MEDIATING AND MODERATING EFFECTS OF MANAGEMENT SERVICES ON THE RELATIONSHIP OF HOUSING PERFORMANCE AND STRATIFIED RESIDENTIAL SATISFACTION

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by

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LIST OF ABBREVIATIONS

AARS   Average adjusted R-squared

AGM   Annual General Meetings

APC   Average Path Coefficient

ARS   Average R-squared

AVIF   Average block VIF

BOVAEA   *Board of Valuers, Appraisers, Estate Agents, and Property Managers*

GoF   Tenenhaus GoF

IAQ   Indoor Air Quality

KPKT   *Kementerian Perumahan dan Kerajaan Tempatan*

MC   Management Corporation

MS   Management Services

NLBCDR   Nonlinear bivariate causality direction ratio

POE   Post Occupancy Evaluation

PPA1M   *Perumahan Penjawat Awam 1 Malaysia*

RMMJ   *Rumah Mampu Milik Johor*

RS   Residential Satisfaction

RSCR   R-squared contribution ratio

RSI   Residential Satisfaction Index

RUMAWIP   *Rumah Wilayah Persekutuan*

SDG   Sustainable Development Goals

SPNB   *Syarikat Perumahan Negara Berhad*

SPR   Sympson's paradox ratio

SPSS   Statistical Package for the Social Sciences

SSR   Statistical suppression ratio

LIST OF APPENDICES

KESAN PENGANTARA DAN PENYEDERHANA PERKHIDMATAN PENGURUSAN TERHADAP HUBUNGAN PRESTASI PERUMAHAN DAN KEPUASAN KEDIAMAN BERSTRATA

ABSTRAK

Prestasi bangunan kediaman kos sederhana merosot berikutan banyak aduan yang dilaporkan setiap tahun dalam memenuhi permintaan untuk kepuasan kediaman. Pada masa yang sama, peranan perkhidmatan pengurusan yang boleh mempengaruhi hubungan prestasi perumahan dan kepuasan kediaman juga masih tidak jelas dan meyakinkan. Selain itu, kebanyakan kajian tertumpu kepada perumahan kos rendah dan kajian adalah terhad dalam meneroka isu bangunan kediaman bertingkat kos sederhana. Oleh itu, kajian ini bertujuan untuk mengkaji faktor prestasi perumahan yang mempengaruhi kepuasan kediaman di samping mengambil kira peranan perkhidmatan pengurusan sebagai pengantara dan penyederhana. Pendekatan deduktif digunakan dalam reka bentuk penyelidikan korelasi dan pengumpulan data adalah melalui pengedaran borang soal selidik secara bersemuka. Kajian ini menerapkan pendekatan persampelan kebarangkalian dengan pengumpulan maklumbalas sebanyak 434 dengan kadar maklumbalas sebanyak 80.3%. Data yang diperoleh dianalisis menggunakan statistik deskriptif (skor min) dan pemodelan persamaan struktur sekurang kurangnya kuadrat. Hasil kajian ini menunjukkan bahawa responden sedikit berpuas hati dengan skim perumahan. Ketiga-tiga (3) faktor prestasi perumahan mempunyai kesan signifikan terhadap kepuasan kediaman dengan kesan positif bagi keselesaan dan fungsi perumahan dan kesan negatif untuk kejiranan perumahan. Penemuan ini juga menunjukkan bahawa perkhidmatan pengurusan sebahagiannya menjadi perantara bagi hubungan fungsi perumahan dan kepuasan kediaman. Selain

itu, terdapat kesan penyederhanaan yang tinggi dari perkhidmatan pengurusan terhadap hubungan kejiranan perumahan dan kepuasan kediaman. Kajian ini akan menyumbang pengetahuan tambahan kepada pengurusan perumahan terutamanya bangunan kediaman bertingkat tinggi mengenai pentingnya prestasi perumahan dalam merancang strategi yang lebih baik untuk keadaan perumahan bagi mendapatkan kepuasan kediaman yang tinggi. Selain itu, penemuan ini selari dengan Matlamat Pembangunan Mampan (SDGs) dalam menggalakkan kesejahteraan dan kehidupan sihat terutamanya untuk kumpulan berpendapatan sederhana dan ke bawah. Penemuan kajian ini juga akan membantu kerajaan Malaysia dan agensinya mengetahui berkenaan dengan keadaan perkhidmatan pengurusan, terutamanya bangunan kediaman bertingkat tinggi bagi membolehkan mereka merumuskan dasar yang sesuai yang dapat mendorong pengurusan perumahan untuk memberikan perkhidmatan yang terbaik kepada pengguna.

MEDIATING AND MODERATING EFFECTS OF MANAGEMENT SERVICES ON THE RELATIONSHIP OF HOUSING PERFORMANCE AND STRATIFIED RESIDENTIAL SATISFACTION

ABSTRACT

The performance of medium cost residential buildings is deteriorating due to many complaints reported every year in fulfilling the demand for residential satisfaction. At the same time, the role of management services that can influence housing performance and residential satisfaction relationships also remains unclear and inconclusive. Moreover, most of the studies centered attention on the low-cost housing, and limited studies explored the issue in the context of medium cost high-rise residential buildings. Therefore, this study aims to investigate the housing performance factors influencing residential satisfaction while also considering the role of management services as mediator and moderator. The deductive approach was employed in conjunction with a correlational research design and data gathering via face-to-face survey distribution. This study collected 434 usable responses with an 80.3% response rate by implementing a probability sampling approach. The obtained data were analysed using descriptive statistics (mean score) and the partial least squares structural equation modelling. The study show that respondents were slightly satisfied with the housing scheme. All three (3) housing performance factors significantly affect residential satisfaction with positive effects on housing comfort and function and adverse effects of housing neighbourhood onto residential satisfaction relationship. The findings also indicate that management services partially mediated the housing function-residential satisfaction relationship. Besides, management services have high moderating effects on housing neighbourhood and

residential satisfaction relationships. This study will contribute the added knowledge for housing management of high-rise residential buildings regarding the importance of housing performance for better plans and strategies in handling the housing condition to pursue high residential satisfaction. Also, these findings parallel with Sustainable Development Goals (SDGs) in promoting healthy lives and well-being, especially for middle-income and below. Besides, the results of this study will assist the Malaysian government and its agencies in understanding the current situation of management services, especially for medium cost high-rise residential buildings. Besides, this study helps formulate appropriate policies that will encourage housing management to provide a high quality of services for their end-user.

CHAPTER 1

INTRODUCTION

1.1 Introduction

Housing is one of the significant sectors contributing to the nation's economic development. In general, having a house fulfils human's fundamental needs and over time it becomes a valuable asset that significantly influences one's social well-being (Baqutaya, Ariffin, & Raji, 2016). Additionally, most individuals view housing as a place that provides comfort and peace that satisfies their essential requirements (Bujang, Zarin, & Jumadi, 2010). Housings also meet the fundamental needs of its occupants with a variety of services such as sufficient water and electricity, good roads, access to health services, and school (Clement & Kayode, 2012).

Nowadays, housing plans should not only concentrate on creating new dwelling units but also strategise on how to maintain the quality of the current stock (Ozdemir, 2002). Ibem and Amole (2011) supported this statement and indicated that reasonable endeavours in maintaining the existing stock need to be considered in enhancing the quality of houses. Therefore, the excellent condition of the current house stocks is crucial in providing many benefits to the end-users.

The quality of the houses should be excellent in order to satisfy the occupant. The owner or tenants will appreciate the superb performance of their residence in uplifting their quality of life. Therefore, this research will present the residential satisfaction (RS) assessment, housing performance factors, housing performance and residential satisfaction relationship, and the management services role as mediator and moderator between housing performance and residential satisfaction relationship.

This chapter will elaborate on the issues related to this research topic and justify the need to conduct a study. Therefore, Section 1.2, Section 1.3, Section 1.4 and Section 1.5 discuss the study background, problem statement, research questions, and research objectives, respectively. The following Section 1.6 and Section 1.7 further elaborate the research scope and the significance of the study. Finally, the outline and organization of the thesis's chapters are presented at the end of Chapter 1, in Section 1.8.

1.2   Background of the Study

Housing has become a significant concern for all human beings around the world as it is a reflection of the wellbeing and prosperity of a country. Along with being the indicator of life's wellbeing, housing offers protection as well as an opportunity for the construction sector's growth, creating employment, and contributing to capital expansion.

Housing demands is expanding due to urbanization phenomenon (Masram & Misnan, 2019). Urbanization generally refers to the growing number of people living in urban areas than in rural areas had contributed to the development in terms of populations and the cities (Shang & Chen, 2018). This phenomenon also causes increased land demand for residential, industrial, transportation and commercial transformations (Franco, Mandla, & Ram Mohan Rao, 2017).

Urbanization and industrialization are the two (2) main housing demand push factors in urban areas, especially from the lower and middle-income groups (Yusof & Razali, 2004). Due to this scenario, the housing requirement in urban neighbourhoods needs to be developed to cater for the increasing number of people migrating from rural into urban areas. By 2020, housing demands are expected to increase to 75% due

to the urbanization phenomenon (Masram & Misnan, 2019). The forecast is accurate with the expansion of housing development to meet the demand of all income levels. Still, the Covid-19 pandemic has harmed Malaysia's housing industry (Jagun, Nyakuma, Daud, & Samsudin, 2022) as it requires 6 to 24 months to recover in 2022 (K. Tee, 2021).

In Malaysia, housing development started from the establishment of New Economic Policies (NEP) in 1970 to change the residential patterns stereotype of ethnic groups in the country. As mentioned before, the rapid rate of migration from rural areas, especially by Malay citizens to urban centres in the 80's has led to a rise in the demand for affordable housing in most cities (Olanrewaju & Tan, 2018; Sivar & Kasim, 1997). This urban expansion has also attracted a large group of young people to move to urban centres with the hope of being more secure in life (Fielding, 1992; Shang et al., 2018).

This housing development success is reflected by the housing development statistics, showing as the second-largest contributor to the gross output of the construction sector with RM50.5 billion (24.7%) (Department of Statistic Malaysia, 2019). This statistic proved that Malaysia's development in the housing sector has its own demand from time to time.

Even Malaysia is not spared in this housing and homeownership issues. These issues were studied to embrace the problems mentioned and adapted to suit Malaysia's context (Abujrad & Hassan, 2017; Hong, 2013; Masram & Misnan, 2019; Tobi, Jasimin, & Rani, 2020; Yusof & Razali, 2004). Based on a literatures review and investigation, it is clear that the housing issue continues to impede the growth of several cities in the country, specifically related to the shortage of affordable housing,

particularly for low- and middle-income groups (Kamal, Lai, & Yusof, 2020). The increasing price of houses offered is highly perceived as a burden to buyers, especially for low-income and middle-income households (Khazanah Research Institute, 2014; Olanrewaju, Lim, Tan, Lee, & Adnan, 2018). Table 1.1 shows the increment in housing prices for Malaysia based on housing types (NAPIC, 2020b).

Table 1.1 :   Housing Price for All Housing Types

Types	Price (RM)		
	2010	**2019**	**2020**
Terrace	188,207	392,392	400,252
High-rise	173,713	341,337	400,252
Detached	381,512	668,736	661,623
Semi-Detached	378,294	665,231	661,178
All House	217,857	427,165	429,877

To ensure adequate housing supply, the government's involvement or engagement is necessary to guarantee housing supply is sufficient and proportionately allocated among the ethnics group and socioeconomic levels. Under the Seventh Malaysia Plan (1996-2000) and Eighth Malaysia Plan (2001-2005), the Malaysian government has devoted to providing appropriate, reasonable and affordable accommodation for all Malaysians, but the supply is still not up to par with the demand from low and middle-income groups.

Therefore in 2018, the National Housing Policy (NHP) was launched to provide adequate and good quality housing complete with comprehensive facilities and a conducive environment. The accommodation will increase people's ability and accessibility to own or rent houses while establishing future directions to guarantee the

housing sector's sustainability (National Housing Department, 2018). Until today, government and private sectors collaborate to provide adequate and quality affordable housing around the country, which is one of the six focuses of the Livable Malaysia agenda and parallel with the 12th Malaysia Plan (Economic Planning Unit, 2021).

Housing in Malaysia is being developed in line with the goals of 2030 Agenda, which meant to be achieved between 2020 and 2030 (United Nations, 2020). Therefore, the objective is a successful housing development with the mission of sustainable development to provide adequate shelter for everyone and developing housing that improves people's quality of life whilst protecting the environment. To address the housing issue, especially for low and middle-income groups, Federal and State Governments have introduced various programmes and incentives to encourage these income groups to own a house.

The federal government had launched several affordable housing programmes such as Perumahan Penjawat Awam 1 Malaysia (PPA1M) for civil servants by Perbadanan Putrajaya, My Home Scheme under Ministry of Urban Well-being, Housing and Local Government, Rumah Mampu Milik (Affordable House) by Syarikat Perumahan Negara Berhad (SPNB) and Perumahan Rakyat 1 Malaysia or 1 Malaysia People Housing (PRIMA) and Federal Territory Housing or Rumah Wilayah Persekutuan (RUMAWIP).

These housing programmes give Malaysian citizens from low and middle-income groups a chance in owning their own house. Apart from that, State governments are also keen to provide an affordable housing scheme for their citizens. Rumah Selangorku in Selangor, Perumahan Mampu Milik in Pulau Pinang and Rumah Mampu Milik Johor (RMMJ) in Johor are among the states vigorously developing

affordable housings for low and middle-income groups. Housing projects driven by joint ventures between the government and the private sector are in high demand by many as they are relatively affordable (J. Liu & Ong, 2021).

Many housing programmes by the government are strata properties rather than other types due to the increasing price of land, especially in urban areas. Land scarcity and strata properties have become the new lifestyle trends in urban areas. The development of strata properties will also accommodate slums relocation, providing decent and adequate homes, especially for low-income people (Wahi, Mohamad Zin, Munikanan, Mohamad, & Junaini, 2018). Besides, living in stratified or strata properties or high-rise developments has been an ordinary lifestyle in some of Malaysia's cities since the 1990s (Shuid, 2016).

However, the construction of high-rise housing in urban areas for this income community does come with its own collection of concerns. Housing maintenance, administration, and anti-social activity issues are also concerns that the government should resolve (Shuid, 2016). According to Hashim, Samikon, Nasir, and Ismail (2012), the housing program's performance indicator does not only rely on the number of units completed but also on the other performance indicators. Previous studies mentioned that residents have many complaints regarding the condition of the building, housing needs, comfort, social, cultural and religious needs (Abd-Wahab, Sairi, Che-Ani, Tawil, & Johar, 2015; Karim, 2012). Besides, residents are also dissatisfied with the technical and physical aspects of their houses (Oh, 2000).

Evaluating resident's satisfaction is crucial as indicated by Mohit, Ibrahim, and Rashid (2010) that residential satisfaction to be measured to the extent of whether or not the residents are satisfied with their present housing conditions. Salleh (2008)

supported this statement by expressing that if the housing conditions are adequate in meeting residents' needs and expectations, such assessment may indicate a feeling of contentment and absence from any reported complaints by residents.

Concerning this current situation, the question needs to be answered by the researcher: does the housing development in Malaysia being performed well enough and satisfy the residents who own or rent and live in the house?.

1.3   Problem Statement

Sustainable Development Goals (SDG), established in 2015, pointed out the urgency of ensuring cities and human settlements that include safety, resilience and sustainability, are to be achieved by 2030 (United Nations, 2016). These include providing appropriate, safe and affordable housing for everybody, offering essential services like sustainable transport systems, expanding public transportation, and enhancing road safety.

Other than that, SDG are intended to provide safe, inclusive and accessible, green and public spaces, exceptional attention to air quality, waste management, participatory of people towards the management and sustainable human settlement planning (United Nations, 2016). This aspiration emphasized that on top of competing for outstanding development growth in every industry, the housing sector also needs to ensure that the housing performance is considered to make the world a better place to stay.

In Malaysia, the government and the private sector have established many public programs to meet the needs of low and middle-income groups. Citizens appreciate this move to meet housing supply and demand, but it will better benefit

residents if housing provides them with a better quality of life with excellent housing performance. The residents are the one who will use and live in the property after its completion and the most critical factor that can be used as a benchmark of a building's success in meeting the design objectives is the level of user satisfaction (Wilkinson, Reed, & Jailani, 2011).

Stevenson and Leaman (2010) revealed that residents are the receiver of the construction hierarchy that would consequently spend their lives on the decisions and the creations of designers, architects, planners, and consultants. Unfortunately, a limited number of organisations were requested to determine whether the building complies with the standards, even though the greatest reviewers of a building are the residents who are there every day (Barrett & Baldry, 2003).

Therefore, the first and foremost issue for this research is related to residential satisfaction. According to Seshadhri and Paul (2017), residential satisfaction reflects the degree to which the residents felt that their housing assists them in meeting their goals. Residential satisfaction also describes a resident's assessment of their living environment based on their desires, wishes, and accomplishments (Amerigo & Aragones, 1997).

Previous studies mentioned that residential satisfaction comprises three main perspectives, which are purposive, aspiration-gap approach and cognitive, affective and conative dimensions (Amole, 2009b). From these three perspectives, residential satisfaction (RS) with cognitive, affective, and conative aspects are more comprehensive (Emami & Sadeghlou, 2020). This statement is also supported by Yu and Dean (2001), Najib, Yusof, and Osman (2011) and Cho (2020), suggesting residential satisfaction to include these three components.

According to Stauss and Neuhaus (1997) and Yu and Dean (2001), numerous previous studies on satisfaction have exclusively concentrated on the cognitive component, excluding the affective and conative components. Besides, less attention has been paid on the conative component in the perspective of residential satisfaction (RS) (Emami & Sadeghlou, 2020). Therefore, this study fills the gap in determining residential satisfaction by including cognitive, affective and conative components, as suggested by Guido Francescato, Weidermann, and Anderson (1989), Amole (2009b), Najib, Yusof, and Abidin (2011) and Cho (2020). There are four (4) components related to RS, which are overall satisfaction, duration of stay, retention and recommendation. Therefore, this triggered the first question of this research, **'To what extent is the residential satisfaction among residents in the housing area?'.**

Nowadays, performance has become an essential element in all sectors, including the construction industry. Bakar (2008) argued that the quality of construction, including housing, is vital nowadays, as the owners' concern on how the goods are delivered to them has increased. According to Kim, Yang, Yeo, and Kim (2005) and Fatoye and Odusami (2009), one of the approaches taken to enhance a building's overall performance is exploring and comprehending users' demands, expectations, and hopes through ongoing performance evaluation. Housing performance evaluations require an appropriate indicator, and the idea of satisfaction has been the most widely used indicator (Adriaanse, 2007; Ibem, Opoko, Adeboye, & Amole, 2013).

Usually, people expected and demanded their houses to be easy to occupy, cost-effective, run efficiently and become valuable properties (Douglas, 1996). Buildings that do not function as expected are becoming less tolerable to users. Besides, buildings lost their value and risked becoming outdated when their potential

and reputation are threatened by painful and ill-health conditions, unnecessary expense, or resource depletion. Douglas (1996) also mentioned that the actual building performance degrades over time due to various factors such as climatic conditions, insufficient maintenance, user abuse or misuse, wear and tear and so on. Therefore, housing also needs to perform in order to lessen the dissatisfaction among the residents.

There are many reviewed studies mentioning the problems of housing performance in the housing sector. In Nigeria, the leading cause of mortality among young children is concealed casual factors such as inadequate housing (Afolabi, Clement, Ekundayo, & Dolapo, 2012). Oh (2000) mentioned that the middle-income households in Bandar Baru Bangi were pleased with the size and cost of their houses but unsatisfied with the plumbing and the kitchen. Mohit et al. (2010) discovered that Malaysian housing residents are not satisfied with their housing features and minimally satisfied with the public and neighbourhood services. Another study discovered that residents are dissatisfied with some of their house sections, such as the kitchen, dining space, living areas, and also components of housing support services such as the corridors, fire fighting facilities, the lift and its lobby, the cleanliness of drains and garbage collection services (Mohit & Nazyddah, 2011).

Ibem and Amole (2011) observed that people in Nigeria remains to live in substandard and unhealthy housing conditions and are less concerned for the safety of the occupants. Besides, Nigerians who reside in the country's institutional housing complain regarding high number of maintenance backlogs and the unresponsiveness of management (Oladapo, 2006). Li and Siu (2001) also discovered that the majority of residents in Hong Kong public housing are unsatisfied with the maintenance services provided by their buildings' facility management.

The issues of housing performance also need to be explored due to the increasing complaints in Malaysia strata management reports. Selangor and Kuala Lumpur recorded the highest cases compare with other states from January until September 2019 (KPKT, 2019b). This statistic shows that there are many problems related to strata management, especially in the Klang Valley area. Therefore, the government and the private sector need to develop comprehensive action and solutions to solve this issue.

The above scenario proved that although there are many housing buildings built to cater for citizens' demands, housing performance is still an issue that needs to be resolved. Busacca and Padula (2005) mentioned that when the performance scores increase, satisfaction will also proportionally increase. Therefore, there is an urgency to study the housing performance factors leading to residential satisfaction in the study area.

Additionally, fewer researches on residential housing performance were published in journals compared to other types of buildings (Djebarni & Al-Abed, 2000; Stevenson & Leaman, 2010). In Malaysia, there was an increasing number of studies covering housing sectors such as public housing (Abdul-Rahman, Wang, Wood, & Khoo, 2012; Hashim, Samikon, Ismail, & Ismail, 2015; Ramli, Akasah, & Masirin, 2013; Tee & Yahaya, 2011; Yusof, Abidin, & Najib, 2013) and private housing (Azian, Yusof, & Kamal, 2020; Kong Sia, Wong Chin Yew, Yong Lim, & Dongqing, 2017; Musa et al., 2020; Nagatijo, Nizam, & Jupri, 2017; Rahman, Hussain, Uddin, & Islam, 2015; Salleh, 2008; Waziri, Yusof, & Salleh, 2013) but the indicators for housing performance factors are still not clear and were studied separately. This situation resulted in a lack of knowledge, discussion, and debate about how houses, especially

high-rise residential buildings, operate in the presence of other variables, which might have served as a guide for future improvements.

Furthermore, only a few studies have been conducted relating to the combination of housing performance factors (Esruq-Labin, Che-Ani, Tawil, Nawi, & Othuman Mydin, 2014; Gopikrishnan & Topkar, 2015; Hashim et al., 2012; Ibem et al., 2013; Jiboye, 2011; Kim et al., 2005; Seshadhri & Paul, 2017). Besides, in Malaysia's context, most housing performance researches are related to low-cost housing developments (Mohit et al., 2010; Salleh, 2008), and there is little effort to research on medium cost housing (Teck-Hong, 2012).

According to NAPIC and COB statistics, there are 139, 354 units of medium cost housing in three capital states with enormous high-rise residential development (Commissioner of Building, 2020). Table 1.2 shows the details of medium cost housing in every Capital State.

Table 1.2:   Population for Medium Cost High-Rise Residential Buildings

Types/ State Capital	Shah Alam	Penang	Johor Bharu
Medium cost high-rise residential buildings	33,587 unit	78,939 unit	25,095 unit

(Commissioner of Building Department, MBSA, MBPP and MBJB, 2020)

As mentioned by Aziz, Hanif, and Kuppusamy (2011), Baqutayan (2016) and Zainon, Mohd-Rahim, Sulaiman, Abd-Karim, & Hamzah (2017), medium cost housing should be given emphasis and more in-depth study as this housing type is often occupied by the middle-income group and below, who are also contributors towards country's development. Therefore, their welfare and contentment in the living environment must be given priority to ensure equality in all planned development.

High-rise residential property is distinct from other types of property. The building of a housing unit on a single lot is the primary distinction between high-rise residential and landed property. The peculiarity of high-rise residential may be apparent when the property is managed once it has been occupied (Che-Ani et al., 2010). Management services are essential for the housing sector, especially for high-rise residential buildings. As mentioned in the Strata Management Act 2013, the Management Corporation (MC) needs to manage its common area after the developer handed over the responsibility to them. They are responsible for the common area within the housing and need to manage the account as the maintenance fund is essential to run the operations (SMA, 2013). Aside from that, research on the performance that leads to satisfaction theory relation to high-rise residential buildings is scarce.

Thus, this research aims to fill the gap in this area to enhance the knowledge related to housing performance factors and at the same time improve the quality of living for residents of medium cost high-rise housing in the future. Therefore, this triggered the second question of this research, **'Which of the housing performance factors significantly affect the residential satisfaction in high-rise residential buildings?'**.

In concordance, this study's third and fourth issues concerning the mediating and moderating effects of management services (MS). Previous studies showed that management services positively influence housing performance, at the same time impacting on residential satisfaction. Varady and Carrozza (2000) opined that tenants rated reasonable satisfaction towards housing physical condition and management services in their study. Also, satisfied homeowners of low-cost housing in Klang Valley with their dwellings and neighbours are indicating satisfaction on the relationship with the management (Ariff, 2018). Musa et al. (2020) also revealed that

management services have a good reputation given by the residents in medium cost vertical residential buildings in Klang Valley. In single-mother households study in South Korea, management services also become an essential predictor for residential satisfaction (Cho, 2020).

On the other hand, management services also negatively impact on housing performance and residential satisfaction relationships. Che-Ani, Jamil, Zain, Mohd-Nor, & Mohd-Tawil (2009) discovered that majority of residential high-rise buildings were not being properly managed with inadequate facility management, including malfunctioning lifts, irregular garbage collection, and vandalism-related damages. These indicate that many buildings were managed by incompetent management. This situation will cause harm to residents as mentioned by Leung, Yu and Chow (2016) that good management is considered to be crucially important in improving the quality of life (QoL).

Additionally, Tiun (2009) addressed a lack of care related to building management and maintenance difficulties, a lack of responsibility of property managers, insufficient laws, and property management and maintenance professionalism. Also, in Che-Ani et al. (2010) findings, management became more ineffective and revealed the residents were less satisfied in every criterion of sustainable housing indicators managed by Management Corporation (MC). Azali, Mohsin and Rahman (2020) supported these findings by mentioning that inefficient staff affects work performance quality and subsequently causes ineffective management services. This situation is due to the MC's staff's assumption that their contribution is based on voluntary work without any specific goals and objectives. Additionally, management services in high-rise residential buildings inefficiently manages repair costs or utility charges (Suffian, 2013).

The above contradictory findings imply that MS have a heterogeneous impact on the relationship between housing performance factors and residential satisfaction. The importance of considering alternative explanations for management services' role in facilitating housing performance is also being emphasized.

Additionally, Memon et al. (2019) stated that a moderator might determine whether a variable becomes an antecedent (independent variable) that has been examined in previous research or a contextual element that is proven to be important across several fields of study. Most of the previous studies assumed management services as one of the factors influencing residential satisfaction. Jiboye (2009) suggests management services as one of the factors related to housing satisfaction. This statement is supported by Ariff (2018) and Abidin, Abdullah, Basrah, and Alias (2019), suggesting management factor is essential in evaluating residential satisfaction. Besides, in the students housing context, Amole (2009b) and Khozaei, Hassan and Khozaei (2010) opined that students' satisfaction includes management services as a factor. Musa et al. (2020) also suggested that the management needs to act as a mediator to manage any problems within the buildings.

Previous studies indicate conflicting results on management services effects in relation to the housing performance factors and residential satisfaction relationship. Therefore, this triggered the need to fill the gap by investigating the mediating and moderating effects of management services on housing performance and residential satisfaction relationship. A model was developed and tested, integrates the management services as a mediator and moderator of the housing performance-residential satisfaction relationship.

So, these issues urged the researcher to develop the third and fourth research questions; **'Does management services help to mediate the relationship between housing performance factors and residential satisfaction?' and 'Does management services moderate the relationship between housing performance factors and residential satisfaction?'.**

1.4   Research Questions

Based on the above statement of problems, this study will evolve around answering these questions;

1)   To what extent is the residential satisfaction among residents in the high-rise residential buildings?

2)   Which of the housing performance factors significantly affect the residential satisfaction in high-rise residential buildings?

3)   Does management services help to mediate the relationship between housing performance factors and residential satisfaction in high-rise residential buildings?

4)   Does management services moderate the relationship between housing performance factors and residential satisfaction in high-rise residential buildings?

1.5   Research Objectives

In accordance with the previously stated context and problem statement, this study aims to investigate the housing performance factors influencing residential satisfaction by taking into account the role of management services as mediator and

moderator. To achieve the aim mentioned above, the following objectives were forwarded;

1) To identify residential satisfaction in the high-rise residential buildings.

2) To identify the significant relationship between housing performance factors and residential satisfaction in high-rise residential buildings.

3) To examine the mediating role of management services on the relationship between housing performance factors and residential satisfaction in high-rise residential buildings.

4) To investigate the moderating role of management services on the relationship between housing performance factors and residential satisfaction in high-rise residential buildings.

1.6   Scope of The Study

This research covers the evaluation of housing performance related to residential satisfaction. As mentioned before, the Malaysian government has developed many high-rise residential buildings to cater for citizens' demands, especially for the low and middle-income groups. Therefore, this study selects the medium cost high-rise residential buildings in three (3) cities in Malaysia: Johor Bharu, Johor, Penang Island, Penang and Shah Alam, Selangor.

There are some defined criteria in selecting the case study. First is that these three (3) cities were chosen based on similar total area between the cities (Johor Bharu: 220km², Shah Alam: 290km², Penang: 293km²) (Li & Ling, 2018; Schneider, 2018). The second criterion is that these states recorded a high number of cases registered in the Tribunal for Strata Management by state statistics for January - September 2019

(KPKT, 2019b). Also, the third criterion is these states have a high number of high-rise residential buildings recorded by the Commissioner of Building (KPKT, 2019a).

To address the research questions and accomplish the research objectives, the study area has been set up to focus on the three (3) performance factors, which are housing comfort, housing function and housing neighbourhood. The respondents in this study include the owner and tenants of medium cost high-rise residential buildings, recorded by the Commissioner of Building at every state. Besides, this study only focuses on residents who live in medium cost high-rise housings that had already established their Management Corporation (MC).

This research did not examine the engineering performance of buildings, including structural stability, system integration, and durability. It only assessed performances from the residents' perspective regarding their satisfaction towards housing comfort, housing function, and housing neighbourhood. This study also considers management services' role as mediator and moderator between housing performance and residential satisfaction relationship.

1.7   Significance Of The Study

The findings of the research are helpful in many aspects. This study depicts Malaysia's property situation to a worldwide perspective. With so many implementations and proposal requirements that must meet in line with the Sustainable Development Goals (SDGs), each country developed its own approach to fulfilling the need. As a result, this study will assist other countries in understanding the various situations and regulations in Malaysia's scenario which are involved in achieving those goals.

Second, the findings will give insight regarding housing quality in supporting the initiative by the government on Twelfth Malaysia Plan, which is to provide quality and affordable housing for Malaysians, particularly the B40 and M40 groups. The current housing condition will allow the government to implement the proposed plan.

Third, this study beneficial to the government and the private sectors. Exploring housing performance indicators gives a more comprehensive understanding of housing performance which can influence residents' satisfaction. The findings provided the latest perspective on medium cost high-rise residential buildings' actual performance, especially for Johor Bharu City Council, Shah Alam City Council and Pulau Pinang City Council generally for upcoming new housing developments.

Fourth, the findings help the Management Corporation (MC) of high-rise residential buildings to identify the important housing performance factors. Management for high-rise residential buildings can refer to the results and list out the essential factors for medium cost housing to increase residential satisfaction.

Fifth, the introduction of management services (MS) as mediator and moderator in this study helps to understand the conflicting issues related to their role in the relationship between housing performance and residential satisfaction. As such, it facilitates the management with the needed information on how they can effectively manage the housing and surrounding area to maximise residents' satisfaction levels.

Sixth, an understanding on housing performance is critical for developers and policymakers due to the housing market's strong position as an economic contributor. The real estate developers can provide alternative housing estates that meet prospective occupants' requirements. Residential satisfaction measurements should

also be used as a performance metric in community planning agendas (Mohit et al., 2010).

Lastly, this study also provides added knowledge on the housing performance situation in Malaysia. This research helps other researchers to explore more possible issues regarding medium cost housing, high-rise residential buildings, housing performance, residential satisfaction, and management services. Academicians and researchers will get clear pictures of the current situation to guide future research in housing scope.

1.8   Research Methodology

This study will investigate the housing performance factors influencing residential satisfaction by considering the role of management services as mediator and moderator in medium cost high-rise residential buildings. A quantitative method design will be used to collect quantitative data using a questionnaire survey. The study population is residents living in medium cost high-rise residential buildings in three state capitals (Shah Alam, Penang Island and Johor Bharu).

Additionally, the sampling unit is the owner and tenants who live in medium cost high-rise residential buildings for at least six months. The pre-test and pilot surveys will be carried out, and the results will be utilised to refine and improve the field data questionnaire. Respondents will be selected using stratified random sampling, and the data will be analysed using descriptive, PLS-SEM, mediation and moderation analysis on SPSS and WarpPLS software. A detailed discussion of the research methodology is presented in Chapter 3.

1.9 Thesis Outline

This thesis starts with a general introductory on the elements of the study. This introductory was explained and discussed in Chapter 1. Chapter 1 comprises the chapter's introduction, the background of the study, problem statement, research questions, aim and objectives of the study, the scope of the research and the significance of the study.

In Chapter 2, the relevant literatures for the research and previous studies on the topic were reviewed and presented. These include an explanation of theories of performance and satisfaction, the conceptualization of residential satisfaction, housing performance evaluation, housing performance factors that influence residential satisfaction and the role of management services. Research framework development was also discussed in Chapter 2.

Chapter 3 describes the research methodology. It includes a thorough explanation of the research population, sample size and sampling technique, data collecting instruments, data presentation and analysis methods, as well as reasons for each approach.

Chapter 4 provide preliminary data analysis and model estimation regarding housing performance and residential satisfaction relationship with management services as mediator and moderator. The data analysis is based on four objectives in the research.

Then, Chapter 5 is the discussion on the results in Chapter 4. The discussion will also elaborate on each research objective.

Finally, the conclusion and recommendations are summarised in Chapter 6. A recap of the previous discussion is presented, followed by a summary of the study's major findings to support the research objectives. The implications of the study findings are also presented. Contributions of the study to existing theoretical and practical knowledge in the relevant field are highlighted too. Lastly, limitations of the research and recommendations for future research are mentioned.

CHAPTER 2

LITERATURE REVIEW

2.1   Introduction

This chapter will explore the concrete explanations about housing in Malaysia, housing performance, background regarding housing performance, housing performance factors, residential satisfaction, the relationship between housing performance and residential satisfaction, and management services' role as mediator and moderator between housing performance factors and residential satisfaction relationship. Lastly, the conceptual framework was presented to give a clear understanding of this research.

2.2   Housing

Housing is a broad term that refers to any structure used as a residence. Nevertheless, it is more than just a simple living space and has become life's fundamental requirement, as it offers safety, comfort, and health and well-being (Srivastava, Garg, & Dhagat, 2014). Melnikas (1998) mentioned that housing is recognised as a specific physical place where people and groups can live their lives by receiving services, performing house chores, and other biosocial activities. Additionally, housing has a significant effect on anyone's quality of life, welfare, health and productivity (Ibem & Amole, 2010).

Besides, housing becomes a beneficial shelter to the house owner's stabilization and improvement if the house is fulfilled with each person fundamental needs (Bujang et al., 2010). Ilesanmi (2005) emphasised that housing attains social, physical, psychological, political and economic roles. In physical terms, housing

provides a human's fundamental need for shelter or protection from weather elements and dangerous invaders. Housing carries significant psychological and social importance as a place for better privacy and interaction with other family members, relatives, and associates. In economic terms, housing constitutes a considerable capital expenditure, thus becomes a critical component of the economy. Inevitably, housing becomes a vital necessity for human beings regardless of where they plan to live, and it is a necessity for diverse requirements in order to ensure a healthy and thriving life.

2.2.1 Housing in Malaysia

Housing is essential to the entire process of urban regeneration in the metropolitan environment. In Malaysia, the housing development grew when the Malaysian government encouraged Malays to migrate to urban centers to balance the urban population's demographic, in which the Chinese had typically dominated. People from rural to metropolitan areas urged an increasing housing supply to cater to the demands (Shang et al., 2018). Additionally, the transition of the economy's dependence from formerly agricultural to current services and manufacturing boosts the urban population (Bekhet & Othman, 2017). As a result, this growth scenario necessitates various factors, including housing, services, and infrastructure.

In terms of housing, the government aims to overcome housing shortages in big cities through urban redevelopment and housing revitalization initiatives (Ha, 2008). As stated in the Property Stock Report of First Quarter 2020, there are seven (7) categories of Malaysia's residential property which are cluster, 2-3 storey semi-detached, single-storey semi-detached, detached, low-cost house, single-storey terraced, 2-3 storey terraced and stratified. All these residential property types made up the total development of 5,775,095 units (NAPIC, 2020a) (Table 2.1).