REPUBLIC OF AZERBAIJAN

On the rights of the manuscript

ABSTRACT

of the dissertation for the degree of Doctor of Philosophy

MAIN DIRECTIONS FOR THE STABLE AND SUSTAINABLE DEVELOPMENT OF CONSTRUCTION IN THE OIL AND GAS INDUSTRY OF THE REPUBLIC OF AZERBAIJAN

Specialty: 5312.01 – "Field Economics"

Field of science: Economic Sciences

Applicant: **Murad Bakir Gasimli**

BAKU – 2026

The work was performed at the Department of "Business Economics and Management" of Azerbaijan University of Architecture and Construction.

Scientific supervisor: Doctor of Economic Sciences, Professor
Mahabbat Ashir Mammadov

Official opponents: Doctor of Economic Sciences, Professor
Gulshan Zaid Yuzbashiyeva

Doctor of Philosophy in Economics
Gurban Adil Abbasov

Doctor of Philosophy in Economics
Sadagat Vali Ibrahimova

Dissertation council FD 1.10 of Supreme Attestation Commission under the President of the Republic of Azerbaijan operating at Institute of Economics of the Ministry of Science and Education of the Republic of Azerbaijan

Chairman of the Dissertation council: Doctor of Economic Sciences, Professor
Nazim Muzaffar Imanov

Scientific secretary of the Dissertation council: Doctor of Philosophy in Economics
Sevda Mammad Seyidova

Chairman of the scientific seminar: Doctor of Economic Sciences, Professor
Tarbiz Nasib Aliyev

GENERAL CHARACTERISTICS OF THE RESEARCH

Relevance and degree of elaboration of the topic. As one of the strategically important sectors of the global economy, the oil and gas industry plays a significant role in ensuring energy security and economic development. Occupying a leading position in the contemporary global energy balance, the oil and gas sector remains a major source of energy and raw materials for economic activities. At the same time, technological transformations in the industry, volatility in energy markets, climate change, and international requirements to reduce carbon emissions have necessitated new approaches to sectoral development.

According to the International Energy Agency, global energy demand continues to increase, and fossil fuels are expected to retain their importance as energy sources in the near term. At the same time, environmental protection, ecological safety and the implementation of green-economy principles have become strategic priorities for enterprises operating in the oil and gas industry. Accordingly, efficient use of natural resources and development of alternative energy sources are among the fundamental prerequisites for sustainable development.

Development of the oil and gas industry directly influences other areas of the economy, particularly construction. Construction plays a key role in the development of oil and gas fields, installation of pipelines, and establishment of utility networks and industrial infrastructure. This sector is characterised by substantial capital investment, advanced technological capabilities and environmental responsibility. Therefore, ensuring stable and sustainable development in construction is of particular economic, social and environmental importance.

The oil and gas sector occupies an important position in Azerbaijan's economy by contributing to state budget revenues, export capacity and foreign-currency receipts. In recent years, changes in oil prices, the COVID-19 pandemic and global economic risks have adversely affected construction activities. Consequently, investment activity has weakened, financial resilience has declined

and output has contracted. Identifying the principal directions for stable and sustainable development of construction in Azerbaijan's oil and gas industry is therefore of considerable scientific and practical significance.

The topic has been investigated from various perspectives by domestic and international researchers. Azerbaijani scholars, including M. A. Mammadov, A. B. Aliyev, H. A. Khalilov, Y. A. Kalbiyev, T. T. Eyniyev and I. M. Rzayev, have examined economic development, stability and problems facing the construction sector. International researchers such as A. I. Pomanova, B. A. Pavlenkov, I. Stepanova and Y. A. Rekitar have extensively addressed the theoretical and methodological foundations of sustainable development, employment stability in construction and environmental issues.

The literature review indicates that the stable development of construction in Azerbaijan's oil and gas industry, improvements in investment efficiency, better utilisation of labour resources and adoption of green technologies have not yet been comprehensively addressed. In particular, the contribution of construction to economic growth, formation of value added, structure of investment flows and the sector's long-term development potential require further investigation.

These circumstances underscore the contemporary relevance of a scientifically grounded examination of the directions of stable and sustainable construction development in the oil and gas industry, assessment of existing challenges and identification of solutions. The dissertation therefore has both theoretical and practical significance for achieving sustainable development of the national economy.

Research Object. The construction sector operating within the oil and gas industry of the Republic of Azerbaijan and the construction enterprises participating in its development.

Subject of the research. The economic mechanisms, institutional factors and managerial instruments shaping the stable and sustainable development of construction in Azerbaijan's oil and gas industry, together with its production infrastructure, labour resources,

investment flows and the system of socioeconomic relations arising from the economic activities concerned.

Aim and Objectives of the Research. The aim is to identify directions for stable and sustainable development of construction in the oil and gas industry of the Republic of Azerbaijan, assess economic, social and technological factors through a comprehensive analysis of the current situation, and develop scientifically substantiated proposals concerning strategic development priorities. To achieve this aim, the following objectives were established:

– to examine the theoretical and methodological foundations of stable and sustainable development, its conceptual substance and principles, and the scope for applying them to construction;
– to identify the main economic, social and environmental challenges facing construction in the oil and gas industry and investigate its key characteristics of stable and sustainable development;
– to establish an analytical basis for assessing development trends in Azerbaijan's oil and gas construction sector and investigate their methodological aspects;
– to analyse comprehensively the current status, level of development, investment provision and structural changes in the sector using an integrated approach;
– to analyse and evaluate the production and economic activities of SOCAR's Neftgaztikinti Trust, identify available potential and determine ways of using it efficiently;
– to analyse indicators of labour utilisation and capital investment efficiency in the oil and gas construction sector;
– to undertake econometric assessment and modelling of the construction sector's impact on macroeconomic indicators;
– to develop scientifically substantiated practical and methodological proposals and recommendations for ensuring stable and sustainable construction development in the oil and gas industry of the Republic of Azerbaijan.

Research methods. The research employed analytical and economic-statistical methods, grouping, comparative analysis and synthesis, economic-mathematical modelling (including econometric

modelling with EViews 12), scientific abstraction and graphical methods.

Main Propositions Submitted for Defence.

1. The theoretical and methodological foundations and principles of stable and sustainable construction development in the oil and gas industry were examined, and the ideas and approaches of economists were assessed. It was established that demand for debt capital in construction is particularly high, frequently owing to interruptions in financial turnover arising beyond researchers' control. The loan-capital market functions by attracting borrowed funds on market terms and directing them to contracting companies for investment in productive capital formation.

2. Comprehensive methods, including expert assessment, analytical grouping and factor analysis, are essential for identifying ways to improve the efficiency of labour-resource utilisation in oil and gas construction.

3. The analysis revealed limitations in the relationship between investment in fixed capital and output volumes in oil and gas construction and installation works. Under these conditions, tax relief for certain investments, lower bank lending rates and stronger public support are considered necessary.

4. A substantial share of waste generated in the country originates from geological exploration, drilling, extraction and processing, as well as construction and installation activities in the oil and gas industry. This negatively affects sectoral resilience and constrains sustainable development. Environmental risks therefore need to be considered during project design in order to minimise the adverse impact of waste on the environment.

5. The findings indicate that a 1% increase in revenue from works and services in the oil and gas industry is associated with a 0.88% increase in GDP, while a 1% increase in investment in construction and installation works in the oil and gas sector is associated with a 0.199% increase in GDP.

6. Econometric analysis conducted in EViews 12 yielded a regression model explaining gross construction output in the oil industry. The results suggest that gross construction output will

follow an upward trajectory through 2030. The anticipated expansion of employment, reduction in unemployment and growth in real and nominal household incomes are expected to support the sustained socioeconomic impact of the sector.

Scientific Novelty of the Research.

1. An econometric model of the macroeconomic impact of construction in the oil and gas industry was developed. It provides empirical evidence that construction is a direct and statistically significant determinant of national economic growth and identifies the sector's multiplier mechanism.
2. The forecasting models indicate that gross construction output will reach AZN 14.1–14.8 billion by 2030.
3. The analysis of institutional development demonstrates that Azerbaijan's construction sector has not yet reached a fully independent and self-regulating stage of development. Systematic government intervention, long-term investment strategies and tax incentive mechanisms are therefore considered scientifically justified requirements for its sustained development.
4. The methodology of labour-resource management in construction was investigated, and the application of an integrated approach to assessing labour potential was substantiated.
5. Assessment of environmental impacts in the oil and gas industry established that construction and installation activities are among the major sources of environmental pressure and adversely affect sustainable development. Accordingly, the need for environmental risk assessment and management at the preliminary design stage of construction projects was scientifically substantiated.

Theoretical and Practical Significance of the Research. The theoretical contribution lies in the comprehensive investigation of stable and sustainable construction development in Azerbaijan's oil and gas industry, the systematisation of existing theoretical approaches and the formulation of additional methodological justifications. Economic, social and environmental dimensions of sustainable development were applied to construction, and scientific approaches to labour efficiency, the structural indicators of capital investment and macroeconomic impact assessment were refined.

Econometric modelling further identified the sector's contribution to economic growth, enriching the existing theoretical framework.

The practical contribution lies in the potential application of the findings and proposals to government programmes, investment policy and strategic planning aimed at developing construction in Azerbaijan's oil and gas industry. The forecast indicators may inform investment decisions, labour-market management, and improvements in tax and credit policies. Furthermore, the approaches proposed for addressing environmental risks in project design and implementation may support environmental protection and the implementation of a green development strategy.

Approbation and application. The author has published 7 scientific articles and 4 conference papers in national and international publications, addressing the key issues covered by the dissertation. The principal propositions and results were presented at international and national scientific and practical conferences in Azerbaijan and abroad. The research findings were reported and published in conference proceedings, including: the international scientific and practical conference for higher-education students and young scholars on “Contemporary Directions in the Development of Management and Economics under VUCA-World Conditions”, held in Ukraine on 17 November 2022, with the paper “Assessment of the Impact of Oil and Gas Production on the Sustainable Development of the Construction Sector in Azerbaijan”; the international scientific and practical conference “International Transport and Logistics Corridor: Development Impulses from Zangilan” on 17 November 2023, with a paper on the role of the East Zangezur transport corridor in the development of oil and gas construction; and the national scientific conference “Contemporary Problems and Prospects of Economic Management”, organised on 23–24 November 2023 by the Institute of Economics of the Ministry of Science and Education and Azerbaijan State Oil and Industry University in commemoration of the 100th anniversary of the birth of National Leader Heydar Aliyev, with a paper assessing the role of oil and gas construction in the reconstruction of liberated territories.

Name of the organization where the dissertation was conducted. The dissertation was completed at the Department of Business Economics and Management of Azerbaijan University of Architecture and Construction.

Total Volume of the Dissertation, Including the Volume of Its Individual Structural Sections. The dissertation comprises an introduction, three chapters, conclusions and a bibliography of 148 references. The study contains 18 tables, 39 graphs and two figures for analytical and evaluative purposes. The introduction comprises 15 559 characters, Chapter I, 82 683, Chapter II, 72 183, Chapter III, 52 973 and the conclusions and recommendations, 9 715. The dissertation totals 166 pages and 233 113 characters.

TABLE OF CONTENTS OF THE DISSERTATION

INTRODUCTION

CHAPTER I. THEORETICAL AND METHODOLOGICAL FOUNDATIONS FOR ENSURING STABLE AND SUSTAINABLE DEVELOPMENT

1.1. Theoretical and methodological foundations and principles of stable and sustainable development

1.2. Main challenges and characteristic features of sustainable development in construction

1.3. Methodological aspects of stable development trends in Azerbaijan's oil and gas construction sector

CHAPTER II. COMPREHENSIVE ANALYSIS OF STABLE AND SUSTAINABLE DEVELOPMENT IN THE CONSTRUCTION SECTOR OF AZERBAIJAN'S OIL AND GAS INDUSTRY

2.1. Analysis of the current state of construction in Azerbaijan's oil and gas industry

2.2. Analysis and assessment of the current production and economic activities of SOCAR's Neftgaztikinti Trust

2.3. Analysis of labour-resource utilisation and structural indicators of capital investment in oil and gas construction

CHAPTER III. PROSPECTIVE DIRECTIONS FOR STABLE AND SUSTAINABLE DEVELOPMENT OF CONSTRUCTION IN AZERBAIJAN'S OIL AND GAS INDUSTRY

3.1. Assessment of the impact of construction in the oil and gas industry on macroeconomic indicators

3.2. Assessment of construction-sector development in the oil and gas industry

3.3. Directions for improving stable and sustainable construction development in the oil and gas industry of the Republic of Azerbaijan

CONCLUSIONS

REFERENCES

MAIN CONTENT OF THE RESEARCH

The **"Introduction"** substantiates the scientific and practical relevance of the topic and presents the state of research, the object and subject, the aim and objectives, the scientific novelty, theoretical and practical significance, and the dissemination and application of the findings.

Chapter I, entitled **"Theoretical and Methodological Foundations for Ensuring Stable and Sustainable Development"**, examines the economic substance and underlying principles of sustainable development, its socioeconomic and environmental dimensions, and its implications for construction in the oil and gas industry. The chapter systematically analyses the contemporary relevance of sustainable development to the global economy and the relationships between efficient natural-resource utilisation and economic growth.

The findings indicate that sustainable development is founded on a balance between economic, social and environmental components. Under contemporary approaches, economic development is assessed not only in terms of output and income growth, but also through environmental protection, efficient resource use and consideration of future generations. Waste released during oil and gas extraction, processing and transportation damages ecosystems and accelerates climate change. It is therefore important for construction in the oil and gas industry to operate in accordance with principles of stable and sustainable development. Chapter I also examines the formation of the sustainable development concept and its internationally recognised principles. The 1992 Earth Summit in Rio de Janeiro is identified as an important milestone in the international acceptance of sustainable development, whose central objective is to reconcile economic growth with environmental safety and social welfare.

The methodological foundations of sustainable development are examined from a systems perspective. The economy, society and the environment constitute the main components of a single, interconnected system, within which changes in one component directly affect the others. Consequently, consideration of

environmental and social factors when making economic decisions is a prerequisite for sustainable development.

Particular attention is devoted to the relationship between the oil and gas sector and sustainable development. It is shown that this sector interacts closely with other branches of the economy, especially construction and infrastructure. Financial resources generated by oil and gas activities stimulate construction development, support job creation, expand infrastructure projects and foster regional socioeconomic development.

At the same time, intensive exploitation of natural resources creates both positive economic outcomes and environmental and social challenges. A systematic presentation of the interactions between natural resources, economic activities and sustainable development is therefore required. To illustrate their causal mechanisms more clearly, the model entitled “Relationship between Natural Resources and Sustainable Development” is presented below:

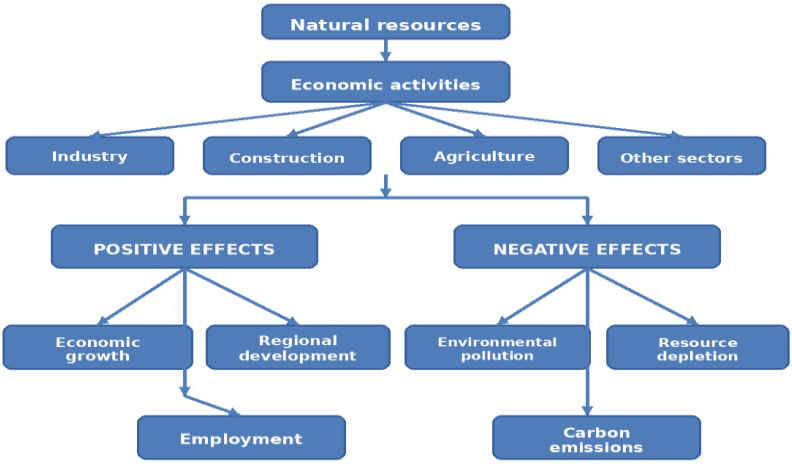


Figure. Model of the oil and gas sector and sustainable development

Source: Prepared by the author on the basis of the logical findings of the research.

The diagram presents the mechanism through which the oil and gas sector influences the economic system, the formation of financial resources, construction development, employment growth and the interaction between regional development and a sustainable economic system. It also traces the effects of natural-resource use on economic growth, environmental pressure, resource depletion and the transition to alternative energy sources as a pathway to sustainable development.

Excessive resource use increases environmental risks and contributes to the depletion of natural reserves. In this context, alternative energy sources and green technologies are particularly important. The chapter also examines the concepts of the green economy and green accounting. The green economy is based on reducing carbon emissions, using resources efficiently and protecting the environment during economic activity. Green accounting makes it possible to evaluate enterprises not only in terms of their financial performance but also in relation to their environmental impacts.

The research identifies economic diversification, development of the non-oil sector and the reintegration of liberated territories into economic activity among the main priorities of sustainable development policy in Azerbaijan. Within this framework, construction in the oil and gas industry is important for infrastructure provision, the development of industrial zones and employment generation.

The analysis in Chapter I demonstrates that construction development in Azerbaijan's oil and gas industry contributes significantly to economic growth, fixed-capital expansion, job creation and the implementation of infrastructure projects. At the same time, construction activity is closely associated with environmental safety, carbon emissions and efficient utilisation of natural resources. Application of sustainable development principles to oil and gas construction is therefore especially relevant.

The following chart shows changes in the share of investment directed towards construction and installation works in total investment in the Republic of Azerbaijan.

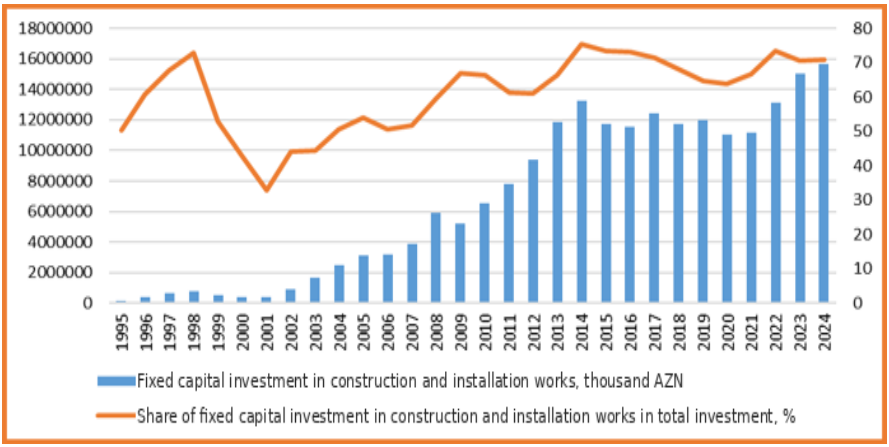


Chart 1. Share of investment in construction and installation works in total investment in the Republic of Azerbaijan, %

Source: https://www.stat.gov.az/source/construction/[1]

The chart indicates that the share of investment allocated to construction and installation works generally increased over 2000–2024. Whereas the indicator fluctuated between 33% and 41% in the early 2000s, it subsequently rose as oil revenues increased and large infrastructure projects were implemented, approaching 75% in 2015–2016. Although investment activity declined to some extent in 2020 due to the COVID-19 pandemic, it recovered in subsequent years, particularly as large-scale construction and installation works were undertaken in the liberated territories. The share exceeded 70% in 2024, indicating that construction had become one of the country's leading economic sectors.

According to the chart, investment in construction and installation works contributed not only to economic growth but also to regional socioeconomic development, new infrastructure facilities and higher employment. Conversely, the expansion of construction and installation activities in the oil and gas industry intensified environmental problems, increased atmospheric carbon emissions and promoted intensive natural-resource use.

[1] Source: https://www.stat.gov.az/source/construction

The findings suggest that construction development in the oil and gas industry should follow principles of stable and sustainable development. Key priorities include introducing green technologies, minimising environmental waste, improving energy efficiency and using natural resources rationally. Alongside increased construction investment, the application of environmental safety standards is an important condition for the long-term stability of economic development.

Chapter II, entitled **“Comprehensive Analysis of Stable and Sustainable Development in the Construction Sector of Azerbaijan's Oil and Gas Industry”**, examines the present condition of construction in the oil and gas industry, its role in economic development, investment dynamics, effects on employment, environmental dimensions and the current production and economic activities of SOCAR's Neftgaztikinti Trust. The chapter establishes that the oil and gas industry is not only one of Azerbaijan's leading economic sectors but also a significant driver of construction development. The development of oil and gas fields, installation of trunk pipelines, and construction and modernisation of energy infrastructure are major factors accelerating growth. In this context, oil and gas construction comprises not merely production facilities but also logistics, transport, service and engineering systems.

The research demonstrates that Azerbaijan's oil and gas construction sector has passed through several stages since independence. In particular, the “Contract of the Century”, signed in 1994, facilitated substantial foreign investment and considerably expanded construction and installation activities in the oil and gas industry. Implementation of the Baku–Tbilisi–Ceyhan oil pipeline, the Southern Gas Corridor and other international energy projects resulted in new trunk pipelines, compressor stations, terminals and energy infrastructure.

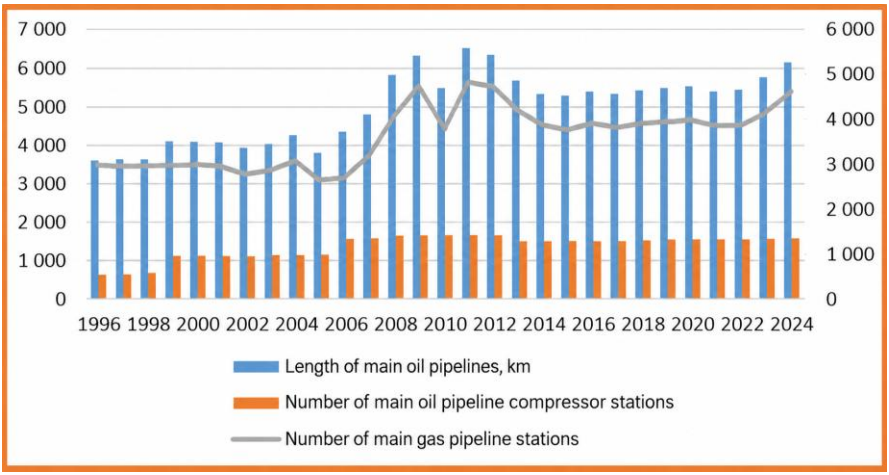


Chart 2. Dynamics of Azerbaijan's trunk pipeline transport, 1995–2023

Source: https://www.stat.gov.az/source/transport/[2]

Analysis of Chart 2 indicates that the total length of Azerbaijan's trunk pipelines generally increased during 1995–2024. It was 3,678 km in 1996–1998, reached 5,836 km in 2008 and 6,526 km in 2011. In recent years, the total length has become relatively stable, reflecting a greater emphasis on modernising existing infrastructure rather than on new pipeline construction.

The chapter also evaluates the economic significance of trunk oil and gas pipelines, demonstrating that gas-pipeline expansion contributes to national energy security and gas export capacity. Pipeline construction has had positive effects on construction employment, the introduction of new technologies and development of domestic engineering capabilities.

The research identifies an important contribution of increased construction investment to the growth of the sector's value-added share in GDP. This relationship is illustrated in the following chart.

[2] https://www.stat.gov.az/source/transport/

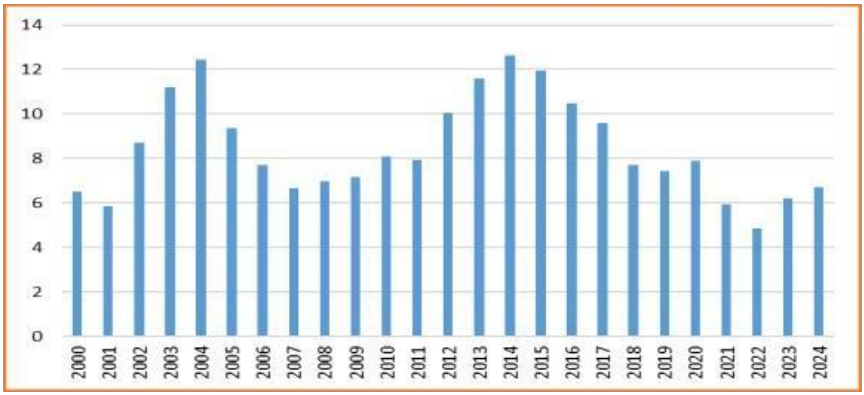


Chart 3. Share of value added by construction and installation works in GDP, %

Source: https://www.stat.gov.az/source/construction/[3]

As shown in the chart, the share of value added by construction and installation works in GDP was 12.45% in 2004 and 12.6% in 2014. Although the share subsequently declined amid global financial crises, lower oil prices and the COVID-19 pandemic, an upward trend re-emerged in 2023–2024.

The chapter also investigates the contribution of construction to employment and finds that the sector is a leading source of jobs among economic activities. Both the number of construction workers and their share of total employment have increased in recent years. In 2024, construction accounted for 8% of total employment, illustrating its socioeconomic importance.

A further major focus of Chapter II is the production and economic performance of SOCAR's Neftgaztikinti Trust. Financial and economic analysis indicates that most of the Trust's revenue derives from the provision of works and services. Total revenue and profit increased during 2015–2019; a decline and a loss were observed in 2020 owing to the pandemic. Financial performance subsequently improved as economic activity recovered. Wage costs, raw materials and transport account for significant shares of the Trust's expenditure. Meanwhile, use of digital technologies, automated

[3] https://www.stat.gov.az/source/construction/

management systems and environmentally oriented technologies has expanded, creating opportunities to improve production efficiency and strengthen safety standards.

Forecast analysis based on economic-mathematical approaches was undertaken to assess future trends in the enterprise's financial indicators. The calculations evaluated expected profit dynamics at Neftgaztikinti Trust through 2030 and generated projections under alternative scenarios. The chart below presents the projected changes in profitability.

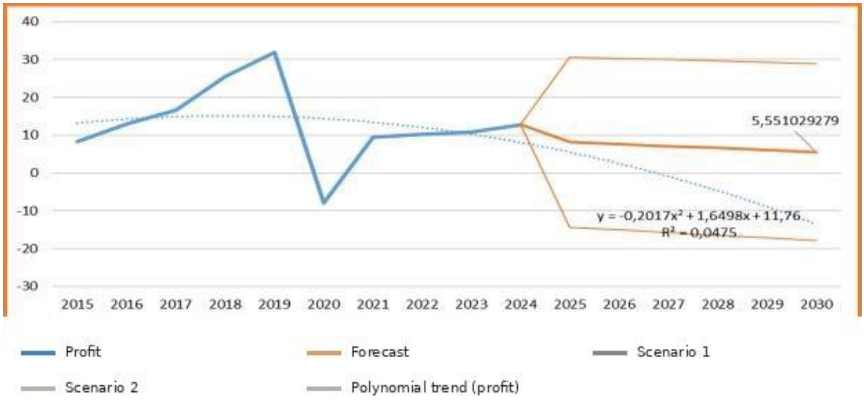


Chart 4. Forecast of Neftgaztikinti Trust's profit through 2030
Source: Prepared by the author using the software package.

According to the chart, Neftgaztikinti Trust's projected profit is expected to decline relative to preceding years, reaching AZN 5.51 million in 2030. The decline is explained principally by increases in indirect production costs alongside a downward trend in innovation-oriented expenditure within the cost structure. Accordingly, increasing expenditure on innovative development and optimising non-productive production costs will be important in the coming years.

The analysis shows that a substantial proportion of investment in Azerbaijan has been directed to the oil and gas sector for many years, primarily reflecting the industry's high investment attractiveness and its central place in the national economy. Large oil and gas

investment projects have significantly contributed to construction development, the establishment of new production and infrastructure facilities, the expansion of construction and installation works, and growth in fixed capital.

The findings indicate that increased investment in fixed capital in the oil and gas industry has stimulated stable construction development and raised the value of construction and installation works. Econometric assessment of the relationship between investment and the value of construction activity is therefore of significant scientific and practical interest. The chart below illustrates this relationship in Azerbaijan.

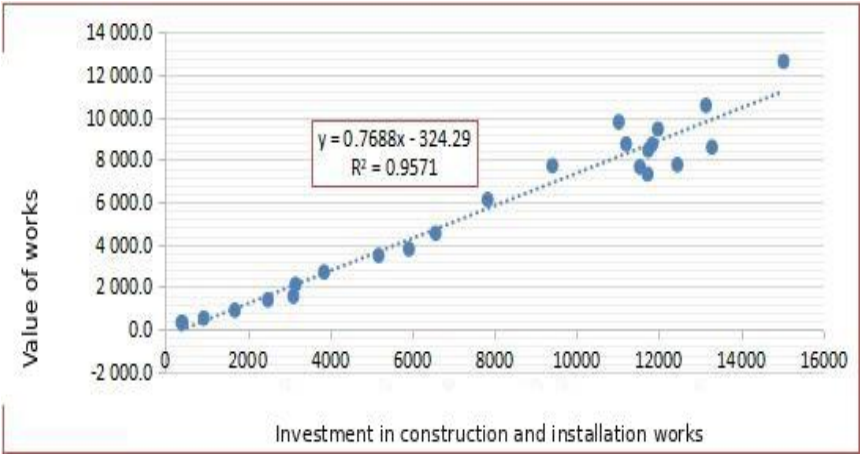


Chart 5. Relationship between investment in construction and installation works and the value of construction works in Azerbaijan

Source: Compiled in MS Excel from data of the State Statistical Committee of the Republic of Azerbaijan.[4]

The chart reveals a very strong correlation between the two variables, represented by the linear regression equation y = 0.7688x − 324.29. The calculated elasticity coefficient is E = 1.05, suggesting that a 1% increase in investment in construction and installation works is associated, on average, with a 1.05% increase in the value

[4] State Statistical Committee of the Republic of Azerbaijan.

of construction works. Thus, expanding investment directly supports economic activity and output growth in construction.

The dissertation also uses MS Excel to assess the relationship between fixed-capital investment and the value of construction and installation works in Azerbaijan's oil and gas sector. The results of the corresponding econometric analysis are presented in the following chart.

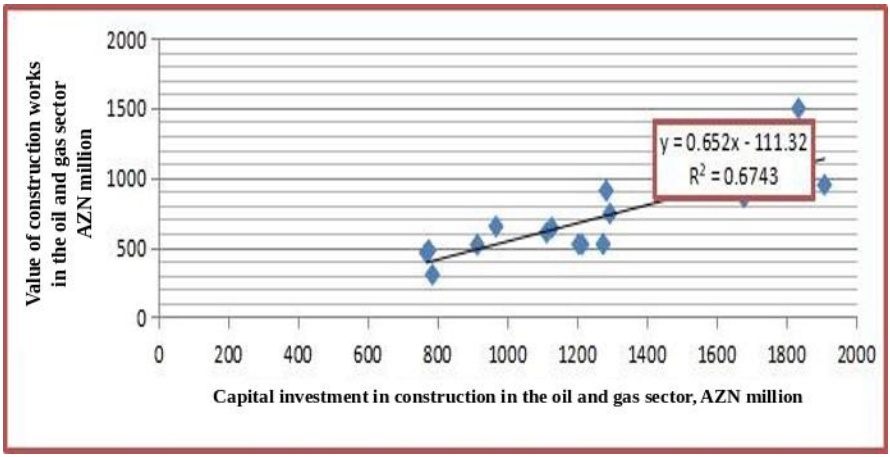


Chart 6. Relationship between fixed-capital investment in oil and gas construction and the value of construction and installation works in Azerbaijan

Source: Compiled by the author from data of the State Statistical Committee of the Republic of Azerbaijan.[5]

The chart indicates a strong correlation between investment in construction and installation works in Azerbaijan's oil and gas sector and the revenue generated by the sector, expressed by the linear regression equation $y = 0.652x - 111.32$.

The estimated elasticity coefficient is $E = 1.164$, indicating that a 1% increase in fixed-capital investment in oil and gas construction is associated, on average, with a 1.16% increase in the sector's revenue. The econometric findings confirm that expanded investment

[5] State Statistical Committee of the Republic of Azerbaijan.

significantly supports stable construction development, higher profitability and greater economic efficiency in the oil and gas industry.

The comprehensive analysis in Chapter II thus establishes that construction in Azerbaijan's oil and gas industry is strategically important for national economic development, energy security, employment growth and infrastructure modernisation. Its future development is closely linked to the introduction of innovative technologies, stronger environmental safeguards, expanded investment and development of the non-oil sector. The findings indicate that an investment policy based on principles of stable and sustainable development will play an important role in the long-term advancement of oil and gas construction.

Chapter III, entitled **"Directions for Improving Stable and Sustainable Construction Development in the Oil and Gas Industry of the Republic of Azerbaijan"**, comprehensively assesses the sector's impact on macroeconomic indicators, its potential for autonomous development, investment activity, effects on employment and GDP, and prospective development priorities. It is demonstrated that oil and gas industry development has significantly increased investment inflows, expanded construction and promoted other economic activities in Azerbaijan. In particular, foreign investment attracted after the "Contract of the Century" increased construction and installation activity and facilitated new infrastructure projects. The research identifies a direct influence of investment in oil and gas construction and installation works on revenue from works and services. Accordingly, the relationships between investment, the value of construction works and GDP were assessed econometrically. A strong correlation was identified between GDP and investment in oil and gas and non-oil-and-gas construction. Regression analysis in EViews 12 found statistically significant relationships between GDP, construction investment in the oil and gas sector, investment in the non-oil-and-gas sector, and revenues from the oil and gas industry.

Table.

Regression analysis of the relationship between GDP and gross output of construction works in the oil and gas sector of the Republic of Azerbaijan

Dependent variable: GDP				
Method: Least Squares				
Date: 28.10.2024 Time: 11:23				
Sample: 2000–2023				
Included observations: 24				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
AVPT	8.968979	0.651633	13.76385	0.0000
C	−813.2381	4432.565	−0.183469	0.8561
R-squared	0.895953	Mean dependent variable		50146.60
Adjusted R-squared	0.891224	S.D. of dependent variable		36200.67
S.E. of regression	11939.42	Akaike information criterion		21.69273
Sum squared residuals	3.14E+09	Schwarz criterion		21.79090
Log likelihood	−258.3128	Hannan–Quinn criterion		21.71878
F-statistic	189.4437	Durbin–Watson statistic		1.186874
Prob(F-statistic)	0.000000			

Source: EViews 12.

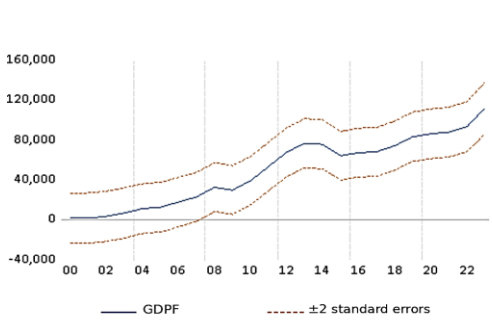
According to Table 3.1, the regression equation estimated using EViews 12 takes the following form:

$$GDP = 8.96897921309 \times AVPT - 813.238147371$$

$$(t)\ (13.76)\ (-0.183) \qquad DW = 1.187$$

Equation indicates that, during the period under investigation, a one-unit increase in AVP, the factor representing gross construction output in Azerbaijan's oil and gas industry, was associated with an 8.97-unit increase in GDP.

Chapter III separately evaluates the potential for autonomous development of construction in the oil and gas industry. An accelerator model was applied to analyse how changes in investment in fixed capital depend on output growth. The estimated accelerator coefficient, $\alpha_1 = 0.397$, was positive but below unity. This suggests that although increased production stimulates investment, the effect is less than proportional and investment activity remains relatively subdued. It was established that SOCAR's construction enterprises allocate only part of their revenues to expanding fixed capital, reflecting cautious investment decisions, restricted access to finance and underdeveloped internal investment capacity. The chapter also extensively examines the sector's effects on employment and other socioeconomic indicators. As a labour-intensive activity, construction plays a significant role in increasing employment. A strong correlation between gross construction output and employment was identified, and the elasticity estimates suggest that a 1% increase in construction output is associated, on average, with a 0.284% increase in employment. This further demonstrates the socioeconomic importance of the sector. The forecasting characteristics of the model are presented in the following chart.



Forecast: GDPF
Actual: GDP
Forecast sample: 2000–2023
Observations: 24

Root mean squared error	11431.12
Mean absolute error	7508.002
Mean absolute percent error	18.75604
Theil inequality coefficient	0.093901
Bias proportion	0.000000
Variance proportion	0.027460
Covariance proportion	0.972540
Theil U2 coefficient	1.026890
Symmetric mean absolute percentage error (SMAPE)	20.65237

Chart 7. Annual GDP values, standard errors and forecasting characteristics
Source: EViews 12.

As the chart indicates, the model's forecasting characteristics can be used to calculate projected GDP values for the Republic of Azerbaijan. The forecasts suggest that gross construction output and investment in fixed capital will increase through 2030. According to trend models developed in MS Excel, gross construction output is projected at approximately AZN 14.8 billion in 2030, while investment in oil and gas construction is projected at AZN 7,394.8 million. These projections indicate that construction will remain one of the principal drivers of economic growth. Chapter III also assesses the relationship between construction and GDP using econometric methods. Regression analysis in EViews 12 identifies a strong correlation between GDP and both gross construction output and value added ($R^2 = 0.919$). An increase in output and value added in construction is found to have a significant impact on GDP. Multicollinearity was also assessed, and the statistical adequacy of the explanatory variables was examined.

The findings of Chapter III demonstrate that stable and sustainable development of construction in Azerbaijan's oil and gas industry is closely linked to increased investment activity, innovative technologies, stronger state support and economic diversification. The econometric models and projections confirm that the sector is strategically important for economic growth, employment and improvements in social welfare.

CONCLUSION AND RECOMMENDATIONS

The research yielded the following principal findings:

1. Stable and sustainable construction development in Azerbaijan's oil and gas industry is strategically important for national economic growth, energy security, employment and social welfare.

2. Stable and sustainable development represents an integrated system of interconnected economic, social and environmental components, and maintaining balance between them is fundamental to long-term development.

3. In resource-dependent economies, particularly those dominated by oil and gas, economic growth is directly related to environmental risks. Inefficient resource utilisation can therefore undermine development stability.

4. The sustainability of economic growth depends not only on resource endowments but also on the quality of resource management, adoption of innovative technologies and effectiveness of institutional mechanisms.

5. The interdependence of the oil and gas industry and construction produces multiplier effects that contribute substantially to job creation, faster regional development and higher social welfare.

6. At the present stage of economic development, green-economy and environmental-responsibility principles are central to sustainable development and require the minimisation of adverse environmental impacts. At the same time, expanding construction activity has increased waste generation and intensified air, soil and water pollution, indicating that the balance between economic growth and environmental safety has yet to be fully achieved.

7. Development of construction in Azerbaijan's oil and gas industry is primarily driven by investment growth. In particular, increases in fixed-capital investment and construction and installation activity have significantly raised the sector's contribution to GDP and economic growth.

8. Although construction has exhibited a long-term growth trend, it has also demonstrated considerable vulnerability to global

economic shocks, especially the COVID-19 pandemic. This underscores the importance of risk management in achieving sustainable sectoral development.

9. Although construction contributes significantly to employment, informal employment, occupational safety problems and job instability remain weaknesses in its social dimension.

10. Econometric analysis reveals a positive and statistically significant relationship between gross construction output and employment. The estimated elasticity indicates that a 1% increase in construction output is associated with an average 0.284% increase in employment, confirming the sector's importance for socioeconomic stability.

11. The dissertation's econometric models establish a strong correlation between gross construction output in the oil and gas industry and GDP ($R^2 = 0.895–0.919$).

Main recommendations arising from the research findings

– expand government programmes aimed at non-oil-sector development and economic diversification, and increase investment in the non-oil sector;

– promote innovative and digital technologies in oil and gas construction projects, accelerating automation and digitalisation of production processes;

– integrate green-economy principles and environmental safety requirements into construction and infrastructure projects, expanding the application of green-building standards;

– improve tax incentives, depreciation mechanisms and public financial-support programmes to encourage construction investment;

– expand preferential credit arrangements for fixed-capital renewal and modernisation, and increase the scale of public–private partnership projects;

– strengthen skilled-worker training in construction, enhance links between education and industry, and establish modern vocational education aligned with labour-market requirements;

– implement institutional measures to reduce informal employment, strengthen occupational safety standards and improve social-protection mechanisms;

– further improve risk-management and economic forecasting mechanisms to increase the effectiveness of investment decisions;

– align the institutional, legal and regulatory framework for construction with international standards and improve management effectiveness.

The main propositions, findings, and recommendations of the dissertation are reflected in the following publications by the author.

1. Gasimli, M. B. Trends in the sustainable development of the construction sector in the oil and gas industry of the Republic of Azerbaijan. Economics and Management of Construction, Baku, 2021, No. 4 (17), pp. 339–344.
2. Gasimli, M. B. Assessment of the impact of oil and gas extraction and production on construction and installation works in the oil sector. Economics and Management of Construction, Baku, 2022, No. 4 (21), pp. 129–136.
3. Yusifov, E. M., Gasimli, M. B. The process approach and opportunities for applying digital technologies to improve the efficiency of industrial enterprise management. International scientific conference "A New Quality Stage of Sustainable Development", dedicated to the 80th anniversary of Academician Z. Samadzade, Baku, 2022, pp. 444–450.
4. Gasimli, M. B. Influence of the construction sector on the gross domestic product of the oil and gas industry. Economics and Region, Odesa, 2022, No. 3 (86), pp. 24–31.
5. Gasimli, M. B. Assessment of the impact of oil and gas production on the sustainable development of the construction sector in Azerbaijan. In: Modern Directions of Management and Economic Development under VUCA-World Conditions: Proceedings of the International Scientific and Practical Conference of University Students and Young Researchers, 17 November 2022, Kharkiv National Automobile and Highway University, Kharkiv, 2022, pp. 366–369.
6. Mammadov, M. A., Gasimli, M. B. Environmental problems in the sustainable development of the oil and gas industry. Economic Reforms, Scientific and Analytical Journal, Baku, 2023, No. 1 (6), pp. 15–21.
7. Gasimli, M. B. Assessment of risk factors in the sustainable development of SOCAR's Neftgaztikinti Trust. ENECO Journal, Tallinn, 2023, Vol. 14, Issue 2, pp. 17–24.

8. Gasimli, M. B. Assessment of the economic potential of construction in the oil and gas industry for the reconstruction of liberated territories. Proceedings of the International Scientific Conference "Interstate Economic Relations: Contemporary Challenges and Prospects", dedicated to the 100th anniversary of National Leader Heydar Aliyev, Sumgayit, 25–26 May 2023, pp. 318–320.
9. Gasimli, M. B. The impact of the restoration of liberated territories on the expansion of Azerbaijan's oil and gas construction sector. International Scientific Conference "Reintegration of Liberated Territories into the National Economy: Objectives and Directions", Baku, 13–14 June 2023, pp. 306–314.
10. Gasimli, M. B. Factors influencing the sustainable development of the oil and gas industry. Economic Reforms, Baku, 2023, No. 4 (9), pp. 89–102.
11. Mammadov, M. A., Gasimli, M. B. The role of the East Zangezur transport corridor in the development of the oil and gas construction sector. Economics and Management of Construction, Baku, 2024, No. 1 (26), pp. 17–20.



The defense will be held on "04" December 2026 at 11^{00} at the meeting of the Dissertation council FD 1.10 of Supreme Attestation Commission under the President of the Republic of Azerbaijan operating at Institute of Economics of the Ministry of Science and Education of the Republic of Azerbaijan.

Address: 115 H. Javid Avenue, Baku, Azerbaijan, AZ 1143.

Dissertation is accessible at the library of the Institute of Economics of the Ministry of Science and Education of the Republic of Azerbaijan.

Electronic version of the abstract is available on the official website of the Institute of Economics of the Ministry of Science and Education of the Republic of Azerbaijan (economics.org.az).

Abstract was sent to the required addresses on "02" November 2026.

Approved for printing:29.10.2026.
Paper size: A5.
Length: 41,275 characters.
Print run: 20 copies.