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BUILDING MAINTENANCE PERFORMANCE IN OPERATION & MANAGEMENT AT SETIA ECOHILL MALL, SEMENYIH

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ABSTRACT

The aim of this research is to identify building maintenance performance in operation & management. The objective of the research is to identify the building maintenance in operation management and to determine the satisfaction from the maintenance team on the performance of the building. This study uses quantitative method which questionnaires will be distributed to the recognized respondents which is the maintenance worker at Setia Ecohill Mall, Selangor. This is such the most effective method in delivering research in collecting numerous data from the big population due to the limited time, cost, and transportation. The findings show that the majority of respondents are currently satisfied with building maintenance performance in operation and management. This thesis gives a comprehensive analysis of building maintenance performance indicators.

Keywords: *Building maintenance performance, Operation, Management, Setia Ecohill Mall, Semenyih*

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INTRODUCTION

Building maintenance has long been considered the "poor relation" of the construction business, with only a subliminal understanding of its significance among both building owners and those working in the field. All stakeholders involved in the building procurement, construction, and management processes exhibit a general lack of awareness of both its magnitude and its significance as a result. As a result, the amount of repair and maintenance work needed to get the nation's building stock to an acceptable minimum level is backlogged and growing at an intolerable rate. (Cruzan,R. 2020)

Building maintenance is a work that is carried out to preserve an asset which is in order to continue its function, above a minimum acceptable level of performance, over its design service life, without unforeseen renewal or major repair activities involved. According to The Committee on Building Maintenance (1972) stated that the building maintenance is defined as a work undertaken in order to keep, restore or improve every part of a building, its service and surround to a currently acceptable standard as well as to sustain the utility and value of the building or facility. Maintenance is important aspect to Property Management due to its essential to keep the building in a good condition as well as the facilities in an operable state.

The volume of a country's gross fixed capital formation determines its level of prosperity. Regardless of their intended use, buildings account for gradually reaching 50% of all countries' gross fixed capital formation. To keep the national capital consumption low, it is necessary to ensure that this asset is performing at its best. The rate of capital consumption will grow as a result of underperforming buildings. Buildings are consequently essential to a nation's economic and well-being because the national building stock is reliant on maintenance expenditures. (Olanrewaju & Abdul-Aziz, 2014)

Problem Statement

Top Management Problems

Every management encounters a variety of problems such as lack of performance and accomplishment throughout maintaining the building. They can be listed as follows:

1. Poor Management of Maintenance Team
2. Shortage of Spear parts
3. Unqualified Maintenance Contractor
4. Unavailability of Skilled Labors
5. Financial Issues

Aim And Objective

Aims of Maintenance Management

To identify building maintenance performance in operation & management.

Objective of Maintenance Management

Maintenance objectives is a target given to the maintenance and management department and it is accepted. All of these targets are product quality, safety, environment preservation, cost reduction and availability. Strategy is an idea which is to determine the steps on how to reach the objectives.

The following is the objective of maintenance management: -

- i. To identify the building maintenance in operation management.
- ii. To determine the satisfaction from the maintenance team on the performance of the building.

LITERATURE REVIEW

There are different definitions of building maintenance, but they all describe it as work done to maintain, restore, or improve the facilities, parts of the building, services, and surroundings to a satisfactory standard, using available resources. The aim is to keep the building in a specific condition and ensure its longevity. (Lee & Scott, 2016)

The objectives of building maintenance are to ensure the building and its services are in a secure and safe condition, to make sure the building is suitable for occupancy, to meet all legal standards and requirements, to maintain the value of the physical assets, and to maintain the overall quality of the building. Maintenance needs and effective maintenance management systems are two major factors that influence building maintenance. The maintenance budget should be allocated to meet basic needs and be carried out within the allocated budget. The objectives of a commercial organization are to ensure that their building functions effectively, to maximize building life and satisfaction, and to balance maintenance spending with building effectiveness. Social organizations aim to maximize overall building life and satisfaction, while maintenance is a procedure carried out within a budget. (Alsyouf, 2017)

Building maintenance encompasses a wide range of tasks aimed at preserving and restoring the various parts of a building, including its structure, components, rooms, windows, walls, and furniture. This is a crucial issue globally, as the quality and longevity of a building is closely tied to the level of maintenance it receives. Proper maintenance can help prevent or delay the need for major repairs and ensure that a building remains functional and visually appealing. Building maintenance is especially

important for older buildings, which are more susceptible to wear and tear and require regular attention to maintain their integrity. (Dzulkifli et al., 2021)

It also helps to identify areas for improvement, prioritize maintenance tasks and allocate resources effectively. The key performance indicators for building maintenance may include costs of maintenance, equipment uptime, response time to maintenance requests, completion rate of maintenance tasks, number of emergency repairs, preventive maintenance completion rate, energy efficiency, and building maintenance costs as a percentage of total operating costs. Regular monitoring and tracking of these indicators can help building owners and managers make informed decisions to ensure the effective maintenance and longevity of their building assets. (Myeda et al., 2015)

Types of Building Maintenance

Planned maintenance involves scheduling regular inspections and evaluations of the building's condition. Examples of this type of maintenance include routine cleaning, annual cleaning and painting of the building's façade and roof. This type of maintenance can be carried out by the building owner, tenants, or building management team, as it mainly involves daily cleaning, painting, and visual inspections (BRS Building Services Sdn Bhd, 2020). A study by Emmanuel Ofori (2015) stated that Planned maintenance is defined as organized and intentional major repairs, carried out with forethought, control, and the use of records, in accordance with a pre-determined plan.

Unplanned maintenance is the direct opposite of planned maintenance where there is no plan for this type of maintenance (Chua et al, 2018). Unplanned maintenance refers to work that is carried out on an emergency basis or in response to a specific problem in the building. This type of maintenance is not scheduled in advance and is performed as a response to an immediate issue, such as a malfunctioning lift (Mydin, 2016). Unplanned maintenance is performed without a pre-determined plan, in response to an issue that has arisen, frequently due to user complaints, unexpected breakdowns, or loss of control. It is reactive in nature and not scheduled ahead of time (Dzulkifli et al, 2021).

Maintenance Plan

Maintenance planning is the process of developing a course of action for preserving a building, which includes identifying and scheduling all necessary maintenance, repair, and construction work, as well as ensuring the necessary resources are allocated. It's essential to ensure the building's safety, longevity and performance. Maintenance planning is a process that involves continuous decision-making, it involves answering questions such as what activities need to be planned for physical assets, or which equipment or systems should be prioritized based on risk, these decisions are usually made by applying technical tools (souza et al, 2022). Effective

and reliable maintenance planning, estimating, and scheduling can lead to numerous benefits such as improved craft labor productivity, increased asset productivity, the use of safe and reliable repair methods, knowledge of Total Maintenance Requirements, increased operations labor productivity, and direct savings and value that positively impact the bottom line (Peters, 2015).

Maintenance Schedule

Scheduling involves coordinating the logistics of maintenance jobs by determining who will perform the job and when it will start and be completed. Effective scheduling requires realistic planning based on data and records, taking into consideration factors such as labor hours, safety procedures, training, and improvement actions. It is an important part of the overall maintenance plan and helps ensure the smooth and execution of the work. (Chua et al., 2018).

A scheduler should also understand the position, its procedures, its resources, analytical skills, and moral fortitude. The scheduler needs to learn about judging courage and capacity to follow directions. (Jaini et al., 2022).

Building Maintenance Performance in Operation & Management

Building maintenance performance in operation and management refers to the effectiveness and efficiency of the processes and activities involved in maintaining the physical condition, functionality, and operational performance of a building or facility. It encompasses various tasks, including preventive maintenance, corrective maintenance, inspections, repairs, and overall management of the building's infrastructure and systems. (Smith, J. K et al., 2019)

Effective building maintenance performance requires a comprehensive understanding of the building's requirements and the implementation of appropriate maintenance strategies. It involves regular inspections to identify potential issues, timely preventive maintenance to prevent breakdowns, and prompt corrective maintenance to address any malfunctions or failures. Additionally, efficient management of resources, including manpower, materials, and equipment, is essential for optimizing maintenance activities and minimizing disruptions to building operations. (Smith, J. K., et al., 2019)

Proactive building maintenance performance can result in several benefits, including increased equipment lifespan, reduced repair costs, improved energy efficiency, enhanced occupant comfort and satisfaction, and compliance with safety and regulatory standards. Moreover, it helps to mitigate risks associated with building failures, minimize downtime, and extend the overall lifecycle of the building. (Smith, J. K., et al., 2019)

METHODOLOGY

This research project is using a quantitative survey method for data collection and analysis. The quantitative research survey method is a type of research design that involves collecting numerical data through standardized and structured methods, such as self-administered questionnaires, standardized interviews, or online surveys. The aim of this research method is to gather numerical data that can be analyzed using statistical techniques to describe patterns, relationships, and trends in the data. This method is commonly used to study topics that are well-defined, quantifiable, and generalizable, and to test hypotheses or establish cause-and-effect relationships between variables. The data will be collected through questionnaires distributed via Email, WhatsApp, and Facebook groups, with clear and understandable questions. The questionnaire will be given to 60 respondents from different levels of position and department in each building.

Instrument of Data Collection

The instrument used in data collection of this research study is questionnaire. The questionnaire was designed in English and Malay language. The use of the translated version improved the readability of the respondents in the questionnaire. The type of questionnaire of this research uses Likert-type scale (1 = very disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = very agree) and (1 = very dissatisfy, 2 = dissatisfy, 3 = neutral, 4 = satisfy and 5 = very satisfy). The questionnaire survey will include a few parts of the question which are Part A, Part B, Part C and Part D. The total number of questions consists of 17 items.

Table 1: Sections in Questionnaire

PARTS	DESCRIPTION	TOTAL QUESTION
A	Respondents' background	5
B	Identification of building maintenance in operation management	5
C	Satisfaction from maintenance team about operation management	5
D	Suggestion to improve operation management	2

DATA ANALYSIS AND FINDINGS

The aim for the research is to identify building maintenance performance in operation & management at Setia Ecohill Mall, Semenyih. The question is divided into 4 parts starting with demographic part which include building information and respondent's background in section A. For the next question is include identification of building maintenance in operation management in part B and satisfaction from maintenance team about operation management in part C. The last question is the suggestion to improve operation management in part D.

Table 2: Case Study (Setia EcoHill Mall, Semenyih)

NO.	ITEM	DETAILS
1.	Building Name	Setia Ecohill Mall, Semenyih
2.	Building Address	Kompleks Membeli Belah Dataran Ecohill, Jln Ecohill 1/2, Setia Ecohill, 43500 Semenyih, Selangor
3.	Building Type	Commercial building
4.	No. of Storey	3 Storey building
5.	Year of Built	7 February 2019
6.	Year of Completion	23 November 2021
7.	Gross Floor Area (GFA)	43,486m ²
8.	Client	SP Setia sdn. Bhd.

SCOPE AND LIMITATIONS OF RESEARCH

The limitation of this study is focused on the mall only. The second limitation is targeting malls within the Selangor area. The data will be collected and analysed in solving current issues.

The research is also being undertaken utilizing a quantitative methodology due to time constraints. Research projects require time, funding, and resources for data collection, analysis, and interpretation. Constraints in these areas may limit the scale or depth of the research, impacting the comprehensiveness of the findings. Over the course of two months, the questionnaire will be circulated, and the replies will be collected for data analysis. Another difficulty in performing this research is that the majority of developers do not comprehend emails or do not answer questionnaires because of time constraints.

RESULT AND FINDINGS

The case study involved 50 respondents from Setia Ecohill Mall, Semenyih, out of a target of 60 respondents. The majority of respondents were male, Malay, and between the ages of 20 to 29. They mostly belonged to the technician team and were familiar with the building. Their presence in the building was typically limited to office hours, spanning 7 to 8 hours per day.

Regarding building maintenance in operation management Part B, most respondents were aware of the requirements for maintaining a safe and clean work environment. They recognized the importance of scheduling daily maintenance tasks, having highly skilled maintenance staff, and conducting routine maintenance for optimal functioning, longevity, and safety of equipment. They also acknowledged the significance of customer service for facilities maintenance.

In terms of satisfaction with operation management Part C, the maintenance team expressed satisfaction with budget planning, as it facilitates effective resource allocation and cost control. They also emphasized the importance of familiarity with equipment or vehicles for maintenance teams, as it enhances their performance. Handling difficult customers or clients was considered vital for maintaining positive relationships and customer satisfaction. The satisfaction of having all equipment in proper functioning condition was highlighted, ensuring a safe and efficient environment.

Part D consisted of open-ended questions regarding suggestions for improvement in operation management. Respondents provided various answers, including setting clear goals and key performance indicators (KPIs), implementing technology solutions, continuous training and development, effective communication and collaboration, performance monitoring and feedback, and performance incentives and rewards. For working more effectively and efficiently with vendors and suppliers, suggestions included establishing clear communication channels, building strong relationships, defining roles and responsibilities, conducting performance monitoring and evaluation, regular performance reviews, and sharing information and knowledge.

In summary, the analysis revealed the demographic profile of respondents, their familiarity with the building, awareness of maintenance requirements, satisfaction with various aspects of operation management, and suggestions for improvement in productivity and vendor/supplier relationships.

Table 3: Means Score for Building Maintenance in Operation Management

NO.	ITEM	MEANS SCORE
1.	Requirements for maintaining safe and clean work environments	4.40
2.	Scheduling maintenance tasks (daily task)	4.46
3.	High skills maintenance staff	4.40
4.	Routine maintenance is always	4.42
5.	Customer service for facilities maintenance	4.32
6.	Manage the budget planning	4.30
7.	Maintenance teams are familiar with the equipment or vehicles	4.34
8.	Handle difficult customers or clients	4.26
9.	New technology that could improve efficiency in your department	4.20
10.	All the equipment in a building is functioning properly	4.16
AVERAGE MEAN RESULT		4.32

CONCLUSION

The objective and data of this research study is rise by the from the literature review, previous research, and questionnaires. This research is more likely to focus on identifying building maintenance performance in operation and management. Furthermore, the research objectives used in the study have contributed to the success of the research questions.

Objective 1: To Identify the Building Maintenance in Operation Management

In this research, the first objective that needs to be achieved is to identify the building maintenance in operation management in Setia Ecohill Mall, Semenyih, Selangor. The result based on the analysis and finding had given the conclusion that by combining the findings from these different sections, the statement successfully achieves the objective of identifying building maintenance in operation management. It provides a comprehensive overview of the respondents' background awareness, satisfaction levels, and suggestions for improvement, offering valuable insights for enhancing operational efficiency and effectiveness.

Objective 2: To Determine the Satisfaction of The Maintenance Team on The Performance of The Building.

According to the findings in Chapter 4, it achieves the objective of determining the satisfaction of the maintenance team regarding the performance of the building. The findings from Part C indicate that the maintenance team is mostly satisfied with various aspects of operation management. Specifically, they express satisfaction with budget planning, recognizing its importance for resource allocation, cost control, and maximizing the value of maintenance activities.

Furthermore, the team acknowledges the significance of being familiar with the equipment or vehicles they work with. This awareness indicates their understanding of how familiarity with the equipment enhances their ability to perform their duties effectively. Their satisfaction in this area suggests that they feel adequately trained and knowledgeable about the equipment, enabling them to carry out maintenance tasks efficiently.

The maintenance team also expresses satisfaction in handling difficult customers or clients, emphasizing the importance of maintaining positive relationships and ensuring customer satisfaction. This highlights their commitment to providing good customer service and indicates their understanding of its significance in maintaining positive stakeholder relationships.

Lastly, their satisfaction with the proper functioning of all equipment in the building showcases their recognition of its essential role in maintaining a safe, productive, and efficient environment. This suggests that the maintenance team takes pride in ensuring that all equipment is in optimal working condition, which contributes to the overall satisfaction of their performance in building maintenance.

Overall, the statement successfully achieves the objective of determining the satisfaction of the maintenance team on the performance of the building. It provides insights into their contentment with budget planning, equipment familiarity, handling difficult customers, and the proper functioning of equipment. Mean score of every question in Part C is shown below: -

Table 4: Means Score for Satisfaction of the Maintenance Team on the Performance of the Building

NO.	ITEM	MEANS SCORE
1.	Manage the budget planning	4.32
2.	Maintenance teams are familiar with the equipment or vehicles	4.30
3.	Handle difficult customers or clients	4.34
4.	New technology that could improve efficiency in your department	4.26
5.	All the equipment in a building is functioning properly	4.20
AVERAGE MEAN RESULT		4.28

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