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FACTORS AFFECTING HOUSING MAINTENANCE COST IN PENANG, MALAYSIA: APARTMENT IDAMAN LAVENDER 3, IDAMAN LAVENDER 4 AND TUNAS RESIDENCE IN PENANG

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ABSTRACT

Housing is a basic need for all. The increasing number of population and income had an increase in housing demand. Thus, it has led to the construction of apartments to meet the needs of people and to reduce the use of land to build residential buildings. From year to year, maintenance costs of the building have increased. It is important to determine the factor that influences the housing maintenance cost of the apartment. One way to do it is by ensuring the maintenance cost of housing such as apartment residence maintenance is reduced. This study is to determine key factor that affect housing maintenance cost. The first objective of this study was to identify the factors that affect housing maintenance cost in Penang, the second objective was to rank the factor that affect housing maintenance cost in Penang and the last objective is to propose the recommendations on the factors identified which affect the housing maintenance cost. To achieve the objectives of the study, the questionnaires were distributed to the parties involved in the maintenance management of the building. A total of 50 questionnaires were distributed to relevant respondents such as building managers or supervisors, and maintenance management staff. In total, 30 completed questionnaires formed a database for descriptive and ranking analysis. Results of this study concluded that there are five dominant factors that affecting housing maintenance cost which are high expectations from tenants, building services, vandalism from tenants, inability to access the property or housing facilities and delay and failure reporting the problems from the tenants.

Keywords: Maintenance Cost, Apartment, Tenants

1.0 INTRODUCTION

The increase in demand for housing and the lack of land for the construction of landed residential properties in major urban areas in Malaysia such as Penang, Kuala Lumpur, has led to the rapid development of high-rise residential schemes in high density areas. Every apartment requires building maintenance to ensure the building is in good condition. To execute building upkeep assignments productively, a legitimate building support plan and observing framework is vital. According to Francis (2001), building support administration is an operation which includes the connection or mix of specialized, social, legitimate and financial determinants that oversee and deal with the utilization of structures. From a Malaysian context, the maintenance cost for housing schemes is known as the building maintenance fund or management fund (Act 663, 2007 and Act 318, 2008). The Joint Management body or Management Corporation administered and controlled the finances for every housing scheme. The Joint Management body involves the developer and purchasers. To maintain the common assets or building to an acceptable standard or excellent condition is the main objective of the Joint Management body or Management Corporation. According to Rydell (1970), maintenance and operating expense are one of the major components of housing cost in Malaysia. Basically, the type of housing such as a condominium, apartment, flat and others depends on the maintenance, and operating expense contributes one-third to one-half of the total cost. Nowadays, an issue about the housing maintenance costs management in Malaysia is often discussed due to the continuous increase in housing maintenance costs.

2.0 LITERATURE REVIEW

Quality of maintenance activities often affects the housing maintenance cost. The quality is also influenced by the amount of budget allocation in each task. Sufficient financial is needed for maintenance work to have good maintenance actions and to sustain the required standards of buildings. Poor maintenance management practices are neither cost-effective nor optimum, and often cause a lot of problems, such as defective buildings, poor building functionality and others. According to Ali (2009) maintenance management or operations management are utilised to convert input consisting of humans, capital, electricity, materials and technology into outputs (goods and services). The operational and maintenance cost components of condominiums consist of capital expenditure along with salaries, insurance fees, taxes, utility fees, management expenses, administrative, marketing and contract service prices and repair/maintenance prices. Operational and maintenance expenses of the condominiums are the prices associated with day-to-day restore, preventive and development work. The related day-to-day influences the direct cost of items required for maintenance consisting of material, labour, plants and tools as well as day-to-day its indirect fees such as management costs and administrative and overhead costs needed for the successful completion of the work (El-Haram and Horner, 2002).

3.0 METHODOLOGY

District of Penang was taken as a case study. The study area covers an area of Sungai Ara and Bayan Lepas only. In this area there are about one hundred and twenty apartment units, however the focus is only on medium cost apartment (property unit value more than RM100,000) residential buildings, which are managed by an official management body or committee. The apartments selected consist of apartments Idaman lavender 3, Idaman Lavender 4 and Tunas Residency. In addition, the buildings needed have a minimum of four storeys and completed between 1992 and 2011. This study used quantitative method (questionnaire survey) and qualitative method (structured interview). The questionnaire survey consists of Part A and Part B. Part A describes about the demographic profile of the respondents and Part B consists of the question on factors affecting housing maintenance cost of apartments in Penang. Five main variables of maintenance cost factors were asked to respondents. The five variables include building characteristic factors, tenant factors, maintenances factor, political factors and others. A total of 50 questionnaires survey form were distributed to all building manager, building supervisor, maintenance management staff or person that have experienced in maintenance of housing especially in apartments who can provide valuable information related to factors affecting housing maintenance cost of apartments. The structured interview also was conducted to measure the level of agreement by expertise on recommendation proposed by the researcher based on the factors that have been identified. All the data from the questionnaire survey were statistically analysed with Statistical Package for Social Science (SPSS) version 22. Two types of analysis were used, namely descriptive mean and ranking. First analysis was to derive the mean score of every variable. Second analysis was to rank the variables according to the most influential factor affecting the maintenance cost in the buildings.

4.0 ANALYSIS AND FINDINGS

Table 1: Total number of respondents

Position	Lavender 3	Lavender 4	Tunas Residence	Total Respondents (Frequency)	Percentage
Building Maintenance Manager	1	1	1	3	10%
Building Supervisor	1	2	1	4	13.33%
Maintenance Staff	8	7	8	23	77%

Out of 50 questionnaires survey form, only 30 respondents (60%) participated in the survey. Table 1 shows the number of respondents. Although the response rate in this study was low (30%), it was considered acceptable. The researcher found that there were twenty (20) variable factors that affect the housing maintenance cost of an apartment. The twenty (20) variables then grouped into five main factors such as building characteristics, tenants' factor, maintenance factor, political factor and other factors.

Table 2: Factors affecting housing maintenance cost

MAIN GROUPS	VARIABLES
Building Characteristics	<ul style="list-style-type: none"> -Age of building -Building height, area and size -Type of structure -Building Services -Building materials
Tenant Factors	<ul style="list-style-type: none"> -High expectations form tenants -Improper use of housing facilities -Vandalism from tenants -Delay and failure reporting the problems from the tenants -There is the inability to access the property or housing facilities
Maintenance Factors	<ul style="list-style-type: none"> -Poor workmanship -Poor quality of spare parts and materials -Poor maintenance management -Budget constraint -Failure to execute maintenance at the right time -Poor budgetary control
Political Factor	<ul style="list-style-type: none"> -New health and safety regulations -Poor management decision system
Other Factors	<ul style="list-style-type: none"> -Third party vandalism -Poor or lack of training of maintenance personnel

Factors that affect the maintenance cost of an apartment is summarised in Table 2. Table 3 shows the highest and lowest mean and standard deviation score which represented the factors affecting housing maintenance cost. The most influential factor was determined by referring to the standard deviation (SD). Figure 1 to Figure 5 show the data which have been analysed using Statistical Package for Social Science (SPSS) version 22. For this paper, the researcher only highlights the top five variables factors that affect housing maintenance cost of apartments. The highest rank is a high expectation from the tenant, and the lowest rank is new health and safety regulations.

Table 2 shows high expectation from tenants does affect the housing maintenance cost. This gives the impression that the tenants' expectations have made the most impact on the maintenance cost of high rise building. The factors that influence the demand is due to the increment of tenant's demand towards better lifestyle and living environment. Thus, it has led to an increment in maintenance requirements and maintenance costs. Other than that, it may also due to the maintenance activities that were not stated in the contract between the tenant and the local authorities (owner). Therefore, it is proven that high standards of expectation from tenants and residents are likely to increase the maintenance cost. Building services is the second rank of the factors that affect maintenance cost of high rise buildings. Hence, the planned maintenance of building services is necessary in order to prevent the poor implications of building services failure (Lam, 2001).

In addition, vandalism from tenants was ranked as the third factor that affect the maintenance cost of apartments. As indicated by Olubodun and Mole (1999), vandalism is one of the factors that cause the defects on building parts. In Malaysia, it is discovered that Kuala Lumpur City Hall (DBKL) spent RM 2.5 million exclusively to repair broken lifts and it was said that 95% of the broken lifts were caused by

vandalism. Besides that, inability to access the property or housing facilities was the fourth - ranked factor. The occupants or tenants were not allowed by the maintenance staff to access to their house due to their privacy. Several tenants may not permit the maintenance staff from accessing their house to carry out maintenance works or tasks because of cultural issues. Next, delay and failure reporting the problems from the tenants was ranked the fifth of factors that affect the maintenance cost of apartments. Early reaction to the building failure is important to reduce the maintenance cost. In any case, early response to the building failure or defects is impossible if there is a delay and failure in reporting the problems. Figure 6 shows the percentage for the level of agreement by expertise on the recommendation given on factors identified by the researcher which is to achieve objective 3 in this study. Based on the data analysis, it was found that all of the respondents (100%) agreed to answer yes on the recommendations given through structured interview as shown in Table 4.

Table 3: Rank factors affecting housing maintenance cost of an apartment

No.	Factors Affecting Maintenance cost of Apartments	Mean	Standard Deviation (SD)	Rank
1	Age of Building	4.367	0.765	13
2	Building height, area and size	4.200	0.750	17
3	Type of structure	4.367	0.765	14
4	Building Services	3.967	1.231	2
5	Building Materials	4.067	0.913	7
6	High expectations from tenants	4.667	1.821	1
7	Improper use of housing facilities by tenants	4.167	0.749	18
8	Vandalism from tenants	3.867	1.221	3
9	Delay and failure reporting the problems from the tenants	3.767	1.111	5
10	Inability to access the property or housing facilities	3.833	1.189	4
11	Poor Workmanship	4.333	0.752	15
12	Poor quality of spare parts and materials	4.467	0.775	11
13	Poor maintenance management	4.567	0.785	10
14	Budget Constraint	4.167	0.749	19
15	Failure to execute maintenance at the right time	4.433	0.771	12
16	Poor budgetary control	4.200	0.751	16
17	New health and safety regulations	3.067	0.679	20
18	Poor management decision system	4.600	0.789	9
19	Third party vandalism	4.033	0.922	6
20	Poor or lack of training of maintenance personnel	4.000	0.821	8

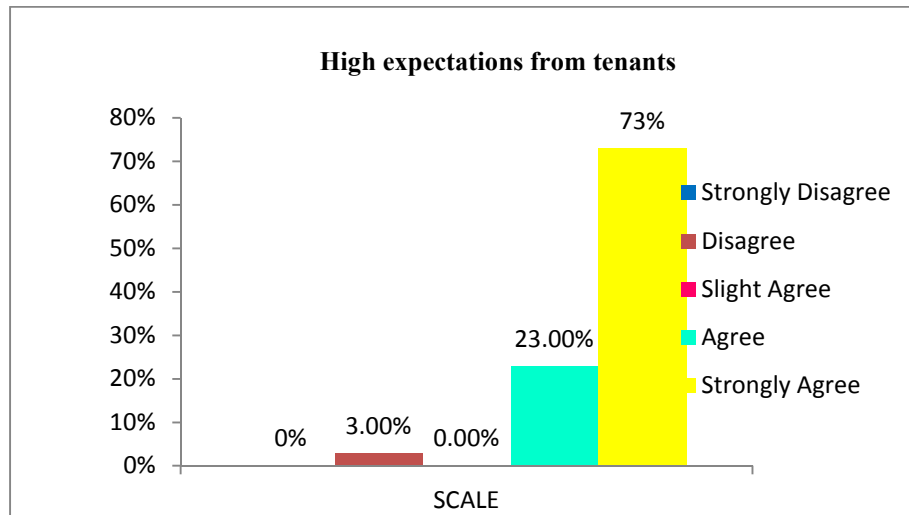


Figure 1: Percentage of high expectations from tenants

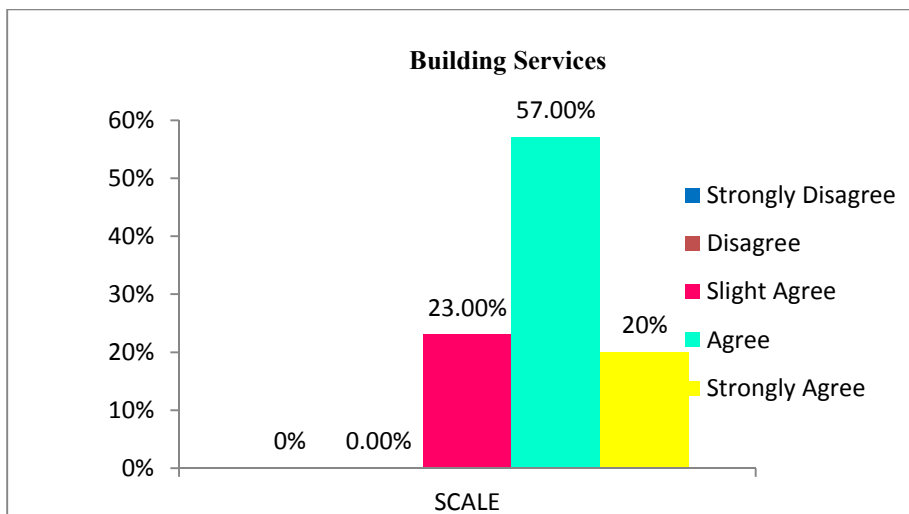


Figure 2: Percentage of building services

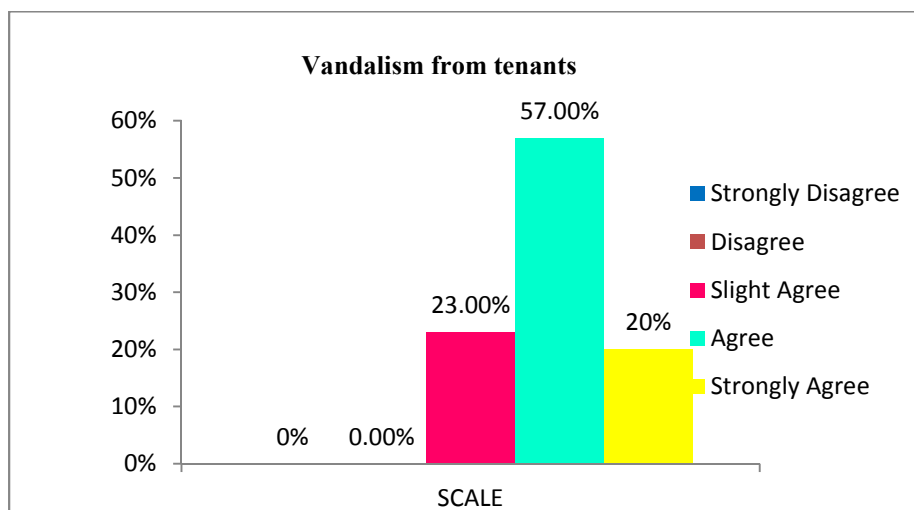


Figure 3: Percentage of vandalism from tenants

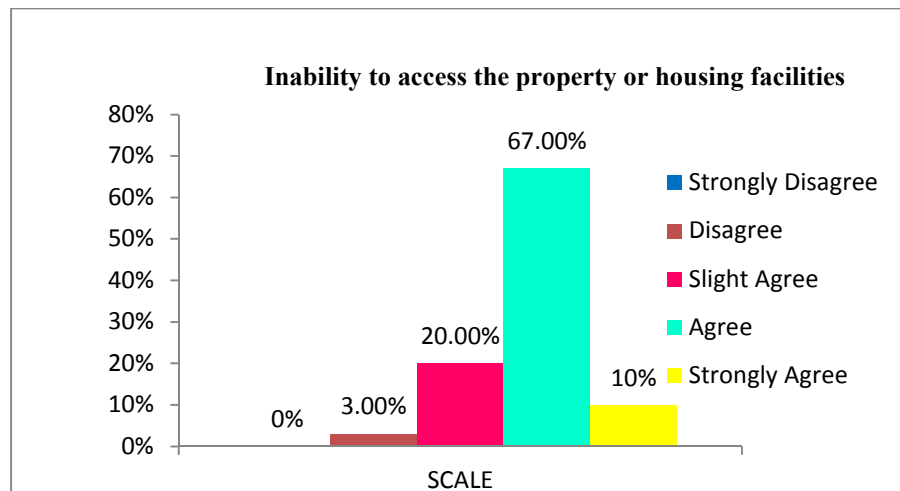


Figure 4: Percentage of inability to access the property or housing facilities

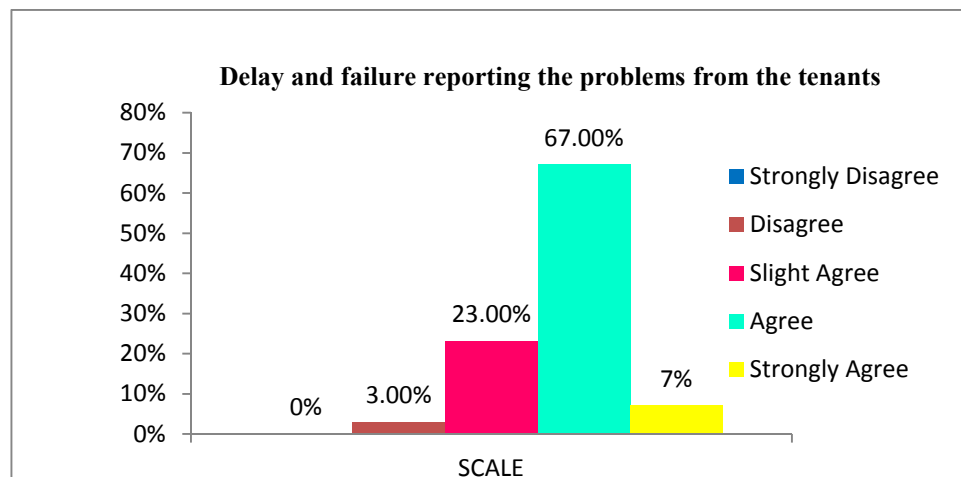


Figure 5: Percentage of delay and failure reporting the problems from the tenants

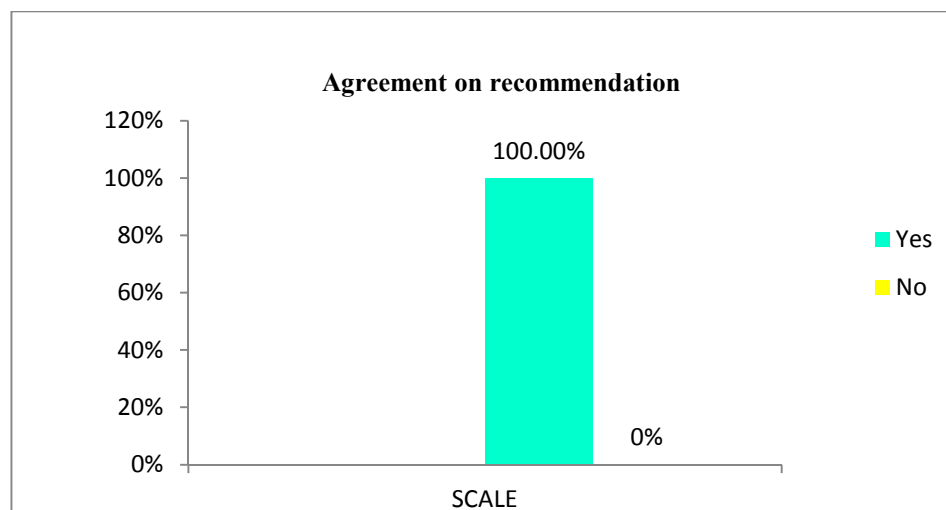


Figure 6: Percentage of agreement by expertise on the suggested recommendation

Table 4: Agreement of suggested recommendation in minimizing maintenance cost by experts

No	Recommendations	Agreement by Expert A, B,C, D & E	
		Yes	No
1	Tenants and residents should also participate in housing management work	√	
2	Introducing property operating manuals and rules to residents and tenants including educating them how to use it	√	
3	Effective maintenance management by following the maintenance policy	√	
4	Allocating balance budgets in every maintenance task	√	
5	Maintain and repair on urgent and on time tasks before further implication or defect occurs	√	
6	Adapting preventive maintenance	√	
7	Ensuring all residents or tenants to pay the maintenance fee on time	√	
8	Employing minimum but optimum labour and staff with acceptable qualification standards	√	

5.0 CONCLUSIONS

This research provides valuable information related to the maintenance cost of apartment buildings. The costs of maintaining a building always become an issue to management and owner of the property. Therefore, steps should be taken or made to reduce the maintenance cost of high rise building. All parties should give cooperation in overcoming the problem of increasing maintenance cost. In conclusion, this research shall give the benefits to many related parties such as developer, maintenance department of the building, where it would help the developer and maintenance department to understand the factors affecting maintenance cost apartment. The developer will also know how to improve their services that affect the maintenance cost of the apartment and indirectly minimize the maintenance cost of their building. Hence, it will reduce the maintenance cost when they manage the high rise building such as condominium, apartment and others building. The government body can refer to the factors affecting maintenance cost of apartment that have been identified to calculate the budget that needs to be allocated for maintenance activity. Other than that, they can improve their performance on maintaining work and try to reduce all problems immediately before the problems might become serious and rapidly increase the cost for repairing. Lastly, this research is also valuable to the build owners and tenants. They will know why the housing maintenance cost is different every year and they will take further action in reducing the cost for maintenance.

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