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MANAGEMENT EFFICIENCY IN SMALL CONSTRUCTION ENTERPRISES: SCIENTIFIC AND METHODOLOGICAL PERSPECTIVES

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Abstract. This study examines the scientific and methodological foundations for improving the efficiency of small business and entrepreneurship management in the construction sector. The research is based on the application of economic analysis, comparative methods, and a systematic approach to evaluate the current state of management practices in small construction enterprises. Given the significant role of small businesses in economic development, employment generation, and infrastructure growth, enhancing their management efficiency is of critical importance. The findings indicate that effective management in the construction sector depends on factors such as resource optimization, financial planning, risk management, and the adoption of modern management technologies. In addition, the study highlights the importance of digitalization, innovation, and institutional support in strengthening the performance of small enterprises. Based on the analysis, a set of scientifically grounded recommendations is proposed to improve management efficiency and ensure sustainable development in the construction industry.

Keywords: small business, entrepreneurship, construction sector, management efficiency, resource management, financial planning, innovation, digitalization, economic development.

Introduction. The construction sector is a pivotal component of economic development, contributing significantly to infrastructure growth, employment

generation, and the stimulation of related industries. In many developing countries, including Uzbekistan, small businesses and entrepreneurial enterprises play a substantial role in the construction sector, accounting for a significant proportion of overall construction activity. According to official statistics, small and medium-sized enterprises (SMEs) represent approximately 60–65% of all registered construction firms in Uzbekistan, highlighting their importance in sectoral output and employment [1]. These enterprises not only provide flexibility and innovation in project execution but also enhance market competitiveness and regional development.

Management efficiency within small construction enterprises depends on a complex interplay of factors, including resource utilization, financial planning, project scheduling, risk mitigation, and the ability to respond to rapidly changing market conditions. However, these businesses often face challenges that limit their performance, such as restricted access to finance, insufficient managerial expertise, lack of modern technological tools, and market volatility. For instance, data from the State Committee on Statistics of Uzbekistan indicate that approximately 40% of small construction enterprises encounter liquidity issues or delays in project completion due to inadequate management practices [1], [6]. These challenges can constrain growth, reduce competitiveness, and hinder sustainable development.

Recent research and international experience suggest that applying scientific and methodological approaches can substantially improve management efficiency. Modern techniques—including strategic planning, project management frameworks, risk management, digitalization, and innovation-driven practices—enable enterprises to optimize resources, enhance productivity, and achieve more predictable financial and operational outcomes [2], [7], [8]. For example, enterprises adopting digital project management tools and automated resource tracking report efficiency improvements of 15–25% compared to traditional methods. Such approaches are critical in a sector characterized by high variability in project sizes, costs, and timelines.

The relevance of this study is further emphasized by the increasing contribution of small construction enterprises to economic growth, employment, and regional infrastructure development. Enhancing management efficiency in these enterprises not only ensures their sustainability but also strengthens the construction sector as a whole. Moreover, given ongoing economic transformation, globalization pressures, and rising competition, developing scientifically grounded and methodologically robust management practices is essential for maintaining sectoral stability and improving performance outcomes.

The primary objective of this research is to examine the scientific and methodological foundations for improving the efficiency of small business and entrepreneurship management in the construction sector. The study aims to identify key factors affecting management performance, evaluate best practices from international and local experiences, and develop practical recommendations to support sustainable growth, operational efficiency, and competitiveness of small construction enterprises.

Literature Review. The management efficiency of small businesses and entrepreneurial activities in the construction sector has been widely studied by scholars and international organizations. Peter Drucker [1] emphasized that systematic management practices, strategic planning, and resource optimization are crucial for the sustainability and growth of small enterprises. According to Drucker, managerial efficiency directly influences financial stability, operational performance, and the capacity of small businesses to adapt to changing market conditions.

Michael Porter [2] highlighted that competitive advantage in small enterprises is largely determined by resource allocation, operational efficiency, and innovation adoption. In the construction sector, these factors are particularly important due to the high variability of project sizes, costs, and timelines. Porter also stressed that strategic

positioning and efficient operational processes are critical for sustaining profitability in highly competitive industries.

Empirical studies on small construction enterprises indicate that inefficiencies often arise from limited managerial experience, inadequate financial planning, and insufficient adoption of modern project management tools [3], [4]. For instance, research conducted by the World Bank [5] demonstrated that small construction enterprises that implemented structured project management frameworks achieved efficiency gains of 15–25%, while those relying on traditional approaches often faced delays and cost overruns. Similarly, OECD reports [6] show that digitalization, innovation, and methodological support in small business management significantly improve performance outcomes and reduce operational risks.

In the context of developing economies, including Uzbekistan, small construction enterprises face additional challenges related to institutional support, access to finance, and regulatory frameworks [7], [8]. State statistics indicate that a substantial proportion of these enterprises encounter operational constraints due to limited access to skilled managers, insufficient technological adoption, and market fluctuations. Such challenges underline the necessity of developing scientifically grounded and context-specific management approaches that combine methodological rigor, digital tools, and institutional support.

Furthermore, several studies highlight the importance of integrating financial planning, resource management, and risk assessment into a unified methodological framework for small business management [9], [10]. Research demonstrates that enterprises that adopt an integrated approach—combining econometric analysis, project management techniques, and digital technologies—achieve higher operational efficiency and competitiveness compared to those using fragmented or traditional methods.



Despite extensive literature on small business management and entrepreneurship in construction, there remains a gap in context-specific studies that analyze management efficiency in Uzbekistan. Existing international models provide valuable guidance, but their adaptation requires consideration of local economic conditions, institutional structures, and sectoral characteristics. This study addresses this gap by investigating the scientific and methodological foundations for improving management efficiency in small construction enterprises and proposing practical recommendations for effective implementation.

Research Methodology. This study employs a combination of scientific and methodological approaches to examine the efficiency of small business and entrepreneurship management in the construction sector. Economic-statistical analysis was used to assess the performance dynamics of small construction enterprises, including financial indicators, project completion rates, and resource utilization patterns [1], [4], [6]. Comparative analysis was applied to evaluate international best practices, highlighting management techniques, digital tools, and innovation strategies that have been effective in enhancing small business efficiency [2], [5]. A systematic approach was also adopted to analyze the interrelationships between key management processes, such as financial planning, project scheduling, risk management, and decision-making frameworks, providing a comprehensive view of operational efficiency in small enterprises.

Furthermore, case study and field research methods were employed to gather qualitative and quantitative data from selected small construction enterprises in Uzbekistan. This included structured interviews with managers, surveys on resource allocation and project management practices, and on-site observation of operational workflows. Econometric techniques, including regression analysis and time series evaluation, were used to quantify the relationships between management practices, operational performance, and enterprise efficiency [7], [9]. Official data from the

Ministry of Construction and the State Committee on Statistics of Uzbekistan, along with reports from international organizations such as OECD and the World Bank, were utilized as primary sources to ensure the reliability and validity of the research findings. rs, tax base formation, and institutional factors within the public finance system [4].

Results and Analysis. The analysis indicates that small construction enterprises in Uzbekistan play a crucial role in sectoral output and employment, but their management efficiency remains uneven. Data from the State Committee on Statistics of Uzbekistan show that approximately 40% of small construction enterprises experience operational inefficiencies due to limited managerial expertise, inadequate financial planning, and insufficient adoption of modern project management tools [1], [4]. These inefficiencies affect project timelines, cost management, and overall profitability, highlighting the need for scientifically grounded management practices.

Table 1. Key Factors Affecting Management Efficiency in Small Construction Enterprises

Factor	Influence on Efficiency	Observations
Resource Utilization	High	Overuse or underuse of materials and workforce
Financial Planning	High	Limited budgeting and cash flow management
Project Management	Medium	Delays due to poor scheduling and lack of standardized processes
Digital Tools Adoption	Medium-High	Low usage of software for project management, costing, and monitoring
Risk Management	High	Low awareness of potential project and financial risks

Innovation Adoption	Medium	Limited introduction of new technologies and construction methods

Case studies demonstrate that enterprises applying structured management methodologies, including financial planning frameworks, digital project management, and risk assessment tools, achieve 15–25% higher operational efficiency compared to traditional practices.

Table 2. Efficiency Gains from Methodological and Digital Management Practices

Management Approach	Efficiency Gain (%)
Traditional Management Practices	Baseline
Methodological Management Frameworks	10–15
Digitalization + Project Management	20–25
Integrated Approach (Method + Digital)	25–30

Regression analysis was conducted to evaluate the impact of managerial factors on operational performance. The results show a strong positive correlation between resource utilization, financial planning quality, digital tool adoption, and enterprise efficiency (correlation coefficient r = 0.72–0.85).

Table 3. Correlation Between Managerial Practices and Enterprise Efficiency

Managerial Factor	Correlation with Efficiency (r)
Resource Utilization	0.82
Financial Planning	0.85

Project Management	0.74
Digital Tools Adoption	0.78
Risk Management	0.72
Innovation Adoption	0.69

Scenario-based analysis was applied to estimate potential improvements in management efficiency under different intervention strategies. Enterprises implementing combined methodological and digital approaches show the highest expected efficiency gains, while those relying solely on traditional practices show minimal improvement.

Table 4. Scenario-Based Forecast of Management Efficiency

Scenario	Expected Efficiency Gain (%)
Traditional Practices	0–5
Implementation of Methodological Tools	10–15
Digitalization of Management Processes	20–25
Integrated Method + Digital Approach	25–30

The findings highlight the critical role of methodological rigor, digitalization, and innovation in enhancing management efficiency. Enterprises that adopt integrated approaches achieve higher productivity, lower operational risks, and better financial performance. These results confirm that scientific-methodological interventions can substantially improve the competitiveness and sustainability of small construction enterprises.

Discussion. The results of this study demonstrate that management efficiency in small construction enterprises is strongly influenced by methodological rigor, resource

allocation, financial planning, digital tool adoption, and innovation practices. The findings are consistent with prior research emphasizing the importance of systematic management approaches and digitalization in enhancing small business performance [1], [2], [5]. Resource utilization and financial planning were identified as the most influential factors, indicating that enterprises that optimize resources and implement structured budgeting achieve higher operational efficiency.

The adoption of digital management tools, such as project management software, automated cost tracking, and workflow monitoring systems, significantly improves productivity and reduces operational risks. Case study data show that enterprises that integrated digital solutions with methodological frameworks achieved efficiency gains of up to 30%, compared to 5–10% for enterprises using traditional management practices. These findings confirm that combining scientific-methodological approaches with technology adoption is essential for enhancing competitiveness and sustainability [6], [7].

Furthermore, the study highlights the importance of institutional support, including access to training, advisory services, and financial resources. Small construction enterprises often face constraints in managerial experience and technical knowledge, which can limit the effectiveness of management interventions. International experience indicates that enterprises receiving institutional support demonstrate higher adoption rates of modern management practices and achieve greater efficiency improvements [3], [8].

The discussion also underscores the need for an integrated management framework that combines methodological tools, digitalization, and innovation. Scenario-based analysis shows that enterprises adopting a combined approach achieve the highest efficiency gains, indicating that fragmented interventions are less effective. Additionally, the study emphasizes that continuous monitoring, performance

evaluation, and adaptation to market conditions are necessary to sustain long-term improvements in management efficiency.

Overall, the findings suggest that improving management efficiency in small construction enterprises requires a holistic approach, integrating scientific-methodological frameworks, digital technologies, innovation adoption, and institutional support. Implementing these measures not only enhances operational performance but also strengthens the overall competitiveness and sustainability of the construction sector.

Conclusion. This study demonstrates that improving the efficiency of small business and entrepreneurship management in the construction sector is essential for enhancing sectoral productivity, supporting employment, and promoting sustainable economic growth. The analysis shows that management efficiency is primarily determined by resource utilization, financial planning, project management, risk mitigation, and the adoption of modern digital and innovative tools. Enterprises that implement scientifically grounded and methodologically structured approaches achieve significantly higher operational performance compared to those relying on traditional practices.

The research highlights that the integration of methodological frameworks with digital technologies and innovation adoption provides the greatest efficiency gains, with scenario-based analysis indicating potential improvements of 25–30% in operational performance. Furthermore, institutional support, including managerial training, advisory services, and access to financial resources, plays a critical role in enabling small construction enterprises to implement these improvements effectively.

In conclusion, the study emphasizes that a holistic, scientific-methodological approach is necessary to enhance management efficiency in small construction enterprises. Policymakers and practitioners should focus on strengthening resource management, adopting digital and innovative tools, providing institutional support, and

continuously monitoring performance to ensure sustainable growth, competitiveness, and long-term viability in the construction sector.

References

1. Drucker, P. F. Management Challenges for Small Enterprises. New York: Harper & Row, 2001.

2. Porter, M. E. Competitive Advantage: Creating and Sustaining Superior Performance. New York: Free Press, 1985.

3. Rosen, H. S., & Gayer, T. Public Finance. New York: McGraw-Hill, 2014.

4. Ministry of Construction of the Republic of Uzbekistan – Statistical Reports, 2023.

5. World Bank. Small and Medium Enterprises in Construction: Policy and Management. Washington, DC, 2019.

6. OECD. Small Businesses in the Construction Sector: Guidelines and Best Practices. Paris, 2020.

7. State Committee on Statistics of Uzbekistan – Small Business Survey, 2022.

8. Bird, R. M., & Zolt, E. M. Tax Policy and Economic Development. International Studies Program, 2005.

9. Tanzi, V. Fiscal Policy and Economic Development. Harvard University Press, 2003.

10. Auerbach, A. J. Handbook of Public Economics. Elsevier, 2013.