результати оцінки рівня цифровізації підприємств у Херсонській області є важливим внеском у розуміння поточного стану та потенціалу розвитку. Впровадження цифрових технологій в бізнес-процеси може сприяти підвищенню конкурентоспроможності підприємств, стимулювати інноваційний розвиток та сприяти економічному зростанню регіону.

**Ключові слова:** рівень цифровізації, підприємства, Херсонська область, оцінка, впровадження цифрових технологій, бізнес-процеси, цифрові рішення, цифрова грамотність, інфраструктура, конкурентоспроможність, інновації, сталий розвиток.

**Formulation of the problem.** In recent years, digitalization has emerged as one of the key trends in business and the economy. This trend is not new, as computer technologies have been utilized in various economic sectors for several decades. However, with the advent of the Internet, mobile devices, and cloud technologies, digitalization has become more accessible and widespread.

The application of digital technologies in business operations opens up extensive opportunities for optimizing business processes, enhancing efficiency, and ensuring competitiveness. Various digitalization tools allow for the automation and streamlining of business processes, simplifying interactions with clients and partners, and improving the accuracy and speed of data analysis.

In today's world, where competition is increasing and consumer demands are constantly changing, it is crucial not only to provide quality goods and services but also to promptly respond to market changes and forecast their development. This is where digitalization plays a significant role, enabling the collection and analysis of large volumes of data, the development of forecasts, and the identification and rectification of operational deficiencies within a company.

However, it is important to note that digitalization is not a one-size-fits-all solution for all businesses. Effective implementation of digital tools requires an analysis of one's own activities and business processes, risk assessment, consideration of industry-specific characteristics, and competitive advantages.

Furthermore, digitalization also demands efforts and investments from companies. Qualified specialists are needed to develop and implement the necessary software solutions, as well as to ensure information security and protection. Therefore, careful consideration and evaluation of all costs and possibilities are essential before embarking on the implementation of digital tools.

**Analysis of recent research and publications.** Scientists have conducted research on various aspects related to this issue. These include examining electronic communications within current business structures, exploring challenges in corporate partnerships [17], assessing the level of digitalization in Ukraine [21], applying matrix methods to analyze the competitive performance of enterprises during strategization and digital transformation [8], developing effective resource utilization systems to balance economic activity and resource characteristics [2], studying the impact of the digital economy and business during

the pandemic [4], investigating innovation processes and their role in economic growth [22], exploring strategies for socio-economic development and the mechanisms for their implementation within the economic context [1].

However, there is a pressing need to further investigate the contemporary development of digitalization trends in Ukraine. It is crucial to study and identify strategies for businesses to effectively embrace this field.

**Formulation of the purpose of the article.** The objective of this research article is to assess the digitalization level of enterprises in the Kherson region and compare it with industry benchmarks. The study aims to provide a comprehensive analysis of the current state of digital transformation among businesses in the region, identify the key factors influencing digitalization efforts, and propose recommendations for enhancing the digital readiness of enterprises in the Kherson region. By evaluating the digitalization level, this research intends to contribute to the understanding of the digital landscape in the region and provide insights that can inform policymakers, industry stakeholders, and businesses on strategies for accelerating digital transformation and fostering economic growth.

**Presentation of the main material.** Various criteria can be used to assess the level of digitalization of enterprises in the Kherson Region. One of the most common indicators is the presence and effectiveness of information and communication technologies (ICT) utilization.

To evaluate the presence of ICT, criteria such as the availability of computers and software used for accounting, administrative management, production control, marketing, sales, etc., can be used. The level of adoption of cloud services, email, and social media can also be assessed.

To assess the effectiveness of ICT utilization, criteria such as reduced costs in administrative and accounting work, increased employee productivity, decreased production process time, increased sales volume, etc., can be considered.

To obtain information about the digitalization level of enterprises in the Kherson Region, employee surveys regarding ICT usage can be conducted. Additionally, analyzing information on the availability of software and cloud services in these enterprises can provide valuable insights. Furthermore, comparisons can be made with other regions and industries to understand the relative level of digitalization compared to others.

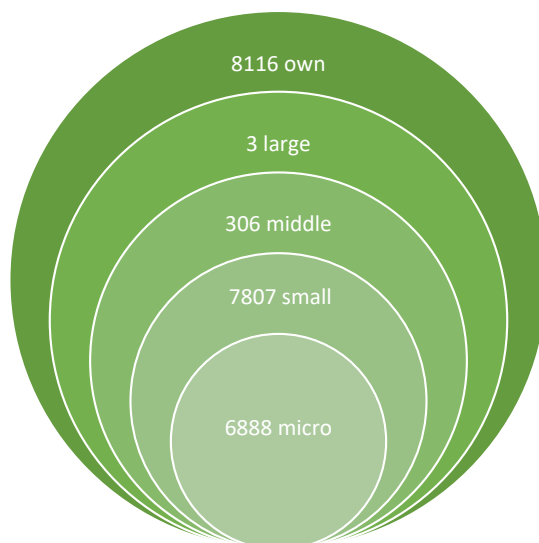


Figure 1. The number of enterprises at all levels in the Kherson region

According to the data from the State Statistics Service of Ukraine, in 2020, there were 8,116 enterprises registered in the territory of the Kherson Region. Among them, there were 3 large enterprises, 306 medium-sized enterprises, and 7,807 small enterprises, including 6,888 micro-enterprises.

Out of these enterprises, more than 99% had access to the Internet, indicating that the use of technology and the Internet has become practically standard for businesses in the region. However, only 25% of enterprises in the Kherson Region have their own websites, and less than 10% actively utilize social media for advertising their services and products. According to the Ministry of Economic Development, Trade, and Agriculture of Ukraine, over 50 innovative enterprises specializing in the development and implementation of digital technologies were established in the Kherson Region between 2018 and 2020. Additionally, in 2020, the "Electronic Kherson Region" program was launched, aiming to create a unified electronic space for service provision and the implementation of projects using digital technologies.

Based on the assessment of the level of digitalization of enterprises in the Kherson Region, it can be concluded that the majority of businesses are still at the initial stages of digitalization. Some of them have basic electronic resources such as websites and social media pages but underutilize these resources to attract new customers and increase their efficiency.

Most enterprises lack a comprehensive digital strategy and action plan for digitalizing their operations. Some businesses have limited experience in using advanced programs and technologies that can automate and optimize their business processes.

However, the presence of electronic resources and the use of certain programs for business process automation indicate that these enterprises are interested in implementing digital tools and developing the digital economy. It is important for businesses to effectively utilize digital technologies to attract new customers, increase sales volumes, and improve the quality of products and services.

Therefore, the enterprises in the Kherson Region require support and an enhancement of their digitalization competencies to ensure sustainable development and competitiveness in the modern digital world.

Furthermore, certain sectors, such as e-commerce and internet marketing, already exhibit a high level of digitalization. However, some industries, including manufacturing, transportation, construction, healthcare, and education, may require significant efforts to achieve effective digitalization.

Additionally, it is important to note that the level of digitalization may vary depending on the size and ownership structure of the enterprises. For instance, larger companies typically have greater opportunities for investing in digitalization and developing their own information systems.

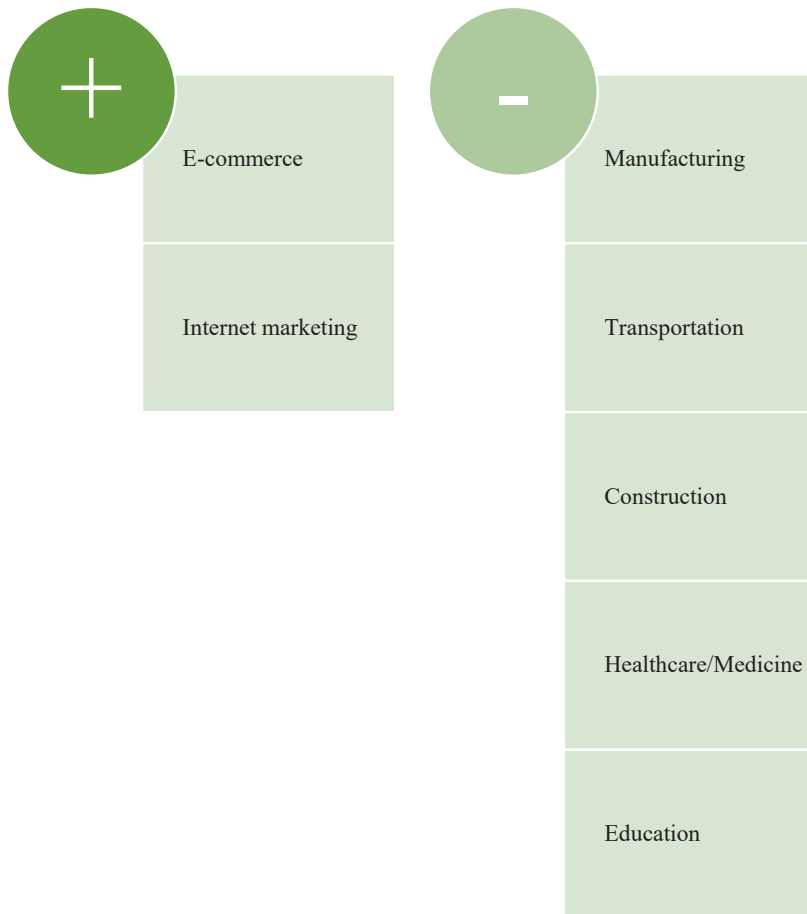
Therefore, the assessment of the level of digitalization of enterprises in the Kherson region indicates that overall digitalization is average, with certain sectors having a high level of digitalization. However, to achieve maximum efficiency in the activities of enterprises in this region, additional efforts may be required to digitalize and implement advanced technologies in sectors with lower levels of digitalization, as well as to ensure access to proper infrastructure and resources for all enterprises, regardless of their size and ownership form.

Unfortunately, even in the 21st century, a significant number of entrepreneurs lack trust in innovative developments and technologies, let alone their integration into their own businesses and enterprises. This widely known problem is called "neophobia."

The problem of neophobia is one of the most common reasons that complicate the implementation of digital tools in enterprises. Neophobia refers to the fear of new technologies that can arise among employees, managers, and other business participants who do not know how to use these tools and do not understand their benefits.

In this regard, it is important to conduct regular training, education, and consultations on the use of digital tools for all business participants involved in the implementation of these tools.

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*Figure 2. The most popular types of activities among enterprises at all levels in the Kherson region*

It is also important to actively involve employees in the development and implementation of new technologies, which will make them more aware and prepared for change.

It is necessary to develop a strategy for implementing digital tools that involves gradual and thoughtful adoption of new technologies, allowing employees and managers to avoid stress and neophobia. Additionally, it is crucial to maintain a positive mindset among the staff and motivate them to use digital tools, emphasizing the benefits they can bring to the company and individual employees.

Therefore, addressing neophobia can significantly facilitate the process of implementing digital tools in the enterprise and ensure a more successful utilization of these tools. To achieve this, it is important to provide sufficient support, training, and motivation to employees involved in the implementation and use of digital tools.

One effective way to support employees is by providing training and workshops on using digital tools, which can help increase their competence and confidence in utilizing them. Additionally, it is important to provide opportunities for practical application of these tools, such as allowing employees to use them in their work.

In addition to training, motivation is also a crucial factor. Management should provide sufficient motivation for employees to use digital tools. This can be achieved, for example,



*Figure 3. Tools for all business participants involved in the implementation*

through financial incentives, rewards for successful utilization of these tools, or incorporating them into the employee performance evaluation system.

Furthermore, it is important to provide proper support and assistance to employees in case of technical issues with digital tools. This can be ensured by establishing a technical support service that addresses employees' inquiries and resolves their problems.

Therefore, addressing neophobia and providing adequate support and motivation to employees are important factors for the successful implementation and utilization of digital tools in the enterprise.

For effective management, it is necessary to allocate work time for familiarizing employees with new tools and provide appropriate education and training so that employees can utilize these tools to their full potential. Additionally, it is important to ensure adequate support from technical assistance to address any issues that may arise during the use of the new tools.

Furthermore, it is crucial to consider the cultural aspects of the company and foster open communication between management and employees to ensure their support and engagement in the implementation of digital tools.

Overall, the successful implementation of digital tools in an enterprise depends on open communication, support, and training of employees, as well as considering the cultural characteristics of the company.

According to a selective survey of 7,502 companies worldwide conducted by Morning Consult on behalf of IBM from March 30 to April 12, 2022, although an increasing number of enterprises consider the reliability of artificial intelligence (AI) important, the majority of them have not taken steps to ensure that their AI is reliable and responsible. Here are the findings:

- 74% have not reduced unintentional bias.
- 68% have not tracked performance changes and model updates.
- 61% have not verified their ability to explain decisions using AI.
- 60% have not developed an ethical AI policy.

Among the factors hindering successful AI implementation are the following:

- 34% of surveyed companies consider limited skills, experience, or knowledge in AI as an obstacle.

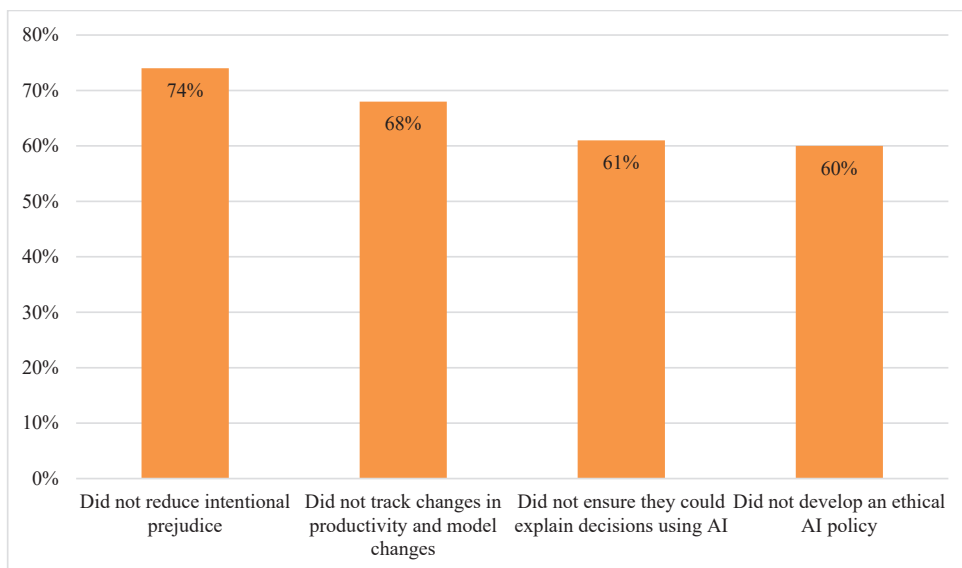


Figure 4. The neophobia of artificial intelligence implementation

- High cost (29%).
- Lack of tools or platforms for model development (25%).
- Projects that are too complex or difficult to integrate or scale (24%).
- Data complexity (24%).

Two-thirds of the surveyed companies are implementing or planning to use AI to achieve their sustainable development goals.

The assessment of the level of digitization included the analysis of various aspects, such as the presence and utilization of digital technologies, access to the internet and computer

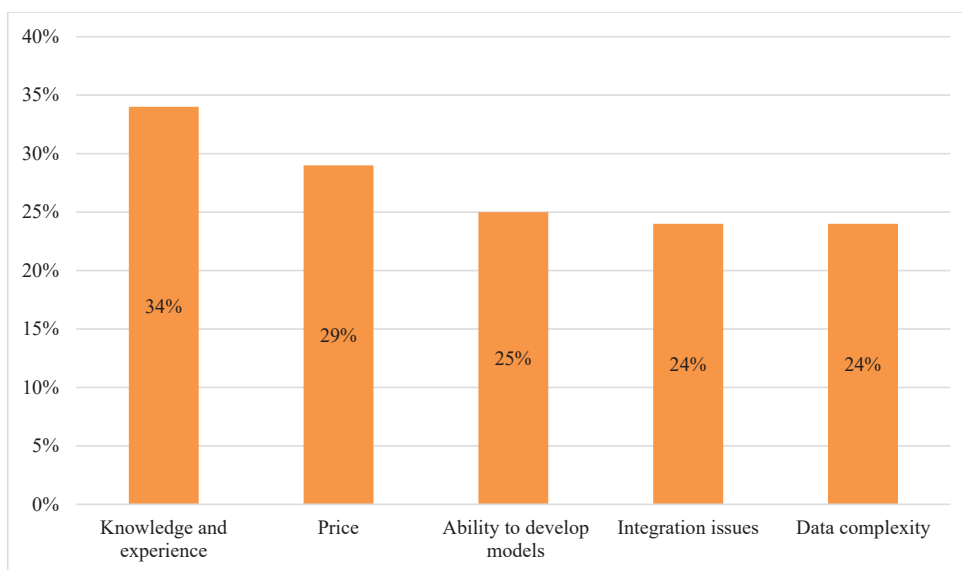


Figure 5. Obstacles Factors

resources, the presence of digital solutions in business processes, and the level of digital culture among entrepreneurs.

Based on the conducted analysis, it was found that many companies in the Kherson region are already implementing digital technologies in their operations, such as e-commerce, online marketing, and process automation. However, a significant number of companies were also found to not fully utilize the potential of digital tools or have limited access to them.

**Conclusions.** The assessment of the level of digitization has revealed certain barriers to the rapid implementation of digital technologies in businesses within the Kherson region, such as insufficient knowledge and skills of the personnel, financial constraints, and inadequate infrastructure. Overcoming these barriers can be a key task for further development of digitization in the region.

The conclusions also indicate that a favorable business environment, government support, and promotion of innovative initiatives can stimulate the process of digitization in enterprises. It is important to develop digital technology infrastructure, promote digital literacy among entrepreneurs, and ensure the availability of educational programs and consultations for the implementation of digital tools.

In summary, the assessment of the level of digitization in businesses within the Kherson region shows that while some enterprises are already successfully utilizing digital technologies, there is a need for further development and support of this process. The implementation of digital tools can contribute to increased efficiency, competitiveness, and innovative potential of enterprises, which is a crucial factor for their success in the contemporary business environment.

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