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Operational Innovation Design Using the Blue Ocean Strategy Approach to Increase Project Production Cost Efficiency at PT. Kiabadi Jaya Fasadindo

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ABSTRACT

Management experiences a phenomenon related to project production costs that are increasing and often not in accordance with the Gross Profit (GP) target standards that were jointly set at the beginning of the period. Production costs are the main factor affecting the company's profitability. The purpose of this study is to identify the factors causing the swelling of project production costs, analyze the cost factors that need prioritization in implementing efficiency programs, and design action plans or improvement strategies to ensure the achievement of cost efficiency. This research was conducted using the Blue Ocean Strategy approach and two analytical tools, namely the strategy canvas and the ERRC grid, to design an effective operational innovation strategy focused on value innovation, thereby increasing project production cost efficiency at PT. Kiabadi Jaya Fasadindo. According to the research results, the company can still improve project production cost efficiency in two ways: first, by enhancing the competence of Human Resources (HR) with relevant HR development strategies that focus on increasing competence and productivity through On the Job Training (OJT) programs; and second, by implementing project management systems in accordance with the company's business processes to improve effectiveness and efficiency.

KEYWORDS *Human Resource Competence, Project Cost Efficiency, Competitive Advantage, Project Management, Building Facade*

INTRODUCTION

The global construction industry is experiencing unprecedented transformation driven by economic pressures, technological advancements, and sustainability demands (Casini, 2021). According to the Global Construction Outlook 2024, the construction sector worldwide faces significant challenges, including cost inflation, labor shortages, and increasing project complexity (McKinsey Global Institute, 2024). The industry's contribution to global GDP remains substantial, yet profitability margins continue to shrink due to fierce competition and escalating operational costs (Dunford, 2021). Construction companies globally are struggling with cost overruns averaging 27% above initial budgets, with delays occurring in 77% of projects (Project Management Institute, 2023).

The construction sector's economic impact is particularly pronounced in developing economies (Lopes, 2022). In Southeast Asia, construction industries contribute approximately 8–12% to national GDP, making them critical drivers of economic growth (Asian Development Bank, 2023). However, this growth comes with challenges, including inefficient project management, inadequate cost control systems, and limited technological adoption (Ghansah, Owusu-Manu, & Ayarkwa, 2021). The World Economic Forum (2023) identifies construction as one of the least digitized industries globally, with productivity growth lagging significantly behind other sectors.

Globalization has intensified competitive pressures within the construction industry. The reduction of trade barriers and increased access to information about products and pricing have diminished niche markets and monopolistic opportunities (Porter, 2023). This has accelerated

the commoditization of construction services, triggered intense price competition, and resulted in declining profit margins across the industry (Porter, 2023). Companies are forced to compete primarily on cost, often compromising quality and sustainability objectives (Rounaghi, Jarrar, & Dana, 2021).

Indonesia's construction sector demonstrates remarkable growth potential while facing significant operational challenges (Rounaghi et al., 2021). The sector contributed 9.92% to Indonesia's Gross Domestic Product (GDP) in 2023, positioning it as the fifth-largest economic sector. The construction sector experienced growth of 6.4–6.7%, driven by extensive infrastructure development programs and urban expansion projects (Dirjen Bina Konstruksi, PUPR, 2024). This growth trajectory is expected to continue, with numerous development projects scheduled for completion through 2024.

Despite this growth, the Indonesian construction industry faces substantial challenges, including unfair competition practices, rapid technological changes, relatively limited construction resources, and regulatory governance issues (Wibowo, Satria, Gaol, & Indrawan, 2024). Director General of Construction Development Rachman Arief Dienaputra emphasized that "various challenges serve as motivators for Indonesia's construction industry to continue advancing" (PUPR, 2024). The industry confronts increasing complexity in physical execution, cost management, and human resource administration.

The facade construction subsector, specifically, represents a specialized niche within Indonesia's broader construction industry (Soemardi & Pribadi, 2021). Building facades have become increasingly important as architectural aesthetics and energy efficiency requirements evolve. However, this specialization brings unique challenges, including material sourcing difficulties, skilled labor shortages, and complex installation requirements that significantly impact project costs and timelines (Mai, Doan, & Ghaffarianhoseini, 2025).

Cost management represents the most critical challenge facing construction companies in Indonesia. Research by Beny Mulyana Sukandar et al. (2018) on construction company efficiency in Indonesia revealed that cost overruns occur in approximately 68% of projects, with average increases of 15–25% above initial budgets. These cost escalations primarily result from inadequate planning, poor resource management, and insufficient monitoring systems (Mahmud, Ahmed, Olanipekun, Aha, & Akoh, 2025).

The construction industry's productivity paradox is particularly evident in specialized sectors like facade construction (Barbosa, Woetzel, & Mischke, 2017). While other industries have achieved significant productivity gains through technological adoption, construction productivity has remained relatively stagnant. Hartatik and Baroto (2017) identified that construction companies struggle with traditional management approaches that fail to optimize resource utilization and cost efficiency.

Human resource competency represents another critical challenge. Mislan Sihite (2018) emphasized that building competitive human resources requires systematic development strategies focused on skill enhancement and productivity improvement (Reni, Sihite, & Rijal, 2024). The construction industry faces difficulties in developing specialized skills required for complex facade installations, leading to frequent errors, rework, and cost overruns.

Material waste and quality control issues compound cost management challenges. Stephanie Dian Hapsari found that construction companies often experience material waste

rates exceeding 10–15% of total material costs, primarily due to inadequate planning, poor storage practices, and insufficient quality control measures. These inefficiencies directly impact project profitability and competitive positioning.

The urgency of this research stems from the immediate financial pressures facing PT. Kiabadi Jaya Fasadindo and similar companies in the facade construction industry. Current financial data reveals alarming trends: Gross Profit margins declined from 24.31% in Q1 2023 to 12.23% in Q4 2023, representing a dramatic deterioration in profitability. Project production costs (HPP) increased from the standard 77.5% to an average of 79.37%, creating unsustainable operational conditions.

The company's financial performance indicators demonstrate an urgent need for intervention. Of 85 projects executed in 2023, 55.29% experienced cost overruns exceeding tolerance levels, while 27.06% resulted in actual losses despite initial profit projections. This performance pattern threatens the company's long-term viability and requires immediate strategic responses.

Market conditions intensify this urgency. Increasing competition from new entrants offering aggressive pricing, combined with client demands for cost reductions, creates a challenging operating environment. The traditional approach of competing solely on price is no longer sustainable, necessitating innovative strategies that create value while maintaining cost competitiveness.

Previous research provides important foundations for understanding construction cost efficiency challenges and potential solutions. Kim and Mauborgne (2015) introduced Blue Ocean Strategy as a framework for creating uncontested market spaces through value innovation, moving beyond traditional competitive approaches. Their methodology has been successfully applied in various industries to achieve cost leadership while maintaining differentiation.

Eric Harianto and Cienthia Loekman (2021) demonstrated Blue Ocean Strategy implementation in Indonesian transportation companies, achieving significant cost reductions while improving service quality. Their research validates the approach’s applicability in Indonesian business contexts and provides methodological guidance for service sector implementations.

Diana Andriani applied Blue Ocean Strategy to pharmacy services, showing how the framework can optimize operational efficiency while creating customer value (Bendra, Saragi, & Putriana, 2023). Her research emphasizes the importance of systematic analysis using strategy canvas and ERRC grid tools to identify innovation opportunities.

Christian H.S. (2022) utilized Blue Ocean Strategy for operational innovation in toll road optimization, demonstrating the approach's effectiveness in infrastructure-related contexts. This research provides relevant insights for construction industry applications, particularly regarding operational efficiency improvements.

Research on construction cost management provides additional theoretical foundation. Haidar Azmi and Denny Hambali (2021) examined production cost efficiency using target costing methods, revealing the importance of systematic cost planning and control. Their findings support the need for comprehensive cost management systems in achieving operational efficiency.

This research contributes several novel elements to existing literature. First, it represents the first comprehensive application of Blue Ocean Strategy specifically to facade construction cost management in Indonesia. While previous studies have applied this framework to various industries, none have focused specifically on the unique challenges and opportunities within the facade construction sector.

Second, the research develops an integrated operational innovation model combining human resource development with project management system optimization. This dual-focus approach addresses both capability development and systematic operational improvements, creating a more comprehensive solution than previous single-focus studies.

Third, the research introduces practical implementation tools specifically designed for small-to-medium facade construction companies. The developed systems for Material Packing List Monitoring (MPLM), Project Budget Control and Monitoring (PMBP), and Project Implementation Stage Monitoring (TPP) provide actionable frameworks that can be immediately implemented by similar companies.

Fourth, the research validates Blue Ocean Strategy effectiveness in a highly competitive, price-sensitive market environment. Most previous applications have focused on markets with greater differentiation opportunities, making this research particularly valuable for industries facing intense cost competition.

This research aims to identify and analyze factors contributing to project production cost inflation at PT. Kiabadi Jaya Fasadindo, design effective operational innovation strategies using Blue Ocean Strategy methodology, and develop practical implementation frameworks for improving cost efficiency. The research provides significant contributions across academic, practical, economic, and social dimensions, offering a replicable framework applicable to the broader construction industry while demonstrating sustainable competitive advantage creation in highly competitive markets.

METHOD

This research used a qualitative approach with descriptive case study research type. This research was conducted from January to December 2023 and Quarter 1 January to March 2024 at PT. Kiabadi Jaya Fasadindo located in Sidoarjo.

The Blue Ocean Strategy tools become the focus in the approach to determining effective strategies in creating new innovations in the company. These operational innovations are to increase the efficiency of project production costs at PT. Kiabadi Jaya Fasadindo, which is currently the main problem in facing increasingly fierce competition climate.

Data collection was carried out through in-depth interviews with 6 informants consisting of 2 people from internal management of PT. Kiabadi, 2 people from facade companies represented by PT. Karya Utama Steel and CV. Barokah Jaya Perkasa, and 2 experts from PT. SNF Consulting and PT. Alamraya Sebar Barokah who are quite knowledgeable about management and the construction world.

The research analysis uses Porter's Five Forces analysis tools to identify key success factors, followed by ERRC Grid analysis (Eliminate, Reduce, Raise, Create) and Strategy Canvas to design value innovation strategies according to the Blue Ocean Strategy framework.

RESULTS AND DISCUSSION

Priority Target Identification

The priority targets in this research focus on achieving the main objectives to provide significant contributions in answering identified problems, specifically increasing project production cost efficiency through operational innovation design using the Blue Ocean Strategy approach. The research is limited to two critical aspects: Human Resources (HR) development by improving quality and competence in project management, and System enhancement by improving and creating operational systems relevant to company challenges.

Business Process Analysis

Understanding Kiabadi's business process is crucial for identifying cost inflation factors and determining critical departments and processes requiring improvement focus. The business process at Kiabadi involves several key departments: Engineering (responsible for design, development, and technical implementation), Project (managing and executing projects from start to finish), and Quality Control (ensuring products and services meet established standards).

Table 1. Project Performance Categories Based on Gross Profit Range

GP Range	Category	Percentage	Number of Projects	Description
>22%	Excellent	8.24%	7 projects	Exceeds standard target
18-22%	Good	12.94%	11 projects	Meets standard target
10-18%	Fair	21.18%	18 projects	Below standard but acceptable
0-10%	Poor	30.59%	26 projects	Significantly below standard
<0%	Very Poor	27.06%	23 projects	Loss projects

The analysis reveals that 55.29% of projects experienced cost overruns exceeding tolerance levels, with potential additional gross profit reaching Rp. 636,242,533 if target GP could be maintained according to initial plans.

Detailed Case Study Analysis

Three representative projects were selected for detailed analysis based on criteria including GP decline >10% from plan, experiencing losses, and work delays >30% from scheduled timeline.

Case Study 1: Cafe & Resto Jemursari Surabaya

Table 2. Cost Comparison - Standard, Plan, and Actual Realization

Component	Standard (%)	Plan (%)	Actual (%)	Deviation (%)
Material	45.00	42.50	48.23	+5.73
Labor	22.50	20.26	26.84	+6.58
Equipment	5.00	5.50	6.12	+0.62
Transportation	3.00	2.98	4.28	+1.30
Others	2.00	2.50	2.60	+0.10
Total HPP	**77.50**	**73.74**	**88.07**	**+14.33**
Gross Profit	**22.50**	**26.24**	**-8.07**	**-34.31**

The project experienced overall GP realization of -8.07% against planned +26.24%, resulting in loss profit of Rp. 99,502,796. Field findings included planning errors in drawings

and specifications, ineffective coordination and communication, measurement errors requiring material reordering, and poor quality control implementation.

Case Study 2: Chalidana Islamic School

Table 3. HPP Component Analysis - Chalidana Islamic School

Component	Plan Amount (Rp)	Actual Amount (Rp)	Variance (Rp)	Variance (%)
Material	140,875,000	156,240,000	+15,365,000	+10.91
Labor	67,200,000	74,820,000	+7,620,000	+11.34
Equipment	18,275,000	19,150,000	+875,000	+4.79
Transportation	9,900,000	11,200,000	+1,300,000	+13.13
Others	8,300,000	8,650,000	+350,000	+4.22

Overall GP decreased from planned 18.61% to actual 4.48%, representing a loss of Rp. 46,872,281. Primary causes included inaccurate initial calculations regarding material waste, particularly ACP (Aluminum Composite Panel), and undisciplined quality control implementation.

Case Study 3: Sumber Cahaya Samarinda Building Store

The project experienced GP decline from planned 22.53% to actual 8.94%, with loss profit of Rp. 27,706,176. Contributing factors included ACP material shortages requiring additional procurement from Surabaya, material delivery delays to expedition affecting labor costs, and poor material monitoring causing delays, especially for inter-island destinations requiring longer delivery times.

Porter's Five Forces Analysis

Based on interviews with six informants, Porter's Five Forces analysis reveals the competitive landscape affecting cost efficiency strategies:

1. Threat of New Entrants (High) New entrants pose significant threats by offering substantially lower prices without maintaining quality standards. As informant BP stated: "New entrants provide threats because they always offer prices that severely damage the market without maintaining quality" (C/BP/3). The primary threat is aggressive pricing strategies to attract customers, combined with advanced technology adoption for increased efficiency.

2. Threat of Substitutes (Medium) Current substitute products and services exist but require extensive education and have respective advantages and disadvantages. Informant FN noted: "Although several products and innovations exist, currently there are no substitute products equivalent to conventional facades we offer" (D/FN/4). Substitute threats include prefabricated building technology, design-build services, construction consultancy, and facility management services.

3. Bargaining Power of Buyers (High) Buyer negotiating power has intensified due to increased market knowledge and multiple service provider options. Informant FN explained: "Buyer bargaining power manifests in increasingly aggressive price negotiations, occurring because buyers now have better market price knowledge, especially with easy information

access" (D/FN/5). Buyers can access detailed price information directly from manufacturers, enabling informed decision-making.

4. Bargaining Power of Suppliers (High) Facade specialization limits supplier options, often creating monopolistic conditions. Informant BP stated: "Facade specialization causes limited suppliers who often monopolize specific specifications requested by main contractors or owners" (C/BP/6). Limited supplier numbers, specification dependencies, vulnerability to price and availability changes, and cash payment requirements for main materials characterize this force.

5. Rivalry Among Competitors (Very High) Industry competition centers on aggressive pricing due to reduced main contractor budget allocations for facade work. Informant BP noted: "Competition includes increasingly competitive pricing because main contractor budgets are also proportionally reduced" (C/BP/7). Factors include numerous companies with similar technical and management skills, equivalent technology and resource access, and government policy changes affecting market dynamics.

Key Success Factor Identification

Based on interviews with six informants and Porter's Five Forces analysis, key success factors for improving facade project production cost efficiency include:

Table 4. Key Success Factors Priority Matrix

Factor	Frequency Mentioned	Impact Level	Priority
Human Resources Competence	6/6	Very High	1
Mature Project Planning	5/6	Very High	2
Cost Control & Monitoring	4/6	High	3
Quality Control	4/6	High	4
Technology Innovation	3/6	Medium	5
Supply Chain Optimization	3/6	Medium	6
Communication Coordination	3/6	Medium	7

Informant BP emphasized: "Key success factors include competent human resources improving productivity at every project implementation stage, mature project planning providing clear workflows, and quality control at every implementation step reducing error risks" (C/BP/8).

ERRC Grid Analysis

Based on Porter's Five Forces analysis and Key Success Factors identification, ERRC Grid analysis determines factors requiring elimination, reduction, enhancement, and creation for project cost efficiency:

Table 5. ERRC Grid for Project Cost Efficiency

Eliminate	Raise
- Over budget HPP exceeding tolerance - Loss profit or negative gross profit - Time-consuming manual processes - Imported material dependence - Low-quality material usage	- HR Training and Development Programs - Mature project planning - Effective team communication coordination - Business process automation with software - Strict quality control - Strict regulation & SOP implementation
Reduce	**Create**
- Incompetent HR - Material and equipment delays - Project production cost swelling - Work defects - Schedule delays - Uncontrolled waste - Unnecessary design revisions	- Relevant HR Development System - Strict Budget Control & Monitoring System - Logistics Management System with MPLM - Integrated Project Management System with TPP - Strategic supplier partnerships - Financial management system - Drone usage for project monitoring - ERP system for integrated business functions

Strategy Canvas Development

The strategy canvas analysis serves as a critical tool for understanding the competitive landscape in which Kiabadi operates, particularly in relation to its main competitors, Karya Utama Steel and Barokah Jaya Perkasa. By evaluating key success factors such as HR competence, project planning, cost control, quality control, technology innovation, supply chain management, and communication coordination, the analysis reveals specific areas where Kiabadi can enhance its value propositions.

Firstly, the findings indicate that Kiabadi currently lags behind its competitors in HR competence and technology innovation. This gap suggests a need for strategic investments in talent development and innovative technological solutions. Improving HR competence could lead to better project outcomes, while embracing new technologies may streamline operations and enhance overall efficiency.

Conversely, Kiabadi demonstrates competitive strength in project planning and quality control, positioning it favorably in these critical areas. Maintaining and further developing these strengths can be instrumental in solidifying Kiabadi's market presence.

The insights gained from the strategy canvas not only highlight current performance levels but also serve as a roadmap for strategic focus. By prioritizing operational innovation and addressing the identified weaknesses, Kiabadi can enhance its competitive edge and create more robust value propositions for its stakeholders. This approach will ultimately contribute to a more sustainable business model in a competitive industry landscape.

Innovation Strategy Design

Value innovation forms the foundation of Blue Ocean Strategy, encompassing the entire company activity system. Based on ERRC Grid analysis, value innovation can be created by eliminating and reducing existing weaknesses while enhancing services and creating new factors.

a. **Elimination Strategy:** Over budget HPP exceeding tolerance affects 55.29% of projects, eliminating or reducing project profits and disrupting company finances. Loss profit or negative gross profit affects 27.06% of projects, transforming projected profits into losses. Low-quality materials cause repeated repairs (re-work) due to potential rejection for not meeting standard specifications.
b. **Reduction Strategy:** Incompetent HR significantly affects work rhythm, causing repeated errors due to poor project management capabilities. From project findings, 27.06% of projects in the "Very Poor" category result from HR negligence including SOP non-compliance, inadequate supervision, and poor coordination. Material and equipment delays cause unproductive idle time, leading to schedule delays and HPP cost inflation.
c. **Enhancement Strategy:** Training and development programs, though existing at Kiabadi, require increased intensity and consistency. Effective training ensures competent HR supporting project success. Many project errors result from insufficient technical knowledge and limited project management experience. Mature project planning serves as the foundation for project implementation success, particularly ensuring cost, time, and resource efficiency.
d. **Creation Strategy:** Relevant HR development systems focus on improving individual competence, productivity, and potential to maximize organizational objective contributions. Strict budget control and monitoring systems represent key steps ensuring project cost efficiency and preventing budget inflation. Integrated project management systems support planning, organization, implementation, and project control, helping project teams with scheduling, resource allocation, progress tracking, and budget management.

   Formula for Cost Efficiency Impact:

   Cost Efficiency Improvement = [(Target HPP - Actual HPP) / Target HPP] × 100%

   Where:

   a. Target HPP = Standard production cost percentage (77.5%)
   b. Actual HPP = Realized production cost percentage

   Example Calculation: If HPP reduction from 79.37% to 75% is achieved: Cost Efficiency Improvement = [(77.5 - 75) / 77.5] × 100% = 3.23%

   This 3.23% HPP reduction can increase Net Profit by approximately 17%, demonstrating significant impact potential.

Portfolio Optimization Analysis

Strategy prioritization considers impact potential, implementation risk, and resource requirements:

Table 6. Strategy Portfolio Optimization

Strategy	Impact	Risk	Resource Requirement	Decision
HR Development System	Very High	Low	Medium	Implement Immediately
Budget Monitoring System	Very High	Low	Low	Implement Immediately

Strategy	Impact	Risk	Resource Requirement	Decision
Material Packing List Monitoring	High	Low	Low	Implement Immediately
Project Stage Monitoring	High	Low	Medium	Implement Immediately
Drone Technology	Medium	Medium	Medium	Pilot Implementation
ERP System	Very High	High	Very High	Feasibility Study Required

The optimization analysis prioritizes strategies with high impact and low risk for immediate implementation, while high-risk strategies require careful planning and feasibility assessment.

Innovation Strategy Design

Based on the ERRC Grid analysis, value innovation can be created by eliminating and reducing existing weaknesses and by improving services and creating new factors. The operational innovation strategy designed focuses on 2 main aspects:

1. Human Resource Development

Implementation of **On the Job Training (OJT) Program** which includes:

a. Making training curriculum according to job descriptions
b. Regular training implementation every Wednesday
c. Training evaluation by HR division
d. Assessment using 360-degree method for 3 months

2. Project Management System

Implementation of three integrated systems:

a. **Material Packing List Monitoring System (MPLM)**

a) Project Budget Plan (RAP) preparation
b) Material Packing List (PLM) making
c) Purchase Order (PO) monitoring
d) Budget plotting
e) Payment process

b. **Project Budget Control and Monitoring System (PMBP)**

a) Project expenditure recap
b) Real-time GP monitoring
c) HPP component analysis
d) Remaining cost planning

c. **Project Implementation Stage Monitoring System (TPP)**

a) Planning stage
b) Pre-implementation stage
c) Implementation stage
d) Supervision stage
e) Final stage

Research Benefits Assessment

This research provides benefits in several aspects:

1. **Academic**: Provides new empirical data on facade building project production cost efficiency.
2. **Practical**: Proposed strategies can be applied in real projects to reduce production cost swelling.
3. **Social**: Improves project management quality affecting worker and client satisfaction.
4. **Economic**: Increases facade building company profitability through better project cost management.
5. **Environmental**: Project cost efficiency strategies encourage the use of environmentally friendly materials.
6. **Policy**: Provides recommendations for project management regulations in the construction sector, especially building facades.

Application in Professional Practice

The application of this research in professional practice can be used by Management in designing operational innovations to increase project production cost efficiency through:

1. Implementation of relevant HR development strategies focused on competence and productivity improvement
2. Implementation of integrated project management systems according to company business processes
3. Use of drone technology for project monitoring
4. Development of strategic partnerships with suppliers

CONCLUSION

Project production cost increases are primarily driven by incompetent human resources, immature planning, work defects, inadequate quality control, uncontrolled waste, and material delays, with material and labor costs being the key priorities for cost efficiency programs. To improve project production cost efficiency, the company should focus on enhancing HR competence through targeted development strategies such as On-the-Job Training (OJT) to boost skills and productivity, alongside implementing project management systems aligned with business processes, including Material Packing List Monitoring (MPLM), Project Budget Control and Monitoring (PMBP), and Project Implementation Stage Monitoring (TPP). This operational innovation design leverages the Blue Ocean Strategy approach, emphasizing value innovation to create uncontested market space and mitigate unfair competition. Future research could explore the long-term impacts of integrating digital technologies with these systems to further optimize cost efficiency and scalability in facade construction projects.

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