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## **PERFORMANCE MEASUREMENT PRACTICES IN PROPERTY MANAGEMENT OF PUBLIC HOUSING MALAYSIA**

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### **Abstract**

Public Housing (PH) in Malaysia is commonly called for improvement, as property management issues continue to arise. To address these issues, performance measurement plays an important role in monitoring the efficiency and effectiveness of the operation in PH. However, limited performance measurement studies in PH provide an overview of what property management operations are to be measured. Hence, this paper aims to examine the performance measurement practices adopted in public housing. From here, six overarching themes, particularly management in tenancy, maintenance, building, social, financial, and administrative are identified. These six main themes are further divided into nineteen subthemes. Further, an interview is conducted with PH zone managers from Kuala Lumpur City Hall (DBKL) to examine the current management operation and performance measurement practices in PH Malaysia. This paper provides insightful information on the trend, indicators, and operations in the performance measurement practices in PH.

**Keywords:** Performance Measurement, Public Housing, Property Management

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## **INTRODUCTION**

Public housing (PH) is developed worldwide by each local housing authority (LHA) or housing association (HA) to assist low-income groups under the governance of the central government. Generally, PH aims to improve living conditions by subsidising or providing a lower rental rate for PH tenants (Byun & Ha, 2016; Kim et al., 2004). Unfortunately, the PHs are commonly labelled with insufficient maintenance, lower-quality living environment, lack of operation and maintenance funding, high vandalism and crime rates, dilapidated buildings, poor allocation system, and tenant dissatisfaction (Blokland, 2008; Mohit et al., 2010; Salleh et al., 2011; P. White, 2013; Xu & Luo, 2021; Yuan et al., 2019). These issues arose as a consequence of mismanagement of property management (Luo et al., 2020; Priemus et al., 1999; Wei & Wang, 2021). To improve property management, performance measurement plays an important role to monitor the operation and current condition of the building to provide a clear direction on the parts that require further improvements (Hashim et al., 2015; A. D. White et al., 2011; Zailan, 2001). For this reason, various studies have suggested that multi-dimensional performance measurement in property management should be focused to ensure the efficiency and effectiveness of the PH operations (Flynn, 2007; Lam, 2008; Nath & Sharma, 2014; Postnikova et al., 2021; Puspitarini & Akhmadi, 2019; Walker, 2001).

Despite the proliferation of research on performance measurement, few studies have examined the trend and the performance measurement indicators in public housing over the years. Furthermore, previous studies in PH Malaysia have focused on identifying problems with property management issues (Hashim et al., 2015; Jabatan Perumahan Negara, 2017; Sulaiman et al., 2016) rather than proposing strategies for improvement. Thereby, to address the gap, this paper examined the trend of PH performance measurement practices in the property management context through an extensive literature review (LR). Besides, an interview was conducted with zone managers of the PH department from DBKL to understand the current management operation and performance measurement practices in Malaysia. The structure of this paper starts with an introduction and the rationale of PH performance measurement studies. This is followed by the methodology which explains the approaches used. Then, the outcome of the LR and the interview is presented. Finally, an insightful discussion and conclusion are provided.

## **THE RATIONALE FOR PERFORMANCE MEASUREMENT IN PUBLIC HOUSING**

PH property management issues can be categorised into maintenance management issues, tenancy management issues, financial management issues, and social management issues. In detail, maintenance management issues include inadequate building and facilities maintenance (Xu & Luo, 2021). Besides, the

continual rise and the unaffordable property price in the market have led to tenancy management issues (Azmi & Bujang, 2021; Cagamas, 2013; Nasir et al., 2022). In detail, inequitable allocation unit of PH, illegally subletting to third parties, and low tenancy turnover rate (Bo, 2012; Li et al., 2017; Xu & Luo, 2021; Zeng et al., 2017). Further, financial management issues that arise in PH include lack of operation and maintenance funding (Tu, 2017), insufficient funds generated by rental income to cover operating and capital expenses (Kushendar et al., 2021; Tu, 2017), and tenants who under economically disadvantaged group tend to default their rent payments and management fee (Luo et al., 2020). On top of that, social issues in PH include vandalism and high crime rates (Xu & Luo, 2021). These highlighted property management issues degrade the fairness, efficiency, and effectiveness of the operation in PH.

In searching for solutions for improving property management issues in PH, performance measurement plays a vital role. However, according to previous studies, PH lacks specific approaches that clearly define each function or activity of the management within the operation in PH (Postnikova et al., 2021; A. D. White et al., 2011). This further increased the difficulty of performance measures implementation and the performance indicators identification for PH (Johnsen, 2005; Modell, 2005; Nath & Sharma, 2014). Thereby, this paper is guided by these research questions- What is the trend of performance measurement studies in the context of PH? What are the current management operation and performance measurement practices in PH Malaysia?

This paper examines the trend in property management performance measurement for PH and highlighted the current management operation and performance measurement practices in PH Malaysia to provide insights as well as directions for future research. Understanding where the focus of performance measurement studies in PH can provide insights into the types of performance measurement used based on the suitability and nature of the property management activities. This paper is critical to support those PHs that are searching for better approaches to evaluate the performance in property management activity.

## **METHODOLOGY**

A qualitative research approach is adopted in this study. First, an extensive LR was conducted to identify the trend of performance measurement studies in the context of PH. This is followed by the interview conducted with zone managers and the head of the sales department from DBKL to examine the current management operation and performance measurement practices in PH Malaysia.

## **TREND OF PERFORMANCE MEASUREMENT PRACTICES IN PUBLIC HOUSING**

To answer the first research question, this paper has examined the trend of PH performance measurement practices through an extensive literature review. The trend of the performance measurement practices in PH is presented based on the studies' objectives and the property management activities involved. The study's objectives are divided into problem identification (PI), framework development (FD), and comparison and evaluation (CE).

The problem identification studies focus on examining flaws and issues within current performance measurement practices. For example, the study from Nath & Sharma (2014) investigates the outcome of the performance measurement system (PMS) application in Vale. In detail, the study shows that the PMS provides substantial advantages to the five departments in PH and has avoided the complexity by being confined to some common indicators. However, the organisation has admonished PMS for not improving operational efficiency and the organisation's efforts have shifted away from the initial goal of serving underprivileged people who were locked out of the Fijian housing market. Besides, in Smith & Walker (1994) study, the adopted performance indicators were found to be inappropriate with a greater emphasis on the input indicators (economic efficiency) rather than the overall effectiveness. As a result, the performance measurement outcomes only reflect on partial picture, leading to the inability of the management authorities to justify the effectiveness of property management activities. Both studies, which aim to identify problems, have proposed some solutions to the existing problems. For example, Smith suggested relevant performance indicators which are seen as tools for evaluating the local authority housing management while Nath suggested the employment of critical theories to highlight the identified issues.

On the other hand, the framework development studies focus on performance indicator identification and performance measurement framework development. In general, most studies measure the management activities' performance based on tenant satisfaction parameters. This is because the survey-generated metrics through measuring satisfaction are less problematic than the 'cost' measures. The 'cost' measures metrics are too broad and complex to provide insight into the differences in housing management resources input, which results in little practical value (Pawson et al., 2015). Besides, for indicators selection during framework development, several studies demonstrated the use of factor analysis for selecting indicators through principal component analysis (Huang & Du, 2015) and partial least squared structural equation modelling (Postnikova et al., 2021). The factor analysis identifies the factors, also known as the indicators by looking at the statistical relationship between the indicators based on the outcomes using questionnaires data. In the study by Huang & Du (2015), the principal component analysis using varimax rotation is used to

confirm the indicators to be included in the performance measurement framework. While in the study by Postnikova et al. (2021), the screening of performance indicators are based on four assessment which includes internal consistency reliability, item reliability, convergent validity, and discriminant validity. However, these methods required huge labour to distribute and collect the results from the large-scale questionnaire surveys. Consequently, the formation of PMS can only be performed for considerably long periods.

Further, comparison and evaluation studies focus on studying the outcome of the performance measured through the application of the developed performance measurement framework. For example, Yan et al. (2021) evaluate the PH objectives by examining tenants' satisfaction regarding housing quality, housing quantity, and willingness to communicate with the PH governance. Besides, in Ibem & Aduwo (2013) study, residential satisfaction of three different modes of housing acquisition such as mortgage, outright purchase, and rental are compared and evaluated. The findings show that satisfaction levels were higher among mortgage holders, followed by outright purchase holders and renters in PH. This has resulted from the cost implications and conditions attached to outright purchase holders and renters in PH. Furthermore, another study aimed to compare and evaluate the residential satisfaction across three types of public housing schemes in China, particularly cheap rental housing, economic comfortable housing, and monetary subsidised housing (Huang & Du, 2015). The findings reveal that the PH allocation scheme greatly influences residential satisfaction and the residents allocated in different housing schemes will eventually be attached to different residential environment problems. As a result, the government should improve the physical environment of PH, the PH allocation, and the social environment to ensure PH's effectiveness.

Based on the extensive LR, this study summarises the performance measurement practices into six main themes and nineteen sub-themes according to the types of property management activities. The six main themes include tenancy management (4 sub-themes), maintenance management (4 sub-themes), building management (2 sub-themes), social management (4 sub-themes), financial management (3 sub-themes), and administrative management (2 sub-themes). The result presented in Table 1 and Table 2 provides a comprehensive overview of the trend of performance measurement in PH management. Table 1 shows the findings of performance measurement studies in PH based on the literature review while Table 2 describes the indicators found from the literature review in detail.

**Table 1:** Literature review summary of performance measurement studies in PH.

Source: Authors (years) - country		Yan et al. (2021) - China	Yuan et al. (2019) - China	Khair et al. (2015) - Malaysia	Postnikova et al. (2021) - Malaysia	Walker & Murie (2007) -UK	Smith & Walker (1994) -UK	Huang & Du (2015) -China	Nath & Sharma (2014) - NZ	Pawson et al. (2015)- AUS	Ibem & Aduwo (2013)- Nigeria	Ukoha & Beamish (1997) - Nigeria	Ilesanmi (2010) - Nigeria	Varady & Carrozza (2000) -US	Greenlee et al. (2018) -US
Main Aim	CE	FD	CE	FD	CE	PI	FD, CE	PI	FD	CE	FD, CE	CE	CE	CE	
Methodology	QT	QT	QT	QT	QT	QL	QT	QL	MM	QT	QT	QT	QT	MM	
Tenancy management	UA	√					√	√							
	TS		√						√	√					
	LT					√	√							√	
	RR										√	√			
Maintenance management	SS	√												√	
	ER			√		√									
	PM					√	√						√	√	
	QP						√			√	√	√	√		
Building management	BD	√		√	√			√			√	√			
	PC	√		√	√						√	√			
Social management	NQ	√						√			√			√	
	SP			√						√	√	√			
	TP						√							√	
	TT									√					
Financial Management	RM			√		√	√			√		√		√	
	OM					√	√		√					√	
	AM								√					√	
Administrative Management	CP			√					√	√		√		√	
	IM		√											√	
CP - Comparison and Evaluation FD - Framework Development PI - Problem Identification QL - Qualitative QT - Quantitative MM - Mixed Method			UA - Unit Allocation TS - Tenant Selection LT - Lettings RR - Rules & regulation SS - Services Satisfaction ER - Emergency repairs PM - Planned Maintenance				QP - Quality performance BD - Building design PC - Physical condition NQ - Neighbourhood Quality SP - Safety performance TP - Tenant participation				TT - Tenants support RM - Rental management OM - Operating management AM - Asset Management CP - Complaints IM - Information management				

Source: Author (2022)

**Table 2:** Detail descriptions of main themes and sub-themes.

<b>Main theme</b>	<b>Description</b>	<b>Sub-theme</b>	<b>Indicators</b>
Tenancy Management	Tenancy management activities cover tenants' selection, eligibility screening, lettings units, and attracting and finding potential tenants.	Unit allocation	Housing availability, Location suitability, Waiting time
		Tenant selection	Household income
		Lettings	Average re-let time, Number of vacant unit, Percentage of dwellings let, Vacancy rate changes, Percentage of unit turnarounds
		Rules and regulations	Satisfaction towards enforcement of rules and regulations
Maintenance Management	Maintenance management activities cover repairs, cleaning services, planned maintenance, corrective maintenance, and responsive maintenance to ensure the building operates and maintains in optimum condition.	service satisfaction	Satisfaction toward maintenance service delivery
		Emergency repairs	Post-occupancy evaluation survey, Number of emergency repairs, Average response time to emergency repairs
		Planned maintenance	Percentage of routine repairs completed within the target timeframe, Proportion of outstanding maintenance work, Timeline improvement in the repairing work
		Quality performance	Satisfaction towards maintenance service quality
Building Management	Building management focuses on building design and physical condition to ensure the building functions in good condition.	Building design	Comfort of tenant (thermal, visual, ventilation, acoustic) Dwelling size (unit, parking, corridor), Locations (access to public amenities and transport), Surrounding site (landscaping, green areas, pollution, land use, natural disaster)
		Physical condition	Quality of the actual living condition (walls, floors, windows, doors, painting, density, privacy, internal and external utility services, structural attributes, fire and plumbing systems)
Social Management	Social management covers the stimulation of tenant participation, neighborhood safety, and social services for residents to fulfil their welfare and non-housing needs.	Neighborhood quality	Tenant Satisfaction towards: Neighborhood safety and security, Percentage of green Quietness, Sanitation
		Safety performance	Tenant Satisfaction towards: Property and life security in the PH area
		Tenant participation	Tenant satisfaction towards the chance of tenant participation in the PH management and decision-making process
		Tenant support	Employment or training Aiding tenants with arrears Supporting tenants in maintaining tenancies
Financial Management	Financial management involved managing financial accounts, budgets, rental collection, and monitoring the	Rental management	Percentage of rental collection, Percentage of rent arrears, Percentage of rent reviews
		Operating management	Operating reserves, Average weekly management cost per dwelling, Total administrative cost to total revenue

	outgoings and the cost of operation.	Asset management	Current asset to current liabilities, Quick asset ratio, Percentage of unexpended fund within the specific period
Administrative Management	Administrative management covers administration services such as helpdesk, customer service functions, and database management.	Complaints	Customer complaint response time, Cases of complaints investigate
		Information management	Availability of the dynamic information management on: Multi-level housing security, management office System that archives for families with housing difficulties, Social credit investigation mechanism that focuses on credibility declaration

Source: Author (2022)

## PUBLIC HOUSING UNDER DBKL MANAGEMENT

PH schemes in DBKL have been categorised into Public Housing (Perumahan Awam or PA) and DBKL's People's Housing Programme (Program Perumahan Rakyat or PPR). To be specific, there are two types of PPR housing programs, namely “PPR Disewa” (PPR Homes for rent) and “PPR Dimiliki” (PPR homes for ownership). The PH in DBKL is geographically distributed into 4 zones, as illustrated in Figure 1. A total of 63 PH projects have been developed by DBKL which comprised both PA and PPR projects. Based on Figure 1, zone 1 and zone 4 have the highest number of PH projects with a total number of 18 PH projects each, while zone 2 and zone 3 have 16 and 11 PH projects respectively.

The detailed information on the PH under DBKL management is presented in Table 3. On top of that, a total of 60957 housing units are developed and divided into two main categories, for rent and for sale. The proportions of the for rent units comprised 61% (37410 units) while for sale units comprised 39% (23547 units). In detail, for rent units in zone 1, 2, and 3 covers 62% (10200 units), 73% (13497 units), and 56% (7561 units) while for sale units covers 38% (6187 units), 27% (4898 units), and 44% (5822 units). However, in zone 4, the proportion of for sales housing units is larger as compared to for rent units, with 52% (6640 units) against 48% (6152 units).

Besides, based on the occupancy rate, the occupied unit stands at a higher percentage (97%) as compared to the vacant unit (3%). In detail, the occupied unit in zone 1 to 4 comprised 98%, 97%, 96%, and 98% as compared to the vacant unit where only 2%, 3%, 4%, and 2% are available for the applicants in PH. Meanwhile, among the total number of tenants in PH, 15% of tenants are found to be categorised under the disability and senior citizen categories. In detail, a total of 1294 tenants (1%) have been found under the disability category in Zone 1 to 4 and 19763 tenants (14%) are found under the senior citizen category.



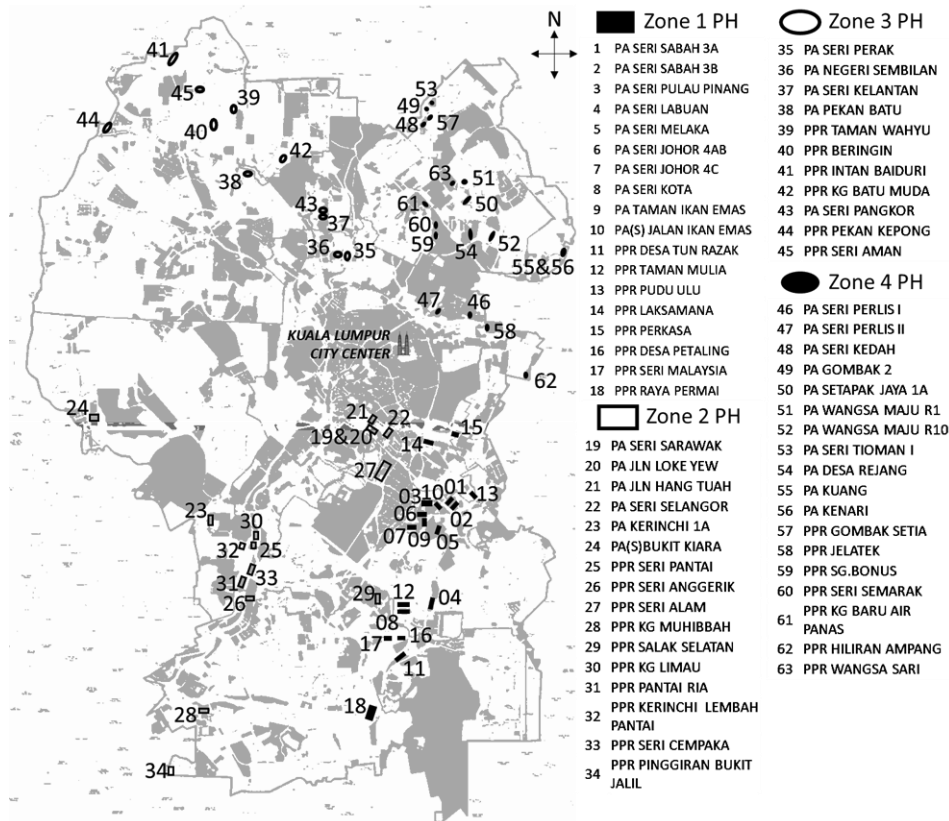


Figure 1: Geographical distribution of the PH under DBKL management.  
Adapted source: City Planning System (CPS) by DBKL, (2022)

Table 3: Summary of PH under DBKL management.

	Zone 1	Zone 2	Zone 3	Zone 4	Sum Total
<b>Number of PH</b>					
PPR	8	10	7	7	32
(PPR/Total)	(44%)	(63%)	(64%)	(39%)	(51%)
PA	10	6	4	11	31
(PA/Total)	(56%)	(38%)	(36%)	(61%)	(49%)
<b>Total</b>	18	16	11	18	63
(Total/Sum Total)	(29%)	(25%)	(17%)	(29%)	
<b>Number of units</b>					
For Sale	6187	4898	5822	6640	23547
(Sale/Total)	(38%)	(27%)	(44%)	(52%)	(39%)
For Rent	10200	13497	7561	6152	37410
(Rent/Total)	(62%)	(73%)	(56%)	(48%)	(61%)
Occupied unit	10044	13062	7238	6059	36403
(Occupied/Rent)	(98%)	(97%)	(96%)	(98%)	(97%)
Vacant unit	156	435	323	93	1007
(Vacant/Rent)	(2%)	(3%)	(4%)	(2%)	(3%)
<b>Total (Sale + Rent)</b>	16387	18395	13383	12792	60957

(Total/Sum Total)	(27%)	(30%)	(22%)	(21%)	
<b>Number of tenants</b>					
Disability (Disability/Total)	337 (1%)	464 (2%)	191 (1%)	302 (2%)	1294 (1%)
Senior Citizen (Senior Citizen/Total)	6773 (11%)	6328 (25%)	3,535 (7%)	3,127 (26%)	19763 (14%)
Others (Others/Total)	52073 (88%)	18961 (74%)	43562 (92%)	8704 (72%)	123300 (85%)
<b>Total</b> (Total/Sum Total)	59183 (41%)	25753 (18%)	47288 (33%)	12133 (8%)	144357

Source: Sales department in PH under DBKL as of December 2021.

## MANAGEMENT OPERATION AND PERFORMANCE MEASUREMENT PRACTICES IN PUBLIC HOUSING MALAYSIA

The outcome of the interview answers the second research question by providing insights of the current management operation and performance measurement practices in PH Malaysia. As mentioned, the PH programs under DBKL comprise of for sales and for rent schemes. These housing programs are open for eligible low-income buyers and renters to apply through the Computerized Open Registration System (SPT).

At the ministerial level, the Housing Management and Community Department (HMCCD) are responsible for managing the operation and management of PH under DBKL. The visions of HMCCD are (1) to provide efficient and effective services for the prosperity of the city and (2) to ensure a prosperous community in the urban. Meanwhile, the missions of HMCCD comprised of (1) creating a better urban community by delivering quality and excellent public services and (2) creating excellent and quality service delivery through integrated planning and implementation between the organization and the citizens of the city.

To achieve the visions and missions of the HMCCD, two different types of management are assigned in PH, particularly PPR under full management by DBKL and the mixture of management by both DBKL and Joint Management Body (JMB). Figure 2 shows the organisational structure of the PH property management divisions under full management by DBKL under the governance of HMCCD. For the mixed management by both DBKL and JMB, the JMB is formed to manage the cleanliness within the PH only. Based on Figure 2, the management operation is divided into different units following the property management activities.

On the other hand, the current performance measurement practices in PH have been discussed during the interview session with zone managers. The outcome of the interview shows that the current performance measurement practices among PH are available but minimal. Particularly, only one indicator is

being measured each in both tenancy and administrative management. In detail, the indicators are “tenancy allocation must carry out within fourteen working days after the repairs are completed” for tenancy management and “The feedback towards the complaints must be responded no later than three days from the date of complaint receipt and follow up until the complaints are resolved” for administrative management. With only two indicators available in the current performance measurement practice, it is not sufficient to provide an overview of the performance of property management in PH. This is further supported by the zone manager during the interview, where he highlighted the need to have a comprehensive performance measurement practice that covers a broader range of indicators based on property management activities as performance measurement practices are important to provide greater interest to the general public.

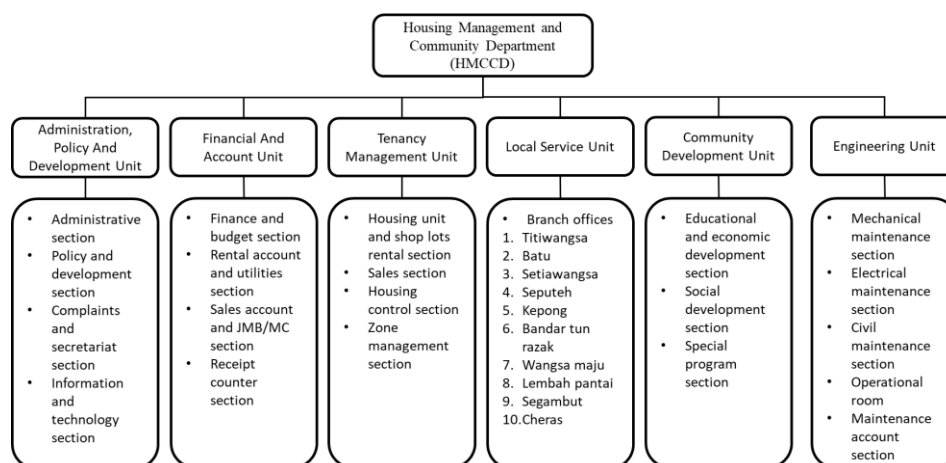


Figure 2: Organisation structure in HMCCD.

Source: HMCCD, DBKL, 2022

## DISCUSSION AND CONCLUSION

The trend of the performance measurement studies in PH shows the importance and the applicability of the performance measurement framework for comparison and evaluation, and the outcome of PH performance could bring important insights for future improvement regarding housing allocation schemes and the building environment. Generally, most of the studies focus on measuring tenant satisfaction with different property management activities. However, tenant satisfaction shouldn't be the central focus of performance measurement practice as tenants may have little experience or knowledge in some property management services or may not have experienced the management activities provided for a considerable time (Clapham, 1992; Wei & Wang, 2021). Besides, several studies also concluded that satisfaction could not truly measure the quality of services

(Ma & Yang, 2019). In future studies, other performance measurement practices such as benchmarking with indicators, critical success factors, and service quality assessment (SERVQUAL) are suggested.

Based on the summary of the PH under DBKL management, future studies are suggested to focus on the rental scheme as this scheme comprised a higher percentage (61%) as compared to the sales scheme (39%). The targeted tenants for the rental scheme are also the more vulnerable ones in terms of housing affordability. Besides, future studies are suggested to focus on improving the facilities and fulfilling the needs of the senior citizen and disability groups as they formed a total of 15% among all tenants in the PH under DBKL management.

On top of that, based on the outcome of the interview with the zone managers, further work is required in developing a well-structured performance measurement framework that focuses not only on tenancy and administrative management but also on other property management activities. Based on the LR presented in this paper, the property management activities that involved six main themes and subsequent nineteen sub-themes are suggested as the guidelines on the indicators required for the performance measurement framework development. Further, the structure of the performance measurement indicators is suggested to translate into a system with input, throughput, output, and outcome to rationalise the complexity of what needs to be measured. A comprehensive performance measurement framework could improve the efficiency and effectiveness of the operation in PH without overburdening the government so that the public resources could be more efficiently utilised. The property measurement framework is also essential to better reflect on the performance in PH Malaysia and aids in performance monitoring for future strategy development and improvement.

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