

Impact of Digitalization on International Financial Security in Conditions of Sustainable Development

Wpływ cyfryzacji na międzynarodowe bezpieczeństwo finansowe w warunkach zrównoważonego rozwoju

Oksana Desyatnyuk*, Mariya Naumenko, Iryna Lytovchenko***,
Oleksandr Beketov******

*West Ukrainian National University, 11 Lvivska Str., Ternopil, 46020 Ukraine

E-mail: o.desyatnyuk@wunu.edu.ua, ORCID: 0000-0002-1384-4240

**National Academy of the National Guard of Ukraine,
Department of Management and the Military Economy
Zahysnykiv Ukraine sq., 3, Kharkiv, 61001 Ukraine

E-mail: marianaumenko1955@gmail.com, ORCID: 0000-0002-1974-2341

***Simon Kuznets Kharkiv National University,
Department of Management, Logistics and Innovation,
Ave. Nauki, 9-A, Kharkiv, 61166 Ukraine

E-mail: iryna.lytovchenko@hneu.net, ORCID: 0000-0002-8117-1244

****West Ukrainian National University
11 Lvivska Str., Ternopil, 46020 Ukraine

E-mail: Beketov44a@gmail.com, ORCID: 0009-0000-0839-919X

Abstract

The implementation of digital technologies in financial security allows you to automate and accelerate the processes of ensuring security. Electronic monitoring and analytics systems can quickly identify suspicious transactions and vulnerabilities, facilitating a prompt response to threats. That is why the topic of the current research is relevant and timely. The purpose of the study is to present the main components of the digitization process of international financial security in the context of sustainable development, with an emphasis on the formation of a comprehensive methodological approach to the analysis of the issue. The methods used in this research include the observation method to identify the main features of the digitization process of international financial security, the forecasting method to identify the main trends in the development of digital security, and the methods of analysis, synthesis, deduction, and induction to visually present the results of the research. Additionally, the graphic method is utilized to display a comprehensive methodological approach and illustrate the research results. During the course of the research, the basic components of the process of digitizing financial security were analysed, and an assessment of strengths and weaknesses was conducted. Additionally, opportunities and threats related to the process of digitizing international financial security were determined. The priority areas for the digitization of international financial security in the context of sustainable development have been identified. The main results of the study include the development of a comprehensive methodological approach to the process of digitizing international financial security under conditions of sustainable development. The study also yields the following conclusions regarding the development of digitization: the utilization of analytical tools and artificial intelligence in financial security improves the accuracy of detecting fraud, money laundering, and other financial crimes; digital technologies facilitate access to financial services in remote and less developed regions; digital technologies enable cost optimization for ensuring financial security through automation and efficient resource utilization.

Key words: digital technologies, digital tools, financial security, international standards, sustainable development

Streszczenie

Wdrożenie technologii cyfrowych w kontekście bezpieczeństwa finansowego pozwala zautomatyzować i przyspieszyć procesy zapewnienia bezpieczeństwa. Elektroniczne systemy monitorowania i analizy potrafią szybko identyfikować podejrzane transakcje i luki, ułatwiając szybką reakcję na zagrożenia. Dlatego tematyka artykułu jest istotna i aktualna. Celem jest przedstawienie głównych elementów procesu cyfryzacji międzynarodowego bezpieczeństwa finansowego w kontekście zrównoważonego rozwoju, z naciskiem na ukształtowanie kompleksowego podejścia metodologicznego do analizy. W artykule wykorzystano następujące metody: obserwacyjną, służącą identyfikacji głównych cech procesu cyfryzacji międzynarodowego bezpieczeństwa finansowego, metodę prognostyczną służącą identyfikacji głównych trendów rozwoju bezpieczeństwa cyfrowego oraz metody analizy, syntezy, dedukcji oraz indukcja wizualnej prezentacji wyników badań. Dodatkowo, metoda graficzna służy zobrazowaniu kompleksowego podejścia metodologicznego i zilustrowaniu wyników badań. W toku badań dokonano analizy podstawowych elementów procesu cyfryzacji bezpieczeństwa finansowego oraz dokonano oceny mocnych i słabych stron. Dodatkowo określono szanse i zagrożenia związane z procesem cyfryzacji międzynarodowego bezpieczeństwa finansowego. Zidentyfikowano priorytetowe obszary cyfryzacji międzynarodowego bezpieczeństwa finansowego w warunkach zrównoważonego rozwoju. Do głównych wyników badania należy opracowanie kompleksowego podejścia metodologicznego do procesu cyfryzacji międzynarodowego bezpieczeństwa finansowego w warunkach zrównoważonego rozwoju. Z badania wynikają także następujące wnioski dotyczące rozwoju cyfryzacji: wykorzystanie narzędzi analitycznych i sztucznej inteligencji w bezpieczeństwie finansowym poprawia skuteczność wykrywania oszustw, prania pieniędzy i innych przestępstw finansowych; technologie cyfrowe ułatwiają dostęp do usług finansowych w odległych i słabiej rozwiniętych regionach; technologie cyfrowe umożliwiają optymalizację kosztów w celu zapewnienia bezpieczeństwa finansowego poprzez automatyzację i efektywne wykorzystanie zasobów.

Slowa kluczowe: technologie cyfrowe, cyfrowe narzędzia, bezpieczeństwo finansowe, międzynarodowe standardy, zrównoważony rozwój

Introduction

The outbreak of the health crisis associated with the COVID-19 epidemic in early 2020 has caused the world to turn en masse to *cyberspace*, effectively accelerating the digital transformation that began decades ago. International financial companies have adopted business models based on digital technologies to continue their operations. Internet traffic growth reached 60% shortly after the start of the epidemic, which is evidence of the digital acceleration caused by the pandemic. Digitization plays a crucial role in the competitiveness of the financial sector, facilitating the development of innovative business models. The increasing performance of mobile devices, the availability of large volumes of easily accessible data, and the utilization of blockchain technology are among the driving forces behind this development. To ensure the success of this process, conditions that promote innovation are necessary. In this context, international security regulations should not hinder the advancement of new technologies by creating unjustified barriers to market access. New technologies open the doors of financial markets to new products and participants, leading to rapid and profound changes at all stages of this process. Consequently, the world is faced with new challenges in terms of sustainable development. However, it is important to note that digitalization addresses significant data security concerns at national and international levels. Security is a fundamental requirement encompassing various aspects, ranging from general considerations to the realms of national, international, and global economies. Presently, financial security contributes to international financial security by integrating parameters that characterize safe operations and elements of state security, all while considering the conditions of sustainable development and aspects of globalization. The state of international financial security, in the context of sustainable development, is influenced by factors that form the technological foundation of modern financial technologies and the cybersecurity of national payment and banking systems in the era of digitalization. In recent years, there has been increased relevance in regulating and controlling the exploitation of loopholes in the interaction of tax systems across different countries. These loopholes are often utilized to artificially reduce taxable income or transfer income to jurisdictions with low tax rates. The dilution and erosion of profits lead to a loss of revenue for governments worldwide. However, despite the progress made in addressing the issue of profit shifting, concerns persist about the ability of existing tax regulations to meet the needs of a rapidly evolving economy.

Furthermore, the advancement of digitalization processes in the economy has given rise to the shadow economy. This occurs due to the execution of illicit transactions through digital channels. The preservation of anonymity in digital agreements and the confidentiality of individuals involved in such agreements contribute to illegal business operations, thereby posing a threat to international financial security. Shadow banking, online shops with payment

systems, digital currencies, and underground economic activities all represent threats to global international financial security.

On one hand, digitalization serves as a catalyst for the growth of the digital economy, promoting conditions for sustainable development and globalization. On the other hand, it also contributes to the development of digital inequality and the existence of shadow economies in both traditional and digital sectors.

The aforementioned aspects provide a strong foundation for conducting research, substantiating the relevance of the topic, and facilitating the exploration of current issues.

Literature review

According to the authors of the study, it is recommended to begin the literature review by analysing digitalization in the context of sustainable development. The authors utilized an analysis of existing publications indexed in the Scopus database to illustrate keywords related to the direction of digitization in the context of sustainable development (Fig. 1).

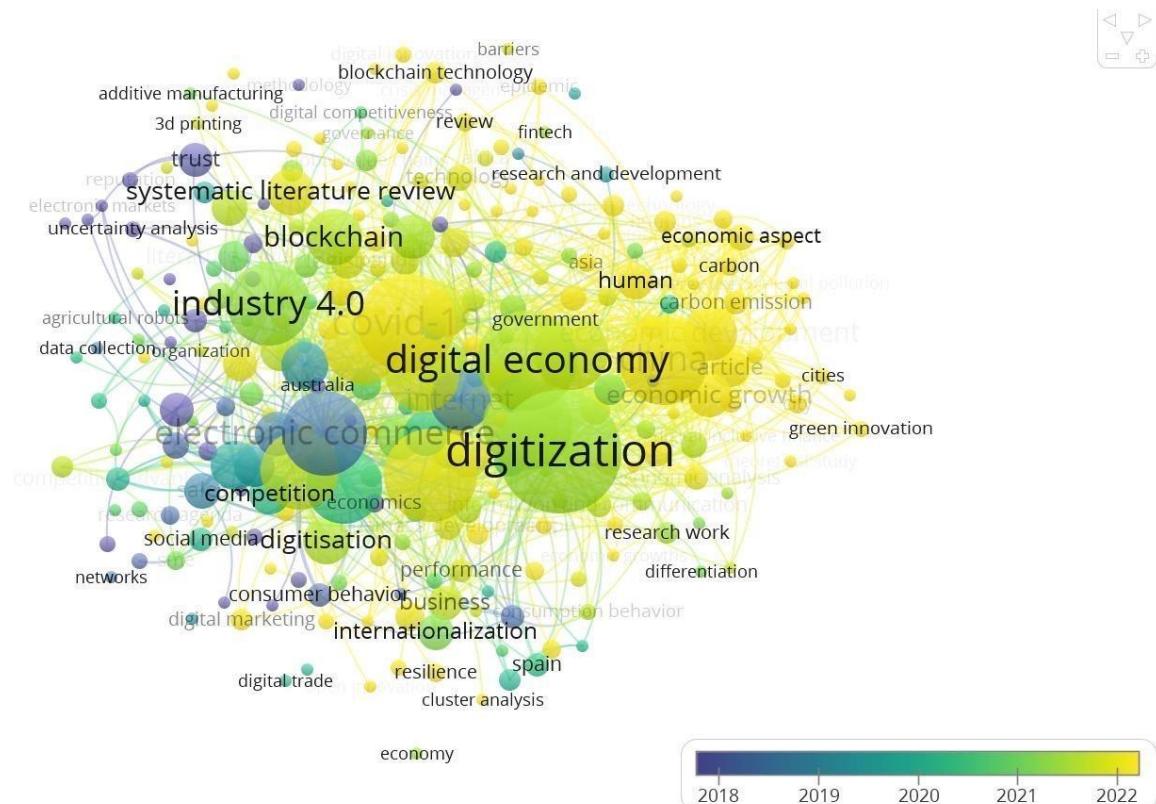


Figure 1. Illustration of keywords in the direction of digitization in the context of sustainable development (developed by the authors, based on Scopus publications 2018-2022)

The illustration of keywords related to digitization in the context of sustainable development allows us to infer that the number of publications has increased in the past two years. This increase signifies the ongoing relevance of the research.

In the exploration of sustainable development, the works of A. Pawłowski (*Pawłowski A., 2008, 2021*) hold significant importance. In these works, the author delved into the dimensions of sustainable development, taking into account political, technical, and legal aspects. These foundational works aid in the development of the methodological framework for the current research.

Additionally, in the study of sustainable development, the authors examined the works of Ganushchak-Yefimenko, L., Nifatova, O., Fastovets, N., Plysenko, H., Lutay, L., Tkachuk, V., Shcherbak, V., & Ptashchenko, O. (Ganushchak-Yefimenko, L., 2020) and Elina Boichenko, Nataly Martynovych, Iryna Shevchenko (*Boichenko B.*, 2021), which focus on the utilization of sustainability indicators and the concept thereof. Furthermore, the work of Mensah J. (Mensah J., 2019), dedicated to exploring the consequences and principles of sustainable development for society, deserves thorough investigation.

International financial security, given the rapid pace of sustainable development, is currently a pressing issue. Baranov A., Kucher V., Ustymenko O., Utkina M., Hrybachova I. (Baranov A., 2020) elucidate the mechanism of managing international financial security, considering the factor of intellectual property. The works of Bashtova

M. (Bashtova M., 2017) and Beal T. (Beal T., 2022) shed light on the contemporary challenges of international financial security, encompassing relationships, environmental factors, and global efforts. These aspects are crucial for achieving sustainable development goals. Additionally, the works of the following scholars merit special attention: Pushak Y., Lagodienko V., Basiurkina N., Nemchenko V., Lagodienko N. (Pushak Y., 2021), Gandhi Y. (Gandhi Y., 2022), Hrybienko O. (Harieieva O.), Bulatova O., Zakharova O. (Hrybienko O., 2022), and Kopytko M., Fleychuk M., Vereskia M., Petryshyn N., Kalynovskyy A. (Kopytko M., 2021). These works emphasize the significance and importance of promoting the development of international financial security, its organization, and management.

As mentioned, the digitalization of international financial security contributes not only to the sustainable development of the world but also to negative factors. Therefore, in order to comprehend the purpose of the study, the authors analysed works that explore the factors of the shadow economy, specifically those by Drobot E. V., Makarov I. N., and Kovalev A. A. (Drobot E. V., 2020).

Thus, the analysis of the literature enabled the authors of the study to conclude that the issue of digitalization of international financial security remains relevant in the context of sustainable development. It is worth noting that despite the extensive body of scientific achievements, the impact of digitalization on international financial security and its consequences for ensuring global financial security are insufficiently studied.

Aim of the research

The purpose of the study is to examine the influence of digitization on international financial security in relation to sustainable development. The study aims to analyse the impact of digitalization on the advancement of international financial security and explore the interplay between the development of digitalization in international financial security and the facilitation of achieving sustainable development goals.

Methods

During the research, empirical methods such as observation and forecasting were employed to thoroughly examine and present the characteristics of the digitalization process and its impact on financial security. Additionally, analytical, synthesis, induction, and deduction methods were utilized to visually illustrate the utilization of information tools in the establishment of financial security. Each of these methods was employed to address specific research objectives at various stages of the study.

Therefore, it is beneficial to provide a concise description of the application of each of these methods. For instance, the observation method is suitable for describing the digitalization process in enterprises, institutions, organizations, and so on. This method facilitates the rapid adaptation of management systems to address the latest challenges in the external environment. Additionally, during the examination of digital tool implementation, the use of analysis and synthesis methods is recommended. These methods aid in optimizing the processes of making marketing and management decisions.

The forecasting method was utilized to identify and substantiate scientific perspectives that determine the overall trajectory of future events. For instance, it helped determine the sequence of utilizing digital tools to ensure financial security in the context of sustainable development. Moreover, the methods of induction and deduction were employed to draw conclusions about the potential for ensuring financial security in the present-day era of digitalization.

A graphic method was employed to visually represent the sequence of information tool implementation and the associated actions involved in establishing financial security. The research results were meticulously organized and presented through tables and figures.

Furthermore, the evaluation results regarding the assessment of opportunities and threats related to the digitalization of international financial security in the context of sustainable development were obtained using the expert method. This method enables the optimization of research outcomes and facilitates their utilization for future forecasting.

The SWOT analysis of the digitalization of international financial security in the context of sustainable development is employed to identify strengths, weaknesses, opportunities, and threats. This analysis enables the formulation of marketing and management solutions to ensure sustainable development and establish a robust financial security system.

Therefore, each of the methods considered played a vital role in addressing specific research tasks. Together, they contributed to formulating a comprehensive set of actions and solutions to foster sustainable development.

Results

The digitization of international financial security in the context of sustainable development plays a crucial role in ensuring the stability and effectiveness of financial systems, as well as contributing to the attainment of sustainable

development goals. During crises and recessions, particular attention is placed on international financial security. Illicit financial flows can surge by exploiting technical vulnerabilities in operational processes and monitoring/control procedures. Financial criminals seek to exploit temporary weaknesses in anti-money laundering and counter-terrorism financing efforts. It is worth noting that on a global scale, criminal networks may aim to exploit the current circumstances of the COVID-19 crisis to launder illicit funds, engage in fraudulent activities, or misuse personal data for malicious purposes. Hence, it is crucial to prioritize the maintenance and enhancement of control and monitoring systems as a central organizational concern. Sustained efforts are necessary from financial sector participants to promptly respond and adapt their systems.

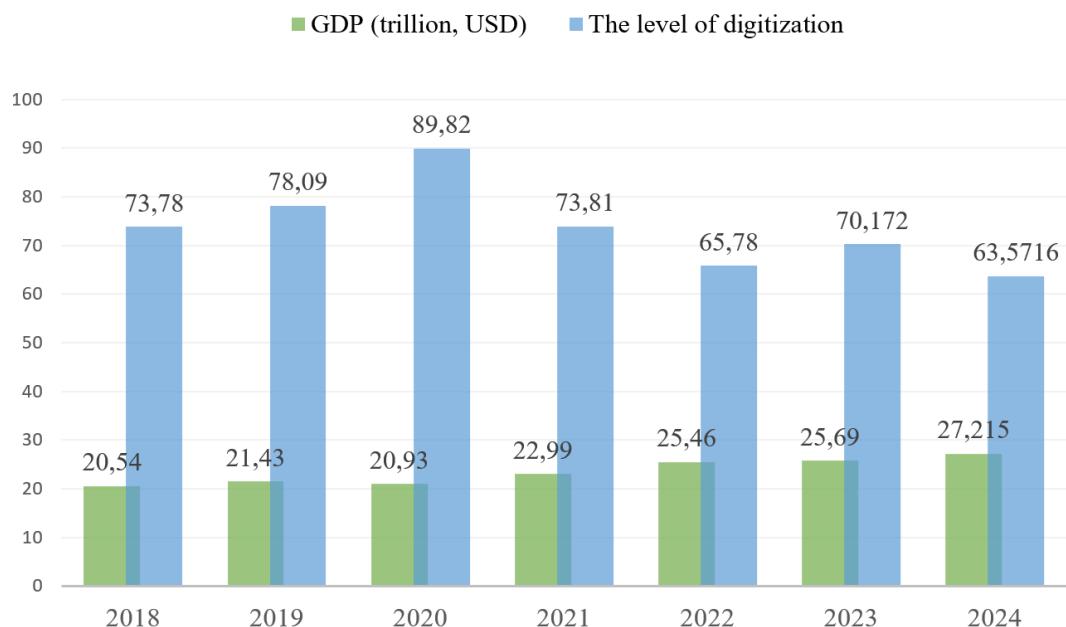


Figure 2. Dependence of fluctuation of world development in comparison of the level of GDP and the level of digitalization (current state and forecast), source: constructed by the authors

Table 1. Factors influencing the digitization of international financial security in conditions of sustainable development (proposed by the authors)

A group of factors	Characteristic
Ecological basis	Environmental financial risks Green investments Responsible financing
Technological base	Development of digital security Cyber security of the banking system and banks Payment system security Sustainability of the infrastructure of the national payment system Technological basis of the payment system Cyber fraud
Institutional basis	Protection of national financial assets outside the country Security of the country's financial assets Optimal functioning of the national financial system
Political base	National currency exchange rate Stability of the balance of payments Corruption of the authorities Undefined directions of development of the political system Political and legislative instability Development of digitization policy Income from products of the national economy
Scientific and technical progress	Development of technologies and introduction of innovations New systems of transmission and processing of information and its protection Implementation of blockchain technologies, smart contracts The concept of Industry 5.0., Web 3.0
Financial basis	High rates of inflation, unemployment Credit rates The possibility of an international financial crisis

The primary objective of digitalization is to leverage modern technologies to enhance management processes, ensure security, and mitigate risks in the financial sector. In Figure 2, authors will present the correlation between global development fluctuations, GDP levels, and the degree of digitalization from 2018 to 2022, along with the forecast for 2023-2024.

Indeed, the presented dynamics show that 2020 experienced the highest rates of digitalization globally, primarily driven by the consequences of the pandemic. The popularity of digital services surged due to quarantine restrictions. It is worth noting that the indicator for 2022 was lower than that of 2021, which the authors of the study attribute to the technological restructuring of digitalization conditions to ensure sustainable and uninterrupted business operations.

The depicted correlation indicates that digitalization in the context of sustainable development is influenced by various factors that determine its level. Recognizing this, the authors of the study aimed to propose factors that influence the digitization of international financial security within the framework of sustainable development, ultimately shaping opportunities and threats. These factors are detailed in Table 1.

During the course of the research, the authors concluded that macro-environmental factors pose the greatest threat, while meso- and micro-environmental factors present opportunities for enhancing the state of digitization in international financial security within the context of sustainable development. The factors identified during the research are considered crucial in elevating the level of digitization in international financial security, as they reinforce its social significance and highlight the need to incorporate them when formulating measures aimed at digitalization development. Thus, these factors should be taken into account when establishing a comprehensive methodological approach to the digitization of international financial security in conditions of sustainable development (Table 2). Additionally, based on the analysis, a SWOT analysis matrix (Fig. 3) was constructed, illustrating the weaknesses, strengths, opportunities, and threats associated with the digitalization of international financial security in the context of sustainable development.

Table 2. Assessment of opportunities and threats of digitization of international financial security in the conditions of sustainable development

No	Factor	Rating
1.	Ecological basis	
1.1.	Environmental financial risks	-3
1.2	Green investments	+4
1.3	Responsible financing	+3
2	Technological base	
2.1	Development of digital security	+5
2.2	Cyber security of the banking system and banks	+5
2.3	Payment system security	+5
2.4	Sustainability of the infrastructure of the national payment system	+5
2.5	Technological basis of the payment system	+3
2.6	Cyber fraud	-5
3.	Institutional basis	
3.1	Protection of national financial assets outside the country	+5
3.2	Security of the country's financial assets	+4
3.3	Optimal functioning of the national financial system	+4
4	Political base	
4.1	National currency exchange rate	+3
4.2	Stability of the balance of payments	+3
4.3	Corruption of the authorities	-5
4.4	Undefined directions of development of the political system	-4
4.5	Political and legislative instability	-4
4.6	Development of digitization policy	+4
4.7	Income from products of the national economy	+2
5	Scientific and technical progress	
5.1	Development of technologies and introduction of innovations	+5
5.2	New systems of transmission and processing of information and its protection	+4
5.3	Implementation of blockchain technologies, smart contracts.	+4
5.4	The concept of Industry 5.0., Web 3.0	+5
6	Financial basis	
6.1	High rates of inflation, unemployment	-5
6.2	Credit rates	-3
6.3	The possibility of an international financial crisis	-5

+ – possibilities

- – threats.

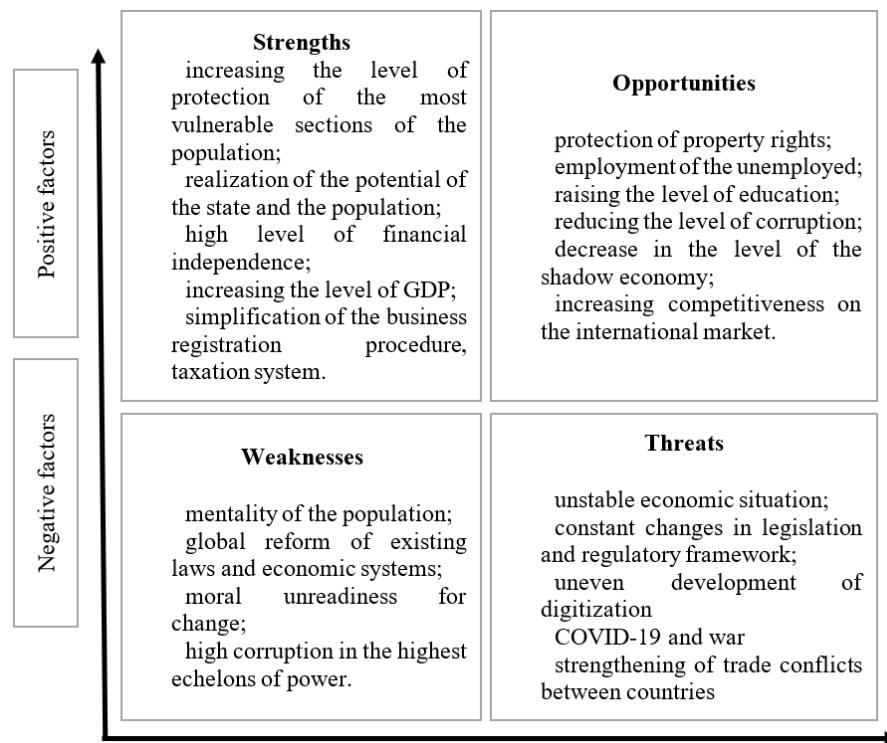


Figure 3. SWOT-analysis matrix of digitization of international financial security in conditions of sustainable development, source: author's development

The SWOT analysis matrix of the digitalization of international financial security in the context of sustainable development reveals a predominance of strengths, indicating a positive trend in the development of digitalization in alignment with sustainable development goals.

Addressing weaknesses and threats must be built on a three-pronged foundation, namely: cross-border activities (consistency of domestic regulations), taxation (linking with financial performance and value creation), and harmonization of business and government (by increasing transparency).

Revealing the role of digitalization in ensuring sustainable development through international financial security, the authors of the study suggest considering the following characteristics:

1. *Digital presence*: Digital technologies enable the automation of various processes, leading to increased productivity. They facilitate the automation of repetitive tasks, reduce errors, and optimize workflow, thereby contributing to the efficient utilization of time and resources. Digitization enables businesses in multiple sectors to conduct diverse production processes across different countries while gaining access to a broader customer base worldwide. Moreover, it allows enterprises to strengthen their presence in regional markets without the need for extensive physical infrastructure. By avoiding the establishment of offline offices or networks of representative offices, businesses can achieve operational scalability at the local level without incurring significant operational costs or capital investments.
2. *Digital Intellectual Property*: Dependency on intangible assets, including intellectual property (IP). It should be noted that companies actively utilizing digital technologies are characterized by increased investments in intangible assets, particularly in IP assets that can be owned or leased from third parties. Many such companies heavily rely on IP assets, such as software supporting their services, websites, and various other critical functions, which serve as central elements of their business models.
3. *Digitized data*: Business models of highly digitized enterprises are characterized by a large volume of data and the involvement of a significant number of users. The benefits of data analysis can be enhanced as more information related to specific users or customers is collected. The role of user engagement is particularly evident in social networks, where companies heavily rely on data, network effects, and user-generated content. However, it should be noted that the level of user participation and involvement does not necessarily correspond to the degree of digitalization. For example, cloud computing can be considered a highly digitized business with limited user involvement. It is anticipated that these characteristics will become more prevalent as digitalization progresses.

Based on this study, the authors propose the development of a comprehensive methodological approach to the digitalization of international financial security in the context of sustainable development (Fig. 4).

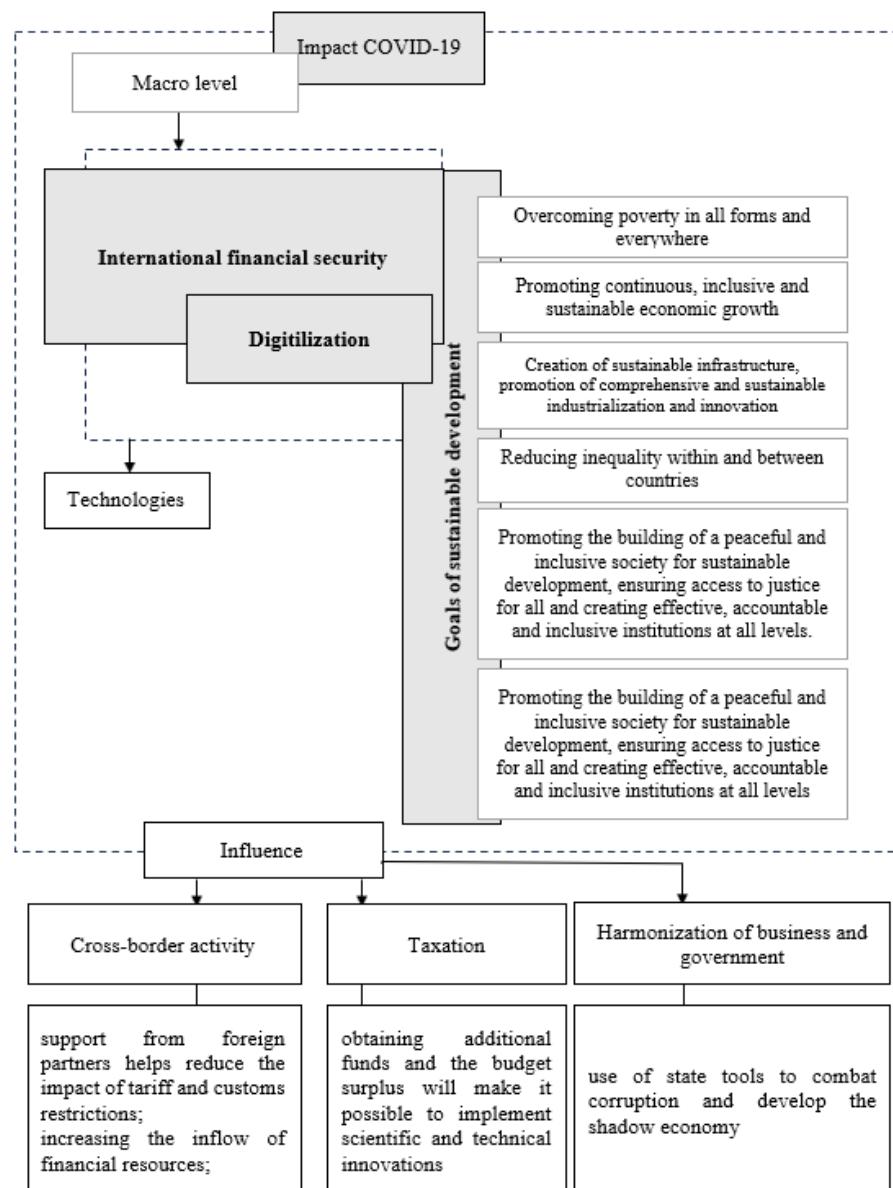


Figure 4. A comprehensive methodical approach to digitalization of international financial security in conditions of sustainable development, source: developed by the authors

The proposed complex methodical approach is built taking into account the macro level. The macro level provides for certain criteria, namely:

1. Financial flows. Sufficient financial flows formed during the current functioning of economic entities consolidated in the *hands* of the state to ensure the current state activity.
2. Payment systems and settlements. Stable functioning of the national payment system and the system of international settlements, both in the aspect of the entire state and in the aspect of the functioning of organizations, enterprises and households.
3. Investments. Attracting a sufficient level of foreign investments, ensuring the quality of these investments and their non-speculative nature, as well as foreign borrowings.
4. Capital outflow. Prevention of cross-border outflow of capital from the country, which is implemented according to legal and illegal schemes, in combination with ensuring a sufficient level of capital reserves necessary for investments in the fixed capital of organizations and other investments necessary for financial support not only for current consumption and current economic activities, but for development of the socio-economic system of the country, taking into account expanded reproduction.
5. Income level. Securing a sufficient level of income to generate a level of domestic demand capable of financing the flow of innovation necessary for the expanded reproduction of the economy.

Ways to ensure digitalization of international financial security in conditions of sustainable development:

1. Improvement of the political base for the use of digital technologies;

2. Development of international standards. It is important to establish international standards and regulatory frameworks that govern digital financial services and protect against cyber threats. The development and adoption of such standards will ensure the unity and security of financial transactions around the world.
3. Strengthening cyber security. Establishing strong cybersecurity systems is critical to protecting financial institutions and transactions from cyberattacks. States should invest in the development of cyber security technologies, training of specialists, exchange of threat information and joint action to prevent cybercrime.
4. Expansion of financial inclusion. Digital technologies can open up access to financial services for millions of people around the world. However, it is important to ensure that all sections of society have equal access to these technologies. Infrastructure development, education and support for vulnerable groups will help reduce the digital divide and ensure financial inclusion for all.

Discussion

Compared to most previous studies, this article focuses on the creation of conditions for the digitalization of financial security in the context of sustainable development. The process of digitizing financial security in this context may give rise to some debatable points, which require further research. Here are some of them:

1. Issues of cyber threats and privacy: With the increasing use of digital technologies in the financial sector, the likelihood of cyber-attacks and data breaches also increases. This poses a threat to the privacy of customers and the security of their financial assets. Discussions may arise regarding the need to impose certain restrictions on the processing and storage of personal data in order to ensure privacy protection (Gandhi Y., 2022).
2. The digital divide. The implementation of digital technologies requires access to the Internet and an established infrastructure. In many countries, especially in developing countries, there is inequality in access to digital technologies, which can increase the digital divide between different segments of the population. This can lead to discussions about fairness and equality in access to digital financial services (Hrybinenko O., 2020).
3. Issues of population employment and unemployment growth. The implementation of digital technologies, such as automation and artificial intelligence, can have profound implications for employment. While these technologies can enhance productivity and efficiency in certain sectors, they also have the potential to replace certain types of work, leading to concerns about job displacement and unemployment. Additionally, the shift towards digitalization often requires individuals to acquire new skills and qualifications, creating a need for upskilling and reskilling programs. The impact of digitization on the labour market and its implications for social justice are important topics for discussion and further research.
4. Environmental consequences of using digital tools. The increasing reliance on digital technologies comes with environmental consequences. The energy consumption associated with data centres and digital infrastructure contributes to carbon emissions and energy consumption. Moreover, the manufacturing and disposal of electronic devices generate electronic waste, which poses environmental challenges. In the context of sustainable development, there are ongoing discussions about the need to mitigate the negative environmental footprint of digital technologies. This includes exploring ways to reduce energy consumption, promote renewable energy sources, and develop environmentally sustainable practices in the digital sector. Finding alternative solutions that balance the benefits of digitalization with environmental sustainability is a key area of focus in these discussions.
5. Issues of digital discrimination and inequality. The widespread adoption of digital technologies introduces concerns regarding potential discrimination and inequality. Algorithmic decision-making and automated data processing can perpetuate biases and unequal treatment, particularly when the algorithms are opaque or lack transparency. This can result in incorrect or discriminatory outcomes related to financial security and access to services. It is crucial to establish ethical standards and frameworks that guide the responsible development and deployment of digital technologies, ensuring fairness, accountability, and the protection of individuals' rights.

These discussion points underscore the importance of addressing the challenges associated with the digitalization of financial security within the context of sustainable development. It is necessary to strike a balance between the convenience and productivity gains offered by digitalization, while safeguarding privacy, preventing discrimination, and promoting environmental sustainability. By adopting a comprehensive approach that considers these multifaceted concerns, we can foster an inclusive and responsible digital transformation that supports sustainable development goals and benefits all members of society.

Conclusions

The study provides a solid basis for discussing the digitalization of international financial security in the context of sustainable development, leading to the following conclusions:

1. The necessity of prioritizing cyber security integration: As digitization continues to expand, there is a pressing need to address cyber security concerns. The increasing number of cyber threats and attacks highlights the importance of implementing robust cyber defense measures. Integrating cyber security into all facets of digitization is crucial for safeguarding the security and integrity of financial systems.
2. The process of state regulation and standardization. International standards and regulatory frameworks for digital financial security must be developed. Standardization will help create unity in approaches to cyber security and ensure a high level of security for financial transactions.
3. Financial inclusion. Digital technologies can open up access to financial services for millions of people who were previously excluded. However, it is important to ensure that digital security is accessible and secure for all, particularly vulnerable populations.
4. Ethics and transparency. Digital technologies must be developed and used in accordance with ethical principles. It is important to ensure the transparency of algorithms and the operation of artificial intelligence systems in order to avoid discrimination and injustice.
5. Sustainability, environmental and social responsibility: The development of digital technologies must take into account environmental sustainability. The increase in the use of digital technologies is accompanied by an increase in energy consumption and e-waste. It is necessary to actively work on reducing the impact of the digital industry on the environment, promote the use of energy-efficient solutions and environmentally sustainable practices.
6. Acceleration of globalization processes and global cooperation: Digital technologies and financial security are global issues, and their solution requires global cooperation. States, international organizations and the private sector must work together to set standards, share information and develop joint strategies to ensure digital security in a sustainable development environment.

These conclusions point to the need for careful planning, regulation and implementation of digitalization of international financial security in conditions of sustainable development. Taking into account the discussion points and research conclusions, effective strategies and solutions can be developed that will contribute to ensuring security and sustainable development in the financial sector.

We note that the results obtained in the current study can be used in the development of various methods of increasing international financial security in conditions of sustainable development, taking into account digitalization.

Thus, the COVID-19 pandemic is expanding the opportunities and challenges associated with digital transformation. The impact of digitalization on international financial security in the context of sustainable development is determined by the practice of the digital economy and possible directions of action. The potential of the digital economy as a lever for innovation and inclusive growth in the context of sustainable development is being optimized.

References

1. BARANOV A., KUCHER V., USTYmenko O., UTKINA M., HRYBACHOVA I., 2020, Mechanism of state economic security management in the direction of intellectual property rights protection: cases of selected industries, *Journal of security and sustainability issues (Scopus)*, <https://dspace.lvduvs.edu.ua/bitstream/1234567890/3309/1/%d0%a1%d0%ba%d0%be%d0%b1%d1%83%d1%81%20%d1%81%d1%82%d0%b0%d1%82%d1%82%d1%8f%20Alexander%20Baranov%2c%20Vitalii%20Kucher%20et%20al.pdf>.
2. BASHTOVA M., 2017, *International economic security through relations and factors of nature use*, State institution Institute of Economics of Nature Use and Sustainable Development of the National Academy of Sciences of Ukraine, Kyiv, <http://dspace.wunu.edu.ua/bitstream/316497/5577/1/%D0%91%D0%90%D0%A8%D0%A2%D0%9E%D0%92%D0%90%D0%20%D0%9C.pdf>.
3. BEAL T., 2022, *Economic security: A need for a renewed global effort*, Chatham House, https://www.chatham-house.org/2022/03/economic-security-need-renewed-global-effort?gclid=Cj0KCQjw1vSZBhDuARIsAKZlijRmwvxun diWLnOThFQB-AvE3IymysGUYTOPTPUkFC8Vwjs2Xw-huwaAvV6EALw_wcB.
4. CHEEVER F., 2022, Environmental law, *Britannica*, <https://www.britannica.com/topic/environmental-law/Sustainable-development#ref750231>.
5. DROBOT E. V., MAKAROV I. N., 2021, Assessment of Factors and Stressors of the Shadow Economy: World Experience, *Shadow Economy*, 5(1), 53-77, <https://1economic.ru/lib/112236>.
6. GANDHI Y., 2022, Economic Security: Meaning, Importance and Types, *Analytic Steps*, <https://www.analytics-steps.com/blogs/economic-security-meaning-importance-and-types>.
7. GANUSHCHAK-YEFIMENKO L., NIFATOVA O., FASTOVETS N., PLYSENKO H., LUTAY L., TKACHUK V., SHCHERBAK V., PTASHCHENKO O., 2020, Use of key indicators to monitor sustainable development of rural areas, *Global journal of environmental science and management GJESM*, 6(2): 175-190, https://www.gjesm.net/article_37320.html
8. HRYBINEKO O. (HAPIEIEVA O.), BULATOVA O., ZAKHAROVA O., 2020, Evaluation of demographic component of countries' economic security, *Business, Management and Economics Engineering*, 18(2): 307-330 (Scopus, Web of Science), <https://journals.vilniustech.lt/index.php/BMEE/article/view/12309>.

9. BOICHENKO E., MARTYNOVYCH N., SHEVCHENKO I., 2021, Cognitive Modeling Concepts of Sustainable Development of Society, *Problemy Ekonomiki/ Problems of Sustainable Development*, 16(2): 158-165.
10. KOPYTKO M., FLEYCHUK M., VERESKLIA M., PETRYSHYN N., KALYNOVSKYY A., 2021, Management of security activities at innovative-active enterprises, *Business: Theory and Practice* (Scopus), <https://dspace.lvduvs.edu.ua/bitstream/1234567890/4068/1/%d0%b2%d0%b5%d1%80%d0%b5%d1%81%d0%ba%d0%bb%d1%8f%20%d1%81%d0%ba%d0%be%d0%bf%d1%83%d1%81.pdf>.
11. KOVALEV A. A., 2020, International economic security in the modern era of the clash of civilizations: problem of conceptualization, *Theoretical and Applied Economics*, 2: 61-74, https://en.nbpublish.com/library_read_article.php?id=29842.
12. MENSAH J., 2019, Sustainable development: Meaning, history, principles, pillars, and implications for human action: Literature review, *Cogent Social Sciences*. <https://www.tandfonline.com/doi/pdf/10.1080/23311886.2019.1653531?needAccess=true>.
13. MOLLENKAMP D. T., 2022, Economic Security, *Investopedia*, <https://www.investopedia.com/economic-security-5213404>.
14. PAWŁOWSKI A., 2008, How many dimensions does sustainable development have? *Sustainable development*, 16(2): 81-90, <https://onlinelibrary.wiley.com/doi/abs/10.1002/sd.339>.
15. PAWŁOWSKI A., 2021, Sustainable development and renewable sources of energy, *Advances in Environmental Engineering Research in Poland*, 3-16, <https://www.sciencegate.app/document/10.1201/9781003171669-1>.
16. PEARCE D., *Sustainable development*, <https://www.tutor2u.net/economics/topics/sustainable-development>.
17. POLASKY S., KLING C. L., LEVIN S. A., 2019, Role of economics in analyzing the environment and sustainable development, *PNAS*, <https://www.pnas.org/doi/10.1073/pnas.1901616116>.
18. PUSHAK Y., LAGODIENKO V., BASIURKINA N., NEMCHENKO V., LAGODIENKO N., 2021, Formation the system for assessing the economic security of enterprise in the agricultural sector, *Business: Theory and Practice* (Scopus), <https://dspace.lvduvs.edu.ua/bitstream/1234567890/4105/1/13013-Article%20Text-49347-2-10-20210305.pdf>
19. FINCAN, *Shadow economy of the countries of the world*, http://fincan.ru/articles/95_tenevaja-ekonomika-stran-mira/.
20. SHEVCHENKO I., ZAVADSKYKH H., PTASHCHENKO O., ZVONAR V. VISHKA I., 2023, The Application of Digitization in the Economy as a Promising Direction in the Growth of Human Capital, *Econ. Aff.*, 68(01s): 345-352, <http://ndpublisher.in/admin/issues/EAvg68n1sz11.pdf>.
21. THE ICRC, 2015, *What is Economic Security?*, <https://www.icrc.org/en/document/introduction-economic-security#:~:text=The%20ICRC%20defines%20economic%20security,environment%20and%20prevailing%20cultural%20standards>.
22. UN, 2015, *Sustainable Development Goals. The Sustainable Development Agenda*, <https://www.un.org/sustainabledevelopment/development-agenda/>
23. YOUMATTER DEFINITIONS, 2020, *Sustainable Development – What Is It? Definition, History, Evolution, Importance And Examples*, <https://youmatter.world/en/definition/definitions-sustainable-development-sustainability/>.