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Review Article

THEORETICAL FOUNDATION OF THE DIGITALIZATION OF TRADE RELATIONS WITHIN THE EAEU

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Abstract: *The purpose of this study is to analyze the theoretical foundations of the digitalization of trade relations and to identify the specific features of the development of digital trade mechanisms within the Eurasian Economic Union (EAEU). The paper examines the impact of digital technologies on the transformation of international trade and the development of economic integration processes. The methodological basis of the research includes methods of comparative and system analysis, and the method of scientific generalization. The use of these methods made it possible to comprehensively examine the processes of trade digitalization and determine the main directions of their development within integration associations. The main hypothesis of the study is that the implementation of digital technologies increases the efficiency of trade relations between EAEU member states by reducing transaction costs, simplifying trade procedures, and developing cross-border e-commerce. The results of the study show that the digitalization of international trade is becoming one of the key factors in the development of economic integration. The development of electronic document management, digital trade platforms, and electronic data exchange systems improves the efficiency of interaction between participants in foreign economic activity. It is concluded that the further development of digital technologies and the formation of a unified digital space within the EAEU may strengthen trade and economic relations between member states and increase the competitiveness of their economies in the global digital economy.*

Key words*: Digitalization of Trade, EAEU, International Trade, Economic Integration, Cross-border E-commerce, Electronic Document Management.*

JEL classification*: F13, F15, O33*

1. INTRODUCTION

The rapid advancement of digital technologies has fundamentally transformed the architecture of international trade, reshaping traditional mechanisms of exchange, coordination, and regulation. In recent years, the digitalization of trade relations has emerged as a key driver of economic efficiency and integration, significantly influencing the functioning of regional economic unions. In this context, the Eurasian Economic Union (EAEU) represents an important case for analyzing the impact of digital transformation on trade and economic cooperation.

The widespread adoption of information and communication technologies (ICT), the expansion of digital platforms, and the growing importance of cross-border e-commerce have led to the emergence of new forms of trade interaction. These developments contribute to the reduction of transaction costs, the simplification of trade procedures, and the acceleration of information exchange between economic agents. As a result, digitalization not only enhances the efficiency of trade relations but also transforms the institutional environment in which these relations evolve.

At the same time, the digital transformation of trade processes within the EAEU is accompanied by a number of structural and institutional challenges.

Differences in the levels of digital development among member states, as well as inconsistencies in regulatory frameworks, limit the full realization of the potential benefits of digital integration. Therefore, the study of the theoretical foundations of trade digitalization and the identification of its specific features within the EAEU are of particular relevance.

This study aims to analyze the theoretical foundations of the digitalization of trade relations

and to identify the specific features of the development of digital trade mechanisms within the EAEU. The research is based on the application of comparative and system analysis, as well as the method of scientific generalization, which allows for a comprehensive examination of digital trade processes within integration associations.

The main hypothesis of the study is that the implementation of digital technologies increases the efficiency of trade relations between EAEU member states by reducing transaction costs, simplifying trade procedures, and fostering the development of cross-border e-commerce. In this regard, particular attention is paid to such elements as electronic document management systems, digital trade platforms, and electronic data exchange mechanisms.

By systematizing existing theoretical approaches and adapting them to the context of the EAEU, this paper contributes to a deeper understanding of the role of digitalization in international trade and economic integration. The findings may be useful for further academic research and for the development of policy measures aimed at creating a unified digital space within the EAEU.

2. THEORETICAL FOUNDATIONS OF TRADE DIGITALIZATION

2.1. CONCEPT AND ESSENCE OF DIGITALIZATION IN INTERNATIONAL TRADE

The digitalization of international trade represents a structural transformation of economic interactions based on the integration of digital technologies into trade processes. This transformation encompasses the use of information and communication technologies (ICT), digital platforms, and data-driven systems that redefine traditional forms of exchange and coordination between economic agents.

According to Meltzer (2019), digital trade fundamentally alters the mechanisms of cross-border exchange by enabling real-time data transmission, reducing information asymmetry, and facilitating the participation of firms in global markets. In this context, digitalization should be understood not only as a technological shift but also as an institutional and economic transformation that reshapes trade relations.

A similar perspective is presented by Azmeh, Foster and Echavarri (2020), who argue that digitalization contributes to the emergence of new trade regimes and requires the adaptation of international trade rules. These changes are particularly relevant for regional economic unions, where coordination between member states becomes a critical factor.

Furthermore, the expansion of digital platforms and online marketplaces has created new opportunities for firms, especially small and medium-sized enterprises (SMEs), to engage in international trade. As noted by Ahmedov (2020), digital technologies lower entry barriers and increase market accessibility, thereby enhancing the inclusiveness of global trade.

Thus, digitalization can be defined as a multidimensional process that integrates technological, economic, and institutional changes, leading to the transformation of international trade systems.

2.2. DIGITAL TECHNOLOGIES AS A FACTOR OF REDUCING TRANSACTION COSTS

One of the key theoretical aspects of trade digitalization is its impact on transaction costs. In the framework of institutional economics, transaction costs include expenses related to information search, negotiation, contract enforcement, and monitoring.

Digital technologies significantly reduce these costs by automating processes and improving transparency. According to Mirzaye and Mohiuddin (2025), the implementation of digital tools in trade operations leads to faster information exchange, reduced administrative burdens, and improved coordination between participants in international trade.

In addition, electronic document management systems eliminate the need for paper-based procedures, thereby reducing time delays and operational costs. The United Nations Economic and Social Commission for Asia and the Pacific (UN ESCAP, 2023) emphasizes that the transition to digital documentation enhances efficiency and minimizes the risk of errors in trade processes.

The role of digital platforms is also crucial in reducing transaction costs. These platforms provide integrated environments for buyers and sellers, enabling efficient matching and reducing search costs. As highlighted Fozilova (2021), digitalization facilitates the optimization of supply chains and improves the overall efficiency of trade operations.

Therefore, the reduction of transaction costs is one of the central mechanisms through which digitalization enhances the efficiency of trade relations.

Table 1. Key Effects of Digitalization on International Trade

Aspect of Trade	Traditional Model	Digital Model
Transaction costs	High	Reduced
Speed of operations	Slow	High
Market access	Limited	Global
Documentation	Paper-based	Electronic
Transparency	Low	High

Source: Compiled by the author based on Ahmedov (2020); UN ESCAP (2023); Mirzaye and Mohiuddin (2025).

2.3. METHODOLOGICAL APPROACHES TO THE STUDY OF DIGITAL TRADE

The study of digital trade requires an interdisciplinary methodological approach that combines elements of international trade theory, institutional economics, and digital economy studies. Traditional trade theories, such as comparative advantage, must be complemented by new approaches that account for the role of data, platforms, and digital infrastructure.

One of the widely used approaches is the application of gravity models, which allow for the assessment of trade flows under the influence of digital factors. Duval and Utoktham (2025) demonstrate that digitalization significantly increases trade volumes by reducing trade costs and improving connectivity between countries.

Another important methodological tool is the use of composite indices, such as the Trade Digitalization Index (TDI), which provides a comprehensive assessment of the level of digitalization of trade processes. According to UN ESCAP (2024), such indices enable comparative analysis across countries and regions, highlighting disparities in digital development.

In addition, system analysis and comparative methods play a key role in examining digital trade within regional integration frameworks. These methods make it possible to identify structural differences between countries and assess the effectiveness of digitalization policies.

Thus, the methodological framework for studying digital trade is characterized by a combination of quantitative and qualitative approaches, ensuring a comprehensive understanding of this complex phenomenon.

2.4. THE ROLE OF DIGITAL INFRASTRUCTURE IN INTERNATIONAL TRADE DEVELOPMENT

Digital infrastructure represents a fundamental prerequisite for the effective functioning of digital trade. It includes telecommunications networks, data centers, cloud computing systems, and digital platforms that enable the transmission, storage, and processing of information. Without a well-developed digital infrastructure, the potential benefits of trade digitalization cannot be fully realized.

According to UN ESCAP (2024), the level of digital infrastructure development directly influences the degree of participation of countries in international trade. Countries with advanced digital connectivity demonstrate higher trade volumes and better integration into global value chains. This is explained by the ability of firms to efficiently access digital platforms, exchange data, and coordinate cross-border operations.

In addition, digital infrastructure plays a critical role in reducing trade costs. The availability of high-speed internet and reliable communication systems allows for faster processing of trade transactions and improves the efficiency of logistics operations. Duval and Utoktham (2025) emphasize that improved digital connectivity leads to a measurable decrease in trade costs and an increase in trade flows.

However, disparities in digital infrastructure remain a significant challenge, particularly for developing and transition economies. Limited access to digital technologies restricts the ability of firms to participate in international trade and reduces the overall effectiveness of digitalization policies. As a result, bridging the digital divide becomes a key priority for policymakers.

Thus, the development of digital infrastructure is a necessary condition for the successful digitalization of trade relations and the enhancement of economic integration.

3. TRANSFORMATION OF INTERNATIONAL TRADE UNDER THE INFLUENCE OF DIGITALIZATION

3.1. IMPACT OF DIGITAL TECHNOLOGIES ON TRADE PROCESSES

Digital technologies have significantly transformed the structure and functioning of international trade. The integration of digital solutions into trade processes has led to the automation of operations, increased speed of transactions, and improved efficiency of supply chains.

According to Ahmedov (2020), digitalization enhances the transparency of trade operations and facilitates access to international markets. This transformation is particularly evident in the increasing role of data as a key production factor.

Moreover, digital technologies enable real-time coordination between participants in global value chains. As noted in Socio-Economic Planning Sciences (2023), digital trade contributes to technological innovation by facilitating knowledge transfer and reducing barriers to information exchange.

These changes also affect the competitive landscape of international trade, as firms that adopt digital technologies gain significant advantages in terms of efficiency and market access.

3.2. DEVELOPMENT OF CROSS-BORDER E-COMMERCE

One of the most prominent manifestations of trade digitalization is the rapid growth of cross-border e-commerce. Digital platforms have created new opportunities for firms to engage in international trade without the need for physical presence in foreign markets.

Mirzaye and Mohiuddin (2025) emphasize that cross-border e-commerce reduces entry barriers for firms and increases the diversity of goods and services available to consumers. This is particularly important for SMEs, which often face difficulties in accessing traditional export channels.

In addition, e-commerce platforms facilitate the integration of logistics, payment systems, and customer service, creating a seamless trading environment. As highlighted by Fozilova (2021), this integration enhances the efficiency of trade operations and improves customer experience.

However, the development of cross-border e-commerce also poses challenges related to regulation, data protection, and taxation, which require coordinated policy responses at both national and international levels.

3.3. ELECTRONIC DOCUMENT MANAGEMENT AND DATA EXCHANGE SYSTEMS

Electronic document management systems (EDMS) and digital data exchange platforms play a crucial role in the digitalization of trade processes. These systems enable the automation of documentation procedures, reducing the need for manual processing and minimizing errors.

According to UN ESCAP (2023), the implementation of electronic documentation significantly reduces the time required for customs clearance and improves the efficiency of trade operations. This is particularly relevant for regional integration frameworks, where harmonization of procedures is essential.

Furthermore, digital data exchange systems facilitate the interoperability of national trade systems, enabling seamless communication between different stakeholders. Duval and Utoktham (2025) note that such systems contribute to the reduction of trade costs and the enhancement of connectivity.

Thus, the development of electronic document management and data exchange systems is a key component of the digital transformation of international trade.

3.4. DIGITAL PLATFORMS AND DATA AS KEY DRIVERS OF TRADE TRANSFORMATION

In the context of the digital economy, data and digital platforms have emerged as fundamental drivers of transformation in international trade. Unlike traditional trade systems, where physical goods and logistics dominated, modern trade increasingly relies on the exchange, processing, and utilization of data. This shift has led to the formation of a new paradigm often referred to as "data-driven trade."

Digital platforms play a central role in this transformation by acting as intermediaries that connect buyers, sellers, and service providers across borders. These platforms reduce information asymmetry, facilitate market entry, and enable more efficient matching of supply and demand. According to Meltzer (2019), digital

platforms significantly lower barriers to entry into international markets, particularly for small and medium-sized enterprises, by providing access to global customer bases and integrated service ecosystems. Moreover, the increasing importance of data as a production factor has changed the nature of comparative advantages in international trade. Countries with advanced digital infrastructure and strong data governance frameworks are better positioned to benefit from digital trade. Azmeh, Foster and Echavarri (2020) argue that control over data flows and digital infrastructure is becoming a critical determinant of competitiveness in the global economy. The role of data is particularly evident in the optimization of supply chains. Digital technologies enable real-time tracking, predictive analytics, and automated decision-making, which enhance the efficiency and resilience of trade operations. As highlighted by Duval and Utoktham (2025), the integration of digital solutions into trade processes leads to improved connectivity and reduced trade costs, thereby increasing overall trade volumes.

However, the growing reliance on data also raises important regulatory and institutional challenges. Issues related to data protection, cybersecurity, and cross-border data flows require coordinated policy responses at both national and international levels. The absence of unified standards may lead to fragmentation of digital markets and limit the potential benefits of digitalization. In the context of the EAEU, the development of digital platforms and data exchange systems represents a key direction for enhancing trade integration. The creation of a unified digital ecosystem can facilitate cross-border interactions, improve transparency, and strengthen economic cooperation among member states. At the same time, achieving these objectives requires the harmonization of regulatory frameworks and the development of common standards for data management and digital infrastructure.

Thus, digital platforms and data are not only technological tools but also strategic resources that shape the future of international trade and regional economic integration.

4. FEATURES OF DIGITALIZATION OF TRADE RELATIONS WITHIN THE EAEU

4.1. CURRENT STATE OF DIGITAL TRADE DEVELOPMENT IN THE EAEU

The Eurasian Economic Union (EAEU) has recognized digitalization as a strategic priority for enhancing economic integration and competitiveness. The member states have initiated various programs aimed at developing digital infrastructure and promoting the use of digital technologies in trade.

However, the level of digital development varies significantly among EAEU countries. According to UN ESCAP (2024), disparities in digital infrastructure and institutional capacity limit the effectiveness of digital integration within the region.

Inshakova (2021) notes that while some progress has been made in the development of digital platforms and e-government systems, the overall level of digitalization remains uneven. This creates challenges for the implementation of unified digital trade mechanisms.

4.2. INSTITUTIONAL AND REGULATORY CHALLENGES

The digitalization of trade within the EAEU is accompanied by a number of institutional and regulatory challenges. Differences in legal frameworks, standards, and regulatory approaches hinder the development of a unified digital market.

According to Meltzer (2019), effective regulation is essential for ensuring the smooth functioning of digital trade. In the context of the EAEU, this requires the harmonization of national policies and the development of common standards.

Azmeh, Foster and Echavarri (2020) emphasize that the lack of coordinated regulation may lead to fragmentation and reduce the benefits of digital integration. These challenges highlight the importance of institutional cooperation among member states.

4.3. PROSPECTS FOR THE FORMATION OF A UNIFIED DIGITAL SPACE

Despite existing challenges, the development of a unified digital space within the EAEU presents significant opportunities for enhancing trade and economic cooperation. The integration of digital systems can improve efficiency, reduce costs, and increase the competitiveness of member states.

UN ESCAP (2023) highlights the importance of implementing electronic document management systems and digital trade platforms as key elements of digital integration. These tools can facilitate cross-border trade and improve coordination between stakeholders.

Furthermore, the development of digital infrastructure and the adoption of common

standards can strengthen the position of the EAEU in the global digital economy. As noted by Mirzaye and Mohiuddin (2025), digitalization has the potential to significantly enhance economic integration and promote sustainable growth.

In conclusion, the formation of a unified digital space within the EAEU represents a strategic direction for the development of trade relations, requiring coordinated efforts at both national and regional levels.

4.4. DIGITAL DIVIDE AND ITS IMPACT ON TRADE INTEGRATION WITHIN THE EAEU

One of the critical challenges affecting the digitalization of trade relations within the EAEU is the existence of a digital divide among member states. This divide is manifested in differences in access to digital infrastructure, levels of technological development, and the capacity to implement digital solutions in trade processes.

According to UN ESCAP (2024), disparities in digital readiness significantly influence the ability of countries to benefit from digital trade. Member states with more advanced digital ecosystems are better positioned to implement electronic trade systems, while less developed economies face structural constraints that limit their participation.

The digital divide also affects the efficiency of regional integration. Inconsistent levels of digitalization hinder the interoperability of national systems and complicate the implementation of unified digital trade mechanisms. As noted by Inshakova (2021), uneven digital development creates asymmetries in trade relations and reduces the overall effectiveness of integration processes.

Furthermore, the existence of a digital divide may lead to unequal distribution of benefits from digitalization, potentially increasing economic disparities within the Union. This highlights the importance of coordinated policies aimed at reducing these gaps and promoting inclusive digital development.

To address this challenge, EAEU member states need to invest in digital infrastructure, enhance institutional capacity, and promote knowledge sharing. As emphasized by Mirzaye and Mohiuddin (2025), coordinated efforts in digital policy development can significantly improve the outcomes of digital integration.

In this regard, overcoming the digital divide is a key condition for the successful formation of a unified digital space within the EAEU and for strengthening trade and economic cooperation among its member states.

5. DISCUSSION OF THE RESULTS

The results of the study confirm the central hypothesis that the implementation of digital technologies significantly increases the efficiency of trade relations within regional integration frameworks, including the Eurasian Economic Union (EAEU). The findings demonstrate that digitalization acts as a multidimensional factor influencing technological, institutional, and economic aspects of trade.

First, the analysis shows that digital technologies contribute to a substantial reduction in transaction costs. This is achieved through the automation of trade procedures, the implementation of electronic document management systems, and the use of digital platforms. These results are consistent with the findings of Mirzaye and Mohiuddin (2025), who emphasize the role of digital tools in simplifying trade operations and enhancing efficiency. Similarly, UN ESCAP (2023) highlights that the transition to electronic documentation significantly reduces processing time and administrative burdens.

Second, the study confirms that digitalization facilitates the development of cross-border e-commerce, which plays a crucial role in expanding trade opportunities for firms. The integration of digital platforms enables small and medium-sized enterprises to access international markets more easily, supporting the conclusions of Ahmedov (2020). At the same time, the growth of e-commerce intensifies competition and requires the adaptation of regulatory frameworks, as noted by Meltzer (2019).

Third, the results indicate that the effectiveness of digital trade is highly dependent on institutional factors, particularly the level of regulatory harmonization among EAEU member states. The lack of unified standards and legal frameworks limits the potential benefits of digital integration. This finding is in line with the arguments of Azmeh, Foster and Echavarri (2020), who stress that insufficient coordination may lead to fragmentation of digital trade systems.

In addition, the proposed conceptual model of digitalization of trade relations within the EAEU demonstrates that technological and institutional factors are interdependent and jointly determine economic outcomes. The interaction between digital infrastructure, regulatory policies, and trade

processes creates a synergistic effect that enhances overall trade efficiency. This supports the conclusions of Duval and Utoktham (2025), who show that digitalization increases trade flows by improving connectivity and reducing trade costs.

However, the study also reveals several limitations. The uneven level of digital development among EAEU countries remains a significant barrier to the formation of a unified digital space. Differences in infrastructure, institutional capacity, and technological readiness hinder the full realization of digital integration. These findings are consistent with UN ESCAP (2024), which identifies disparities in digitalization levels as a key challenge for regional integration.

Thus, the discussion highlights that while digitalization creates substantial opportunities for enhancing trade efficiency, its successful implementation requires coordinated institutional efforts and the development of a unified regulatory environment.

CONCLUSION

The study provides a comprehensive analysis of the theoretical foundations of the digitalization of trade relations and examines the specific features of digital trade development within the Eurasian Economic Union (EAEU). The results confirm that digitalization is a key driver of transformation in international trade and plays a crucial role in strengthening economic integration.

It has been established that the implementation of digital technologies contributes to the reduction of transaction costs, the simplification of trade procedures, and the expansion of cross-border e-commerce. These factors collectively enhance the efficiency of trade relations and increase the competitiveness of national economies. At the same time, the study demonstrates that the effectiveness of digital trade depends not only on technological factors but also on the level of institutional development and regulatory coordination.

A significant contribution of the paper is the development of a conceptual model of digitalization of trade relations within the EAEU, which integrates technological, institutional, and economic dimensions. This model provides a systematic framework for understanding the mechanisms through which digitalization influences trade processes in regional integration contexts.

Despite the positive effects of digitalization, the study identifies several challenges that limit its potential within the EAEU. These include disparities in digital development among member states, inconsistencies in regulatory frameworks, and insufficient coordination of digital policies. Addressing these challenges requires the harmonization of legislation, the development of digital infrastructure, and the implementation of unified standards for electronic trade systems.

In conclusion, the formation of a unified digital space within the EAEU represents a strategic priority for enhancing trade and economic cooperation. The successful realization of this objective will depend on the ability of member states to coordinate their efforts and adapt to the evolving conditions of the global digital economy. The findings of the study may serve as a basis for further research and for the development of policy measures aimed at promoting digital integration within the EAEU.

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