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ABSTRACT

of the dissertation for the degree of Doctor of Philosophy

**DEVELOPMENT DIRECTIONS OF E-COMMERCE IN THE
FORMATION OF BUSINESS RELATIONS**

Speciality: 5308.01 – General economy

Field of science: Economic sciences

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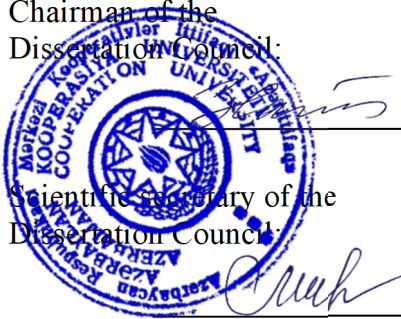
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GENERAL CHARACTERISTICS OF THE RESEARCH WORK

Relevance of the topic and degree of development. In the modern period, the process of digitalization of economic relations is progressing rapidly, and from this perspective electronic commerce (e-commerce) has become an integral component of global business relations. As a result of the development of digital technologies, the purchase and sale of goods and services over the Internet is fundamentally changing traditional trade models and creating new business platforms and forms of relations. These processes provide grounds to state that, over the last decade, e-commerce has demonstrated unprecedented growth worldwide. The value of global e-commerce sales has reached trillions of US dollars and accounts for a significant share of global gross domestic product (GDP). Particularly during the coronavirus pandemic (COVID-19), the share of online sales in total retail trade increased sharply, and in 2020 approximately 19% of global retail sales were carried out through electronic channels. This dynamic shows that both consumers and companies are increasingly internalizing the advantages of e-commerce and seeking integration into the digital environment. By eliminating geographical barriers, e-commerce has accelerated the integration of global markets and stimulated the formation of transnational business relations.

E-commerce generates transformation not only in the consumer market but also in business-to-business relations. By partially replacing traditional intermediary institutions, new digital platforms facilitate direct interaction between enterprises. As a result, intercompany relations become more flexible, transparent and large-scale, and even small and medium-sized business entities are able to join global trade networks and expand their partner and customer base.

The formation of business relations has also moved to a different plane under these new conditions. Traditional physical communication and contracting practices are being replaced by the real-time exchange of information and offers on online platforms. Thus, in the e-commerce environment, business relations are formed

in accordance with the principles of a networked economy, and new interdependencies and opportunities emerge among market participants. From this point of view, the relevance of the topic is highly important for developing countries, including Azerbaijan, because the development of the non-oil sector and the expansion of the digital economy are among the strategic priorities of the state in the Azerbaijani economy. In this regard, the relevance of the dissertation topic is closely linked to the strategic development documents adopted by our state in recent years. Thus, the “Strategy for the Development of the Digital Economy in the Republic of Azerbaijan for 2026–2029” is an important strategic document that reflects the transition of digital transformation in the country to a new stage. The Strategy identifies the expansion of digital infrastructure in entrepreneurship, the enhancement of economic competitiveness, the promotion of innovation-based development and the strengthening of digital skills as key targets. In addition, the Strategy places special emphasis on the application of Fourth Industrial Revolution technologies such as artificial intelligence, big data, blockchain, cloud technologies and “smart city” solutions in economic sectors. In this respect, the Strategy provides a basis for evaluating e-commerce not merely as a sales channel, but as a systemic mechanism that ensures the development of the digital economy, business relations and innovative entrepreneurship. In addition, “Azerbaijan 2030: National Priorities for Socio-Economic Development” identifies digital transformation, the integration of innovative technologies into economic processes and the creation of a competitive business environment as important development directions. This shows that the development of e-commerce acts not only as a technological innovation, but also as an important factor that ensures the expansion of business relations among economic entities and the formation of more efficient cooperation mechanisms. The same approach is reflected in the “Socio-Economic Development Strategy of the Republic of Azerbaijan for 2022–2026”. In that Strategy, the development of the digital economy, support for entrepreneurial activity and the strengthening of interactions among market participants are presented as priority directions. Based on these

aspects, it can be noted that e-commerce platforms may be evaluated as modern economic instruments that accelerate the interaction of business entities, reduce transaction costs and expand opportunities for cooperation.

E-commerce is considered an effective tool for modernizing the country's business relations and increasing access to foreign markets. Thus, the development of e-commerce is also of great relevance for Azerbaijan in terms of economic diversification, strengthening of the non-oil sector, regional market integration and the creation of new jobs. Although a number of studies on the digital economy, e-government and e-commerce have been conducted in the country in recent years, the impact of e-commerce on business relations has not yet been fully and comprehensively developed. Local studies have mainly addressed the general level of e-commerce development, its legal framework and consumer-oriented aspects; however, issues such as the strategic impact of e-commerce on the formation of relations among business entities and its contribution to regional economic integration have not been widely investigated. Existing gaps and information shortages in this area further increase the relevance of the dissertation topic. The above also provides grounds to state that, from both theoretical-methodological and empirical perspectives, a comprehensive study of the problem "Development directions of e-commerce in the formation of business relations" is important for Azerbaijani economic science and economic practice.

The issue of e-commerce and its impact on business relations has been studied in the scientific literature from various perspectives. International research shows that e-commerce not only increases economic efficiency, but also changes market structures and leads to the emergence of new business models. A number of scholars have emphasized that e-commerce reduces transaction costs, transforms the functions of intermediaries and, as a result, enhances the competitiveness of companies. Thus, a comprehensive knowledge base has been formed in the global scientific community regarding the effects of e-commerce at both micro and macro levels. At the same time, studies on the experience of developing countries have examined the issue in a more specific context. For example, research on the

development of e-commerce in Eastern Europe, Asia and the CIS emphasizes the role of factors such as infrastructure limitations, the digital divide and shortcomings in legal regulation in those regions.

In the late 1990s, with the development of e-commerce, R.Kalakota and A.Winston wrote one of the first books on e-commerce in world literature, entitled "E-commerce: A Manager's Guide". Although nearly 30 years have passed, G.Lee, D.Chaffey, S.Krug, E.Ries, J.Reynolds and others have provided information in most of their books on e-commerce about general aspects of e-commerce, ways to develop it, various sales strategies and the role of social media in e-commerce.

A review of local literature also shows that "e-commerce" has become one of the dynamic topics of recent years. Among Azerbaijani scholars, M.G.Akbarov authored "E-commerce", while I.K.Musayev, M.N.Alizade and A.B.Mahmudov authored "Electronic Business". A number of studies have also been conducted on the mutual influence of e-commerce and business relations. In addition, Z.A.Samadzade, A.F.Musayev, R.A.Balayev, G.I.Ismayilov, S.M.Mammadov, A.M.Mustafayev, E.B.Suleymanov, S.G.Mammadov, A.A.Gurbanov, C.A.Ibrahimli and C.M.Najafova have addressed issues of e-commerce and taxation, the taxation of e-commerce, the essence of e-commerce in international trade relations and other related matters in their research, discussed existing problems and proposed solutions. However, most of these studies have focused on topics in the context of general economic development or technological innovation, while the role of e-commerce in the plane of business relations has not been examined in depth. Therefore, the selected dissertation topic serves to fill a gap that is important in Azerbaijan from both scientific-theoretical and practical policy perspectives.

Object and subject of the research. The object of the research consists of economic entities operating in the field of business and trade in the Republic of Azerbaijan. The subject of the research is the mechanisms through which e-commerce influences the formation of business relations, as well as the regularities of the emergence, development and improvement of economic relations among buyers, sellers and partner economic entities in the digital environment.

Purpose and objectives of the research. The purpose of the research is to comprehensively analyze the development trends of e-commerce in the process of forming business relations, to assess the current situation using the example of the Azerbaijani economy and world countries, and to prepare scientifically substantiated proposals and recommendations for strengthening the impact of e-commerce on business relations. To achieve this purpose, the following objectives have been defined:

- to examine theories that explain the formation of e-commerce in business relations;
- to study the theoretical and methodological foundations of the development of e-commerce and business relations;
- to evaluate and analyze a new conceptual model for the interaction between e-commerce and business relations;
- to analyze the current state of business relations and e-commerce in the global environment and propose a new assessment method;
- to conduct macro-level analysis for developed and developing countries and develop an econometric model in this field;
- to conduct a micro-level analysis of e-commerce among small and medium-sized business entities in Azerbaijan and develop an econometric model for its assessment;
- to develop a new model for the use of e-commerce in the Republic of Azerbaijan and carry out forecasting for its application;
- to identify possible directions for increasing the potential opportunities for the use of e-commerce in the Republic of Azerbaijan and prepare relevant recommendations;
- to propose a number of effective measures for increasing state support for the improvement of business relations through e-commerce.

Research methods. The methods used in the research process include statistical generalization, analytical review, analysis and synthesis, a systematic approach and econometric calculations.

Main provisions submitted for defense. The main scientific provisions obtained as a result of the conducted research and submitted

for defense are as follows:

- E-commerce is one of the main mechanisms conditioning the digital transformation of traditional business relations;
- Although the current level and dynamics of e-commerce development in Azerbaijan are characterized by a high growth rate, its weight in the overall trade system remains low;
- The main reasons limiting the development of e-commerce are infrastructure shortcomings and institutional barriers;
- E-commerce has the potential to exert a multidirectional positive impact on the national economy and business entities;
- The proposed model and strategic directions for e-commerce development will strengthen its impact on business relations;
- The econometric models developed for the application of e-commerce in Azerbaijan are effective tools for increasing the efficiency of business activity at macro and micro levels;
- The expansion of e-commerce in the activities of small and medium-sized business entities (SMEs) enables the strengthening of their market participation and competitiveness;
- The orientation of state support toward the development of e-commerce will accelerate the process of digital transformation of business relations;
- The optimization of business relations through e-commerce will provide additional stimulus to the development of Azerbaijan's foreign economic relations and strengthen export potential.

Scientific novelty of the research. The scientific novelties obtained as a result of the conducted research are as follows:

- The theoretical foundations of e-commerce in business relations have been analyzed, and a conceptual approach characterizing the impact of e-commerce on the formation of business relations has been substantiated.
- The regularities governing the theoretical development of e-commerce and business relations have been analyzed, and a new development regularity has been identified.
- A new conceptual model for the interaction between e-commerce and "C2C" business relations has been proposed.

- The current state of e-commerce in business relations in the global environment has been analyzed, and new assessment criteria have been substantiated.
- An econometric model for the development of e-commerce in the Republic of Azerbaijan has been applied, and directions for increasing the turnover of e-commerce in total trade have been identified.
- Empirical data were collected over three years on the application of e-commerce in an SME entity; based on these practical data, an econometric model was developed and practical recommendations were prepared for the enterprise to accelerate the e-commerce process.
- For the first time in the Republic of Azerbaijan, the application of an appropriate model for forecasting the development dynamics of e-commerce for the next five years has been proposed.
- The infrastructure, legal and institutional barriers of Azerbaijan's e-commerce sector have been scientifically systematized, and a relevant action plan has been prepared.
- A package of strategically oriented practical proposals based on state support has been prepared for accelerating the development of e-commerce and strengthening its impact on business relations.

Theoretical and practical significance of the research. The theoretical significance of the research lies in the fact that the results obtained make valuable contributions to the field of digital economy and e-commerce theory in economic science. The concept and model formulated within the dissertation enrich the theoretical explanation of the impact of e-commerce on business relations. In particular, the analysis of the development features of e-commerce in Azerbaijan within conceptual frameworks such as transaction cost theory and network effects constitutes a new example in terms of applying these theories to the national economy. This work may serve as a reliable theoretical basis and source of information for future scientific research on the digital economy, e-commerce and business transformation. The practical significance of the research is measured

by the applicability of its results and proposals in the process of economic policy formation and in business decisions. The recommendations put forward in the dissertation may serve as a basis for a concrete action plan for developing the e-commerce sector in the Republic of Azerbaijan. In addition, the analyses and forecast indicators presented in the dissertation are also useful for local business entities. Companies may shape their digital transformation strategies by taking into account future development trends in e-commerce. For example, the findings obtained on the benefits and challenges of SMEs' transition to e-commerce may help them make well-founded investment decisions in this field.

Approbation and application. The results of the research have been presented at a number of international conferences, scientific events and seminars. The research results have also been published in various scientific journals. In addition, the results of the research may be applied by enterprises operating in the business sector, which will help them improve their e-commerce strategies. Based on the content of the dissertation, the researcher has published a total of 14 scientific articles and conference materials in local and foreign journals recommended by the Higher Attestation Commission under the President of the Republic of Azerbaijan, including 7 articles (3 published abroad) and 7 theses (1 published abroad). The main provisions of the dissertation and the proposals put forward have been published in international and republican scientific-practical conferences.

Among the conference materials, the following reports and theses may be mentioned: "Prospects for the Development of E-commerce in Azerbaijan" (Baku, 2023), "Development Directions of E-commerce Activities of Supermarkets in Azerbaijan" (Baku, 2023), "Prevention of Customer Churn in E-commerce" (Baku, 2023), "Synergizing Green Economy and E-commerce: Sustainable Practices for the Digital Marketplace" (Baku, 2024), "A Study on the Impact of Mobile Commerce on the Future of E-commerce" (Baku, 2025), "Employee Rights and Social Security Issues in Digital Platform Labor Markets" (Baku, 2026), "Platform Ecosystems and Value Creation in E-commerce: A Conceptual Model" (Moscow, 2026), and other reports and theses.

During the research, the author's articles entitled "Promoting Customer Reviews in the Electronic Business Environment in Azerbaijan" (Baku, 2023), "Estimating Customer Churn in Mobile Commerce: An Application of a Decision Tree Machine Learning Algorithm" (Baku, 2023), "The Role of Campaigns and Promotions Applied in E-commerce in Buyer Behavior" (Baku, 2024), "E-commerce Challenges of Old Commerce Centers: Evidence from Azerbaijan" (Ulan-Ude, 2024), "The Evolution of E-commerce: From Clicks to Bricks and Beyond" (Kyiv, 2024), "Platform Business Models: Addressing Organizational, Sectoral and Societal Dimensions in an Azerbaijani Context" (Vilnius, 2025), and "Explainable Recommender Systems in E-commerce" (Baku, 2026) were also published.

The name of the organization where the dissertation was carried out. Baku Business University.

The structure of the dissertation work and its total volume in characters. The dissertation consists of an introduction, three chapters, conclusions and proposals, a list of references, 1 scheme, 18 tables and 8 graphs. The total volume of the research is 276284 characters, including the introduction – 18421 characters, Chapter I – 71801 characters, Chapter II – 58144 characters, Chapter III – 60847 characters, conclusion – 17625 characters and the list of references – 23388 characters. Excluding tables, diagrams, graphs and the list of references, the dissertation comprises a total of 226838 characters.

THE MAIN CONTENT OF THE RESEARCH WORK

The **introduction** of the dissertation consistently presents the relevance and degree of development of the topic, the purpose and objectives of the research, its object and subject, methodological basis, main provisions submitted for defense, scientific novelty, theoretical and practical significance, as well as issues of approbation and application. It is also noted that in the modern period the digitalization of economic relations is not merely a technological change, but also means that relations of production, distribution, exchange and consumption acquire new content. In the context of the development

of the digital economic environment, e-commerce may be considered one of the important mechanisms for establishing, expanding and managing relations among business entities. In particular, the weakening of the concept of geographical space in the global market, the expansion of the platform economy, and the acceleration of digital payments and logistics solutions have brought e-commerce to the forefront as one of the most dynamically developing fields.

For Azerbaijan, e-commerce is of strategic importance in terms of expanding the non-oil sector, strengthening regional market integration, increasing export potential and enhancing the competitiveness of small and medium-sized businesses. In this regard, the purpose of the research is to assess the development directions of e-commerce in the process of forming business relations on theoretical, analytical and applied planes and to provide effective policy proposals.

The first chapter of the dissertation is entitled “**Theoretical and methodological foundations of the study of e-commerce in business relations**” and forms the theoretical and methodological basis of the research. In the first chapter, traditional trade relations are compared with digital trade relations; the historical evolution of e-commerce, its main models, legal and institutional framework, aspects related to behavioral economics, and the new content of business relations are examined in detail.

In the first subsection of the first chapter, the theoretical foundations of the formation of e-commerce in business relations are systematically presented. Although the concept of e-commerce was initially characterized mainly by the electronic placement of orders and payments, its content has expanded considerably in the modern period. E-commerce is now a multidimensional system in which a unified flow of information is established among the producer, seller, buyer, logistics operator, payment service provider and digital platform. The subsection explains the historical development of e-commerce by stages, beginning with the electronic data interchange stage of the 1970s and continuing through Internet marketplaces, mobile commerce, social commerce and the platform economy. In particular, the period after 1995, namely the emergence of platforms

such as Amazon and eBay, as well as the sharp expansion of online sales during the pandemic, are key turning points indicating that e-commerce has entered a qualitatively new stage.

The share of trade in GDP also reflects the country's economic resilience and consumer confidence, which proves the important role of trade in the Azerbaijani economy. Academician Z.A.Samadzade noted that *“the faster development of trade and service networks is an important factor in ensuring the harmonious functioning of the country as a whole and improving efficiency indicators”*¹

In addition, transaction cost theory, network effects, institutional approaches, the technology acceptance model and diffusion theory are interpreted as the main conceptual pillars explaining the development of e-commerce. One of the greatest advantages of e-commerce is the reduction of information search, contracting, payment and control costs. However, this reduction is not automatic. Digital trust, reputation mechanisms, legal protection and data security are important complementary conditions of this process.

In addition, the role of the legal-institutional framework is also specifically emphasized. Sustainable development of e-commerce is impossible without clear regulation of the recognition of electronic contracts, the legal force of digital signatures, protection of consumer rights, security of personal data, and tax and customs procedures. In this context, the experience of developed countries is summarized, while the development of the legal framework for Azerbaijan, its achievements and limitations are explained. At the end of subsection 1.1, it is concluded that the formation of e-commerce results from the synthesis of technological innovation, economic efficiency and institutional reliability. If one of these three components is weak, the real potential of digital trade is not fully realized.

The second subsection of the first chapter is devoted to the development regularities of the formation of e-commerce and business relations. This subsection shows that, in the digital market, economic decisions are formed differently from the classical market environment, through information abundance, algorithmic guidance,

¹ Səmədzadə Z.Ə. Azərbaycan iqtisadiyyatı, 100 ildə II-ci cild, Bakı-2021, 636 s.

social influence, behavioral biases and platform design. From the perspective of behavioral economics, concepts such as online decision-making tendencies, the social proof effect, impulsive purchasing, default choice and herd behavior are presented as important determinants of consumer behavior in e-commerce. On digital platforms, decisions are often determined more by limited attention, presentation format and reputation signals than by rational optimization.

This subsection also analyzes in detail the impact of newly emerging digital market structures on business relations. While the function of intermediaries in the traditional value chain was stable and relatively linear, in the digital market these relations move toward a network-based, multilateral and more flexible form. At the same time, problems such as the concentration of market power in dominant platforms, changes in the competitive environment and the emergence of algorithmic advantages are also noted.

Along with the above, the transformation of the competitive environment and relationship dynamics is explained as a separate direction in the second subsection of the first chapter. In e-commerce, competition is now formed not only on the basis of price, but also on delivery speed, service quality, user experience, consumer reviews, data analytics and personalized offers. Under these conditions, business relations become more flexible and more data-based. Companies compete with one another on the one hand, while cooperating within the same platform or ecosystem on the other. Thus, the general conclusion of the subsection is that the development regularities of e-commerce create fundamental changes not only in consumer behavior, but also in the market structure, platform dominance and the essence of interbusiness relations.

In the third subsection of the first chapter, a specific approach is presented to the modern features of mutual influence between e-commerce and business relations. This subsection combines, within a unified analytical framework, the modern development dynamics of e-commerce, forms of integration, the impact of digitalization, the transformation of “business-to-business” (B2B), “business-to-consumer” (B2C) and “consumer-to-consumer” (C2C) models, as well

as regional and global effects.

The subsection interprets the impact of digitalization on business relations in a multidimensional manner. Trends such as forecasting customer behavior through artificial intelligence and big data analytics, making transactions more transparent and traceable through blockchain-based solutions, accelerating financial relations through digital payment services, and turning social platforms into marketing and sales channels are presented as new features of e-commerce. In the B2B model, digitalization is associated with supplier search, order automation and simplification of contracting processes. In the B2C model, personalization, rapid delivery and platform dominance come to the fore. In the C2C model, the strengthening of user-based markets, second-hand trade and social trust mechanisms is emphasized.

One important feature of this subsection is the joint examination of regional and global effects. Although e-commerce strengthens global integration, its successful development depends on taking into account the characteristics of the local environment. The experience of China, the United States, Germany, Türkiye and other countries shows that the same digital technologies produce different results in different institutional and cultural environments. In this respect, e-commerce develops not according to a single model, but on the basis of the interaction between global trends and local adaptation mechanisms. The subsection concludes that, although the impact of e-commerce on business relations is universal in nature, its intensity and form are determined by the level of digital readiness, legal framework, infrastructure capacity and consumer behavior model of a particular country.

Overall, the main conclusion of the first chapter is that e-commerce is considered not as an independent phenomenon, but as a new organizational form of business relations. In the digital environment, interaction between parties is not limited to the moment of transaction; information exchange, reputation building, management of long-term customer relations, logistics and after-sales services are integrated into a single value chain. In this regard, e-commerce is not simply a digital copy of classical market relations, but also a process of restructuring institutions, trust mechanisms and market behavior. Here, transaction

costs, network effects, platform intermediation, behavioral economics and legal-institutional approaches are presented not in isolation from one another, but within a unified conceptual system.

The second chapter of the dissertation is entitled **“Analysis and assessment of the current state of e-commerce and business relations in the global environment and in Azerbaijan”**. In this chapter, the theoretical framework is complemented by empirical analysis, and the real state of e-commerce is assessed on the basis of statistical indicators, comparative criteria and econometric models at global and national levels.

This chapter first analyzes the current state of business relations and e-commerce in the global environment. International measurement tools such as the UN “B2C E-commerce Index” are used to assess countries’ readiness for digital trade. The number of Internet users, the number of persons with financial accounts, the number of secure Internet servers and the quality of postal-logistics services are interpreted as fundamental indicators of e-commerce. The specific impact of each of these criteria on the formation of business relations is explained.

One of the important conclusions of the first subsection of the second chapter is that the level of e-commerce development across countries is not explained solely by income differences. Among countries with similar economic resources, some develop digital trade more rapidly, while others lag behind. The assessment conducted for Azerbaijan also shows that although a certain technical and demographic base has been formed in the country, additional work is required at the behavioral and institutional levels to increase the economic weight of e-commerce. In other words, the availability of the Internet alone is not sufficient for the development of e-commerce; its quality, cost, patterns of use and trust mechanisms among market participants are equally important.

The main point here is that the actual level of e-commerce cannot be fully measured using only the classical four indicators. Factors such as price affordability of the Internet, average speed, digital payment habits, platform culture and the level of digital literacy among entrepreneurs should also be included in the assessment.

Table 1.

Additional indicators proposed for the B2C E-commerce Index of the United Nations Conference on Trade and Development and their possible effects

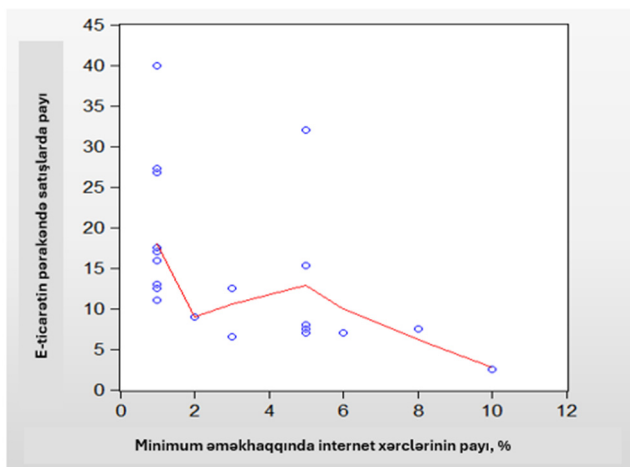
Proposed indicator	Justification	Possible impact on the ranking
Internet speed	Internet quality improves the online shopping experience; high speed increases satisfaction in e-commerce.	Countries with high speed may move up, while those with wide coverage but low speed may move down.
Internet affordability	The target of the UN Broadband Commission is that an entry-level package should cost less than approximately 2% of monthly income. Affordable Internet increases usage and e-commerce.	Countries with expensive Internet may lose points, while those offering affordable prices may gain an advantage.
Digital literacy	Digital illiteracy is a major barrier to the adoption of e-commerce.	Countries with high levels of education and ICT skills may move up, while those with weak skills may fall behind.
Use of electronic payments	Actual use of digital payments is a key prerequisite for e-commerce.	Leaders in mobile money and digital wallets may move up, while countries where cash payments dominate may move down.
Equal distribution of digital infrastructure	The urban-rural Internet gap is significant. Equal coverage increases nationwide e-commerce readiness.	Countries with smaller regional differences gain an advantage, while those with sharp differences may lose points.

Source: Prepared by the author on the basis of the new criteria proposed for the index.

In the second subsection of the second chapter of the dissertation, an economic-statistical model is applied to examine the impact of e-commerce on business relations in developed and developing

countries. The main purpose of this subsection is to quantitatively measure the key infrastructure variables explaining the share of e-commerce in retail sales. For the selected group of countries, the share of e-commerce turnover in retail sales was taken as the dependent variable, while the ratio of the cost of Internet services to the minimum wage and average Internet speed were taken as explanatory variables. This model shows that digital infrastructure factors play a decisive role in the spread of e-commerce, and their improvement accelerates the transition of business relations to a broader digital environment.

The subsection discusses descriptive statistics, the logical justification of variables, distribution characteristics and regression results. The obtained result is that an increase in Internet speed is a positive factor that increases the share of e-commerce in retail trade, whereas an increase in the ratio of the cost of Internet services to the minimum wage has a negative effect. The practical result of the subsection is that investment in digital infrastructure, optimization of tariff policy and expansion of high-speed Internet access in the regions may increase the overall economic weight of e-commerce.



Graph. Illustration of the regression line of the econometric model

Source: Prepared by the author on the basis of "World Population Review" data.

The third subsection of the second chapter is devoted to the micro-level analysis of e-commerce among SME entities in Azerbaijan and to the development of its econometric model. In this subsection, the real situation of e-commerce in the regions is analyzed on the basis of survey materials collected among micro and small entrepreneurs in Neftchala district. The survey results show that the number of entrepreneurs using e-commerce is low compared with the total entrepreneurial population, which indicates that digital transformation in the regions is still at an initial stage. The main barriers include the absence of platforms and websites, logistics shortcomings, insufficient customer inclination toward e-commerce and lack of information among entrepreneurs.

Table 2.

Results of the econometric model for the SME entity.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X	5.838281	0.403451	14.47084	0.0000
C	8204.017	2165.897	3.787815	0.0006
R-squared	0.860315	Mean dependent var		35850.22
Adjusted R-squared	0.856207	S.D. dependent var		16145.31
S.E. of regression	6122.314	Akaike info criterion		20.33122
Sum squared resid	1.27E+09	Schwarz criterion		20.41919
Log likelihood	-363.9620	Hannan-Quinn criter.		20.36193
F-statistic	209.4052	Durbin-Watson stat		0.473157
Prob(F-statistic)	0.000000			

Source: Prepared by the author on the basis of the results of the econometric model.

The positive relationship shown through the microeconomic model in this subsection – that is, the increasing relationship between the number of visitors and sales volume – is highly important from a practical policy perspective. This result shows that a properly established digital environment, advertising and platform activity can generate real income growth for a regional entrepreneur. Therefore, the digital transformation of SMEs is not merely a theoretical challenge, but a development direction with a measurable economic effect.

The main practical conclusion of the second chapter is that

entrepreneurial initiative alone is not sufficient for the expansion of e-commerce in the regions. Technical, logistical, educational and institutional support must be provided in parallel.

The third chapter of the dissertation is entitled **“Directions for improving e-commerce in the formation of business relations in Azerbaijan”**. In this chapter, a future development roadmap is formed on the basis of the theoretical and empirical results obtained in the previous chapters. A systematic approach is presented to the forecasting of e-commerce, increasing its usage potential and strengthening state support.

In the first subsection of the third chapter, the development dynamics of e-commerce in the Republic of Azerbaijan are forecasted. Official statistical indicators show that the electronic retail trade turnover in the country has increased many times over the last ten years. Despite this growth, however, the share of e-commerce in total retail turnover remains low.

Along with substantiating the forecasting model, the factors affecting this dynamic are also analyzed separately. The increase in the number of Internet users, the spread of broadband Internet, the accessibility of mobile Internet, the greater affordability of Internet services relative to the minimum wage, the expansion of non-cash payments and changes in consumer habits are identified as the main determinants of the future growth of e-commerce. The forecast is that, if these positive trends are maintained, e-commerce turnover and its economic weight will increase further in the coming years, and the integration of SMEs into digital markets will accelerate in particular.

In the second subsection of the third chapter of the dissertation, directions for increasing the potential opportunities for using e-commerce in the Republic of Azerbaijan are presented. In this subsection, the development of e-commerce is linked to the modernization of the general trade sector and the sustainable growth of the non-oil economy. It is shown that the trade sector has an important share in the country’s GDP and that the expansion of e-commerce within this sector has the power to increase both efficiency and competitiveness. International comparisons clarify that in a number of countries the share of e-commerce in the trade sector is

considerably higher; therefore, there are also significant unused opportunities in this direction in Azerbaijan.²

Several strategic directions are put forward for realizing these opportunities. First of all, equal accessibility of broadband Internet across the regions should be ensured, the social affordability of Internet tariffs should be maintained, digital literacy should be increased and practical training programs should be organized for entrepreneurs. At the same time, the speed, reliability and geographical coverage of logistics and delivery services should be improved, the security of payment systems should be strengthened, and electronic signature and digital identification opportunities should be applied more widely.

In the third subsection of the third chapter, issues of increasing state support for improving digital business relations in Azerbaijan are examined. Although market mechanisms are important for the expansion of e-commerce, the role of the state remains decisive during the transition stage. The formation of the legal framework, recognition of electronic signatures and electronic document circulation, stimulation of the online payment ecosystem, investment in Internet infrastructure, expansion of digital government services and support for export-oriented platforms are presented as the main directions of state intervention. In this context, the VAT mechanism, promotion of non-cash settlements, the activity of platforms such as “Azexport.az” and “Digital Trade Hub”, and strengthening of digital identification systems are evaluated as important practical examples.

International experience is also given broad consideration. The liberal innovation environment and private-sector leadership in the example of the United States, export-oriented incentives and active regulatory policy in the example of Türkiye, the combination of legal protection and high infrastructure quality in the example of Germany, and state policies aligned with the platform economy in other countries are analyzed comparatively. It is proposed that such experiences should not be applied in Azerbaijan without taking into account local

² Digital Payments Report 2023 / Central Bank of the Republic of Azerbaijan. Baku, 2024.

economic-institutional conditions, but should instead be implemented selectively and in adapted form. In particular, targeted subsidies by region, digital transformation funds for SMEs, tax incentives, simplified procedures for e-commerce entities, stronger protection of consumer rights in the online environment and stricter data security standards are substantiated as priority directions of state support.

The main advantage of the third chapter of the dissertation is its strategic nature. It does not merely list problems, but also formulates a policy package capable of solving them in stages. This package includes infrastructure development, increasing the social affordability of the Internet, strengthening digital literacy, expanding secure payment systems, training and incentive mechanisms for SMEs, simplifying tax and administrative procedures, promoting access to export platforms and stronger protection of online consumer rights. In this regard, the proposals put forward in the third chapter serve as a practical roadmap for deepening digital business relations in the Azerbaijani economy.³

Overall, the third chapter leads to the conclusion that technological base, market initiative and state support must exist simultaneously for the development of e-commerce. The spread of the Internet or the creation of platforms alone is not sufficient; institutional trust, legal protection, digital literacy and logistics infrastructure must be developed in parallel.

CONCLUSION

The main results obtained in the dissertation may be summarized as follows:

- As a result of the research, it was determined that e-commerce is one of the main digital mechanisms influencing the formation of business relations. Whereas in traditional trade relations the interaction between buyer and seller is established mainly through physical space, intermediaries and existing market networks, e-commerce makes these relations more flexible, operational and large-scale. In the digital environment, economic entities can establish faster

³ OECD. Promoting enterprise digitalisation in Azerbaijan. Paris, 2022.

contact with each other, present their products and services to a broader audience and expand partnership opportunities regardless of geographical limitations. In this regard, e-commerce changes not only the form of business relations, but also their content.

- Although a certain development dynamic is observed in the field of e-commerce in Azerbaijan, its share in total trade turnover and in the economy remains limited. Although the trade sector occupies a significant place in the formation of GDP in the country, the specific weight of e-commerce within this structure is still not sufficiently high. This situation shows that traditional forms of trade still hold a dominant position. At the same time, the observed increase in the volume of domestic and cross-border e-commerce transactions in recent years confirms the high future development potential of this field.

- The development of e-commerce in Azerbaijan is of great importance for the diversification of the non-oil sector, expansion of entrepreneurial activity and formation of the digital economy. Through e-commerce, enterprises gain the opportunity to present their products and services to wider markets, establish direct contact with consumers and reduce sales costs to a certain extent. These opportunities are especially important for small and medium-sized business entities. This is because e-commerce increases the ability of SMEs to compete with large companies and creates conditions for them to operate more flexibly in advertising, sales and customer relations.

- The results of the research show that e-commerce expands market access opportunities for SME entities. In the traditional business model, small entrepreneurs often face limited financial resources, weak advertising opportunities, a shortage of physical sales locations and geographical limitations. E-commerce, however, removes some of these limitations and enables them to present their products and services to different regions of the country, as well as to foreign markets. In this respect, e-commerce should be assessed as a tool that creates new economic opportunities not only for large companies, but also for micro, small and medium-sized enterprises.

- E-commerce creates conditions for more transparent and

information-based economic relations among business entities. Digital platforms make it possible to compare prices, monitor product assortments, collect consumer reviews and identify market demand more promptly. This enables entrepreneurs to rely on more information in the decision-making process. As a result, buyer-seller relations, supply relations and partnership relations acquire a more flexible and measurable character.

- During the research, it was determined that one of the main factors hindering the development of e-commerce in Azerbaijan is the uneven development of digital infrastructure. Although Internet access opportunities have expanded in the country, especially in the regions the speed, stability and price of the Internet are still not fully satisfactory for the mass development of e-commerce. For the efficient functioning of e-commerce, Internet access alone is not sufficient. This access must be high-quality, fast, continuous and affordable. Therefore, the development of broadband Internet in the regions, expansion of mobile Internet coverage and strengthening of control over the quality of Internet services appear as important directions.

- Logistics and delivery infrastructure is of special importance in the development of e-commerce. In the process of online shopping, consumer satisfaction depends not only on the price and quality of the product, but also on timely, safe and reasonably priced delivery of the order. Although postal and courier services have developed in Azerbaijan in recent years, there is still a need for improvement in terms of delivery opportunities to the regions, the number of logistics centers, warehouse infrastructure and operational order management. Therefore, for the sustainable development of e-commerce, it is expedient to modernize the logistics system, establish warehouses and sorting centers in the regions and stimulate the activity of private courier companies.

- Improvement of the legal and institutional environment is one of the key conditions for the development of e-commerce. Although existing legislation has formed an initial legal basis in the field of e-commerce, it needs to be further developed in terms of the modern requirements of the digital economy. In particular, issues such as the security of online payments, protection of personal data, legal force of

electronic contracts, responsibility of electronic platforms, resolution of online disputes and protection of consumer rights should be regulated by more precise and systematic legal mechanisms. Increasing legal certainty in this field may strengthen the confidence of both entrepreneurs and consumers in e-commerce.

- The research established that consumer trust plays an important role in the development of e-commerce in Azerbaijan. A portion of the population has concerns about online payments, the security of bank card information, product quality and the reliability of sellers. These factors limit the widespread adoption of online shopping. Therefore, it is necessary to implement awareness-raising measures among consumers about the advantages of e-commerce, safe shopping rules, protection of rights and the use of reliable platforms.

- State support acts as one of the important factors in the formation of the e-commerce ecosystem. The development of digital government services, the application of the electronic signature system, the stimulation of non-cash payments, the creation of national export platforms and support measures for entrepreneurial entities have produced positive results in this field. At the same time, state support for the development of e-commerce should be expanded in a more systematic and targeted form. It is considered expedient to apply concessional loans, grants, tax incentives, digital skills training and technical support mechanisms for start-ups, SMEs and entrepreneurs operating in the regions.

- Based on the results of the research, it is necessary to prepare a national strategy and roadmap for the development of e-commerce in Azerbaijan. Such a strategy should be aimed not only at promoting e-commerce, but also at developing the e-commerce ecosystem as a whole. The strategy should consider digital infrastructure, legal regulation, logistics, payment systems, digitalization of SMEs, consumer rights, personnel training and international integration issues in mutual connection. This approach may allow measures taken in the field to be implemented not in a fragmented manner, but systematically and in a coordinated way.

- The analysis of international experience shows that legal stability, strong infrastructure, secure payment systems, reliable logistics and

state-business cooperation play an important role in the development of e-commerce. The experience of developed countries and regional states provides useful directions for the development of e-commerce in Azerbaijan. However, rather than applying foreign experiences in Azerbaijan as they are, it is more appropriate to use them selectively and in adapted form, taking into account national economic, institutional and social characteristics. This approach would enable both benefiting from international standards and considering the real opportunities and limitations of the local market.

- At the future stage of development, the application of innovative technologies in e-commerce will be of great importance. Mobile commerce, sales through social networks, artificial intelligence-based personalized offers, big data analysis, automated customer service and digital analytics tools can increase the competitiveness of e-commerce entities. Economic entities operating in Azerbaijan can use these technologies to identify customer needs more accurately, optimize sales processes and adapt more flexibly to market changes. However, both technical opportunities and legal and ethical requirements should be taken into account when applying these technologies.

As a final conclusion of the research, it may be noted that the development of e-commerce in Azerbaijan should not be evaluated merely as the transfer of trade operations to the online environment. This process may be assessed as a systematic development mechanism that affects the formation of business relations, the expansion of partnership opportunities, changes in consumer behavior, renewal of the competitive environment and the digitalization of the economy. The effective development of e-commerce may have a positive impact on strengthening the non-oil sector, expanding the market opportunities of SMEs, increasing regional economic activity and integrating Azerbaijan into the international digital trade space.

Overall, the conducted research shows that the development potential of e-commerce in Azerbaijan is high; however, full realization of this potential requires the implementation of comprehensive and consistent measures. Improvement of digital and logistics infrastructure, adaptation of the legal framework to modern requirements, enhancement of payment system security, support for

the transition of SMEs to e-commerce, strengthening of consumer trust and application of international experience in accordance with local conditions constitute the main development directions. The implementation of targeted measures in these directions can make an important contribution to the development of business relations in Azerbaijan through e-commerce in a more flexible, transparent, inclusive and competitive form.

The following articles and theses by the author have been published on the topic of the dissertation:

1. Promoting Customer Reviews in the Electronic Business Environment in Azerbaijan // – Baku: “Audit” journal, 2023, №4. – pp. 109-117.

2. Estimating Customer Churn in Mobile Commerce: An Application of a Decision Tree Machine Learning Algorithm // – Baku: “Economic Growth and Public Welfare” journal, 2023, №3. – pp. 17-25.

3. The Role of Campaigns and Promotions Applied in E-commerce in Buyer Behavior // – Baku: “Scientific News of Azerbaijan State University of Economics” journal, 2024, №1. – pp. 71-81.

4. E-commerce Challenges of Old Commerce Centers: Evidence from Azerbaijan // – Ulan-Ude: “Economics and Management”, 2024, №2. – pp. 66-73.

5. The Evolution of E-commerce: From Clicks to Bricks and Beyond // – Ukraine: International scientific journal “Internauka”, 2024, №7. – pp. 15-21.

6. Platform Business Models: Addressing Organizational, Sectoral and Societal Dimensions in an Azerbaijani Context // - Applied Research in Studies and Practice, 2025, №21. – pp. 20-24.

7. Explainable Recommender Systems in E-commerce // - Audit journal, Baku Business University, 2025, №4. – pp. 111-120.

8. Prospects for the Development of E-commerce in Azerbaijan. // – Baku: conference material entitled “Interstate Economic Relations: Modern Challenges and Prospects”, 2023, 25-26 May. – pp. 24-26.

9. Development Directions of E-commerce Activities of Supermarkets in Azerbaijan. // – Baku: conference material entitled

“VII International Scientific Conference of Young Researchers dedicated to the 100th anniversary of the birth of National Leader Heydar Aliyev”, 2023, 28-29 April. – pp. 386-388.

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11. Synergizing Green Economy and E-commerce: Sustainable Practices for the Digital Marketplace. // – Baku: conference material “Green Economy as a Model of Sustainable Development” dedicated to the 101st anniversary of the birth of National Leader Heydar Aliyev. 2024, 24 April. – pp. 332-335.

12. A Study on the Impact of Mobile Commerce on the Future of E-commerce. // – Azerbaijan: Kaoru Ishikawa International Congress on Business and Economics Sciences - VII, 2025, February 11-12. – pp.98-103

13. Platform Ecosystems and Value Creation in E-commerce: A Conceptual Model. // - Moscow: “Issues of Management and Economics: Current State of Contemporary Problems”: collection of articles based on the materials of the CIII International Scientific-Practical Conference, Moscow, Internauka Publishing House. – pp.156-159

14. Employee Rights and Social Security Issues in Digital Platform Labor Markets. // - Azerbaijan: Nasco XVIII “XXVIII Republican Scientific Conference of Doctoral Students and Young Researchers” dedicated to the “Year of Constitution and Sovereignty”. – pp.357-361



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