

ANALYSIS OF THE INFLUENCE OF WORK CULTURE AND CONSTRUCTION PROJECT PERFORMANCE IN NORTH SUMATRA

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ABSTRACT

A strong work culture plays an important role in the success of a construction project. This research aims to analyze the influence of work culture on construction project performance in North Sumatra. Using a quantitative approach through questionnaires, data was collected from 150 respondents involved in various construction projects in the region. Analysis was carried out using descriptive statistical methods and simple linear regression. The research results show that the implementation of an inclusive and proactive work culture significantly improves project performance. Case studies of the Medan-Kualanamu-Tebing Tinggi Toll Road construction project and the revitalization of Kualanamu International Airport in North Sumatra show that a work culture that encourages communication, teamwork and innovation can contribute to project completion on time and within budget. The results of this research indicate the importance of implementing a strong work culture to ensure the success of construction projects in North Sumatra. This research provides important insights for project managers and practitioners to increase the efficiency and success of construction projects through improving work culture.

Key Words: Culture, Construction Project Performance, North Sumatra

ABSTRAK

Budaya kerja yang kuat memainkan peran penting dalam keberhasilan proyek konstruksi. Penelitian ini bertujuan untuk menganalisis pengaruh budaya kerja terhadap kinerja proyek konstruksi di Sumatera Utara. Dengan menggunakan pendekatan kuantitatif melalui kuesioner, data dikumpulkan dari 150 responden yang terlibat dalam berbagai proyek konstruksi di wilayah tersebut. Analisis dilakukan menggunakan metode statistik deskriptif dan regresi linier sederhana. Hasil penelitian menunjukkan bahwa implementasi budaya kerja yang inklusif dan proaktif secara signifikan meningkatkan kinerja proyek. Studi kasus proyek pembangunan Jalan Tol Medan-Kualanamu-Tebing Tinggi dan revitalisasi Bandara Internasional Kualanamu di Sumatera Utara menunjukkan bahwa budaya kerja yang mendorong komunikasi, kerja sama tim, dan inovasi dapat berkontribusi pada penyelesaian proyek tepat waktu dan sesuai anggaran. Hasil penelitian ini mengindikasikan pentingnya penerapan budaya kerja yang kuat untuk memastikan keberhasilan proyek konstruksi di Sumatera Utara. Penelitian ini menyediakan wawasan penting bagi pengelola proyek dan praktisi untuk meningkatkan efisiensi dan keberhasilan proyek konstruksi melalui peningkatan budaya kerja.

Kata Kunci: Budaya Kerja, Kinerja Proyek Konstruksi, Sumatera Utara

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1. INTRODUCTION

Work culture is an important factor that influences construction project performance. Work culture includes the values, norms and behaviors adopted by organizational members in carrying out their duties. According to Robbins and Judge (2017), a strong work culture can motivate employees, increase job satisfaction, and ultimately improve organizational performance. This is also true in the context of construction projects, where team coordination, communication, and leadership play an important role in achieving project goals.

In North Sumatra, construction projects often face challenges related to time management and team coordination. For example, the Medan-Kualanamu-Tebing Tinggi Toll Road construction project experienced several obstacles in the initial stages due to a lack of effective communication and coordination between the project team. However, by implementing a better work culture, such as improving communication and teamwork, this project was successfully completed on schedule and budget (Setiawan, 2020).

A good work culture can also increase innovation and creativity in the work environment. The Kualanamu International Airport revitalization project is another example in North Sumatra where a work culture that encourages innovation has contributed to improving the quality of work results and client satisfaction. This project shows that when team members feel valued and given space to innovate, project performance can improve significantly (Hartono, 2019).

In addition, previous research also shows that a work culture that supports ethics and respects individual contributions can reduce conflict and increase work morale. In the context of construction projects, this is very important considering the frequent occurrence of sudden changes and situations that require quick decisions. Kurniawan and Susilo (2018) found that a strong work culture contributed to increasing productivity and efficiency in construction projects in Indonesia. Garrison and Bly (2013) also stated that the success of a project depends greatly on how the project team manages communication and conflict.

Similar cases were also found abroad, such as in the Dubai Marina development project in the United Arab Emirates. This project was successfully completed by adopting a work culture focused on cross-functional collaboration and technological innovation. According to research conducted by Alashwal et al. (2017), an inclusive and innovative work culture played a significant role in completing this project on time and within budget. This research shows that a strong and adaptive work culture can overcome complex challenges in large construction projects.

This research aims to analyze the influence of work culture on construction project performance in North Sumatra. By understanding the relationship between work culture and project performance, it is hoped that effective strategies can be found to increase the success of construction projects in this region.

2. DATA AND METHODS

2.1. Population and Sample

This research was conducted on construction projects in North Sumatra. The research population includes all workers involved in construction projects in the region.

To obtain representative data, a simple random sampling technique was used. Based on the Slovin formula with a margin of error of 5%, the number of samples taken was 150 respondents from various construction projects in North Sumatra.



Figure 1. Project Medan-Kualanamu-Tebing Tinggi Toll Road construction project and revitalization of Kualanamu International Airport in North Sumatra (documentation, 2013)

2.2. Slovin's Formula

$$n = \frac{N}{1 + Ne^2}$$

Where:

n is the sample size

N is the population size (estimated at 1,000 construction project workers)

e is the margin of error (0.05)

$$n = \frac{1000}{1 + 1000(0,5)^n} = \frac{1000}{1 + 24} \approx 38$$

However, to increase the reliability of the results, a sample of 150 respondents was taken.

2.3. Research Instrument

Data was collected using a questionnaire consisting of three main parts:

1. General Information: Collect demographic data of respondents.
2. Work Culture Assessment: Using a 1-5 Likert scale, where respondents assess various aspects of work culture.
3. Project Performance Assessment: Using a 1-5 Likert scale, where respondents assess project performance based on predetermined indicators.

2.4. Analysis Method

The collected data was analyzed using descriptive and inferential statistical methods with the following steps:

1. Descriptive statistics:

1. Calculate the mean, median, and standard deviation for each questionnaire item.
2. Present data in the form of tables and graphs to provide an overview of work culture and project performance.

2. Reliability and Validity Test:

1. Using Cronbach's Alpha to measure the reliability of the questionnaire.

2. Construct validity testing was carried out through factor analysis.

3. Linear Regression Analysis:

1. Testing the relationship between work culture (independent variable) and project performance (dependent variable).
2. A simple linear regression model is used to identify the influence of each aspect of work culture on project performance.

4. Linear Regression Formula:

$$Y = \alpha + \beta X + \epsilon$$

Where:

- Y is project performance
- X is work culture
- α is intercept
- β is the regression coefficient
- ϵ is the error term

2.5. Analysis Steps:

1. Descriptive Statistics:

Mean, median, and standard deviation of each questionnaire item. Data visualization using histograms or bar graphs.

2. Reliability and Validity Test:

Calculating Cronbach's Alpha to ensure the reliability of the questionnaire. Factor analysis for construct validity.

3. Linear Regression Analysis:

Field, A. (2013) run a simple linear regression to test the relationship between work culture and project performance. Interpret regression results, including regression coefficients, R2 values, and statistical significance.

Descriptive Data

- 1) Of the 150 respondents who participated, the following are their demographic characteristics:
- 2) Age: 20-30 years (40%), 31-40 years (35%), >40 years (25%)
- 3) Job Title: Project Manager (20%), Supervisor (30%), Field Worker (50%)
- 4) Length of work: <1 year (10%), 1-5 years (50%), >5 years (40%)

Analysis Results

Table 1. Descriptive statistics

Aspects of Work Culture	Mean	Median	Std. Dev.
Teamwork	4.2	4	0.6
Communication	4.0	4	0.7
Leadership	3.8	4	0.8
Innovation	3.6	4	0.9

2.6. Reliability Test:

Cronbach's Alpha: 0.85 (reliable)

2.7. Validity test:

All items are valid with a loading factor > 0.5

Table 2. Linear Regression Analysis

Independent Variable	Regression Coefficient (β)	t value	Significance (p)
Teamwork	0.45	5.2	0,000
Communication	0.35	4.8	0,000
Leadership	0.30	4.0	0,000
Innovation	0.25	3.5	0,000

R²= 0.65 (65% of the variation in project performance is explained by work culture). The analysis show that work culture has a significant influence on construction project performance in North Sumatra, with teamwork and communication as the main factors.

4. RESULT AND DISCUSSION

Work Culture in Construction Projects in North Sumatra, the research results show that the aspects of teamwork, communication, leadership, and innovation have relatively high means, namely 4.2, 4.0, 3.8, and 3.6 respectively. This shows that the majority of construction project workers in North Sumatra have a positive view of the work culture in their environment. According to Hartono (2019), a good work culture can increase collaboration and communication between team members, which in turn can increase work efficiency and effectiveness.

Construction Project Performance in North Sumatra, project performance is measured based on indicators such as achieving time targets, budget and quality of work results. Descriptive data shows that the majority of projects successfully met this target, with a fairly high mean project performance. However, several challenges remain, especially related to time management and optimal resource allocation. The case study of the Medan-Kualanamu-Tebing Tinggi Toll Road project shows that implementing an effective work culture can help overcome this challenge (Setiawan, 2020).

Analysis of the Relationship between Work Culture and Project Performance, the results of linear regression analysis show that all aspects of work culture have a significant positive influence on project performance. The regression coefficients for teamwork, communication, leadership, and innovation are 0.45, 0.35, 0.30, and 0.25 respectively, with an R² value of 0.65. This means that 65% of the variation in project performance can be explained by the work culture implemented. This finding is consistent with research by Kurniawan and Susilo (2018) which shows that a strong work culture can increase productivity and efficiency in construction projects.

5. CONCLUSION

This study has investigated the influence of work culture on construction project performance in North Sumatra. By using a quantitative approach and analyzing data from 150 respondents involved in construction projects, this research found that the implementation of a strong work culture contributed positively to project performance. The results of statistical analysis show that there is a significant correlation between the work culture implemented, such as team collaboration and effective communication, with the achievement of time targets, work quality and client satisfaction.

The results of this research are consistent with previous findings which show that a work culture that supports teamwork and innovation is an important factor in increasing the efficiency and success of construction projects. The implications of these findings suggest that organizations and project managers in North Sumatra can strengthen their project performance by prioritizing building an inclusive and proactive work culture.

Overall, this research provides important insights for practitioners and academics in understanding the role of work culture in the context of construction projects in North Sumatra and Indonesia in general. Measures to improve work culture, such as the development of training programs and the promotion of collaborative values, are expected to support the achievement of project goals more effectively in the future.

Thus, implementing a good work culture not only has the potential to increase operational efficiency, but can also have an overall positive impact on the construction industry in North Sumatra.

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