

**REPUBLIC OF AZERBAIJAN**

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**A B S T R A C T**

of the dissertation for the degree of Doctor of Philosophy

**DIRECTIONS FOR THE IMPLEMENTATION OF  
INNOVATION MECHANISMS IN THE SERVICE SECTOR  
IN AZERBAIJAN**

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## GENERAL CHARACTERISTICS OF THE DISSERTATION

**Relevance of the topic and degree of elaboration.** In the modern era, innovative approaches are regarded as a priority direction across various hierarchical levels of management. The innovation component plays a fundamental role in the development of individual enterprises within the service sector as well as the sector as a whole, contributing to the modernization of their activities and the enhancement of operational efficiency. Innovations act as a key driving force across all spheres of economic activity, serving as the main stimulus in ensuring the competitiveness of enterprises in the service sector.

Although the application of innovative approaches creates significant opportunities for the dynamic development of the economy and enhancement of competitiveness, research conducted across the country reveals that only a limited number of service sector enterprises (SSEs) make purposeful and sustainable use of such approaches. Current practice shows that the share of products and services created through the application of innovative technologies remains at a minimal level in terms of overall economic value.

This situation has formed under the influence of various objective and subjective factors. Among these, the limited financial resources of enterprises, insufficient support from both public and private institutions, the low level of development of technological infrastructure, and the shortage of human capital must be particularly emphasized. In addition, the weak cooperation and integration links between SSEs and other enterprises or institutions also hinder the expansion of innovative activity.<sup>1</sup>

The mentioned challenges are not only of a technical or material-technical nature but are also closely related to the inefficiency of management systems. In this context, both

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<sup>1</sup> Ильичева Е.С. Разработка механизма управления инновационным потенциалом промышленного предприятия. – М.: МГТУ, 2013. – 25 с.

technological and organizational-management issues significantly restrict the structuring and implementation of innovation processes. In such circumstances, the effective management of innovation potential (IP) becomes complicated, and existing methodological approaches fail to yield real economic results.

As a result, the development and implementation of a new generation of management mechanisms capable of responding promptly to changing economic conditions and technological trends becomes a matter of urgency. Such approaches would enable SSEs to utilize resources more efficiently, optimize structural problems, and make flexible decisions in accordance with changing market demands.

Under current conditions, many service sector enterprises do not consider innovative development directions as individual strategic priorities, limiting themselves to merely integrating these approaches into the general management mechanism. However, an effective strategic management system should be based on scientifically substantiated and structured models that ensure the development of innovation potential. Such models serve to strengthen the competitive advantages of the enterprise and to expand opportunities for the optimal use of resources.

Although the demand for innovative approaches is high among most SSEs operating in Azerbaijan, a significant portion of these enterprises still lacks sufficient innovation potential. Consequently, the implementation of any new technology or management method may disrupt organizational stability and negatively impact the efficiency of operations.

In the context of a modern market economy, to maintain and enhance competitive advantages, SSEs must apply technological innovations, adapt innovative management systems to the demands of a dynamic environment, and develop proactive adaptation mechanisms in response to changing economic conditions. This is possible not only through technological modernization but also through strategic thinking and the establishment of flexible management structures.

All of the issues mentioned above indicate the high relevance of the chosen dissertation topic.

Both local and international literature reveal that great importance is attached to research in the field of innovation activity within enterprises. Some of the Azerbaijani scholars who have conducted research in the field of innovative approaches include: E. Mammadov, V. Novruzov, A. Huseynova, Y. Mammadov, P. Humbatov, P. Hasanov, V. Gasimli, F. Gasimov, A. Taghiyev, K. Abdullayev, among others.

Among foreign researchers who have contributed to innovation studies, the following names can be mentioned: A.N. Asaul, V.A. Alexin, A.A. Alekseyev, V.M. Askinadzi, A.V. Andreychikov, E.V. Bogatova, A.I. Bazilevich, V.P. Barancheyev, L.G. Belova, O.S. Belokrylov, A.N. Bubenkov, M.V. Velichko, I.V. Vasilyevskaya, V.D. Gribov, V.D. Gazman, O.N. Dontsova, P.F. Drucker, V.M. Zasnobin, N.Y. Zamyatina, N.P. Ivashenko, V.V. Ivanov, A.I. Ivanus, Y.V. Kozhenko, and others.

In the context of innovation problems in service sector enterprises, the following scholars may be cited: V.I. Barinova, I.V. Balk, V.N. Babich, L.A. Voronina, V.Y. Vilisov, L.P. Gavrillov, N.V. Gorodnikova, N.V. Grineva, I.P. Detkina, N.V. Yeremeyeva, T.G. Ksyankenko, M. Clayton, I.M. Lifits, V.P. Medvedev, A.M. Magomedov, B.Z. Milner, A.F. Naumov, S.S. Nosova, D.A. Novikov, O.V. Pikunov, N.E. Potapenko, I.M. Sinyayeva, A.L. Semenov, R. Tucker, L.T. Tlekhuray-Berzekova, V.V. Chernykh, and others.

Among dissertations devoted to this problem, one may also highlight the works of: A. Brisayev, Y.A. Dolzhenko, D.K. Ivanov, V.M. Komarov, T.A. Lanshina, A.N. Lysenko, O.V. Lesnikova, K.V. Nazvanova, A.V. Platonov, A.E. Tezina, A.S. Shevchenko, E.V. Fedorova, and others.

Despite the significant innovation potential of enterprises in the service sector, fundamental issues related to the management and structuring of this potential remain unresolved in a comprehensive manner. While most existing research addresses innovation implementation in a general sense, the formation of

scientific approaches regarding the specific management mechanisms, structural elements, and systematic evaluation of innovation potential is still facing serious shortcomings.

Moreover, a unified management model guiding and systematically applied to the development of SSEs has not yet been established nationwide. In many cases, models are used without proper theoretical foundation or adaptation to practice, resulting in numerous management-related problems. Among the most typical issues are the failure to correctly define management objects, the limited scope of applied mechanisms (covering only local service segments), and the inability to adapt to the multi-faceted structure of IP.

Furthermore, current models often disregard risk factors, lack mechanisms for responding to uncertainties, and fail to demonstrate resilience to dynamic changes — all of which reduce the efficiency of the management system. It should be noted that the management of IP is not limited to the application of technological innovations but is also directly linked to the adoption of strategically oriented decisions, the formation of adaptive management approaches, and institutional coordination.

When examining the weak development of innovation activity in the service sector, it would be inaccurate to attribute it solely to technological backwardness. One of the main underlying reasons is the lack of systemic and rapid management and decision-making mechanisms in this field. Enterprises often fail to assess their innovation potential in accordance with real economic and institutional conditions, thus missing favorable opportunities. Additionally, if innovation-related risks, uncertainty levels, and long-term impact factors are not considered during the strategic planning phase, the applied management approaches fail to deliver the expected practical outcomes. This situation indicates that innovation potential should not be based solely on material and technical capacities but should also rely on precise evaluation criteria, institutional compatibility, and rapid decision-making mechanisms. Accordingly, the development of new management models and the refinement of practical implementation mechanisms

become essential for innovation-oriented development in the service sector. From this perspective, the formation of scientifically grounded and practice-oriented approaches aimed at the systematic management of innovation potential in service enterprises is considered a key direction — both theoretically and practically.

Under such conditions, the need arises for new types of management concepts. These concepts must be based on flexible models capable of managing innovation processes in a changing economic and social environment, while also incorporating risk management and forecasting capabilities. As research has shown, such complex and adaptive management approaches offer more effective outcomes in terms of realizing innovation potential. A systematic analysis of theoretical and methodological approaches in the field of effective management of SSEs, as well as future research in this direction, are of significant scientific importance. The development of an indicator system for the objective assessment of SSE performance and the formation of a methodological base for the evaluation of innovation potential further enhance the relevance and practical value of this research. A scientifically grounded investigation of these issues provides a real foundation for improving strategic management mechanisms in the service sector, enabling more efficient use of resources and ensuring innovation-oriented development.

**Object and Subject of the Research.** The object of the dissertation research comprises service sector enterprises that apply innovative approaches (including trade and paid services, tourism services, public catering enterprises, and hotels).

The subject of the research is the economic relations formed in the process of implementing innovative approaches within service sector enterprises (SSEs).

**Purpose and Objectives of the Research.** The primary purpose of this dissertation research is to systematically examine the theoretical and methodological approaches aimed at the formation of management mechanisms in the service sector; to provide a scientific justification for the creation and application of innovative products and technologies that contribute to enhancing the

competitiveness of service sector enterprises; and to develop effective methodological recommendations for practical implementation.

In accordance with this objective, the dissertation aims to fulfill the following tasks:

- To investigate the main theoretical approaches to the application of innovative methods in enterprises and to classify existing concepts based on the author's perspective;

- To identify the specific characteristics of innovative approaches in enterprises operating within the service sector;

- To develop methodological tools for the evaluation and implementation of innovative management;

- To conduct a systematic analysis of the innovation-oriented development of service enterprises operating in the trade sector;

- To carry out diagnostics of innovation processes in the catering and paid services sector;

- To analyze the operational characteristics and innovation trends of tourism and hotel enterprises utilizing modern technologies;

- To identify the innovative development directions of service sector enterprises and to analyze the main factors influencing this process;

- To forecast the impact of innovative management on profitability indicators in SSEs;

- To assess the economic efficiency of innovative management practices applied in service enterprises.

**Research Methods.** The theoretical foundation of the research is based on the conceptual approaches of both local and foreign scholars concerning the management of service sector enterprises and their innovation-oriented development. These approaches encompass areas such as resource provision, strategic planning, quality management, and the evaluation of project efficiency.

Within the framework of the research, scientific and theoretical approaches related to the management and evaluation of service sector enterprises were systematically analyzed. Theoretical perspectives of both local and foreign authors were taken as a basis

in order to assess the effectiveness of management mechanisms in the context of a rapidly changing external environment. To achieve the stated objectives, the dissertation employed correlation and regression models, methods of economic and comparative analysis, as well as management and evaluation algorithms.

**Key Provisions Submitted for Defense.** The practical value of the conducted dissertation research lies in the formulation of management mechanisms that ensure the effective implementation of innovative approaches in enterprises operating in the service sector, and in identifying the necessary conditions for the coordinated execution of these processes. The methods and conceptual approaches developed within the research framework enable the achievement of the following practical results:

- Modeling all structural elements of service sector enterprises in accordance with their development priorities, and precisely defining the functional load of each element, thereby facilitating purposeful and effective management;

- Comprehensive and multidimensional evaluation of enterprise performance, detection of factors that negatively affect development potential, and selection of optimal management mechanisms to minimize these effects — all of which contribute to the improvement of strategic management quality;

- Ensuring the efficient use of investments in the implementation of innovation-oriented projects, while forecasting and controlling potential financial risks;

- Optimizing the decision-making cycle in management, thus reducing the time required to bring new products and services to the market, which provides enterprises with advantages under dynamic market conditions;

- Increasing the long-term profitability of enterprises through the implementation of innovative products with competitive advantages;

- Strengthening the current market positions of service enterprises by developing strategically grounded and market-adequate marketing approaches.

The theoretical and methodological provisions put forward in the dissertation can be applied both in the practical activities of

service sector enterprises (SSEs) and in the educational process at higher education institutions.

**Scientific Novelty of the Research.** The scientific novelty of the dissertation consists of the following:

- Several categories of the innovative approach have been clarified, and their interpretations have been substantiated by the author;

- The features and specific characteristics of the innovative approach in service sector enterprises have been identified;

- A methodological framework for studying the innovative approach in service sector enterprises has been developed;

- A systematic analysis of service enterprises operating in the trade sector from the perspective of innovative approaches has been conducted, and relevant conclusions have been drawn;

- Diagnostic results have been provided for enterprises delivering paid and catering services within the innovation process system;

- An analysis of the operations of tourism and hotel enterprises employing modern innovative technologies has been carried out, and the results have been identified;

- The main directions of innovation development have been developed, and the key factors influencing them have been determined;

- Research on the forecasting of profitability resulting from the application of innovative approaches in SSEs has been conducted, and findings have been proposed;

- The economic efficiency and effectiveness of innovative approaches applied in SSEs have been determined.

**Theoretical and Practical Significance of the Research.**

The theoretical significance of the research entitled “Directions for the Implementation of Innovation Mechanisms in the Service Sector in Azerbaijan” lies in the development and deepening of scientific understanding of the specific nature of innovation processes and their role in modernizing the economy, as well as enhancing the competitiveness of the national service sector.

The relevance of this research is driven by the necessity to align Azerbaijan’s economy with the modern challenges of globalization and digitalization, as well as the urgent need to

diversify its economic structure. The application of innovative mechanisms in the service sector makes it possible to significantly increase labor productivity, improve service quality, and create new products and services — all of which contribute to the establishment of a sustainable and competitive environment. Under conditions of digital transformation and increasing demand for personalized services, innovative technologies such as artificial intelligence, the Internet of Things, and blockchain are becoming essential tools for the modernization of this sector.

The theoretical and practical significance of this work lies in the systematization and generalization of knowledge related to the nature and implementation directions of innovative mechanisms in the service sector, as well as in the development of approaches for assessing their effectiveness. This research contributes to the theory of innovation management and proposes models and methods tailored to the specific characteristics of Azerbaijan's service economy.

**Approval and Implementation.** The main provisions of the dissertation have been presented at international scientific-practical conferences and published in scientific journals of the Higher Attestation Commissions of Azerbaijan, the Czech Republic, Italy, Ukraine, and Russia. A total of 5 scientific articles and 4 conference papers related to the dissertation materials have been published in national and international editions.

**Name of the Institution.** The work was performed at the Department of "Economics and Economic Relations" of Odlar Yurdu University.

**Structure and Volume of the Dissertation.** The structure of the dissertation consists of an introduction (157,840 characters), three chapters (Chapter I – 62,783 characters, Chapter II – 63,453 characters, Chapter III – 47,359 characters), nine subsections, and a conclusion (12,253 characters), totaling 201,688 characters. The dissertation comprises 170 pages and includes 8 figures, 22 graphs, 44 tables, and 1 diagram, structured in accordance with the logic and content of the research. The list of references consists of 173 sources.

# **STRUCTURE OF THE DISSERTATION**

## **Introduction**

### **Chapter I. Theoretical and Methodological Foundations of the Innovative Approach in Service Sector Enterprises**

1.1. Theoretical Foundations of the Innovative Approach in Enterprises

1.2. Features of Applying Innovative Approaches in Service Sector Enterprises

1.3. Methodological Framework for Studying Innovative Approaches in Service Sector Enterprises

### **Chapter II. Comprehensive Analysis and Diagnostics of the Innovative Approach in the Republic's Service Sector Enterprises**

2.1. Systematic Analysis of the Innovative Approach in Service Enterprises Operating in the Trade Sector

2.2. Diagnostics of Innovation Processes in Enterprises of Paid Services and Public Catering

2.3. Features of Studying Tourism and Hotel Enterprises Using Modern Innovative Technologies

### **Chapter III. Main Directions for Improving the Application of Effective Innovative Approaches in Service Sector Enterprises**

3.1. Innovative Development Directions of Service Sector Enterprises and the Influencing Factors

3.2. Forecasting the Profitability of Innovative Approaches in Service Sector Enterprises

3.3. Economic Efficiency of Innovative Approaches (Management) in Service Sector Enterprises

## **Conclusion**

## **References**

## MAIN CONTENT OF THE DISSERTATION

**The Introduction** substantiates the relevance of the research, defines the purpose and objectives of the study, and outlines the subject and object of the research, its scientific novelty, and the practical significance of the dissertation's findings.

**In Chapter I, titled “Theoretical and Methodological Foundations of the Innovative Approach in Service Sector Enterprises”,** the theoretical and methodological aspects of implementing innovative approaches in service sector enterprises are examined. The chapter consists of three main sections. The first subsection, entitled “Theoretical Foundations of the Innovative Approach in Enterprises”, reviews the main concepts and principles of innovative approaches in business. It discusses key theories and models of innovative development, defines terms and concepts related to innovation in enterprises, and identifies the main factors influencing innovative activity.

The second subsection, “Features of Applying Innovative Approaches in Service Sector Enterprises”, focuses on the specificity of innovation implementation in the service sector. It highlights the unique characteristics of the service industry such as its strong dependence on human capital, the importance of service personalization, and the significance of service quality. The main challenges and opportunities for applying innovative strategies in service enterprises are also analyzed.

The final subsection of the chapter, “Methodological Framework for Studying Innovative Approaches in Service Sector Enterprises”, presents methods and tools for analyzing and evaluating innovative activities in the service sector. It describes methodological approaches applicable for diagnosing research and innovation processes, as well as indicators and criteria for assessing the successful implementation of innovations.

In summary, Chapter I addresses the theoretical foundations of innovative approaches in enterprises (including their essence, key concepts, and categories), identifies the specific features of applying

innovative approaches in service enterprises, and develops the methodological tools necessary for the study of such approaches.

Overall, the chapter establishes a solid basis for the subsequent analysis of innovation in the service sector and forms the theoretical and methodological framework of the research.

This approach also systematizes the mechanisms and tools of stimulation.

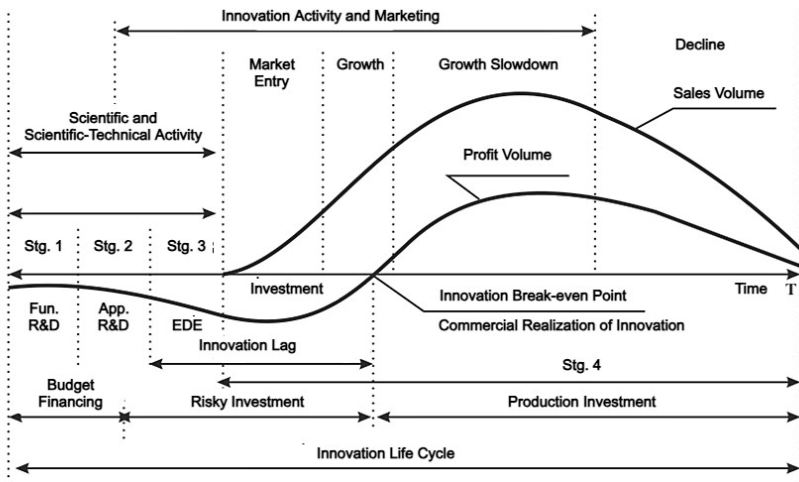
**Table 1.**  
Mechanisms and Instruments of Stimulation in Service Sector Enterprises (SSEs)

Mechanisms	Main Instruments	
	Direct	Dolayı
Monetary-Credit	Preferential loans, credits, leasing	-
	Subsidies, grants, vouchers	
	Co-financing by private business, insurance, reimbursement of production costs	
Fiscal	-	Tax incentives
		Customs exemptions
		Preferential taxation regimes
		Depreciation benefits and concessional payments for the use of state property
		Tax holidays
		Tax credits
Budgetary	Targeted financing	-
	State orders and public procurement	

Source: Compiled by the author.

Based on the reviewed scientific literature, the author has arrived at the following conclusions: “Innovative approach possesses strategic importance in the modern economy and is one of

the key resources for enhancing the competitiveness of enterprises, increasing the technological level, and strengthening economic security. In Azerbaijan, the stimulation of innovation activities is considered a main priority in the state's economic policy aimed at strengthening innovation potential. However, problems persist in terms of the interaction of innovation elements and the accurate identification and measurement of innovation potential in enterprises. Innovation activity and potential have been studied from various aspects. Nevertheless, the absence of a unified definition and the challenges in measuring innovation potential — particularly the necessity to evaluate intellectual capital and intangible assets in addition to financial indicators — are emphasized. At the same time, organizational culture, state support, and the development of human capital have a significant impact on innovation potential. Innovation processes are carried out sequentially in stages, each of which requires purposeful activities. The goal of state policy is not only to achieve technical innovation, but also to ensure the practical application of innovations in terms of commercial and consumer benefit.”



**Figure 1.** Main Stages of the Innovation Process

Source: Compiled by the author.

The study of the main phases of the innovation process for the development of innovative services allows us to conclude that, as a result of a management assessment, one of the following two objectives can be identified:<sup>2</sup>

- improvement of the service (bringing quality characteristics to the required level);
- development of the service (enhancing quality characteristics beyond the required level).

**The II chapter of the dissertation, titled "Comprehensive Analysis and Diagnostics of the Country's Service Sector Enterprises from the Perspective of Innovative Approach,"** is devoted to the comprehensive analysis and diagnostics of service sector enterprises in the Republic of Azerbaijan through the lens of innovative approaches. The chapter is divided into three main sections, each analyzing the specific features and innovative aspects of different areas within the service sector.

The first section, "Systematic Analysis of Service Enterprises in the Trade Sector from the Perspective of Innovative Approach," examines trade enterprises, their current level of development, and their capacity to implement innovations. The structure, processes, and key factors influencing the innovative activities of these enterprises are systematically analyzed. Special attention is paid to how innovations can contribute to increasing the efficiency and competitiveness of trade enterprises. Based on the conducted research, the author of the dissertation has arrived at the following conclusions:

- The increase in the number of stores and retail outlets, as well as the rise in the number of individual entrepreneurs, indicates positive development in the trade sector.
- The positive dynamics of trade turnover and the growth in per capita consumption reflect an improvement in the population's well-being and purchasing power.
- The growth of non-food product turnover indicates a diversification in consumer preferences.

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<sup>2</sup> Пушняк, Е.В. Методология стратегии инновационной деятельности. – М.: ИНИЦ «Патент», 2014. – 208 с.

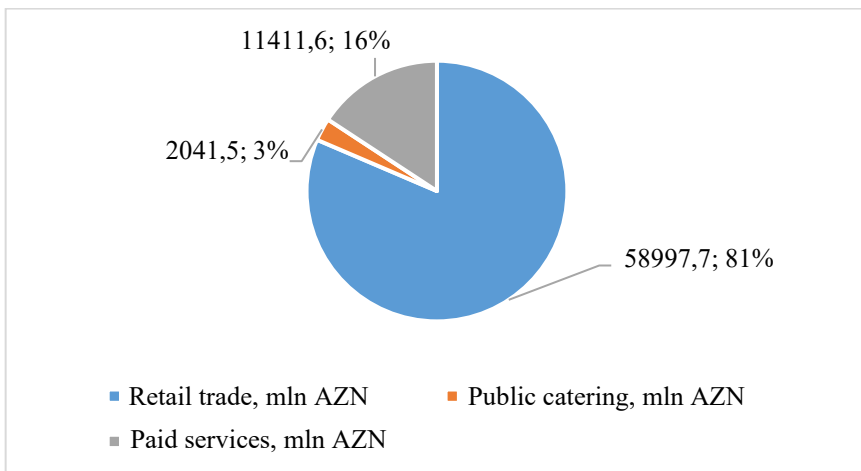


Figure 2. Structure of the Consumer Market in 2023, in Percentages  
 Source: Author's compilation based on ARSSC data

The second subsection of the dissertation, titled "Diagnostics of Innovation Processes in Paid Services and Public Catering Enterprises," focuses on enterprises providing paid services and the public catering sector. The diagnostics aim to identify the strengths and weaknesses of the innovative activities of these enterprises, assess their readiness to adopt modern technologies, and analyze the factors limiting innovative development. The study also examines innovation processes aimed at improving service quality and enhancing customer satisfaction.

As a result of the analysis and examination of the dynamics and structure of services provided to the population, the author has reached the following conclusions:

- There has been a positive trend in the overall value of services, especially legal services, which may indicate rising household incomes and improved access to services. This suggests that people have started spending more on personal transportation, appearance, and family.

- Service categories that were most negatively affected in 2020, such as transport and household services, have started to recover, as evidenced by positive growth indicators.
- The significant growth in communication and education services highlights the importance of these sectors for the population. However, gaps have been identified in the recovery of supplementary education services.

These conclusions are based on indicators that reflect the key trends and development potential of various paid service sectors. The third subsection of the dissertation, titled “Features of the Study of Tourism and Hotel Enterprises Using Modern Innovative Technologies,” is dedicated to the examination of the characteristics of tourism and hotel enterprises, as well as the possibilities of applying the latest technologies in this field. This section analyzes modern innovative technologies used in the hotel and tourism industry (such as digital solutions, automation, and the use of big data to analyze customer needs). At the same time, it assesses the impact of innovations on improving the quality of service and expanding the range of services offered.

Overall, Chapter II is aimed at the comprehensive analysis of service sector enterprises and the evaluation of their innovative development, which allows for the identification of both problem areas and prospects for the application of innovative approaches in the country.

**In Chapter III of the dissertation, titled “Key Directions for Improving the Implementation of Effective Innovative Approaches in Service Sector Enterprises,”** the innovative development directions of service sector enterprises are defined, the influencing factors are identified, the profitability of innovative approaches in such enterprises is forecasted, and the economic efficiency of innovative approaches (management) is assessed.

The objective factors necessitating the application of innovations in the service sector are determined by the organizational level of service enterprises (SSEs): the higher the level, the greater the need for innovation. SSEs engaged in

intellectual activities and associated with new R&D achievements (e.g., computer services, software, repair and technical servicing of imported radio and television equipment and household appliances, services for foreign-branded vehicles, mobile communication, medical and wellness services, dry cleaning and garment dyeing, consulting services) typically have a higher organizational level. In contrast, SSEs such as domestic-communal services, construction-repair firms, and social service institutions operate at a lower organizational level.

In our opinion, research in this field should be based on identifying the main challenges to the development of innovation activities in the service sector. At the same time, it is proposed to use a classification approach based on the innovation potential indicator of SSEs, which includes resource, functional, and result components.

Let us take a closer look at this process, starting with the identification of the problematic factors:

- I. Resource Component – Insufficient scientific potential
- II. Functional Component – Low level of information support in service sector enterprises (SSEs)
- III. Result Component – Low demand for innovations

The expert evaluation method was used to identify the problematic factors affecting the innovation potential of the service sector mentioned above. For this purpose, leading specialists and management staff from enterprises operating in trade, paid services, public catering, tourism, and hospitality were involved in the discussion.

The analysis of the collected data indicates that the innovation structure in the country's regions is still in the active formation stage. In order to monitor this process more accurately, a comparative table of the elements of the innovation infrastructure must be constructed (see Table 2).

**Table 2.**

**Comparative Table of Innovation Infrastructure Elements**

<b>Nature of Innovation Activity</b>	<b>Idea Generation</b>	<b>Innovation Entrepreneurship</b>
Essence of Innovation Activity	Creation of innovations as a proposal	Implementation and promotion of innovations
Elements of Innovation Infrastructure	<ul style="list-style-type: none"> <li>- R&amp;D centers;</li> <li>- Institutes;</li> <li>- Industry and service sectors;</li> <li>- Pilot production;</li> <li>- Test laboratories and centers;</li> <li>- Information service companies;</li> <li>- Patent and license organizations;</li> <li>- Science parks;</li> <li>- Innovation centers;</li> <li>- Venture funds;</li> <li>- Centers for shared use of scientific equipment;</li> <li>- Exhibitions</li> </ul>	<ul style="list-style-type: none"> <li>- Application firms;</li> <li>- Engineering centers;</li> <li>- Innovation-technical centers;</li> <li>- Innovation-industrial complexes;</li> <li>- Consulting companies;</li> <li>- Advertising and marketing agencies;</li> <li>- Regional information centers;</li> <li>- Scientific-technical centers;</li> <li>- Centers for training and professional development of qualified personnel;</li> <li>- Certification centers;</li> <li>- Patent and license organizations;</li> <li>- Business incubators;</li> <li>- Technology transfer centers;</li> <li>- Entrepreneurship support structures</li> </ul>

Source: Compiled by the author based on Жихарев К.Л. и др. Инновационное управление развитием и корпоративный подход. – М.: МАКС ПРЕСМ, 2007. – 2012 с.

In Table 2, the key elements of the innovation infrastructure are presented, divided according to the directions and characteristics of innovation activity—namely, idea generation and innovative

entrepreneurship. The comparative analysis of the elements of innovation infrastructure reveals the following important points:

1. Idea generation is aimed at the creation and development of new concepts and technologies.
2. Innovative entrepreneurship focuses on the commercialization and promotion of the created innovations.
3. Idea generation includes the creation of innovations that still require development and testing.
4. Innovative entrepreneurship concentrates primarily on the implementation and promotion of innovations in the market.
5. Idea generation involves the presence of institutions such as research centers, science parks, patent and licensing organizations, test laboratories, and centers facilitating idea development and prototyping.
6. Innovative entrepreneurship is characterized by elements that support market entry, such as venture funds, consulting firms, marketing agencies, technology transfer centers, business incubators, advertising agencies, and support structures for entrepreneurs.

The purpose of conducting correlation analysis is to determine the direct correlation dependence between the factors (investments in fixed assets in the trade and tourism sectors, Gross Domestic Product (GDP), and Gross National Income (GNI) per capita). No effect or dependence on GDP has been identified. However, a linear correlation dependence has been identified between the share of investments (investment share) in GNI (GNI) and trade (Trade) and tourism and public catering system (Tour\_x).

According to the Chaddock scale, a noticeable direct linear correlation dependence has been identified between GNI and Trade. That is, the more investment is made in trade, the more GNI increases. The reverse process is also justified. According to the Chaddock scale, a moderate direct linear correlation dependence has been identified between GNI and Tour\_x. At the same time, a moderate direct linear correlation dependence has also been identified between Tour\_x and Tur\_x (share, tourism and public catering, %). In addition, a very strong direct linear correlation dependence has been identified between Tourism\_iashe (investments in the tourism and public catering sector) and Tour\_x.

No linear correlation dependence has been identified among other factors.

Based on the correlation analysis, a regression analysis was conducted, and several models were developed to demonstrate the functional dependencies and the impact of investment factors in the service sector on Gross National Income (GNI) per capita.

Let us specify the symbols of the variables (factors) used in the regression analysis:

GNI – Gross National Income per capita, in manats

Tourism\_iashe – Investments in the tourism and public catering sector

Tour\_x – Share of tourism and public catering, %

Trade\_x – Share of trade, %

We will take GNI (Gross National Income per capita, in manats) as the dependent variable. Let us determine how Trade and other factors affect GNI.

Independent variable – Trade: Investments in the trade and vehicle repair sector.

As a result of the regression analysis, Model 1 was developed.

$$(\hat{GNI}) = 3,60e + 03 + 6,61 * Trade$$

$$\begin{array}{cc} (923) & (2,00) \\ & \text{(Standard errors)} \end{array}$$

$$T = 14, R - squared = 0,426$$

According to the simple linear regression of Model 1, which illustrates the impact of investments on Gross National Income (GNI), a 1 manat increase in investment results in an average increase of 6.61 manats in income. This bivariate model does not account for the effects of other factors. However, an attempt was made to determine the influence of other examined variables, though no statistically significant results were obtained. Only the

simple regression analysis produced significant and adequate models. Thus, Model 1 indicates that the independent variable "Trade" explains 42.6% of the variation in the dependent variable, GNI. Although this is not a very high explanatory power, the coefficients and the model as a whole are statistically significant and therefore suitable for interpretation. The Gauss-Markov assumptions are not violated. Model 1 demonstrates how "Trade" affects GNI in absolute terms.

Model 2 demonstrates the impact of trade investments on GNI in percentage terms. The econometric characteristics of the model satisfy all Gauss-Markov assumptions, and therefore the results can be interpreted reliably. According to the model, a 1% increase in investments in the trade sector leads to an average increase of 0.35% in gross national income (GNI).

Model 2: OLS, observations from 2010 to 2023 (T = 14)  
 Dependent variable: ln\_GNI

	Coefficient	Std. Error	t-Statistic	p-Value	
const	6,64093	0,945060	7,027	<0,0001	***
ln_Trade	0,348506	0,158593	2,197	0,0484	**

As a result of the conducted research, the author of the dissertation arrived at the following conclusions:

- A statistically significant positive linear correlation was identified between per capita gross national income (GNI) and investments in the trade sector. The greater the investment in trade, the higher the national income.
- A one-manat increase in investment in the trade sector results in an average increase of 6.61 manats in per capita GNI, confirming the critical importance of trade investment for income growth.
- A moderate positive correlation was found between GNI and the share of investments directed to the tourism and public catering sector (Tic\_x).
- A strong direct linear correlation exists between the share of investments in tourism (Tic\_x) and total investments in the tourism

and public catering sector (Tourism\_iashe), indicating a synergistic effect of simultaneous development in trade and tourism.

- A synergistic effect was confirmed when investments were simultaneously made in both the trade and tourism sectors. A simultaneous 1% increase in investments in these sectors leads to an average increase of 5.88 manats in per capita GNI, underscoring their combined developmental impact. Although the  $R^2$  value of 0.426 in Model 1 reflects a moderate explanatory power, the model is statistically significant and satisfies the Gauss-Markov assumptions. Therefore, it can be reliably used for forecasting and analysis.

Using the innovation indicators presented above for products and processes, we conducted calculations to determine the total amount of economic effect based on an innovative approach in service sector enterprises (see Table 3).

**Table 3.**

Determination of the Total Economic Effect Based on an Innovative Approach in Service Sector Enterprises, thousand manats

Indicators	Trade Enterprises	Paid Service Enterprises	Catering and Tourism Enterprises	Hotels
1. Economic effect obtained from services ( $E_{UPD1}$ )	10438,6	27,3	151,0	-
2. Economic effect obtained from innovations ( $E_{UPD2}$ )	5665,4	637,4	81,5	-
3. Total economic effect ( $E_{UPD0}$ )	16104,0	664,7	232,5	-

Source: Author's compilation based on ARSSC data

The following specific results were obtained:

1. Economic effect from services: for trade enterprises, paid services, tourism and catering enterprises, the respective amounts were determined as 10,438.6 thousand manats, 27.3 thousand manats, and 151.0 thousand manats.
2. Economic effect from innovations: for trade, paid services, tourism and catering enterprises, the respective amounts were determined as 5,665.4 thousand manats, 637.4 thousand manats, and 81.5 thousand manats.
3. Total economic effect: the respective amounts were 16,104.0 thousand manats, 664.7 thousand manats, and 232.5 thousand manats.

The overall economic effect indicator in this field does not provide a complete impression of the performance of service sector enterprises.

**In the Conclusion section of the dissertation, proposals and recommendations with scientific and practical significance derived from the essence of the research have been presented:**

Assessment of the state of the innovation infrastructure (II) and identification of its development prospects remain one of the key directions for ensuring the coordinated activities of all technologically interconnected participants at each stage of the innovation life cycle. Various institutional and organizational, as well as financial and economic barriers exist that hinder the achievement of strategic goals at different levels.

It should be noted that the foundation of the innovation infrastructure is not limited to the accumulation of only technical resources. This structure also encompasses several critical areas, such as human capital, legal regulation, financial resources, and information support. Ensuring interconnection and alignment among these areas is one of the essential conditions for the efficient implementation of innovation activities. If the mentioned elements do not function in a coordinated manner, the full realization of

innovation processes becomes difficult. Therefore, strengthening cooperation among stakeholders involved in the innovation ecosystem and managing their activities effectively is of great importance. Furthermore, the innovation infrastructure should not be viewed merely as a sum of separate components but as a system based on mutual interaction. The effectiveness of this system lies in how each of its elements complements the others and how closely they are connected through a common goal-oriented activity. Such a system-based approach enables both the acceleration of technological development and the practical realization of ideas. In this regard, having a flexible and functional institutional framework plays a crucial role in the successful implementation of innovation activities.

- The importance of structural analysis of the innovation infrastructure is increasing, as there is a need to develop a methodology for assessing the state of infrastructure in specific regions.

- Without a comprehensive innovation infrastructure, it is impossible to fully realize innovation potential. In many stages of its life cycle, the necessary infrastructure elements are missing, which reduces the overall efficiency of the innovation process.

- In recent years, the development of innovation potential at the regional level has become increasingly important. This level must ensure effective interaction between government bodies, the scientific community, and businesses. At the same time, it is essential to justify organizational and economic mechanisms aimed at managing the innovative development of the regional economy.

- Our research has shown that innovation activity is characterized by several key features:

- a) The implementation of innovations leads to changes in controlled objects (such as products, production tools, and technologies);

- b) The management of innovations involves high volatility and risks for all elements of the system;

- c) Innovation activity is often influenced by external economic factors and may be image-driven or socially oriented—

factors that are not always fully considered in traditional approaches to evaluating economic efficiency.

- Innovation management encompasses not only organizational and technical aspects but also requires coordination of activities at all levels. In the service sector enterprises (SSEs), the innovation strategy is closely linked to the general goals of long-term development and diagnostic methods.

- At the same time, it is not always possible to define all necessary actions in advance to achieve the desired result; the implementation of the strategy may lead to unexpected outcomes that necessitate revisiting or rejecting initial decisions. For service sector enterprises (SSEs), an innovation strategy must be goal-oriented, incorporate alternatives, and consider sustainability. These steps are essential due to the lack of complete or partial information regarding the outcomes of service sector development. In the implementation of an innovation development strategy for SSEs, the formation of the following programmatic approaches is necessary:

- a) Stable and goal-oriented programs – These programs ensure the stable and pre-defined development of innovative activities in service sectors. Such approaches are based on existing infrastructure and service models and are implemented in a planned manner.

- b) Alternative programs (under certainty) – These programs offer a choice among different service formats and technological solutions in situations where specific outcomes can be forecasted in advance. Enterprises can compare available options to determine the optimal course of action.

- c) Stochastic programs – This model is used when the outcomes of innovation activities in the service sector are probabilistic. These programs account for risks but are designed for environments requiring flexible adaptation to changing conditions.

- d) Programs under uncertainty – Applied when the future trajectory and results of service sector activities are not fully clear. This approach enables enterprises to respond to market changes through strategic thinking and adaptive management.

e) Adaptive and flexible programs – These programs ensure that service sectors keep pace with constantly evolving technological and consumer demands. Based on the introduction of new service types, digitalization, and innovative management technologies, such approaches are essential for the sustainable development of SSEs.

On a global scale, the service sector represents one of the most dynamically developing and promising directions of the modern economy. In the development of service sector enterprises (SSEs), the main focus should be directed toward solving priority issues that ensure the sustainable and efficient functioning of this domain. Scientific research and practical experience highlight the relevance of the following key areas:

a) Establishment of a competitive environment – For SSEs to operate effectively, a healthy and transparent competitive landscape must be established. This fosters improvements in service quality and leads to price optimization.

b) Support for structural reforms – Structural enhancement and modernization of the sector, including updates to management models, serve as the foundation for innovative transformation.

c) Increasing the flexibility of the economic system – The service sector contributes to economic agility by enabling responsive maneuvering and facilitating adaptation to various conditions.

d) Mobilization of the population's financial resources – Redirecting private funds into production and services boosts investment activity and expands the capacity of the domestic market.

e) Job creation and reduction of unemployment – The development of SSEs significantly contributes to revitalizing the labor market and improving social welfare.

f) Expansion and improvement of service variety and quality – The implementation of diverse service types and the improvement of quality standards enhance customer satisfaction and create stable market demand.

g) Promotion of creativity and motivation mechanisms – Creating a favorable environment and incentive systems to foster employee creativity ensures the innovative potential of the sector.

h) Integration of vulnerable social groups into production – Engaging socially vulnerable populations in SSEs contributes to a sustainable development model based on social inclusivity.

One of the key indicators of the development level of the service sector is its ability to meet the changing and growing demands of society. Achieving this objective is directly linked to the expansion and systematic implementation of innovation activities within service enterprises. The application of innovative approaches not only contributes to increased customer satisfaction but also facilitates improvements in service quality and process efficiency. Ultimately, these factors lead service enterprises to gain competitive advantages in the market environment and enable the formation of more sustainable development strategies.

The service market, due to its structural characteristics, operates largely in line with classical free market principles. Similar to the commodity market, the emergence of small and medium-sized competitive enterprises acts as a driving force in establishing a competitive environment. The intensification of competition among service sector enterprises (SSEs) stimulates the diversification and enhancement of the quality of services offered in the market. It is important to note that SSEs capable of flexibly adapting their operational strategies, expanding their range of services, and implementing innovative approaches are more likely to succeed in competitive market conditions.

A defining feature of the service delivery process is the necessity of direct and reciprocal interaction between the provider and the consumer. This individualizes both the content and form of the service, rendering it non-standard and situational. The diversity in both technologies and service types limits the universality of the process, making it difficult to precisely predict the final outcome of the service in advance. This element of uncertainty demands more flexible, adaptive, and customer-oriented approaches from service enterprises.

The service delivery process is characterized by the simultaneous occurrence of production and consumption stages, which significantly differentiates labor activity, its organization, and management methods in the service sector from those in other areas of economic activity. The direct and continuous interaction between the service provider and the consumer, along with the prompt and personalized delivery of services, forms the basis of this distinction. Against the background of these specific features, the development of service sector enterprises (SSEs) along an innovative trajectory should encompass the following key directions:

- The creation of flexible and accessible service models tailored to the needs of various social groups, and the expansion of equal access opportunities to services;
- The reinforcement of human-centered approaches, i.e., the organization of services that enhance public welfare and social comfort, as well as the implementation of solutions that increase opportunities for recreation and leisure;
- The application of innovative technologies to form a competitive service environment, the development of non-traditional service formats, and the achievement of high quality standards.

Based on the research, the author's findings have been grouped under the following five key directions:

1. Growth points and development trends in trade and services have been identified:
  - a. The increase in the number of stores, trade places, and individual entrepreneurs is an indicator of positive development in the trade sector.
  - b. The positive dynamics of trade turnover and the increase in per capita consumption reflect improvements in population welfare and purchasing power.
  - c. The growing share of non-food products in trade turnover indicates a diversification in consumer preferences.
  - d. The rise in prices and volume of services, especially legal services, demonstrates both rising incomes and improved accessibility to services.

2. Post-pandemic recovery and sectors needing further support have been identified:
  - a. The recovery process of the transport and household services sectors, which suffered the most in 2020, shows a positive dynamic.
  - b. The communications and education services sectors demonstrate significant growth; however, there are still gaps in the recovery of supplementary education services.
  - c. The post-pandemic increase in population income and tourist numbers indicates a high recovery potential.
3. Mechanisms for increasing profitability in the service sector have been proposed by the author:
  - a. It is recommended to conduct cost audits and identify opportunities for cost reduction to improve profitability.
  - b. Implementing training programs to enhance employee qualifications is essential for maintaining competitiveness and stabilizing workforce levels.
  - c. Automation and digitalization of processes in the tourism sector will help improve the quality of customer service.
  - d. Ensuring a balance between idea generation and their commercialization is necessary for the effective functioning of the innovation ecosystem.
4. The economic impact of investments and innovations has been identified and calculated:
  - a. A significant positive correlation has been established between the volume of investments in trade and the per capita Gross National Income (GNI).
  - b. Every 1 manat invested in trade results in an increase of 6.61 manats in GNI, underscoring the importance of funding this sector.
  - c. Simultaneous investments in the trade and tourism sectors create a synergistic effect, increasing national income by 5.88 manats for every 1% rise in investment.
  - d. The economic effect of innovations in the trade sector amounts to 5,665.4 thousand manats.

5. Limitations of innovations have been assessed and recommendations have been provided:
  - a. Low effectiveness of innovations in the fields of trade, services, tourism, and hospitality has been identified. This indicates the need for additional incentives to improve the process.
  - b. The overall economic effect of innovation implementation does not provide a complete picture, which necessitates additional calculations based on net output and its integral growth.
  - c. Positive changes in the field of infrastructure and social facilities (e.g., construction of new facilities) demonstrate the successful application of innovative approaches. To ensure sustainable development, it is essential to support these efforts and expand their areas of application.

**The main provisions of the dissertation are reflected in the author's following published scientific works:**

1. İbrahimli M.S. Innovation as an Important Tool for Attracting Investment // Сучасні інноваційно-інвестиційні механізми розвитку національної економіки в умовах євроінтеграції: матеріали X Міжнародної науково-практичної Інтернет-конференції, Національний університет «Полтавська політехніка імені Юрія Кондратюка», – Полтава: – 2023, – с. 34-35

2. Метін Байрам Ібрагімлі. Методичний апарат використання інноваційного підходу на підприємствах сфери послуг // – Україна: ААТ, Науково-практичний журнал "Регіональна економіка", – Україна: – 2023. № 4(91) – с.153-159

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10. Elshad Mammadov, Aslan Azimzadeh, Farid Valizadeh, Matin Bayram Ibrahimli, and Toghrul Farzullayev, The Role of Innovations in Companies for Sustainable Economic Development // International Conference on Smart Environment and Green Technologies – ICSEGT2024, – Baku: Springer, – 2024, – pp. 449 - 457

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