https://bestijournal.org | PT. Radja Intercontinental Publishing
E-ISSN: 3025-5821

CONSTRUCTION MANAGEMENT PERFORMANCE ANALYSIS ON PROJECTS SRITANJUNG BANYUWANGI VOCATIONAL SCHOOL PRACTICUM BUILDING

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Abstract

Management in managing construction work activities is very necessary considering that businesses in the construction sector are currently growing rapidly. Construction management is an organization or individual that is multi-disciplinary. Construction Management can be a business entity which requires human resources who are experts in their respective fields which include POAC (Planning, Organizing, Actuating and Controling) in a systematic and measurable manner. Currently at Sritanjung Vocational School, Banyuwangi Regency, a Practicum Building project is being carried out which is located in the south west part of the school. The research method used in this research is a literature review from various related sources. The data obtained came from filling out questionnaires by respondents involved in the Sritanjung Vocational School Practicum Building project. The questionnaire used was 45 respondents who participated in filling out the questionnaire. The results of the analysis regarding the construction management work system factors in the Sritanjung Vocational School Practicum Building construction project are the most dominant at the implementation stage, while the analysis regarding the actions taken by construction management to control time, cost and quality is the most dominant at the control stage
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Keywords: Analysis, Performance, Construction Management, Sritanjung Vocational School

INTRODUCTION

The Practicum Building construction project at Sritanjung Vocational School is an initiative that has a significant impact on the development of education in the Banyuwangi area. As an integral part of the development of educational infrastructure, this project has the main objective of providing modern learning facilities that comply with applicable educational standards. In this context, construction management performance analysis becomes crucial to ensure that projects run efficiently, on time and in accordance with expected quality standards. Management in managing construction work activities is very necessary considering that businesses in the construction sector are currently growing rapidly. Construction management is an organization or individual that is multi-disciplinary. Whether a project can be said to be successful or not depends on the construction management itself in managing and utilizing the various available resources to maximize the results and also what actions are taken if unwanted problems arise. By having a company or individual who is professional in the field of construction management to support the project owner to manage it, it is hoped that the project targets can be achieved effectively and efficiently.

By digging deeper into the aspects of construction management, we can identify successes, obstacles, and opportunities that may impact the achievement of overall project goals. This analysis covers various dimensions of construction management, including project planning, budget management, time monitoring, risk management, resource management, quality control, project team communication, environmental sustainability, and stakeholder feedback. By evaluating each of these aspects, we can gain in-depth insight into the performance of construction management on the Sritanjung Vocational School Practice Building project. Apart from that, this analysis also aims to provide recommendations that can improve the effectiveness of construction management and make a positive contribution to similar projects in the future. The success of this project is not only reflected in the extent to which the project runs according to schedule and budget, but also in the

ability to meet the needs and expectations of all stakeholders, from the school, local communities, to the authorities. By describing and analyzing every aspect of construction management performance.

In implementing a project, of course it cannot be avoided that various problems will slowly arise. Examples include a lack of coordination between MK and the contractor, delays in the arrival of materials, or also the number of workers not being in line with the capacity of the project itself. This is a serious challenge in how the Constitutional Court itself will try to solve the various problems that occur so that the Sritanjung Vocational School Practical Building Project can continue according to the initial plan. With the construction management at the Sritanjung Vocational School Practice Building, we want to know the construction management system implemented so that it can run well and according to schedule. This research aims to conduct an in-depth analysis of construction management performance on the Sritanjung Vocational School Practice Building construction project in Banyuwangi. The background to this research is based on several factors which are an important basis for analyzing construction management performance. It is hoped that this research report can provide a comprehensive view of the Sritanjung Vocational School Practice Building project in Banyuwangi. It is hoped that the improvement steps and recommendations resulting from this analysis will be a valuable guide for parties involved in construction project management to optimize the implementation of similar projects in the future.

Research purposes

1. Analyzing the application of construction management performance on the Sritanjung Vocational School Practice Building project
2. Providing an understanding of the application of construction management performance on the Sritanjung Vocational School Practice Building project.
3. Provide solutions to problems that arise in order to keep the project running according to the expected targets

Benefits of research

The benefits of this research are as follows:

a. For Construction Service Users

To find out how to implement construction management performance so that the construction of a project can be managed well, with appropriate quality and on time.

b. For Researchers

To increase knowledge and a deeper understanding of the application of construction management performance to a project so that it can be used as a provision when researchers carry out the implementation of a project

c. For Science

It is hoped that the results of the research will provide deeper knowledge about construction management so that this knowledge can be developed further in the future.

LITERATURE REVIEW

Construction Management

In Chris' book, March. (2017), “Construction Management: Theory and Practice”, provides a comprehensive overview of the construction industry and is essential reading for students studying management courses in construction-related disciplines. In line with this, the book Construction Project Management Application Theory states that construction projects have unique characteristics that do not repeat themselves. The process that occurs in one project will not be repeated in other projects (Ervianto (2004). Project activity can be defined as a temporary activity that lasts for a limited period of time, with a certain allocation of resources and is intended to carry out tasks whose targets have been clearly outlined (Suharto (1995).

According to Soehendradjati (1987), construction management is a group that carries out management functions in the construction process (implementation stage), a function that will occur in every construction project. Meanwhile, according to Dipohusodo (1996), construction management is an integrated process where individuals as part of the organization are involved in maintaining, developing, controlling and carrying out programs, all of which are directed at predetermined targets and continue over time. Agung et al (2020) in their article also identified several factors related to green building-based performance that are important for users, including building materials that can be reused and recycled, facilities for people with disabilities, environmentally friendly materials and construction, designs and materials that friendly to certain user groups, and the use of solar energy.

In the current era, managing construction requires adequate skills. As stated Managing construction projects in times of rapid change is a challenging objective due to the diversity of stakeholders and the need to meet their requirements. Project management is a significant risk indicator in construction projects. By analyzing successful and failed projects, it is possible to identify clear differences between the two types of processes. Construction project management involves planning, supervising, coordinating, controlling, and developing all project activities. Technological advances, such as cyber-physical systems, are important in construction project management. Michael et al (2011) in their paper also show that management research offers a suitable reference discipline for construction research and theory development. This paper proposes an integrated model for research construction and theory development based on the experience of management researchers. The study described in this paper shows the applicability of management research approaches and how these approaches can inform early theory development in construction management. The theory development process outlined in this paper emphasizes the importance of theory testing, falsification, and critical discourse. This aims to perfect and expand existing knowledge in construction management.

RESULTS AND DISCUSSION

Data Analysis and Processing Methods

The data analysis process begins by collecting all successful data from respondents. After reading, studying, the next step is to process and analyze the data. The method used to find the success of implementing the construction management system on the Sritanjung Vocational School Practice Building project is a quantitative method. The steps taken in data analysis in this research are as follows

A. Descriptive Analysis of Respondents

Data provided by respondents through distributed questionnaires will be processed and used to provide an overview or explanation. An overview or explanation in table form.

B. Ranking Analysis

This analysis method is useful for determining respondent ranking and giving priority to study variables. After collecting data that has been filled in from respondents, the data results are analyzed using mean rank, which is a group explanation technique based on the average value. The average value will be used to provide a value for the successful influence of implementing the construction management work system in the Sritanjung Vocational School Practical Building project.

C. Data Analysis Processing

The use of statistical methods with the help of the application program from Microsoft Excel to process the data as follows:

1. Compile tables, tables are arranged based on the data obtained and grouped based on work and systems in the work related to the object under study so that they can be seen/observed easily.
2. The average value (mean) statistical method analyzes the average value of the final answers to certain items on the questionnaire that have been filled in by respondents,

with the specific aim of identifying the priorities of the variables. To get the IKR value, a formula is used

$$\overline{X} = \frac{\sum_{i=1}^{i=n} xi}{n}$$

Where :

$\overline{X}$ = average factor value measure
xi = measure of factor value in the 1st respondent
n = Number of respondents

Analysis of questionnaire data uses descriptive statistical methods. By knowing how many factors influence the implementation of the construction management work system for each question, the average value (mean) will be calculated. The average of each respondent's answers will be arranged sequentially in a table with the smallest average value. The largest mean value is determined as the best (dominant) value for each question. This method is also used for actions that need to be taken so that the construction management work system runs well. After that, the results of the questionnaire are compared as the ranking coefficient of each factor by sorting the average value (mean) of the highest value as ranking 1 (one).

Data Conclusion Method

After the mean value and ranking are known, then we determine the range to group each variable, by giving 4 choices according to the level of importance and for the purposes in the field. The way to summarize the data is by drawing conclusions based on the data analysis that has been carried out which includes the categories of factors that influence the implementation of the construction management work system, namely by:

1. Determine the interval between agreeing and disagreeing by looking at the score criteria for the analysis results as follows.

Table 3.1 Assessment of Questionnaire Results

Mark Flat-Average (X)	Information
3.5 < X < 4.0	Very influential
2.5 < X < 3.5	Influential
1.5 < X < 2.5	Less influential
1.0 < X < 1.5	No effect

2. Based on the score ranking order, 4 influencing factors will be taken among the other factors, namely by looking at the ranking of the top factor scores that come out in the data analysis. Then, based on the ranking order, the factors that agree and strongly agree will be taken. If, in determining the mean, there are two or more variables that have the same value, then they are sorted from the questionnaire that has the highest weighted value. In this questionnaire, the weight with the highest score is strongly agree.

Results of analysis of the average factors that influence the construction management work system

Table 3.2 Average analysis of factors influencing the construction management work system

No	Factors that influence the management work system construction	Average	Information
1	Planning (Planning)	3.41	Influential
2	Organizing	3.39	Influential

3	Implementation (Actuating)	3.44	Influential
4	Supervision (Controlling)	3.37	Influential

Sritanjung Vocational School Practice Building

Based on table 3.2, it can be seen that according to respondents, the factors that influence the construction management work system on the Sritanjung Vocational School Practice Building project obtained the following results: Overall, factors regarding Planning, Organizing (Organizing), Implementing (Actuating), and Supervising (Controlling) the Vocational School Practice Building projectSritanjung are all influential with an average result of 3.40.

1. Among the POAC factors that have the most influence is implementation (actuating) with an average result of 3.44. Although slightly larger than the factor Planning, Organizing and Controlling.
2. In planning, the most influential is the quality indicator with the average results obtained being $\bar{}$= 3.42 even though the value is not much different from the cost and time indicators.
3. In Organizing, the most influential is the quality indicator with the average results obtained being $\bar{}$= 3.43 although the value is not much different from the cost and time indicators.
4. In Implementation (Actuating), the most influential is the time indicator with the average results obtained being $\bar{}$= 3.50 even though the value is not much different from the cost and quality indicators.
5. In Supervision (Controlling), the most influential is the cost indicator with the average result obtained being $\bar{}$= 3.41 although the value is not much different from the time and quality indicators

Results of analysis of actions taken by construction management to control time, costs and quality

Table 1.2 Analysis of actions carried out by construct management

No	Action carried out by construction management	Average	Information
1	Planning (Planning)	3.40	Influential
2	Organizing	3.40	Influential
3	Implementation (Actuating)	3.39	Influential
4	Supervision (Controlling)	3.42	Influential

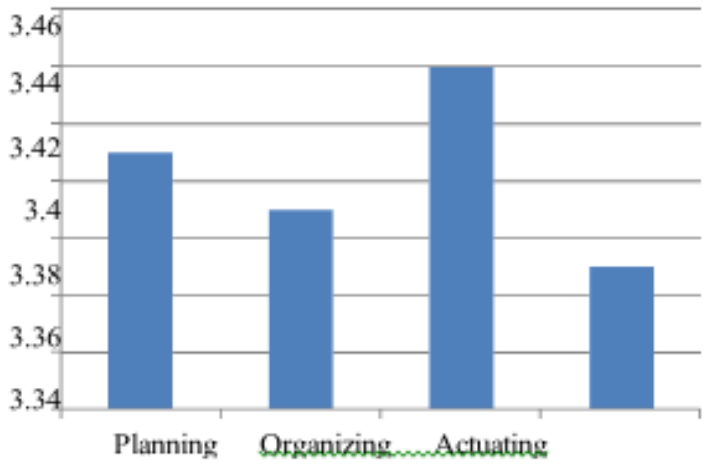

Figure 1.1 Diagram of the average analysis of factors that influence the construction management work system on a project.

Based on table 1.2, it can be seen that according to respondents, the following results were obtained from actions that influenced the construction management work system on the Sritanjung Vocational School Practical Building project:

1. Overall, actions regarding Planning, Organizing, Actuating and Controlling on the Sritanjung Vocational School Practice Building project all had an effect with an average result of 3.40.
2. Among the POAC actions that have the most influence is Supervision (Controlling) with an average result of 3.42. Although slightly larger than the Planning, Actuating and Controlling factors.
3. In planning, the most influential is the quality indicator with the average results obtained being $\bar{}$ = 3.42 even though the value is not much different from the cost and time indicators.
4. In Organizing, the most influential is the time indicator with the average results obtained being $\bar{}$ = 3.44 even though the value is not much different from the cost and quality indicators.
5. In Implementation (Actuating), the most influential is the cost indicator with the average results obtained being $\bar{}$ = 3.44 although the value is not much different from the time and quality indicators.
6. In Supervision (Controlling), the most influential is the cost indicator with the average result obtained being = 3.47 even though the value is not much different from the time and quality indicators.

CLOSING

A. Factors that influence the construction management work system in the P (Planning) / Planning, O (Organizing) / Organizing, A (Actuating) / Implementation, and C (Controlling) / Supervision Processes on the Sritanjung Vocational School Practical Building Project include:

1. Planning (Planning)

a. A very influential factor in the construction management work system on time indicators is the limited and inadequate time used to create working drawings.
b. A very influential factor in the construction management work system on cost indicators is that the company loses opportunities/markets due to products (design results) not meeting the requirements.
c. A very influential factor in the construction management work system on quality indicators is the lack of availability of experts for technical problems during the planning process.

2. Organizing

a. A very influential factor in the construction management work system on time indicators is poor coordination between construction service providers
b. involved in the project.
c. A very influential factor in the construction management work system on cost indicators is the presence of additional or less work.
d. A very influential factor in the construction management work system on quality indicators is the incompleteness of contract documents.

3. Implementation (Actuating)

a. A factor that is very influential in the construction management work system on time indicators is bad weather conditions during project construction activities.
b. A very influential factor in the construction management work system on cost indicators is errors in entering project financial data.

c. A very influential factor in the construction management work system on quality indicators is the absence of submission of implementation methods or job mix designs from contractors for each stage of work.

4. Supervision (Controlling)

a. A very influential factor in the construction management work system on time indicators is that there are deviations in implementation in the field from the master schedule.
b. A very influential factor in the construction management work system on cost indicators is the delay in disbursement of funds for purchasing materials.
c. A very influential factor in the construction management work system on quality indicators is deviations from the implementation of construction methods.

From the results of the analysis of the factors that influence the construction management work system on the Sritanjung Vocational School Practice Building construction project in the planning, organizing, actuating and controlling processes. The most dominant is at the Implementation (Actuating) stage.

B. Actions that influence the construction management work system in the P (Planning)/Planning, O (Organizing), A (Actuating)/Implementation, and C (Controlling)/Supervision Processes on the Sritanjung Vocational School Practical Building Project include:

1. Planning (Planning)

a. The most influential action taken by construction management on time indicators is improving work instructions to increase productivity among workers to produce working drawings.
b. The action taken by construction management on influential cost indicators is to focus on methods for searching and developing market opportunity.
c. The action taken by construction management on quality indicators that is very influential is carrying out corrective actions that are right on target and most effective during the specification checking process.

2. Organizing

a. Actions taken by construction management on time indicators that are very influential are identifying problems and providing considerations in making decisions so that they are faster.
b. Actions taken by construction management on cost indicators that are very influential are leading and holding special meetings if deviations occur in construction implementation.
c. The most influential action taken by construction management on quality indicators is checking and studying documents for construction tenders which will be used as a basis for monitoring work in the field.

3. Implementation (Actuating)

a. The action taken by construction management on a very influential time indicator is the diversion of using other methods in specific work on the project so that it can be diverted using other tools.
b. The most influential action taken by construction management on cost indicators is controlling and correcting project cost estimates.
c. Actions taken by construction management on quality indicators that are very influential are checking, rejecting or approving the implementation method or job mix design proposed by the contractor for each type or new stage of work.

4. **Supervision (Controlling)**
   a. The action taken by construction management on time indicators which is very influential is to control and monitor the number of workers used so that the number of workers can be achieved as needed and the work can be completed on time.
   b. The most influential action taken by construction management on cost indicators is approving material changes with specifications that are equivalent to the previous material.
   c. The most influential action taken by construction management on quality indicators is supervising and approving the implementation of construction implementation methods that are appropriate to the type of work.

From the results of the analysis regarding the actions taken by construction management to control time, costs and quality in the P (Planning), Organizing, Implementation (Actuating), Supervision (Controlling) processes. The most dominant is at the Implementation (Actuating) stage. The most dominant is Supervision.

Suggestion

From the results of the analysis of the discussion regarding Construction Management Performance Analysis on the Sritanjung Vocational School Practical Building Project above, the suggestions given are as follows:

a. Construction Management must be able to analyze the obstacles that occur in the field and then catch up on progress delays.
b. As Construction Management, you must control and monitor factors that occur in the field in the Planning, Organizing, Actuating and Controlling processes related to time, cost and quality indicators.
c. Construction management should be able to instill a high sense of commitment, especially for the contractor, to avoid miscommunication.
d. Construction Management must be able to identify problems and resolve problems.

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