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Occupants' Satisfaction of Serviced Apartments Design: Case Studies in Kuala Lumpur

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Abstract

This paper aims to identify the factors that affect a good serviced apartment design by looking at three (3) parameters which are physical attributes, social needs, and facilities and services through the occupants' satisfaction levels. Despite the increasing number of serviced apartment developments in Malaysia, there has been limited research to analyse occupants' wellness and satisfaction in a serviced apartment to generate a model to guide the service apartments' design and development. The research is conducted using multiple case studies methods through physical observation and questionnaire surveys based on the three (3) parameters mentioned above at the golden triangle area of Kuala Lumpur among three case studies that have been identified. The findings reveal that occupants are generally satisfied with serviced apartments in Malaysia; however, various key components need to be reassessed and improved for future developments in order to serve as a reference for local authorities, developers, and designers to design serviced apartments in the local context from occupant's perspective.

Keywords: Serviced apartment, occupant's satisfaction, physical attributes, social needs, facilities and services

1.0 INTRODUCTION

Changing work culture and globalisation of business worldwide in the 21st century has increased the need for workers to work away from home for a short to a medium period (Tuck, 2017). As the hotel seems too costly for long term travelers, serviced apartments gain popularity due to rapid growth of economic activities and boom of tourists (Exclusive Report: The Rise of Serviced Apartment in Malaysia, 2015). This implies that demand for serviced apartment development in Malaysia compared to the last decade is increasing. Mixed-use developments that come with serviced apartments have become a trend in Malaysia in recent years especially for the young generation, where they can live, work, play, shop, and interact all in one place (Lee, 2018). Despite the rising demands of serviced apartment developments in Malaysia, little research has been done to analyse occupants' wellness and satisfaction for serviced apartment. Thus, this research analyses occupants' satisfaction within local serviced apartments in Kuala Lumpur city center and identifies key factors that can help to improve occupants' satisfaction levels for future serviced apartments in the Malaysian context.

2.0 LITERATURE REVIEW

2.1 Housing in Kuala Lumpur City Centre

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A "Housing Accommodation" includes any building or tenement which is wholly or principally constructed, adapted or intended for human habitation or partly for human habitation and partly for business premises and such other type of accommodation as may be prescribed by the Minister from time to time to be a housing accommodation (Housing Development (Control and Licensing) Act 1966). Kuala Lumpur is Malaysia's capital city situated in the heart of Peninsular Malaysia with 243 kilometre square in area and a population of 1,297,526 people by the year 2000 (Shuid, 2004). Since the year 1984, City Hall of Kuala Lumpur encourages inner-city housing development by private developers that contain medium and high-cost housing to attract more people to live in City Centre (Rahim and Co., 2006). The target population of Kuala Lumpur in the year 2020 is 2.2 million, where development strategy focuses on developments under mixed commercial and residential development by utilising their unique location (Kuala Lumpur Structure Plan 2020).

2.2 Vertical Housing in Kuala Lumpur

Vertical housing accommodation is a tower or point blocks with twenty or more storeys that come with a lift which provides corridors connecting separate dwellings in the same building (Turkington et al., 2004). In the 21st century, the emergence of new building technology merged with an expanding urban population since the 1990s has prompted many big cities to take on high dense housing planning through high rise apartment buildings, encouraging high rise housing to become a residential option in major city regeneration agenda (Chiu, 2003). Technological evolution prompts products like the high-speed elevator to reduce marginal costs of building high rise housing, which soon grows rapidly in cities across the globe and is accepted as a great solution to housing issues in cities (Yuen, et al., 2006). Modular housing blocks bring new modern lifestyle to society in contrast in terms of cultural norms like cohabitation of the nuclear family with 1 or 2 children, reduction in social interaction between neighbors, and differentiation between home and working place (Urban, 2012).

2.3 Serviced Apartment in Malaysia

2.3.1 Features of Serviced Apartment in Malaysia

The serviced apartment has hotel-like service standardised management along with apartment-like administered residence, club, and hotel elements merged in one building developed mainly for rent or investment (Shen Hong, 2013). The building typology of Malaysian serviced apartments is similar to a typical apartment, but are built on a commercial plot with more commercial activities or mix developments (Banoo, 2003). Serviced apartments in Malaysia adopt modern architecture style called Neo-Minimalist Architecture which emphasises design geometric, efficiency, and simple and open plans (Aryani, 2011). Serviced apartments are often located at a strategic location near commercial centers that come with convenient transportation (Shen Hong et al., 2013). Malaysian serviced apartments use aluminum, steel, glass, concrete, and brick as main construction materials with the color range of white with cool grey to black as color tone (Hassan et al., 2015).

2.3.2 Spatial Arrangement in Serviced Apartment

While spatial arrangement in houses is originally spatial realisation of basic human needs, it has developed in modern society into a complex interaction of a multitude of influences subject to various requirements and individual quality standards (Neufert, 2012). Modern space planning of dwelling units demands space and time separation of individual and community interests within the house, also achieving privacy and publicity needs (Toscano & Amestoy, 2008). Traditional common and individual areas seem to have less validity in most serviced apartments in terms of area, but more focus has been put on developing 'multi-purpose room' such as living-working space to suit the current lifestyle (Neufert, 2012).

2.3.3 Common Spaces and Facility

Based on research done by Vanichvatana (2006), the suggested minimum number of facilities to be built in the serviced apartment is 6 to 7 types. Basic amenities provided in serviced apartments are laundry, security guard, swimming pool, satellite or cable, fitness, sauna, and parking. Serviced apartments come with services including 24-hour reception, porterage, maid service, fully furnished rooms and fully equipped kitchen, TV and voicemail, along with additional services which might require additional charges such as a chauffeur-driven vehicle, booking service, meeting rooms, secretarial services, business equipment, babysitting service, chef service, room service, and health clubs (Foxley, 2001). The serviced apartment should also provide room service, business center service, concierge, self-service launderette, cafe, nursery, security, and repair services (Banoo, 2003).

2.3.4 Green Area & Landscaping

Greenspace and landscaping help to take care of residents' recreational activities, encourage community pride in a local community and enable residents to spend their free time locally by decreasing traveling by vehicles (Beer et al., 2003). Greenspaces that are lacking in terms of human ergonomics, sense of secure, user-friendly, and interesting corners, meeting places are some of the bad planning on greenspace (Beer et al., 2003). Good greenspace planning should have more activities of various diversity, enhanced recreational and sports facilities, a safe environment for children to play, and allow residents to conduct social control (Beer et al. 2003).

2.4 Key Factors Influencing Occupants' Satisfaction Level In Serviced Apartments

Residential satisfaction is defined as an emotional response to an individual's place of residence (Francescato & Weidemann, S., 2008). Mohit & Mohamed (2012) highlights that housing satisfaction involves occupant's dwelling, services within the residence area, interaction with neighbours, location of the living unit (Mohit & Mohamed , 2012). Chin-Chun (2003) suggested that physical space, location, neighbour and surrounding conditions are key elements influencing occupants' satisfaction level in the housing area (Chin-Chun, 2003). Toscano & Amestoy (2008) states that individual and household traits, dwelling unit features and community relationships among neighbours are the main contributing factor towards occupants' satisfaction level in housing (Toscano & Amestoy, 2008). Access to transportation, common amenity and physical features influence the housing occupant's satisfaction level (He & Zhao, 2006)

3.0 METHODOLOGY

The study has chosen a multiple case study method as a method of data collection for this research; in which three (3) prominent serviced apartments located in the heart of Kuala Lumpur city center were selected as case studies. Multiple case study has proven to be more extensive in terms of the outcome as it provides better insights towards the observation and strengthens the competencies of the research findings. The case studies chosen were Ascott Kuala Lumpur Serviced Apartment, The Platinum Suites, and Vortex Suites KLCC. All three (3) case studies had similarities in terms of location, facilities, unit sizes, and types, and residential groups. The data collection for this research comes from physical observation on the case studies and survey questionnaire. Physical observation focuses on 3 main components, namely physical attributes (location and context, architectural aesthetics and housing unit), social needs (safety, security and community component) and facilities and services. A sample of 100 households was selected from 3 case studies for survey questionnaires. The 100 household samples were obtained by collaborating with the management of these serviced apartments where they aided in distributing the survey questionnaires to the residents through their respective community channels. In the survey questionnaire, section 1 contains the demographic and social background of residents.

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Section 2 identifies occupants' satisfaction level via 3 main attribute categories — part 1: satisfaction with physical attributes, including location and context, architectural aesthetic and housing unit; part 2: satisfaction with social needs, including safety, security, and community attributes; part 3: satisfaction with facilities and services. Likert scale is used to identify occupant's satisfaction level on serviced apartments. The scale ranged from "1"= very satisfied, "2" = satisfied, "3" = fair, "4" = dissatisfied, "5" = very dissatisfied. The result is analysed based on 3.00 as a mean score which indicates positive satisfaction, scores that fall below 3.00 indicate dissatisfaction. Findings from survey questionnaires are tabulated into graphs and charts for further analysis.

Figure 1: Case study location
Source: Authors, 2020

4.0 FINDINGS

4.1 Physical Attributes Observational Data

Table 2: Physical Attributes

Case Study / Physical Attributes	Ascott Kuala Lumpur Serviced Apartment	The Platinum Suites	Vortex Suites KLCC
Location & Context	Located ten-minutes' walk to Suria KLCC shopping complex. The nearest public transport station available is KLCC LRT Station and Raja Chulan monorail station. The surrounding neighborhood is a central business district. Jalan P.	Situated in Kampung Baru at 7 minutes' drive to Petronas Twin Tower. The closest public transport is Bukit Nanas Monorail station and Dang Wangi Putra LRT station. Local amenities are present around the district. Jalan Sultan Ismail is	Located at Jalan Sultan Ismail at 650 meters away from Petronas Twin Towers. The nearest public transports available are Dang Wangi LRT stations and Bukit Nanas monorail station. The surrounding context of Vortex Suites Residence KLCC is

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	Ramlee and Jalan Pinang are the main road access where traffic is congested during office hours	the main access road where traffic condition is congested during office hours.	central business district with Jalan Sultan Ismail as the main access road.
Architectural Aesthetic	Adopts a modern architectural style identical to most residential apartment buildings in Malaysia. The building consists of 2 towers linked by a central drop off point, surrounded by a ring road access and perimeter green landscape.	Designed as a modern architectural style building which takes up a rectilinear form segmented into 3 main boxes which reduces the mundanity of the simple boxy form. The building sits on top of an 8 storeys carpark podium.	Designed based on a circular floor plan which forms a cylindrical form with central lift core design. Entrance lobby is absent in the building but visitors will arrive straight to the lift lobby which goes up to relative residential floors.
Housing Unit	Housing units are separated into 2 different residences, namely Ascott Kuala Lumpur and Kirana Residence. The building consists of 221 housing units within a 30 floors tower. There are four types of units within the building with built-up area ranging from 613 sq ft to 1,808 sq ft	Designed with 733 units located within a 51 floors tower, 8 floors of parking spaces and 42 floors residential spaces. There are 13 different suites types within the building which are one-bedroom unit, two-bedroom unit and two plus 1-unit with built-up area ranging from 850 sq ft to 1490 sq ft.	Consists of 248 units within a tower of 58 floors. There are five different unit sizes with a range from 731 sq ft. to and 826 sq ft. The tower is designed with a central lift core surrounded by housing units.

Source: Authors, 2020

4.2 Social Needs Observational Data

Table 2: Social Needs

Case Study / **Social Needs**	**Ascott Kuala Lumpur Serviced Apartment**	**The Platinum Suites**	**Vortex Suites KLCC**
Safety and Security The common spaces in the 3 case studies are under 24 hours CCTV surveillance,	Main reception operates at 24-hour at the ground floor and both has natural daylighting and artificial lighting in car park.		Does not have main reception, but uses two-tier lift system with card access. The car park and fire staircase lack natural

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all have security guards and use electronic key card for access			daylighting. There is vandalism at rear gate which enable outsider to trespass through the gate.
Community Aspect	There are 2 management body within Ascott Kuala Lumpur, one by Ascott Kuala Lumpur and another under Kirana Residence. 70% of occupants are short staying occupants and 30% are long staying occupants. The long-term residents are grouped together under the same level for more privacy and interaction	Managed by Platinum Victory Sdn Bhd. Other operators such as The Face Suite and Victoria Home Platinum Suite rented the units from private owners and managed the units individually. Most owners do not live within the building but have rented out their units.	Managed by a few private operators. Due to absence of entrance lobby at ground floor, the residents do not have common space to gather at main lobby, which reduces social interaction at ground floor. Common gathering space is available at level 6 facility level; however, residents are required to pay to enter

Source: Authors, 2020

4.3 Facilities And Services Observational Data

Table 3: Facilities and Services

Case Study / Facilities & Services	**Ascott Kuala Lumpur Serviced Apartment**	**The Platinum Suites**	**Vortex Suites KLCC**
FACILITIES	On-site gymnasium, Jacuzzi, sauna, steam room, outdoor swimming pool, tennis court, surau, children's playground, sky lounge, business center, and convenience store.	Infinity pool, children's wading pool, sky reading zone, café, sky restaurant, multipurpose hall, spa, lounge, sun deck, sky gymnasium and meeting facilities.	Gymnasium, 25-metre lap pool, alfresco lounge, steam and sauna, bar and convenience store.
SERVICES	24-hour reception, airport transfer service, daily breakfast and housekeeping, launderette, shuttle bus, city tour, and	24-hours front desk and security, baggage storage, portable Wi-Fi rental, daily housekeeping, limousine services, laundry, business	Wake-up service, laundry, daily housekeeping, grocery delivery, shuttle service, and luggage storage.

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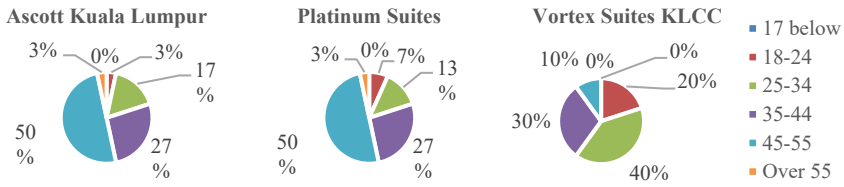
	business center services	center kiosk, delivery menu service, valet parking, grocery delivery, shuttle service and airport transfer.	

Source: Authors, 2020

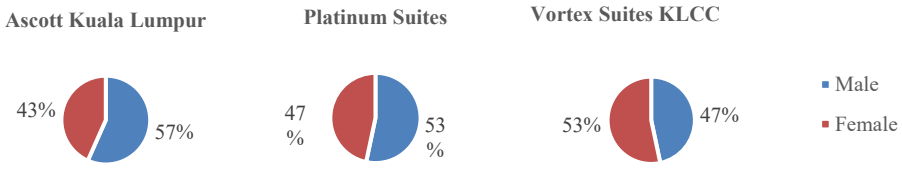
4.4 Survey Questionnaires Result

Section A: Socio-Economic and Demographic Characteristics of Respondents

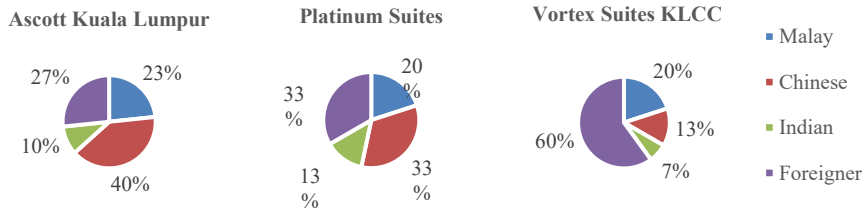
Respondent's Age Gap Category



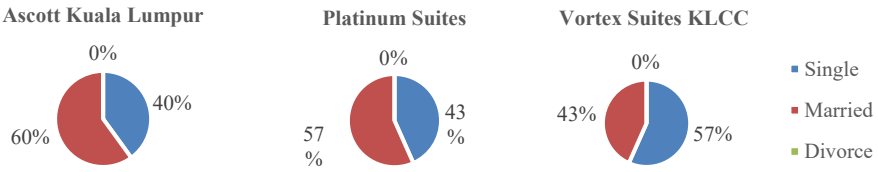
Respondent's Gender



Respondent's Ethnic Decent



Respondent's Marital Status



Length of Stay in Serviced Apartment

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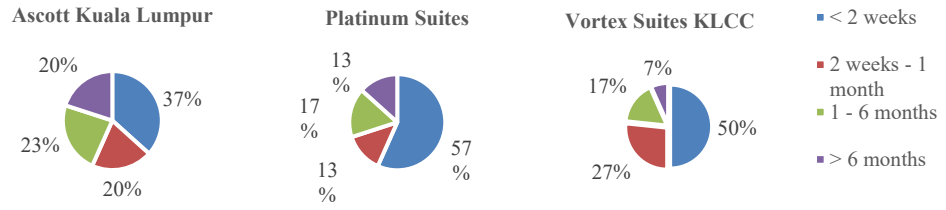
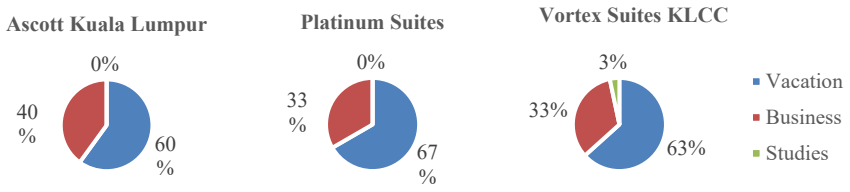
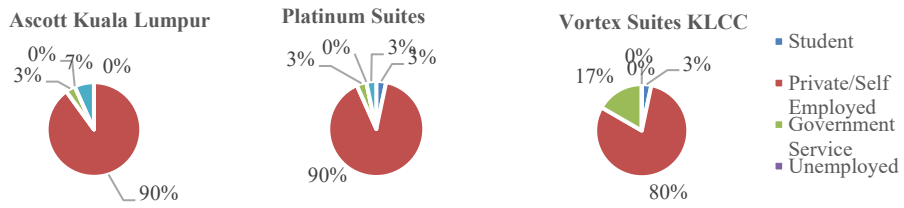


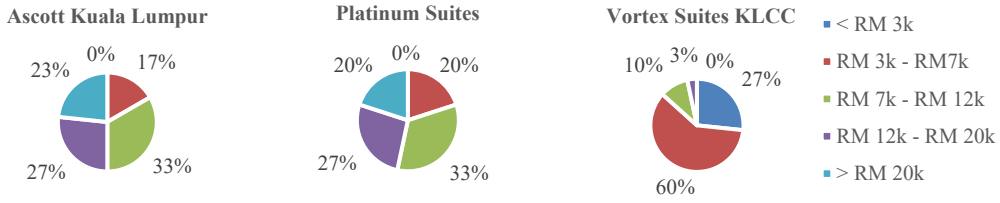
Purpose of Stay in Serviced Apartment



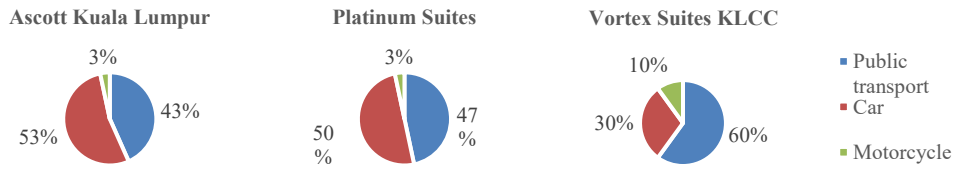
Respondent's Occupation Category



Respondent's Household Income



Respondent's Mode of Transport



Figures 2: Socio-economic and demographic survey on three case studies

Source: Authors, 2020

Section B: Satisfaction Level of Respondents with Serviced Apartment

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Table 4: Satisfaction Level of Respondents survey on three case studies

a) Ascott Kuala Lumpur Serviced Apartment

	1 = Very Satisfied	2 = Satisfied	3 = Fair	4 = Dissatisfied	5 = Very Dissatisfied
Location and Context					
Ease of access to public transport	13%	40%	30%	17%	0%
Surrounding neighbourhood environment	43%	30%	13%	13%	0%
Ease of local amenities around the district	33%	30%	13%	17%	7%
Traffic condition of road access into building	0%	17%	20%	43%	20%
Population density of serviced apartment	20%	37%	10%	23%	10%
Architectural Aesthetic					
External appearance of building	23%	43%	20%	13%	0%
Exterior building colour	17%	23%	40%	13%	7%
Height of building	27%	43%	10%	13%	7%
Personal modification of housing unit (renovation, added plantings, wall painting, etc.)	7%	47%	13%	27%	7%
Common space design (main lobby, landscape, etc.)	20%	43%	0%	20%	17%
Housing Unit					
Unit location within building block	23%	37%	10%	27%	3%
Size of housing unit	10%	67%	10%	7%	7%
Number of rooms of housing unit	40%	47%	3%	7%	3%
Adequacy of air ventilation	13%	70%	13%	3%	0%
Adequacy of natural day lighting	30%	57%	10%	3%	0%
View from windows or balcony	27%	37%	3%	23%	10%
Safety and Security					
Occupant's privacy measures (strangers' control at main lobby, guard house, facility level etc.)	27%	37%	23%	13%	0%
Presence of security guards	33%	30%	20%	17%	0%
Crime prevention system (CCTV, house alarm, card access system, women's parking provision, etc.)	43%	30%	20%	0%	7%
Fire protection system (fire hydrant, sprinkler, etc.)	17%	30%	53%	0%	0%
Lightings adequacy at common area (parking, etc.)	33%	17%	17%	23%	10%
Community Aspect					
Role of management body	50%	27%	13%	10%	0%
Social interaction with community within apartment	0%	7%	13%	37%	43%
Social interaction with immediate neighbours	0%	17%	7%	30%	47%
Relationship with management body	30%	33%	7%	20%	10%
Facilities					
Main lobby and lift lobby design	10%	23%	40%	17%	10%
Green spaces landscaping (ground floor, facility floor, roof top landscape, etc.)	23%	23%	33%	10%	10%
Recreational facilities (gym, swimming pool, etc.)	50%	23%	13%	10%	3%

Public toilet design and cleanliness	7%	30%	7%	33%	23%
Surau design and cleanliness	0%	13%	50%	17%	20%
Vehicles parking facility condition	3%	43%	10%	33%	10%
Convenience store (cleanliness, good varieties, etc.)	0%	10%	17%	43%	30%
Telecommunication transmission (speed, etc.)	23%	40%	20%	10%	7%
Services					
Lift speed and condition	20%	47%	20%	10%	3%
Refuse management system	20%	20%	20%	20%	20%
Staircase condition	3%	27%	60%	10%	0%
Corridor condition	20%	43%	7%	23%	7%
Maintenance of common area and facilities	20%	20%	20%	20%	20%
Reception service	50%	23%	23%	3%	0%
Room cleaning service	27%	33%	23%	13%	3%
Staff service quality	47%	33%	20%	0%	0%

b) The Platinum Suites

Location and Context					
Ease of access to public transport	47%	30%	0%	17%	7%
Surrounding neighbourhood environment	13%	47%	17%	20%	3%
Ease of local amenities around the district	27%	43%	3%	20%	7%
Traffic condition of road access into building	7%	20%	7%	50%	17%
Population density of serviced apartment	23%	43%	17%	13%	3%
Architectural Aesthetic					
External appearance of building	17%	67%	17%	0%	0%
Exterior building color	57%	20%	13%	10%	0%
Height of building	7%	47%	20%	20%	7%
Personal modification of housing unit (renovation, added plantings, wall painting, etc.)	7%	47%	30%	17%	0%
Common space design (main lobby, landscape, etc.)	57%	27%	0%	10%	7%
Housing Unit					
Unit location within building block	40%	37%	10%	10%	3%
Size of housing unit	27%	57%	10%	7%	0%
Number of rooms of housing unit	33%	53%	10%	0%	3%
Adequacy of air ventilation	33%	53%	3%	10%	0%
Adequacy of natural day lighting	47%	40%	7%	3%	3%
View from windows or balcony	50%	40%	0%	10%	0%
Safety and Security					
Occupant's privacy measures (strangers' control at main lobby, guard house, facility level etc.)	57%	17%	13%	7%	7%
Presence of security guards	53%	33%	7%	7%	0%
Crime prevention system (CCTV, house alarm, card access system, women's parking provision, etc.)	67%	20%	10%	3%	0%
Fire protection system (fire hydrant, sprinkler, etc.)	7%	40%	40%	7%	7%

Lightings adequacy at common area (parking, etc.)	47%	23%	10%	10%	10%
Community Aspect					
Role of management body	13%	37%	7%	27%	17%
Social interaction with community within apartment	0%	10%	17%	53%	20%
Social interaction with immediate neighbours	0%	7%	13%	53%	27%
Relationship with management body	7%	17%	17%	53%	7%
Facilities					
Main lobby and lift lobby design	27%	33%	0%	23%	17%
Green spaces landscaping (ground floor, facility floor, roof top landscape, etc.)	10%	43%	7%	30%	10%
Recreational facilities (gym, swimming pool, etc.)	67%	33%	0%	0%	0%
Public toilet design and cleanliness	60%	13%	10%	17%	0%
Surau design and cleanliness	30%	27%	30%	10%	3%
Vehicles parking facility condition	23%	50%	3%	13%	10%
Convenience store (cleanliness, good varieties, etc.)	0%	10%	10%	67%	13%
Telecommunication transmission (speed, etc.)	30%	43%	13%	7%	7%
Services					
Lift speed and condition	13%	40%	10%	23%	13%
Refuse management system	60%	17%	17%	7%	0%
Staircase condition	20%	50%	17%	10%	3%
Corridor condition	17%	53%	13%	13%	3%
Maintenance of common area and facilities	83%	10%	0%	7%	0%
Reception service	43%	17%	7%	23%	10%
Room cleaning service	33%	27%	13%	17%	10%
Staff service quality	40%	20%	10%	27%	3%

c) Vortex Suites KLCC

Location and Context					
Ease of access to public transport	23%	40%	7%	23%	7%
Surrounding neighbourhood environment	37%	43%	7%	10%	3%
Ease of local amenities around the district	27%	37%	7%	20%	10%
Traffic condition of road access into building	10%	13%	7%	50%	20%
Population density of serviced apartment	13%	20%	10%	37%	20%
Architectural Aesthetic					
External appearance of building	30%	43%	10%	10%	7%
Exterior building colour	23%	43%	17%	13%	3%
Height of building	20%	47%	7%	20%	7%
Personal modification of housing unit (renovation, added plantings, wall painting, etc.)	7%	13%	20%	43%	17%
Common space design (main lobby, landscape, etc.)	17%	23%	10%	27%	23%
Housing Unit					
Unit location within building block	17%	40%	3%	33%	7%
Size of housing unit	10%	50%	10%	27%	3%

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Number of rooms of housing unit	20%	47%	7%	20%	7%
Adequacy of air ventilation	20%	50%	7%	17%	7%
Adequacy of natural day lighting	17%	50%	0%	17%	17%
View from windows or balcony	17%	57%	0%	20%	7%
Safety and Security					
Occupant's privacy measures (strangers' control at main lobby, guard house, facility level etc.)	17%	47%	10%	10%	17%
Presence of security guards	20%	60%	10%	10%	0%
Crime prevention system (CCTV, house alarm, card access system, women's parking provision, etc.)	27%	50%	10%	10%	3%
Fire protection system (fire hydrant, sprinkler, etc.)	10%	50%	27%	10%	3%
Lightings adequacy at common area (parking, etc.)	3%	17%	10%	53%	17%
Community Aspect					
Role of management body	10%	27%	3%	50%	10%
Social interaction with community within apartment	0%	10%	7%	60%	23%
Social interaction with immediate neighbours	0%	10%	3%	67%	20%
Relationship with management body	3%	7%	13%	60%	17%
Facilities					
Main lobby and lift lobby design	3%	27%	7%	23%	40%
Green spaces landscaping (ground floor, facility floor, roof top landscape, etc.)	7%	17%	10%	23%	43%
Recreational facilities (gym, swimming pool, etc.)	33%	50%	0%	10%	7%
Public toilet design and cleanliness	7%	7%	7%	40%	40%
Surau design and cleanliness	0%	10%	30%	40%	20%
Vehicles parking facility condition	10%	20%	17%	37%	17%
Convenience store (cleanliness, good varieties, etc.)	17%	43%	0%	23%	17%
Telecommunication transmission (speed, etc.)	17%	43%	7%	23%	10%
Services					
Lift speed and condition	10%	27%	7%	47%	10%
Refuse management system	0%	10%	10%	17%	63%
Staircase condition	0%	7%	7%	27%	60%
Corridor condition	3%	10%	0%	63%	23%
Maintenance of common area and facilities	0%	20%	0%	13%	67%
Reception service	7%	7%	3%	67%	17%
Room cleaning service	7%	17%	7%	50%	20%
Staff service quality	10%	17%	13%	43%	17%

Source: Authors, 2020

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4.5 Overall Satisfaction with Serviced Apartment

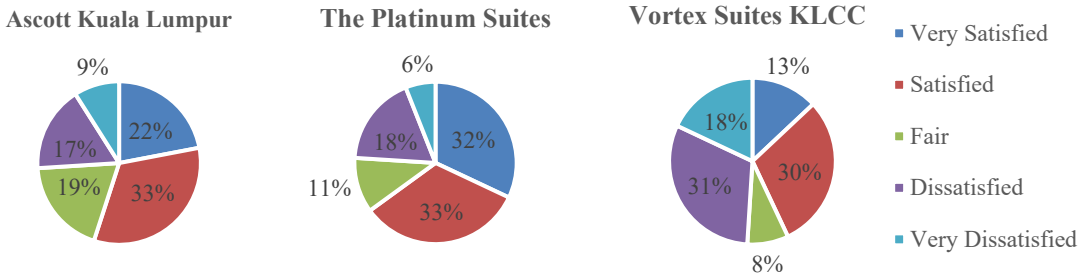

Figure 3: Overall Satisfaction of Serviced Apartment

Source: Authors, 2020

5.0 DISCUSSION

It was shown in the previous section that occupants are satisfied with the ease of access to public transport in all three (3) case studies. This may be due to the location of the service apartments close to public transport stations especially LRT or monorail station that adds to their convenience. With regard to the traffic conditions of road access into the building, the majority of occupants show great dissatisfaction in all 3 case studies. This could be due to congested traffic on main road access during rush hours as the case studies are located at the central district area which is in line with points raised by Mohit & Mohamed (2012). For building height, residents of all 3 case studies prefer higher-level units compared to lower ones, due to a better view towards the surrounding context, fewer noises from traffics, and cooler environment. The study infers that occupants of the three (3) case studies are satisfied with the size and number of rooms of housing units that are well fit for the number of occupants occupying the unit, having enough rooms to cater for the number of occupants. For safety and security, the residents these case studies are satisfied with the occupant's privacy measures and crime prevention systems. The presence of security guards, receptions, boom gate, car park control room, CCTV system, card access system, and alarm system help in controlling strangers as agreed by He and Zhou (2006). In the case of Vortex Suites KLCC, the results infer that occupants prefer a common area with adequate natural daylighting or artificial lightings and management body who provides excellent services in maintaining common areas. In all case studies, the majority of occupants show dissatisfaction towards social interaction with the community within the apartment and with immediate neighbours. One of the reasons may be that the majority of the residents stay for a short period of time, making them unwilling to foster friendship with the community. For facilities and services, it is found that occupants are satisfied with high end and well-maintained main lobby and lift lobby design. The residents do not prefer central core design as it prohibits natural daylighting and natural air ventilation. In the case of Platinum Suites, the study shows that occupants are extremely satisfied with recreational facilities which are well-maintained and clean. The residents also prefer vehicle parking facility condition which is well lit with lightings, clean, and indicated with carpark signage. In the case of Ascott Kuala Lumpur and Platinum Suites, the majority of occupants expressed dissatisfaction with convenience stores. This is mainly due to the lack of varieties of goods and the absence of convenience stores. In the case of Vortex Suites KLCC, occupants generally show dissatisfaction towards corridor and facilities which lacks natural air ventilation and natural daylighting.

6.0 RECOMMENDATIONS

This research study recommends that the key components that had acquired low satisfaction level from residents to be reassessed and improved for future serviced apartment developments. Improvements in the following variable components are fundamental in the future development of serviced apartments to enhance residents' satisfaction levels:

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- Improve the traffic condition of road access into building in terms of ingress and egress by widening road width
- Increase natural daylighting and artificial lighting in the common area especially car park and staircases for safety purpose
- Enhance social interaction between communities within the building and with immediate neighbors through unit design or planned activities
- Provide and upgrade convenience store at the serviced apartment
- Improve on management services especially on the maintenance of staircase, corridor, common area, facilities, reception service, and room cleaning service

7.0 CONCLUSION

The research study found out that the residents are in generally satisfied with serviced apartments in Kuala Lumpur that have been chosen as case studies in the study. In terms of location and context, the design of future serviced apartments should pay more attention to the planning of ingress and egress of vehicles to minimise congestion of traffic. More attention should be given towards the arrangement of unit location within the building block to maximise the location potential of each unit within the building block. In terms of social needs and community aspects, future serviced apartments should put more emphasis on daylighting and social interaction within the community. Future planning for facilities and services should include comprehensive facilities and improve maintenance and management. To conclude, the research infers that in the development of serviced apartments, various factors have to be considered. Serviced apartments have to be designed, managed and maintained with careful consideration that meets the needs and satisfaction of its residents to improve the quality of housing environment as stipulated in the Kuala Lumpur Structure Plan.

8.0 REFERENCES

1. Aryani, S. M. (2011). Minimalist Architecture; Discussion of Its Sustainability in Indonesia. *International Journal on Advanced Science, Engineering and Information Technology, 8*(1), 679-682.
2. Banoo, S. (2003). The attractions and hidden costs of serviced apartments. National House Buyer Association. Retrieved from *https://www.hba.org.my/news/2003/403/attractions.htm*
3. Beer, A. R., T. D., & P. S. (2003). A Changing Understanding of the Role of Greenspace in High-density Housing: A European Perspective. *Built Environment, 29* (No.2), 132-143.
4. Chin-Chun, Y. (2003). Housing satisfaction among residents of Taichung, Taiwan.
5. Chiu, R. L. (2003). Social Sustainability, Sustainable Development And Housing Development : The Experiences Of Hong Kong. In Ray Forrest. James Lee (Ed.) Housing and Social Change: East West Perspective. (pp. 221-239). Hong Kong : Routledge .
6. Exclusive Report: The Rise of Serviced Apartment in Malaysia (2015). Retrieved from *www.PropertyHunter.com.my*
7. Foxley, S. (2001). Serviced apartments in the UK - a growth sector? *Journal of Property Investment & Finance, 19*(1), 79-89. Retrieved from https://doi.org/10.1108/14635780110365389

e-issn: 2229-8568

8. Francescato, G., & Weidemann, S. (2008). Resident's Satisfaction in HUD-Assisted Housing: Design and Management Factors.

9. Green Building Index . (2019). Retrieved from new.greenbuildingindex.org: *http://new.greenbuildingindex.org/*

10. He, L., & Zhao, L. (2006). Study on Determinants of Housing Demand for Community in Beijing.

11. Housing Development (Control and Licensing) Act 1966 (Act 118)

12. Kuala Lumpur Structure Plan 2020. Kuala Lumpur: Kuala Lumpur City Hall. Retrieved from *http://www.dbkl.gov.my/pskl2020/english/vision_and_goals_of_kl/index.htm*

13. Lee, R. (2018, December 18). Cover Story: Co-working and co-living concept with a Malaysian flavour. *The Edge Markets*. Retrieved from *https://www.theedgemarkets.com/article/cover-story-coworking-and-coliving-concept-malaysian-flavour*

14. Mohit, M. A., & M. A. (2012). Assessment of Residential Satisfaction with Public Housing in Hulhumale', Maldives. *ASEAN Conference on Environment-Behavior Studies*, 756-770.

15. Neufert, E. (2012). *Neufert Architects' Data (Fouth Edition).* Oxford: Wiley-Blackwell.

16. Shen Hong, a. J. (2013). SWOT Analysis for Shanghai's Serviced Apartment. *2nd International Conference On Systems Engineering and Modeling (ICSEM-13).* Shanghai, China: Atlantis Press, Paris, France.

17. Shuid, S. (2004). Urbanization and Housing in Kuala Lumpur City Centre: Issues and Future Challenges. *19th Earoph World Planning and HOusing Congress 2004 , 1-14*

18. Tibbits, G. (1988). The enemy within or gates: slum clearance and high rise flats. *R. HOWE (Ed.) New Houses for Old: Fifty Years of Public Housing in Victoria, 1938-1988*, 123-162.

19. Toscano, E., & Amestoy, V. A. (2008). The relevance of social interactions on housing satisfaction. *Social Indicators Research, 86*(2), 257-274.

20. Tuck, L. Y. (2017). *The Redefined Serviced Apartments in Malaysia.*

21. Turkington, R., van Kempen, R., & Wassenberg, R. (2004). *High-rise housing in Europe (Current trends and future prospects).* (U. a. PTB Research Institute of Housing, Ed.) Netherlands : DUP Science .

22. Urban, F. (2012). *Tower and Slab : Histories of Global Mass Housing.* New York : Routledge .