



## **International Congress on Economics, Management and Business Studies**

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### **IMPROVING THE ASSESSMENT AND MANAGEMENT OF ECONOMIC EFFICIENCY OF INVESTMENT PROJECTS IN THE CONSTRUCTION SECTOR**

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#### **Abstract**

Investment projects in the construction sector play a crucial role in economic growth, infrastructure development, and social welfare. However, the high capital intensity, long project cycles, and exposure to various risks make the evaluation and management of their economic efficiency particularly complex. This paper examines modern approaches to assessing and managing the economic efficiency of construction investment projects and proposes improved economic mechanisms. Special attention is given to financial evaluation methods, risk management tools, and digital technologies such as Building Information Modeling. The study identifies key challenges in current practices and provides recommendations for enhancing decision-making processes. The results contribute to improving the sustainability and profitability of construction investments.

**Keywords:** Construction investment, economic efficiency, project evaluation, risk management, BIM, cost-benefit analysis



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### **Introduction**

The construction sector is a fundamental component of national economies, contributing significantly to gross domestic product, employment, and infrastructure development. Investment projects in this sector often involve large-scale financial resources, extended implementation periods, and multiple stakeholders.

Evaluating the economic efficiency of such projects is essential for ensuring optimal allocation of resources and achieving desired outcomes. However, traditional evaluation methods often fail to account for uncertainties, dynamic market conditions, and technological advancements.

In recent years, the increasing complexity of construction projects has necessitated the development of more advanced approaches to efficiency assessment and management. Digital transformation, particularly through tools like Building Information Modeling, has opened new opportunities for improving project planning and control.

This study aims to analyze existing methods and propose improved mechanisms for evaluating and managing the economic efficiency of construction investment projects.

### **Literature Review**

The concept of economic efficiency in investment projects is widely discussed in economic and financial literature. It generally refers to the ability of a project to generate maximum returns with minimum costs.

Traditional methods of evaluating investment efficiency include:

- Net Present Value (NPV)
- Internal Rate of Return (IRR)
- Payback Period (PP)



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- **Cost-Benefit Analysis (CBA)**

These methods provide a financial basis for decision-making but often lack the flexibility to incorporate risk and uncertainty.

Modern research emphasizes the importance of integrated approaches that combine financial, operational, and technological factors. The use of Building Information Modeling has significantly improved data accuracy and project visualization, allowing better forecasting and cost estimation.

Scholars also highlight the role of risk management in investment efficiency. Construction projects are subject to various risks, including cost overruns, delays, market fluctuations, and regulatory changes.

Despite advancements, many construction enterprises still rely on outdated evaluation techniques, limiting their ability to achieve optimal results.

### **Methodology**

This study employs a comprehensive methodological approach that includes:

- Comparative analysis of traditional and modern evaluation methods
- Review of international best practices
- Case-based analysis of construction investment projects
- Synthesis of economic and management models

The research focuses on three main aspects:

1. Economic efficiency assessment methods
2. Project management practices
3. Risk management mechanisms

The analysis aims to identify gaps in current practices and propose improvements.



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### **Results and Discussion**

#### **Evaluation of Economic Efficiency**

Traditional financial indicators such as NPV and IRR remain essential tools for evaluating investment projects. However, they should be complemented with additional metrics to capture the full complexity of construction projects.

Improved evaluation approaches include:

- Scenario analysis and sensitivity analysis
- Life-cycle cost analysis
- Multi-criteria decision-making models
- Integration of digital data from Building Information Modeling

These methods provide a more comprehensive understanding of project performance.

#### **Risk Management in Construction Investment**

Risk management is a critical component of project efficiency. Failure to identify and mitigate risks can lead to significant financial losses.

Key risk categories include:

- Financial risks (inflation, currency fluctuations)
- Operational risks (delays, resource shortages)
- Environmental risks
- Regulatory risks

Effective risk management strategies involve:

- Risk identification and assessment
- Development of mitigation plans
- Continuous monitoring and control
- Use of predictive analytics and digital tools



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The integration of risk management into the evaluation process improves decision-making and enhances project outcomes.

### **Role of Digital Technologies**

Digital transformation has significantly impacted the construction industry. The adoption of Building Information Modeling enables:

- Accurate cost estimation
- Improved project visualization
- Real-time monitoring
- Enhanced collaboration among stakeholders

These capabilities lead to better resource allocation and increased efficiency.

In addition to BIM, other technologies such as artificial intelligence and data analytics are becoming increasingly important in project management.

### **Improving Economic Mechanisms**

Based on the analysis, several key economic mechanisms can be improved:

#### **1. Integrated Evaluation Systems**

Combining financial, technical, and environmental indicators provides a holistic view of project efficiency.

#### **2. Performance-Based Management**

Linking project outcomes to performance indicators ensures accountability and efficiency.

#### **3. Investment Planning Optimization**

Strategic planning and prioritization of projects improve resource allocation.

#### **4. Innovation and Technology Adoption**

Investing in digital technologies enhances productivity and reduces costs.



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### **5. Institutional and Regulatory Support**

Government policies and regulations play a crucial role in shaping investment efficiency.

### **Conclusion**

The evaluation and management of economic efficiency in construction investment projects are complex but essential processes. This study demonstrates that traditional financial methods must be complemented with modern approaches that incorporate risk management and digital technologies.

The use of Building Information Modeling significantly improves the accuracy and effectiveness of project evaluation and management. Additionally, the implementation of integrated economic mechanisms enhances decision-making and project performance.

Future research should focus on developing country-specific models and exploring the impact of emerging technologies on construction investment efficiency.

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