The Evaluation of Performances Measurement System in Property Management in High-Rise Residential Building

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ABSTRACT

Research on the status of the property management profession in Malaysia found that only 30 percent of property managers use efficiency as their management tool. Furthermore, property managers primarily focus on performance variables that are easily and conveniently accessible. The fundamental issues related to the techniques and approaches concerned are generally taken lightly by the practitioners, leading to the inefficiency of maintenance management practices in the market today. So, the goal of this study is to look into how performance measurements can be used and how well existing PM models work in real life by using examples from high-rise apartment buildings. We aim to achieve these objectives by evaluating and analysing the perceptions of property managers from eleven (11) areas in Kuala Lumpur. We distributed questionnaires using quantitative methods to 72 property management organisations that manage high-rise residential properties in Kuala Lumpur. The research shows that most of the people who answered used Key Performance Indicator (KPI) as a performance measurement system (PMS). Choosing to use a PMS in property management is what makes it happen. There is a positive relationship between performance measurement systems (PMS) and property management organisations. This paper provides important research that uncovered the industry scenario and the property managers' key perceptions. We anticipate significant benefits from this research, which can serve as valuable information on high-rise residential buildings.

Keywords: Property Manager, Property Management, Performances Measurement, High-rise building

INTRODUCTION

Property management and maintenance encompass all technical and administrative activities to restore building elements to their original working condition, ensuring that all components are structurally, functionally, and aesthetically optimal (Smith & Lee, 2023). The Malaysian Property Management Standard (2016) defines property management as the management and control of land, buildings, and interests for a fee, excluding property-based business management (Mustafa et al., n.d.). Kamaruzzaman et al. (2013) defined maintenance management, or operations management, as a systematic process that transforms inputs—such as human resources, capital, materials, and technology—into outputs in the form of goods and services.

Recent research highlights ongoing challenges in property management in Malaysia. Tan et al. (2022) reported that only 30% of property managers use efficiency as a core management tool, while Ahmad and Zainal (2024) found a persistent preference for reactive maintenance practices rather than proactive strategies. Studies have linked this reactive approach to negative impacts on facility performance and the quality of services provided. In practice, there is also an absence of standardized guidelines for property measurement systems (PMS), which further complicates efforts to improve service delivery (Tan et al., 2022).

Both occupants and property owners expect their buildings to be attractive, durable, comfortable, and cost-effective. These expectations underscore the importance of property management and the need to assess the performance of property-related services. Performance measurement is crucial for driving organizational improvements, with models such as Key Performance Indicators (KPI), the Balanced Scorecard (BSC), and the Business Excellence Model (BEM) being commonly adopted (Lim & Wong, 2023).

This research examines the effectiveness of performance measurement systems (PMS) in property management for high-rise residential buildings in Kuala Lumpur. Specifically, it aims to identify types and criteria of PMS, investigate their application by property management organisations, and analyse key factors for their effective implementation. Understanding these factors is essential to enhance service quality and meet the growing demands of property stakeholders.

LITERATURE REVIEW

Definition of Property Management

According to the Malaysian Property Management Standard (2016), property management means managing and controlling any land, building, and interest for a fee. However, it is an exception for the management of property-based businesses. Property managers are responsible to the property regarding i) monitoring outgoings and any tax payment; ii) preparation of budgets and holding of financial records; iii) imposing the terms and conditions concerning the leases and other property agreements; iv) advising about sale and purchase and protecting the client's interest; v) insurance consultancy; vi) advising on the growth opportunities or any potential investment; and vii) advising the concerning requirement to upgrade the property or any interest (Balakrishnan & Ishak, 2021).

Property Management as Managing Agent

The managing agent is a strata residential management agent representing the managing board (MC) to oversee the operation staff or contractors (Balakrishnan & Ishak, 2021). This includes cleaners, security guards, and the person responsible for managing the account, who are in contact with the parcel owners and comply with the requirements.

Performance Measurement

Performance measurement is the process of gathering, evaluating and reporting a person, entity, organization, and system or component performance information. This may include examining the engineering method to see whether the product aligns with what is expected or should have been accomplished.

Performance Measurement Definition

According to Poister (2003), performance measurement is 'the process of regularly defining, monitoring, and utilising objective indicators of organisational and programme performance'. Lindblad (2006) described performance measurement as "using goals, measures, and data to assess services.". Next, in the report prepared for the US Department of Housing and Urban Development by Economic System, Inc. (2005), "Performance measurement encompasses the design, collection, and verification of data needed to identify and measure program inputs, outputs, and outcomes.".

Performance Measurement Indicator

A performance indicator is a metric that produces a quantified value to signify a performance level that considers single or multiple aspects (Parida & Kumar, 2006). The literature indicates that multiple sets of measures might be appropriate for various users and that several different performance measures are defined (Halami & Bouckaert, 1996; Kravchuck & Schack, 1996). The task of measuring performance is to decide what indicator to use. Such tests are also referred to as indicators in the performance measurement literature (McDavid & Hawthorn, 2006).

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Types of Performance Measurement Systems

Lim and Yik (2007) pointed out that among the methods recommended for tracking contract performance and quality control services are (i) a structured scorecard, (ii) a benchmarking, (ii) a customer satisfaction survey, (iv) a performance review meeting and (v) an audit that can be used to construct contracts for Operation & Maintenance (O&M) or any other contract for facility management services. Besides, several methods have been used today, such as Benchmarking, Customer (End User) Satisfaction, Performance Review Meeting, Performance Review Audit and Key Performance Indicator (Lim & Yik, 2007). Mk.et .al (2005) indicated that performance measurement method relevant to property management includes (i) Post Occupancy Evaluation (POE), (ii) condition surveys, (iii) Building Quality Assessment (BQA), (iv) Service Tools and Method (STM), (v) Functional Suitability Assessment (FSA), (vi) Real Estate Norm, and (viii) Property Valuation.

The literature on performance measurement and outcome measurement provides various suggestions for developing and incorporating efficient performance measurement systems. In the implementation, literature models were used to display various styles and components of performance measurement systems. The following ten (10) performance measurements models will be examined:

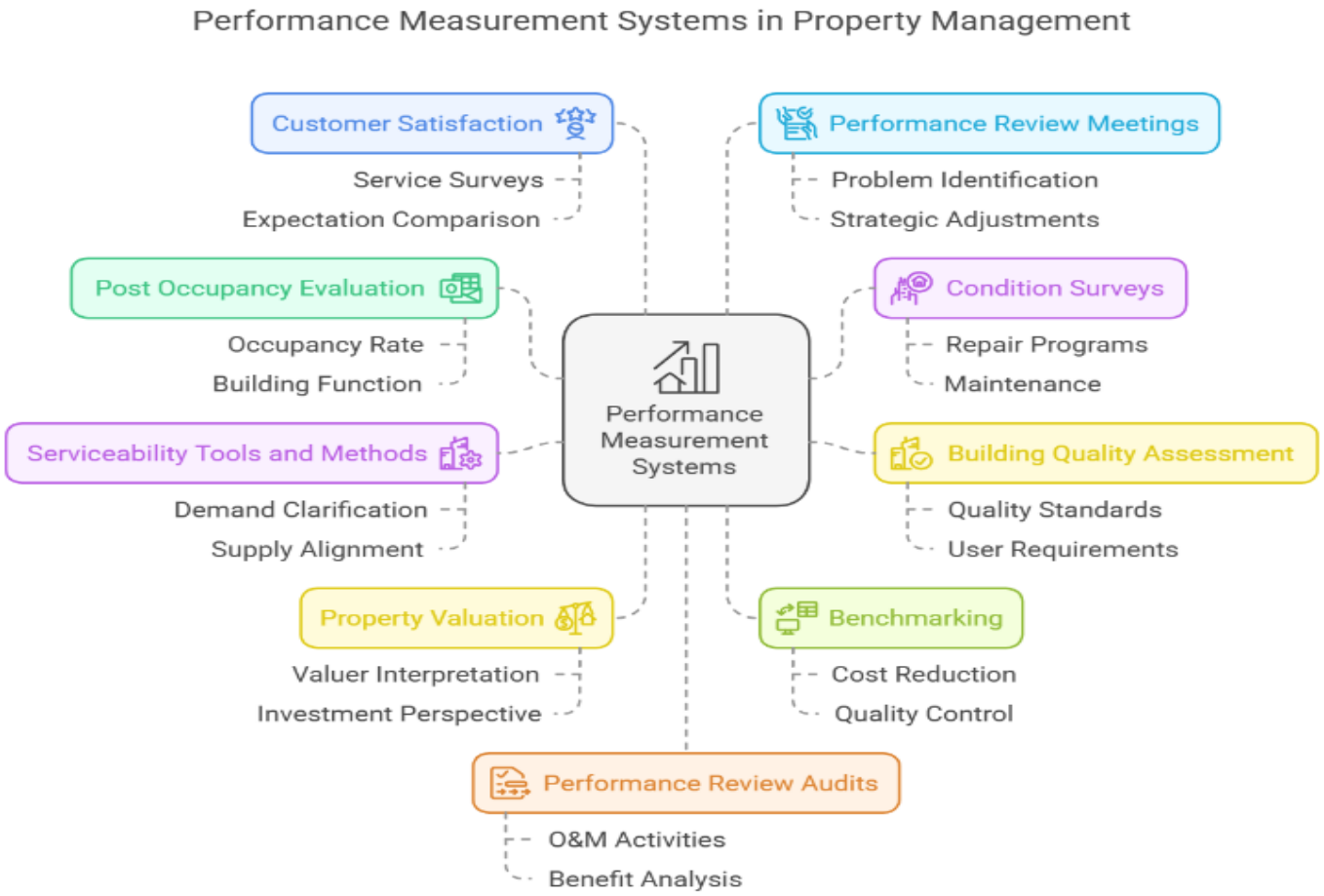

Figure 1: Types of Performance Measurement System

The sub-section below outlines the types and criteria for each measuring performance method.

Post Occupancy Evaluation (POE)

Post-occupancy Evaluation is a performance measurement technique aiming to evaluate the efficiency of assets (Rogage et al., 2020). This method is associated with the occupancy measure. It is necessary to know the occupancy rate for some strata buildings that have been occupied, and it will influence the property's

performance. According to Becker (1989), this methodology has been developed over 30 years, to enable practitioners to learn from past mistakes and achievements, thereby avoiding the need for constant reinvention. Bechtel (1989) describes performance measures as determining whether the function of the building is as expected. Green and Moss (1998) highlight that an organisation should create a learning loop through future studies in management. The reason is it is able to evaluate the building function based on performance records.

Condition Surveys

Even though the property is resilient, Scarrett (1995) notes that it may be physically old, which would lower its value. The physical aspect of the property led to its depreciation in value. To maintain the value of the property, it is crucial to implement a well-planned maintenance schedule that includes both repairs and preventive maintenance. Condition surveys are essential to maintenance programs (Noy, 1995). Besides, repair and preservation advice is the most relevant since this reflects the performance measurement objective. According to Francis (1992), a condition survey is important to apply in order to monitor performance.

Building Quality Assessment

The Building Research Establishment evaluated a computerised building assessment system called Building Quality Assessment (BQA). This method is purposely to measure proportional quality and merit. The assessment needs to take into consideration the investment perspective and occupation purposes. However, this method usually leads to inappropriate decisions because of the obstacles to a clear understanding of the building occupant. Bruhns and Isaacs (1996) recommended establishing the degree of quality in building rests. This implies that user requirements and building type must align with the quality building rests.

Serviceability Tools and Methods (STM)

Davis and Szigeti (1996) define serviceability as a building's capacity to perform as needed. This method considers the trend of occupants between the present and the future. The STM strategy provides methods for coping with demand, clarified as requirements and supply for the tenants, which implies building serviceability. More than the principle of building efficiency, STM is also associated with a complete building assessment process. ASTM standardised the approach in 1996; it was initially built as a Public Works Canada management aid and subsequently accepted in 1993 as an appendage to Canadian government policy.

Property Valuation

Millington (2003) described valuation as the estimated value. Property valuation depends on specific instructions that consider time, the physicality of the property, the economy, and alternative investments (Millington, 2003). Valuation has terms and conditions. Even though property valuation has not been explicitly categorised as a tool for measuring performance, researchers have shown that property value can be evidence of property performance. However, this method depends on the valuer’s interpretation.

Using Benchmarking

This is principally a cost-reduction method (McDougall and Hinks, 2000). It develops based on a trend towards total quality control. Besides, it can assist managers in putting their performance into perspective (Camp, 1989). Sarkis (2001) emphasises benchmarking as a method of using managers’ perspectives. For instance, this can be achieved by using other companies as references, which are recognised as best practices. Indirectly, it can improve the performance of the organisation.

Customer’s (end-user) Satisfaction

The satisfaction of customers (end users) with the leading outsourced hospitality company is the product of contrasting the company they received with what they expected (Gronross, 1984; Parasuraman et al., 1985). The customer satisfaction survey is essential for measuring consumer satisfaction, which can vary over time between individuals (Kennedy, 1996; Brandy, 2002). Daily customer satisfaction surveys help find problems when outsourced service results don't match up with what the end user wants. This way, steps can be taken to improve

overall service quality over time (Grigg, 1996; Roberts, 2002).

Performance Review Meeting

Evidence shows poor performance management has destroyed good contractors' service (Angelici et al., 1995). Lai & Yik (2007) described that the primary aim of the performance review meeting is to enable all contracting parties to discuss bilaterally any problems that occur during the contract duration and identify any adjustments required to comply with the strategic outsourcing objectives.

Performance Review Audit

Business Continuity Institute (BCI, 1993) defines an audit as a systematic examination of, for example, documents, reports, accounts, stock holdings, or quality attributes. However, the term audit also varies according to the role being audited. According to Nanayakkara and Smith (1997) and Donaldson and Amrstrong (2000), O&M activities were used as the main example of a well-known method for checking if O&M activities are being carried out as planned and if the effects of these activities are bringing about the expected benefits. However, it differs from auditing for a quality control program (e.g., ISO 9000) that focuses on tracking compliance with paper-based procedures. In addition, operation and maintenance audits include physical inspection work (Nanayakkara & Smith, 1997). This is important to safeguard the quality of operation and maintenance work.

Key Performance Indicator (KPI)

Cable and Davis (2004) described that evaluating success by defining KPIs helps the senior management team make important strategic decisions. Developing performance measurement is an important phase in the evaluation process since it provides specific measures that comprehensively express the property performance. Therefore, identifying a set of Key Performance Indicators (KPIs) is crucial. This indirectly contributes to the effective development of performance measurement.

Performance Measurement System in Property Management Organization

Over the years, several frameworks for measuring performance have emerged. Until 1980, performance measurement was based mostly on financial measures. According to Kaplan and Norton, the approach then looked at four perspectives that focus on financial aspects: customers, internal processes, innovation, and learning. So, to get a competitive edge, researchers have created frameworks that take non-financial measurements and intangible assets into account (Kamaruzzaman SN et al., 2013). In addition, there is no paper research specific to performance measurement in property management in high-rise residential buildings. A study of The Surveyor, a professional journal of the Malaysian Institute of Surveyors, has revealed since 1980 that there has been no mention of service quality in Malaysia's property management profession (Zarita et al., 2009). In Malaysia, only 30 percent of property management organisations prefer to use quality as a management tool. It has been shown that the majority of organisations in the real estate industry typically use results based on investment and the cost of occupancy (Zarita et al., 2009). It makes sure that two parts of these performance measures—investment-based and occupancy cost—are easy to find and use to judge how well property management is working. Therefore, this research must further explore the other applications of the performance measurement system among property management organisations in high-rise residential buildings.

METHODOLOGY

Kuala Lumpur is the central city of Malaysia. According to the Commissioner of Building, City Hall of Kuala Lumpur, the total development area of high-rise residential buildings in January 2020 was recorded at 4,833 projects covering 11 parliaments area consists Bandar Tun Razak, Batu, Bukit Bintang, Cheras, Kepong, Lembah Pantai, Segambut, Seputeh, Setiawangsa, Titiwangsa and Wangsa Maju. As we know, the Kuala Lumpur city area has many strata development compared to other locations in Malaysia, which is suitable for this research. This research sampling consists of respondents from property management organizations that manage high-rise residential buildings in Kuala Lumpur. It was, therefore, of prime interest to determine the application of performance measurement among property management organizations.

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A quantitative approach was adopted to achieve this research's objectives. Best and Khan (2006) mention that the quantitative approach is useful in investigating a particular phenomenon. It is used to answer questions on relationships within measurable variables to explain, predict and control a phenomenon (Leedy, 1993; Creswell, 1994; Bryman & Bell, 2007). This approach will therefore be useful to gain insight into PMS toward property management organizations in high-rise residential buildings in Kuala Lumpur.

$$\text{Sample size, } n = N * \frac{\frac{Z^2 * p * (1-p)}{e^2}}{[N - 1 + \frac{Z^2 * p * (1-p)}{e^2}]}$$

Where,

• N = Population size,

• Z = Critical value of the normal distribution at the required confidence level,

• p = Sample proportion,

• e = Margin of error

By using the formula, the sampling for this research is 72 samples. Therefore, 72 samples were selected at random to participate in the study. The detail for this sampling is stated in Table 1. From 72 respondents, 65 questionnaires have been returned and 7 have been rejected as incomplete answers to questions. The final sample was made up 65 respondents

Table I Total Sampling

No	Area	Total Housing Development
1	Bandar Tun Razak	7
2	Batu	7
3	Bukit Bintang	4
4	Cheras	7
5	Kepong	7
6	Lembah Pantai	7
7	Segambut	7
8	Seputeh	7
9	Setiawangsa	7
10	Titiwangsa	7
11	Wangsa Maju	5
	Total	72

Data Analysis

The steps involved in analyzing the data started with categorizing all the results and putting them into appropriate groups for coding purposes. Results for the maintenance management system were derived from the previous research. The data will analyse by using SPSS software (Statistics Package for Social Sciences). It can evaluate through an accurate statistical test. At the beginning stage of developing the questionnaire, it needs to test reliability in SPSS software before distributing it to the respondent. Reliability is essential to measure the stability

and consistency with which the instrument measures the concept.

FINDING

The questionnaire for the building managers included several questions. The questions encompassed demographic data, the current application of the performance system in the organisation, and the reasons for the performance measurement system. Based on the literature review, there are about eleven (11) criteria of performance measurement systems widely used in property management organisations. This chapter will discuss the results and findings of the analysis based on data collection through a literature review and the distribution of questionnaires. The objective of data analysis is to evaluate the performance measurement of property management in residential high-rise buildings. The results and findings are important because they relate to the research's objectives. These quantitative data were divided into four sections: Section A: Demographical Data; Section B: The Current Application of Performance Measurement System in Respondent's Organisation; and Section C: Reason for Performance Measurement System (PMS). The sampling of this analysis includes 72 housing development areas in Kuala Lumpur. We discuss the survey results below.

Table 2 General information on maintenance managers of the buildings

Socio-Demographic Information		Frequancy (F)	Percentage (%)
Gender	Female	19	30%
	Male	46	70%
	Total	65	100%
Age	20 years and below	0	0%
	21 – 25 years old	7	11%
	26 – 30 years old	14	22%
	31 – 35 years old	8	12%
	36 years and above	36	55%
	Total	65	100%
Job position	Property Manager	50	77%
	Others	15	23%
	Total	65	100
Service duration with current company	< 1 year	11	17%
	2 – 5 years	15	23%
	5 – 10 years	18	28%
	More than 10 years	21	32%
	Total	65	100%
Working experience in managing building	< 1 year	7	10%
	2 – 5 years	18	28%
	5 – 10 years	24	37%
	More than 10 years	16	25%
	Total	65	100%

Implementation of Performance Measurement System

Respondents' opinions on how important the Performance Measurement System (PMS) is in PM organisations show that 30 percent rate it as important, 17 percent rate it as slightly important, and 53 percent choose it as very important. In a further question, the respondents were asked for a reason related to their answer given in the previous question. According to the respondent, using PMS is important to keep an eye on performance and the efficiency of property management, to make sure the quality of work, to find out if customers are happy with services because they have different expectations, to protect the company's reputation and brand, to check the honesty and performance of staff, to see if there are any weaknesses in the way work is being done, and to see if employees are meeting their goals. The majority of the respondents realised that PMS is important because it is related to the organization's vision and mission and ensures they are able to provide quality service to their clients. Table 2 tabulates further detailed information on the most popular PMS that the PM Organisation has applied.

Table 3 Performance Measurement Systems applied in PM Organization

	Detail	Frequancy (N= Number of Organization)
The method of performance measurement system employed by the organization	Key Performance Indicator (KPI)	57
	Customer satisfaction survey	42
	Performance review audit	22
	Benchmarking	12
	Building Quality Assessment (BQA)	8
	Serviceability Tools and Method (STM)	5
	Condition surveys	5
	Property Valuation	5
	Performance review meeting	4
	Post Occupancy Evaluation (POE)	2
	Others;- Own Company Chart	1

Reason for Performance Measurement Systems (PMS) in the Organization

The result found out that how PMS helps on decision making and operational in property management.

Decision Making

The researcher listed three items on how PMS helps in decision-making: to help achieve the mission, objective and goals of the organization, to improve effectiveness management in PM and to improve property performance. As a result, the highest mean score is 4.31. PMS helps with decision-making based on the organisation's mission, objective and goals. The lowest mean score is 4.28, related to the property's improved performance. The total mean for this element is 4.29, which can be considered in the strongly agree range.

Operational

The researcher listed three items on how PMS helps with operational: to ensure user satisfaction, budgeting control and time-saving due to standard measurement method (preventing unnecessary action). As a result, the highest mean score is 4.18, and PMS helps in budgeting control. The lowest mean score is PMS helps the operational of PM to ensure user satisfaction with a mean score of 3.98. The total mean for this element is 4.10, which can be considered in the strongly agree range.

CONCLUSION

This research has given an overview of the scenario of maintenance management of high-rise residential buildings, particularly on the development of maintenance management and performance measurement systems. In addition, this research also achieved its aims to establish the critical aspects of effective performance measurement for property management to enhance service delivery.

Systematic and effective PMS can influence service delivery within property management organisations. Based on the findings, the current practitioner must examine the rationale behind decision-making and operational data to effectively implement the PMS. The appropriate indicator also plays an essential role. A combination of two factors of the importance of PMS indirectly gives ideas to the property management organisation to create PMS effectively. The study's findings suggest that future research should focus on a more representative sample of organisations located across the country. The suggestion also included conducting a study in the public sector. We should also undertake a comparative study to understand the differences in performance measurement systems used in the private and public sectors.

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