University of Wales, Trinity Saint David

Residential Satisfaction and Behavioural Intentions: A Study of Private Housing in Hong Kong

By

Lui, Lawrence

Student Number: 1715378

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Declaration 1

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

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Date 6 April 2023

STATEMENT 1

This thesis is the result of my own investigations, except where otherwise stated. Where correction services have been used, the extent and nature of the correction are clearly marked in a footnote(s). Other sources are acknowledged by footnotes giving explicit references. A bibliography is appended.

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Abstract

This study explores residential satisfaction and residents' behavioural intentions towards developers in the private housing sector in Hong Kong. It investigates the underlying dimensions of resident satisfaction and their relative importance for behavioural intentions towards property developers. Behavioural intention towards developers refers to the subjective probability that a person will purchase a property from a developer.

This study focuses on developing a reliable and valid instrument to measure the residential satisfaction of private housing residents in Hong Kong. A literature review reveals that residential satisfaction depends on people's satisfaction with the housing units and neighbourhood in which they live. The most important dimensions are often related to housing quality/ characteristics, neighbourhood, environmental safety, transport and public facilities, view and landscape, and property management. They are identified as having a significant bearing on residents' overall satisfaction.

Private housing is a significant part of the housing market in Hong Kong, with a large proportion of the city's population living in private housing. Understanding the factors that influence residents' satisfaction with their private housing is crucial for improving the quality of life for a significant portion of the population. In addition, residential satisfaction has a significant impact on the behavioural intentions of residents towards property developers. It can influence the value of properties and the demand for them, making it an important consideration for property investors and homebuyers.

A pilot study with 66 residents is conducted to assess the initial questionnaire items. The final instrument is revised based on the pilot study results and the advice of eight experts from the industry. The main study consists of 403 residents living in private housing in Hong Kong. The quantitative method was used in this study because it allows for the development of a standardised instrument that can be used to collect data from a large sample of participants. Factor analysis was performed to classify the underlying factor structure of residential satisfaction. Regression analysis was conducted to test the

relationships between each set of dimensions and the overall residential satisfaction perceived by residents.

The results of the main study show that residents' overall satisfaction is driven largely by housing quality/characteristics and neighbourhood, followed by view and landscape, and property management, whereas behavioural intentions towards the developer are determined by housing quality/characteristics and property management, followed by transport and public facilities.

This study is an empirical attempt to establish, analyse and evaluate the unique characteristics of the housing market in Hong Kong, specifically privately developed housing. It has important implications for stakeholders such as property developers, property management companies, home buyers, property investors, architects, and policymakers. The findings offer various ways to improve Hong Kong's housing market, including improving the quality and management of properties by developers and management companies, informing housing policies and regulations for policymakers, guiding homebuyers and property investors in their decision-making, and informing architects and designers to prioritise factors such as housing quality, neighbourhood, view and landscape, and property management to create more satisfying living spaces for residents. The study also recommends that further inquiries be made in specific areas, such as the residential satisfaction of the elderly and teenagers in Hong Kong.

Keywords: Residential satisfaction, residential quality, consumer behaviour, service quality, customer satisfaction, behavioural intentions, private housing, housing problems, property prices, Hong Kong

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Chapter One: Introduction

1.1 Background

Residential satisfaction is an important topic and has been researched extensively in many fields, including town planning, geography, sociology, and psychology (Lu, 1999). Galster and Hesser (1981) defined residential satisfaction as an individual's evaluation of his or her current housing situation in both the residential unit and neighbourhood. It is a multi-dimensional construct that concentrates on the social environment, such as belongingness and acceptance, and the physical environment, such as the availability of community services and housing quality (Grillo et al., 2010; Heller et al., 1984; Hughey and Bardo, 1987; James et al., 2009; Sirgy and Cornell, 2002). While numerous studies have been conducted to understand residential satisfaction, very few have investigated its determinants and consequences. More importantly, there is a dearth of research examining the concept in the private housing sector in Hong Kong.

The primary purpose of this study is to examine the underlying dimensions of resident satisfaction and their relative importance for behavioural intentions. A critical issue of this study is the necessity of understanding how Hong Kong residents evaluate different residential satisfaction dimensions. An attempt is also made to identify the type of properties and environment that cause the highest level of satisfaction.

The post-war housing booms and suburban constructions in the 1950s and early 1960s, together with core city redevelopment via slum clearance programmes, have significantly influenced most of the studies on residential satisfaction in Western countries (Campbell et al., 1976). Rapid industrialisation and economic expansion in the 1970s led to rapid urbanisation in the developing world. The governments of these nations have either

provided or facilitated different forms of housing for various income levels. Research in these nations often aims to determine whether or not the residences built and provided by both the public and private sectors meet the needs of residents.

A wide variety of professionals, from architects to planners to sociologists and psychologists to urban geographers, have been involved in the study of residential satisfaction, which has been seen as a complicated construct. According to Galster (1985), residential satisfaction can serve several important purposes. First, it reflects how people rate their overall quality of life. Second, assessing the private and public sectors' contributions to housing developments is a yardstick for measuring government performance. Finally, it can assess how residents feel about their living conditions and determine how future private or governmental efforts should be focused.

Residential satisfaction has been examined from a wide range of perspectives. A few examples are the effects of hazardous pollutants on residential satisfaction in Korea (Lee et al., 2013), residential preference, residential choice and residential satisfaction in Japan (Ge and Hokao, 2006), and residential satisfaction in large-scale housing estates in Central and Western Europe (Herfert, Neugebaner and Smigiel, 2012), impacts of density and nearby nature on residential satisfaction (Kearney, 2006), and predictors of residents' satisfaction in high-rise and low-rise housing (Francesto, Weidemann, Anderson and Chenoweth, 1975).

1.2 Research Problem and Research Questions

Research Problem

Residential satisfaction with private housing is a significant area of research in Hong Kong due to the large proportion of the population living in private housing, which

accounts for 4 million out of a total population of 7.4 million (The Hong Kong Census and Statistical Department, 2016). This is also the case in other parts of the world. Understanding the factors that influence residents' satisfaction with their private housing is crucial for improving the quality of life for a significant portion of the population. Moreover, residential satisfaction has a significant impact on residents' behavioural intentions towards property developers, which is further emphasised by the high transaction volume and value of primary and secondary property transactions, amounting to HK$723 billion in 2021, with an average transaction value of approximately HK$10.3 million (US$1.3M) per unit and 70,000 residential units. Therefore, investigating residential satisfaction with private housing is essential for improving the housing market in Hong Kong and other regions.

Research Gap

Many studies on residential satisfaction have been conducted in Western countries but there is a dearth of research on resident's satisfaction with private housing and their behavioural intentions towards the property developers in Hong Kong. More research in non-Western contexts is needed to better understand the factors that influence residential satisfaction in different cultural contexts. The researcher believes that, if the overall residential satisfaction is high, the owner or tenant may identify and recommend their developer, and may buy the same developer's properties in the future. Therefore, it is valuable to study the relative importance of the residential satisfaction dimensions and behavioural intentions towards developers of private housing in Hong Kong.

Research Questions

The research questions addressed in this study include the following:

1. What are the housing characteristics in Hong Kong?

2. What are the underlying dimensions of residential satisfaction in private housing in Hong Kong?
3. What is the relative importance of the residential satisfaction dimensions in affecting overall residential satisfaction and behavioural intentions?

1.3 Research Contributions

Theoretical Contributions

This study is one of the few attempts to explore private housing residents' satisfaction in Hong Kong. It advances our understanding of residential satisfaction and behavioural intentions in several ways. Firstly, the study contributes to the development of a reliable and valid instrument to measure residential satisfaction. The use of a standardised and robust instrument can contribute to the development of a common understanding of residential satisfaction and enable better comparisons of findings across studies. Secondly, the study identifies the significant dimensions related to residential satisfaction, including housing quality, neighbourhood, environmental safety, transport and public facilities, view and landscape, and property management. This finding contributes to the understanding of the factors that influence residential satisfaction and can inform the development of more effective housing policies and practices. Finally, the study highlights the importance of residential satisfaction in influencing behavioural intentions towards property developers. This finding contributes to the understanding of the impact of residential satisfaction on the property development industry and can inform the development of more effective marketing and sales strategies for developers.

Managerial Contributions

This study pioneers the examination of the relative importance of each residential satisfaction dimension in affecting residents' overall satisfaction and behavioural

intentions in Hong Kong. Hence, the analyses and results can guide property developers, property management companies, home buyers, property investors, architects, policymakers in developing housing projects, and the people making property investment decisions. The results of this study will help these entities or parties gain an in-depth understanding of residential satisfaction in Hong Kong's private housing sector, thereby improving residential satisfaction and living conditions in the city.

1.4 Aim and Objectives of the Study

Aim of the Study

The aim of the study is to understand residential satisfaction and behavioural intentions in the private housing sector in Hong Kong.

Objectives of the Study

The objectives of the study are:

1. To describe the housing characteristics in Hong Kong.
2. To investigate the underlying dimensions of residential satisfaction in private housing in Hong Kong.
3. To examine the relative importance of each residential satisfaction dimension in affecting overall satisfaction and behavioural intentions in Hong Kong.

1.5 Plan of the Study

The previous section explained the focus of the research, and the following contents briefly describe how this study was conducted. The last section discussed the research problem and the research questions. Chapter 2 will first discuss the history of Hong Kong's housing market and perform research to probe into the causes of the city's

housing problems which arose particularly in the last decade 2010 to 2020. The readers will understand what the government has been trying to tackle these housing problems. In addition, Chapter 2 will also explore the land usage, land supply, housing supply in Hong Kong. A string of factors as to why Hong Kong's property prices have soared to the highest in the world will be explored and discussed.

Chapter 3 will discuss the development of different theories of residential satisfaction. The researcher will prove that various researchers consistently apply and develop their theories or models based on previous literature reviews. The researcher will understand customer satisfaction and behavioural intentions related to this study. Dimensions will be established based on these literature reviews.

Chapter 4 provides the methodology of this research. This study employs quantitative methods using a reliable and validated questionnaire to explore and prove the dimensions of residential satisfaction in Hong Kong's private housing sector. The procedures used to develop the instrument and how it is refined for establishing the main survey are described in Chapter 5. The results of the expert review are also presented, followed by item generation, item purification, the pilot test results, and the instrument's reliability and validity assessment. The analysis and results of this main study are presented in Chapter 6. Different empirical results will be discussed using regression analyses after examining the relationships between residential satisfaction. By conducting factor analysis, the researcher will explore in Chapter 3 the components of residential satisfaction influenced by different dimensions. The researcher will find out whether there are any relationships between some of the demographics and the respondents' overall residential satisfaction. In addition, the researcher performs regression analyses to examine the relationship between the different dimensions.

Research questions will be recapitulated and discussed in consideration of the test results. A summary of the discussion will then be presented, followed by limitations of the study, indications for further future research, and the theoretical and practical implications on residential satisfaction arising from this study for private housing in Hong Kong.

Chapter Two: The Development of the Property Market in Hong Kong

2.1 Introduction

To understand the housing market in Hong Kong, it is crucial to consider the supply of and demand for land and properties, which directly and indirectly affect residents' satisfaction and their property choices. These choices are influenced by various factors such as housing quality, neighbourhood, and environmental features. This chapter provides an exploration of the characteristics of the housing market in Hong Kong. It begins with a discussion of the history of public and private housing development in Hong Kong, followed by an examination of land usage, land supply, housing supply, and outstanding land requirements in Hong Kong. The chapter concludes by discussing the factors that have contributed to the rise in residential property prices over the past two decades. The soaring property prices have resulted in many people living in tiny apartments, which has inevitably affected their living conditions and satisfaction.

2.2 History of Public Housing Development in Hong Kong

The marking of public residential development in Hong Kong today is the cumulative result of historical forces in which the local government under British sovereignty began to exert their influence, particularly as early as the 1950s. The first public housing built by the Hong Kong Government was actualised in 1954 to provide temporary shelter for the 50,000 homeless victims of a massive fire which broke out in Shek Kip Mei on Christmas day in 1953. In the early 1950s, before this unmerciful fire, there had been a continual influx of refugees from mainland China to Hong Kong due to poverty, famine, and the lacklustre prospects of the country. Because of this fire incident and the

observable influx of mainland Chinese, the Government of Hong Kong demonstrated its vision by setting up a fund for building resettlement buildings and appointing a Commissioner for Resettlement to accomplish the task. Not long afterwards, a semi-independent organisation, the former Hong Kong Housing Authority, was set up to provide lower-middle-income families with affordable flats (Housingauthority.gov.hk, 2019).

The North Point Estate, built by the former Housing Authority in 1957, was the first low-cost housing estate project. Later in 1961, some rental accommodation blocks of higher quality than resettlement estates were developed. Wah Fu Estate, a 1971 scheme built adjacent to the sea, was a further improved initiative whereby a concept of a self-contained community with schools, malls, bus terminus and other facilities was provided. Donald Liao Poon-huai, CBE, JP, a government administration officer who studied architecture in the United Kingdom, proposed the avant-garde design of twin-tower blocks with horticultural elements for Wah Fu Estate. Liao became the Commissioner of Housing in 1968 and a member of the Town Planning Board. In the late 1970s, he proposed the Home Ownership Scheme (HOS), which permitted citizens who resided in rented public housing to purchase their flats. Later, the HOS Secondary Market Scheme was launched to increase HOS flats' turnover. Afterwards, the Tenants Purchase Scheme (TPS) was introduced to permit tenants to purchase the Public Rental Housing (PRH) flat they were residing in at very affordable prices (Housingauthority.gov.hk, 2019). Overall, as of 31 December 2018, approximately 44.6% of Hong Kong people lived in permanent public housing units. To name a few, the well-known public housing estates in Hong Kong include:

Table 2.1 A few examples of large-scale public housing estates in Hong Kong (Hong Kong Housing Authority, 2020)

Year built	Name of Estate	No. of residential units	No. of residents
1960 & 1967	Upper Ngau Tau Kok Estate & Lower Ngau Tau Kok Estate	18,500	45,700
1997 & 2008	Kwai Chung Estate	13,700	36,000
1964	Tsz Lok Estate	6,200	17,800
1964	Tsz Ching Estate	8,100	21,900
1990	Siu Sai Wan Estate	6,100	18,800
1962	Choi Hung Estate	7,400	18,000

2.3 Private Housing Development in Hong Kong

As opposed to public housing estates built by government bodies such as the Housing Authority and Housing Society, private housing estates or single blocks are planned and constructed by private property developers. In Hong Kong, the large developers include Cheung Kong Holdings, Sun Hung Kei Properties, Henderson Land Development, New World Development and Mass Transit Railways Corporation Ltd. (MTRC). A private estate with over 10,000 residential units is a very large-scale property development in Hong Kong; examples are Taikoo Shing, City One Shatin, Mei Foo Sun Chuen and Lohas Park.

Because property developers generally have a positive outlook on the prospects of Hong Kong, they are dedicated to increasing the land bank for their groups. Very often, they are confident to bid for both residential and commercial land at high prices. In 2018, Sun Hung Kei Properties paid a record HKD25.16 billion (USD3.23 billion) for the city's most expensive land parcel in terms of a single total sum. It yielded a gross floor area of 1.42 million sq. ft. (Li, 2018). In 2017, a commercial plot of land on Murray Road, Central, was bid for by Henderson Land Development at HKD23.28 billion, equivalent to

USD3.0 billion. This small piece of land is 2,880 square metres, and the permitted gross floor area is 465,005 square feet, translating to HKD50,064 per square foot (Landsd.gov.hk., 2019).

Wealth and inequality co-existing in Hong Kong's society are structured by a political economy focusing on small government and developers' profits. These years, property developers have enabled Hong Kong to prosper by contributing to the government's reserve as they successfully bid for land. Citizens who do not own a property complain about the high housing cost. They think that the real estate developers are primarily responsible for creating this problem – a phenomenon known as "property hegemony". Hong Kong's Gini Index in 2019 was the eighth highest in the world (Wissink, Koh and Forrest, 2017), with the rest in the top 10 developing countries or cities. This is important because income inequality has political and economic impacts, e.g. weaker GDP growth, less income mobility, more outstanding household debt, political polarisation, and higher poverty rates (*Gini Coefficient By Country 2020*).

In retrospect, after years of development, the concept of public housing and private housing has remained almost intact in the eyes of Hong Kong citizens. It is commonly interpreted that those who live in private housing are more well-off, and their residential satisfaction is better. Nevertheless, this study does not compare the residential satisfaction between public housing tenants and private housing residents. Instead, the researcher will focus on the impacts of residential satisfaction in Hong Kong's private housing sector and determine the relative importance of such residential satisfaction dimensions and their effect on behavioural intention.

Contemporary Housing Structure in Hong Kong

With a population of 7.4 million over 1,106 square kilometres, Hong Kong is the fourth most densely populated among countries or markets. Hong Kong's population is 11% of that of England, but the size of England is 117 times that of Hong Kong. There is a continuously high demand to live and work in this third-largest financial hub in the world, and in order to live in this city that is full of opportunities, you need a property. This section will first introduce the existing housing market structure in Hong Kong. As with most other major cities, different housing types meet the diverse needs of the local citizens and foreigners who reside in Hong Kong.

Population by Type of Housing

2.4 Land Usage, Land Supply, Housing Supply and Outstanding Land Requirements

Hong Kong has a mountainous topography, and society faces problems with soaring property prices and rents. The usage of the land in 2019 was divided into the following classes.

Table 2.2 Usage of lands in Hong Kong

Class	Approx. area (km^2)	%
Residential		
Private Residential	26	2.3
Public Residential (including SSF)	17	1.5
Rural Settlement	35	3.2
	A 78	**7.0**
Commercial/ Industrial/ Agriculture/ Other Developed Areas		
Commercial	5	0.5
Industrial	27	2.4
Agriculture	66	5.9
Other Developed Areas & Strategic Infra & Other Facilities	92	8.3
	B 190	**17.1**
Undeveloped Lands/ Others		
Woodland/ Shrubland/ Grassland/ Wetland	733	66.0
Others (G/IC, Open Space, etc.)	110	9.9
	C 843	**75.9**
GRAND TOTAL (A+B+C)	**1,111**	**100.0**

Planning Department - Planning Data. (2019)

From the above data, the developed land area of residential and "commercial / industrial / agriculture / other developed areas" is 268 square kilometres (A + B), which means that only about a quarter of the area in Hong Kong has been developed. The land used for residential is 78 square kilometres, while the figure is five square kilometres for commercial purposes. This number represents 7.5% of the total land area in Hong Kong. The table shows that 66% of the entire land in Hong Kong falls into woodland, shrubland, grassland and wetland. These lands are mostly not suitable for developing residential or commercial buildings, and they are areas consisting mainly of country parks, wetlands, reservoirs and fishponds. This percentage share remained virtually unchanged over the past decade. This makes the land precious in this city. Table 2.3 shows the percentage of citizens living in different housing types in Hong Kong.

Table 2.3 Percentage of citizens living in different housing types in Hong Kong

Citizens in Hong Kong living in different types of housing	Percentage
Public permanent housing	45.4%
Rental housing	30.5%
Subsidised sale flats	14.9%
Private permanent housing	53.8%
Temporary housing	0.8%
Total	100%

Transport and Housing Bureau, 2020

Living space

The living space per capita in Hong Kong also remained flat between 2006 and 2015, increasing marginally from 159 sq. ft. to 161 sq. ft. during the period. Such living space is below that of most developed Asian countries or cities:

Table 2.4 Per capita living area in some cities

Per Capita Living Area (2015)

Country/ City	GDP per capita (USD)	Average Living Area (sq. ft.)	Average Living Area per Capita (sq. ft.)
USA	51,704	2,476	800
Taiwan	38,357	1,119	370
Singapore	60,799	1,044	323
Japan	35,855	667	220
Shanghai	9,055	560	194
Hong Kong	50,936	452	161
PRH of HK (2014)	-	-	130
H.K.'s subdivided flats households	N/A	115	48

Ho, A (2015), Hong Kong Free Press

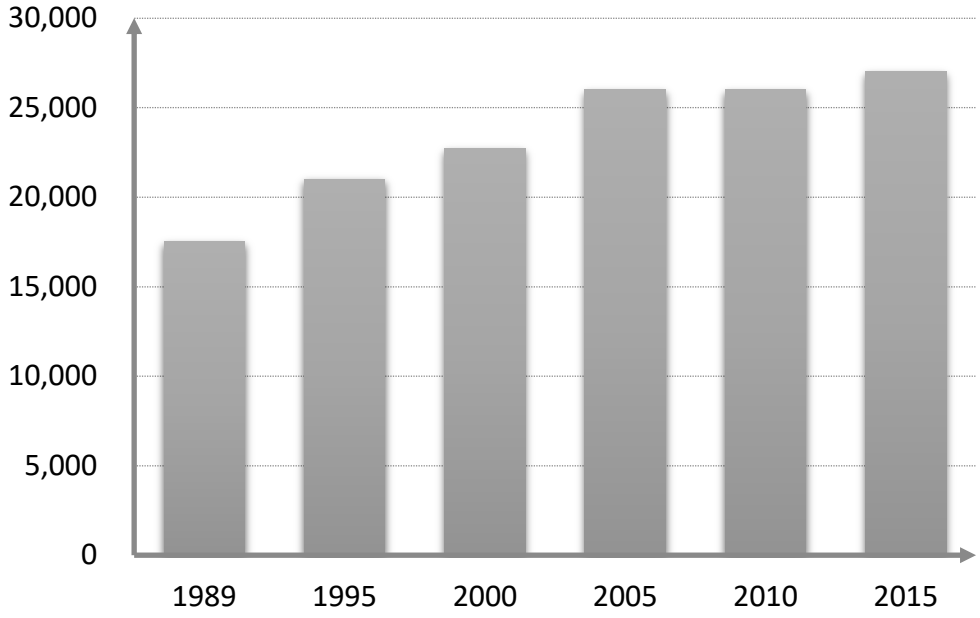
Table 2.4 shows that Hong Kong has a relatively high GDP per capita value. The limited living area does not seem in line with the GDP per capita (Ho, 2015). With such a small living area per capita in Hong Kong, would local citizens generally consider their residential satisfaction abominable or unacceptable? The researcher will present a detailed discussion of residential satisfaction in Chapter 3.

Land Supply

The chronic land shortage is a fundamental social problem that has been plaguing Hong Kong. The city's land supply has neither been growing in line with the increase in population/the number of households nor the continuous economic and social development. From the 1970s to the 1990s, built-up land increased steadily to meet the ramp-up of the population under the government's unwavering determination. However, after the Asian Financial Crisis in 1997, land development slowed down. The pace of land development and housing supply cannot match the rate of population growth as well as a crucial factor, namely the increase in households. Land development also did not keep pace with the economic rebound and subsequent improvements from 2003 to 2019, as land development has been almost static since 2005. Under the shortage of land supply, the number of completed private properties and public housing units went down acutely. This phenomenon is evidenced by the fact that the average annual completed housing units between 2007 and 2016 were 25,700, more than a 50% drop from the 59,800 units completed in the previous decade. The researcher will discuss the built-up land area and reclamation in the following sub-section.

The following chart illustrates the area of built-up land in Hong Kong:

Built-up Land in Hong Kong



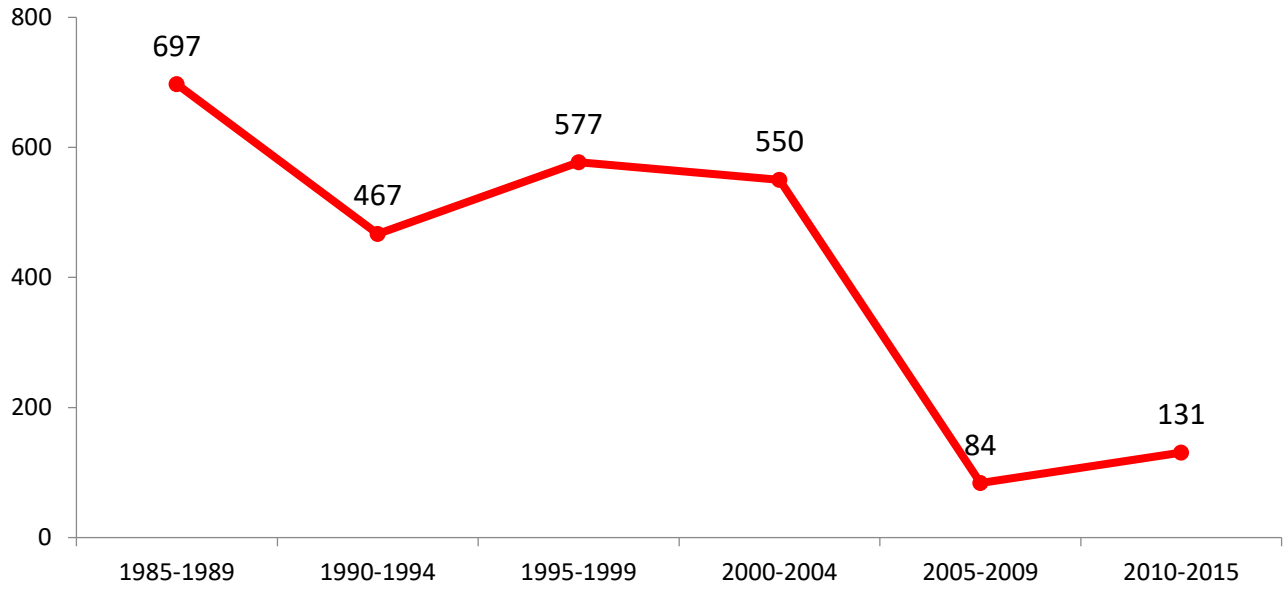
Landforhongkong.hk, 2019

Figure 2.1 Built-up land in Hong Kong in accumulated hectares

As shown in Figure 2.1, Hong Kong's supply of built-up land continuously increased during the 1980s and 1990s. There was a notable rise of 6,000 hectares of built-up land between 1995 and 2005. However, from 2005 to 2015, the new built-up land dwindled by 93% to just 400 hectares. The growth of built-up land has seemingly come to a halt since 2005. See Figure 2.2 below for the information about the reclamation of land from 1985 to 2015.

Reclamation in Hong Kong from 1985 to 2015

According to the reclamation data published by Hong Kong's Census and Statistics Department, 1,741 hectares of land were created through reclamation between 1985 and 2000. In contrast, from 2000 to 2015, only 765 hectares of land were reclaimed.



(The Research Office of the Legislative Council Secretariat, 2016)

Figure 2.2 Reclamation (in hectare) in Hong Kong from 1985 to 2015

Reclamation in Hong Kong

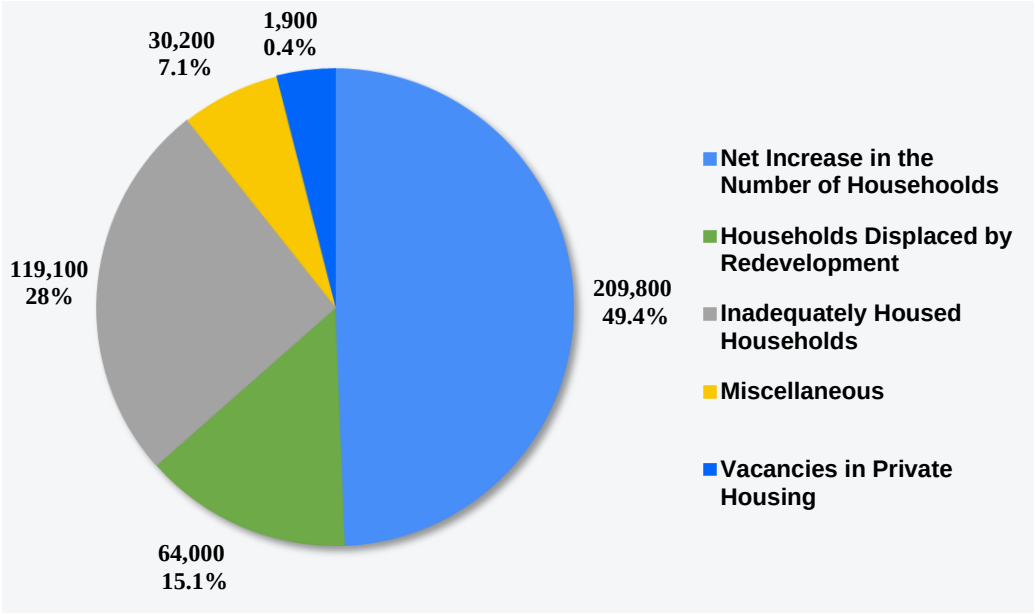
The reclaimed land was a significant supply of developable land for Hong Kong. Still, growing public concerns over the environment have significantly slowed down the pace of reclamation in recent years:

In 2019, Hong Kong's Chief Executive, Carrie Lam Cheng Yuet-Ngor, delivered the annual Policy Address and proposed a plan of large-scale reclamation near north-east Lantau which would create 1,700 hectares of artificial islands that can accommodate 700,000 to 1,100,000 people (Ho, 2015). However, this gigantic project of increasing land supply is expected to cost HKD500 billion to HKD624 billion (USD64 billion to USD80 billion). It caused a public backlash as this reclamation cost will take up almost half of the current fiscal reserves and negatively impact the ocean and environment. Besides, since most of the reclaimed land will be used to build affordable public housing

and infrastructure such as transport links and roads, the revenue from future land sales from these islands is considered to be limited. In a study, the environmental group, Greenpeace, estimated that if the Hong Kong government could buy enough brownfield sites to build a similar number of public housing units, only a quarter of the money would be required compared to the expensive reclamation of the sea (Zhao, 2019). On 4 December 2020, while this reclamation proposal was still controversial, the Legislative Council of Hong Kong's Finance Committee passed the funding for the cost of a feasibility study on the artificial islands and their surrounding environment. The feasibility study was passed in November 2020 (Yeo, 2020).

Housing Supply Target for All Types of Housing

The general housing supply in Hong Kong has been under imminent pressure in recent years. Our Hong Kong Foundation, an organisation that studies public policies that affect Hong Kong's overall interests, estimated that the number of completed private flats would be approximately 92,700 units from 2019 to 2023, an 11% drop from the estimate made in 2018. This think tank said that due to the lack of land and construction delays, the housing units would plummet by 40%, with only 13,300 flats coming on the market by 2023. The organisation suggested that the government prioritise and rezone 25 sites for housing, develop brownfield sites and private rural land in the New Territories, and turn to reclamation (Ng, 2019). The housing supply target for the next ten years is illustrated as follows in Figure 2.3.



(The Legislative Council, 2019)

Figure 2.3 Housing supply target 2020 – 2029 at 425,000 households

Hong Kong Government's Plan

Given the lack of newly created land in the last 15 years, the Hong Kong Government has tried to explore the feasibility of changing the use of existing land (such as agricultural land) to increase land supply for housing and other social and economic development. The government also seeks to explore the feasibility of redeveloping the Housing Authority's factory estates to satisfy public housing needs.

The government reviewed the Fire Safety (Industrial Buildings) Bill through a legislative process to improve the fire safety standards of industrial buildings constructed before 1987. This new ordinance would regulate the six factory estates under the Housing Authority, covering 8,000 units. The Housing Authority estimated that upon enacting the bill, tenants' business operations would be unavoidably affected due to the extensive scope and cost required for the fire safety improvement works. The Housing Authority will evaluate the redevelopment of existing factory estates to understand the feasibility of using the refurbished units as public housing, especially in heightening the supply of

PRH units. The organisation had started the assessment process beforehand and will be able to announce the results with recommendations once the entire study is completed.

Outstanding Land Requirements

Housing (230 hectares)

The long-term outstanding land requirement is about 200 hectares, catering for the long-term public and private housing land requirements beyond the Long-term Housing Strategy's 10-year target.

Economic Uses (256 hectares)

CBD Grade A offices, industries and special industries are expected to have a long-term shortfall of about 100 hectares. An additional requirement of 200 hectares will be required for other specific uses, including science/R&D parks and industrial estates. The demand for some market-driven economic uses, such as retail, could be very volatile and unpredictable, and therefore, no estimates on their long-term land requirements are available.

Government-Institution-Community, Open Space & Transport Facilities (720 hectares)

There is an existing outstanding shortfall of about 60 hectares. There will be further requirements for the improvement/redevelopment of:

- existing substandard Government, Institution or Community facilities, such as schools;
- for space enhancement for certain Government, Institution or Community facilities, e.g. kindergartens; and
- for changing demographic needs, e.g. neighbourhood elderly care facilities.

The total land requirements for various uses will be over 1,200 hectares. This estimate is not exhaustive. The long-term demand for some market-driven uses, such as retail, is difficult to project. The government is also studying the land requirements for construction-related use and recycling facilities, etc., and longer-term estimates for higher education and MICE spaces are unavailable.

2.5 Why property prices inflated in Hong Kong from 2003 to 2020

As mentioned above, the housing shortage has been a significant problem for Hong Kong. Several factors contribute to the phenomenally high property prices in Hong Kong. The housing market faces the problem of limited land and housing supply, while the city has been attracting investors from mainland China and foreign countries. The government's housing policies and the Hong Kong Monetary Authority's mortgage rules have seemingly pushed up property prices, although this was not the original intent.

Land Supply and Housing Supply

After the plummeting of property prices for five consecutive years from 1998 to 2002, Hong Kong issued a "Statement on Housing Policy", which stated that the government would intervene as little as possible in the private property market (HKSAR Press Releases, 2010). The government then decided to cancel all scheduled land sales, and it would only conduct future land sales upon successfully triggering land sites contained in the government's list. This situation did not change until 2010 when Donald Tsang, ex-Chief Executive of Hong Kong, started a new measure covered in a later section – "Government Policies on Real Estate Market in Hong Kong".

Land supply, in principle, should not be a big problem in Hong Kong which has a population of 7.5 million with a total area of 1,106 square kilometres. However, 66% of the area comes with green land and mountains in this city. The core problem that causes the shortage of land supply is the fact that land planning has been locked in a stalemate due to the complexity of changing the purpose of land usage. Approximately 1,000 hectares of farmlands are held by the four largest Hong Kong property developers (Tse, 2018). Suppose that the government can initiate a change in land usage and the property developers are willing to pay a percentage of the land premium. In that case, 116,000 flats of 600 square feet can be built, assuming that 20% of the 1,000 hectares are released to construct homes. In Hong Kong, the government's target of the annual supply of private housing is 18,000 apartments (Tse, 2018); this is about 60% of the overall yearly supply of 30,000 apartments that comprise the number of public housing homes.

The limited supply of land inevitably causes a tight supply of housing units. Table 2.5 shows that the total number of housing units increased by 266,000 (2,479,000 units in 2007 to 2,745,000 in 2017).

Table 2.5 Number of housing units in H.K. by type of permanent housing and total population

Number of housing units in Hong Kong by type of permanent housing:

	Mar 2007 ('000)	Mar 2012 ('000)	Mar 2017 ('000)
Overall Number of Housing in Hong Kong	**2 479**	**2 599**	**2 745**
Public permanent housing	1 115	1 151	1 208
Rental housing	*717*	*761*	*808*
Subsidised sale flats	*398*	*391*	*400*
Private permanent housing	**1 364**	**1 447**	1 537

The population of Hong Kong increased from 6,994,500 in 2006 to 7,336,600 in 2016:

	Mid-2006	Mid-2011	Mid-2016
Population (Thousands)	6,994.50	7,097.60	7,336.60
Usual Residents (Thousands)			*7,116.80*
Mobile Residents (Thousands)			*219.80*
The average annual growth rate over 5 years	0.80%	0.90%	0.70%

(i) Appreciation of Land Prices in Hong Kong

The sale of land (land use rights) is a significant source of income for the Hong Kong Government. The land premium revenue accounted for HKD116 billion to HKD164 billion in the fiscal years 2017-18, 2018-19 and 2019-20, equivalent to approximately 19.5% - 26.6% of the government's total revenue in a year (The Legislative Council, 2020). The restricted availability of land causes developers to bid for land at high prices. For example, in May 2018, Sun Hung Kai Properties won a tender for the Kai Tak Development Area residential parcel. The group paid HKD25.16 billion (USD3.2 billion) for the city's most expensive gross floor area of 1.42 million square feet. The price corresponds to HKD17,776 (USD2,280 equivalent) per square foot (Li, 2018). Despite the land in Hong Kong being leasehold instead of freehold, bid prices are still high. Land leases are usually granted for 99 or 75 years and a few for 999 years. In recent years, the most lucrative land per square foot reported is the price paid for land on Mount Kellett Road on Hong Kong Island's peak, which is equal to HKD42,196 (USD5,400) per square metre, where the price per square foot is the most expensive in the world. In 2017, a luxurious apartment project named Mount Nicholson, located at The Peak, was traded at HKD600 million with HKD131,000 (USD16,800 equivalent) per square foot.

The high land prices fundamentally impel the price acceleration of completed homes. In Hong Kong, the total residential project costs typically include land costs, construction costs, financing costs, consultancy fees, plantation costs, etc. Undoubtedly, land costs are usually the most considerable portion: 40 - 60% of the total project costs.

There is no clear relationship between actual house prices and real per capita income. At least, such a relationship does not seem to exist in Hong Kong. While it is a theory that

the trend of home prices is associated with household or personal income, it does not appear authentic in certain parts of the world to the land market. Also proven in the US as an example, from 1977 to 1997, actual house prices only increased by 8%, while real per capita income expanded by 35%. But actual house prices grew by 28% over the five years of 1997 to 2002, whereas real income per capita only increased by 15%. This fact indicates that the familiar proposition that "higher home prices cannot surpass household income growth" is false (Gallin, 2003).

(ii) Investors from the World

In many people's perception, investment from mainland China is a significant factor that caused the rise in home prices. However, according to Shih Wing Ching, Chairman of the Board of Directors of the largest property agency group, Centaline Property Agency Limited, less than only 10% of the transaction volume of Hong Kong properties is transacted with mainland Chinese buyers. The influence brought by Chinese buyers has been somewhat overhyped in society.

Past studies in the literature seemed to be not comprehensive nor persuasive enough to explain the housing prices in Hong Kong. It is essential to read the next section because it will unveil the under-researched areas regarding Hong Kong's housing prices from the majority of past studies.

(iii) Worldwide Quantitative Easing and Money Supply

In recent years, new mechanisms have rapidly changed the world's financial markets, and some of these changes hit the real estate markets directly and indirectly. For instance, after the financial meltdown in 2008, the United States implemented Quantitative Easing (QE) measures, followed by similar measures in Europe, China and Japan. QE is a form of monetary policy in which a central bank purchases securities from the open market to reduce interest rates and increase the money supply and spur economic activities. QE is typically implemented when interest rates are near zero and economic growth is stalled.

QE creates new bank reserves with the aim to provide banks with more liquidity and encourage lending and investment, i.e., money supply will increase and asset prices will be boosted as a result. The effects of QE on housing prices in Hong Kong is discussed in the next section.

In QE, the central bank purchases government bonds and other financial instruments, such as mortgage-backed securities (MBS). Therefore, in addition to ultra-low interest rates, the central banks adopted large-scale bond-buying programmes. In essence, the four phases of QE have helped the global economy to avoid a great depression because they were used by central banks to stimulate the economy by facilitating the functioning of financial markets.

(iv) Effects of Quantitative Easing on Housing Prices in Hong Kong

Implementations of QEs majorly affected Asia's financial market segments. Uncompromisingly, QEs have contributed to easing the economic situation in Asia by reducing the tail risks of the worldwide financial market, which reduced the Credit Default Swap (CDS) premium in the region. Also, given the stable inflation in Asia, asset prices have surged in some financial markets, including Hong Kong, China and India. These places had a remarkable 100% increase in asset prices from 2008 to 2012 (Cho and Rhee, 2013).

In Hong Kong, the money supply (M1) increased from HKD645 billion in 2008 to HKD2,485 billion in 2019. The effect of the remarkable increase in money supply inevitably led to an appreciation of asset prices.

Table 2.6 M1 supply in Hong Kong from 2008 – 2019

M1 Supply in Hong Kong from 2008 – 2019:

Year	Hong Kong Dollars (in million)	Foreign Currencies (in million)	M1 Supply (in million)
2008	491,115	154,718	645,833
2009	671,241	230,578	901,819
2010	730,093	287,134	1,017,227
2011	794,726	332,593	1,127,320
2012	920,920	456,439	1,377,359
2013	1,000,344	510,552	1,510,895
2014	1,116,675	592,049	1,708,724
2015	1,253,380	717,766	1,971,146
2016	1,428,775	785,195	2,213,970
2017	1,598,014	833,447	2,431,461
2018	1,555,731	865,867	2,421,598
2019	1,533,104	951,634	2,484,738

Table 2.6 shows a significant increase in M1 Supply by 284% in Hong Kong from 2008

to 2019. The Centa City Leading Index, which reflects Hong Kong's secondary private residential property prices, shows that it sharply surged by 220% from 55.46 in December 2008 to 177.71 in December 2019. The M1 money supply data have great reference value for the property prices in Hong Kong.

An increase in money supply causes interest rates to drop and makes more money available for customers to borrow from banks, and at the same time, it causes the currency's value to decrease. This indeed has high reference value because the Hong Kong dollar is officially pegged to the U.S. dollar at the rate of HKD7.8 to USD1. Hence, it is imperative to see how the money supply affects housing prices, and many people seem to have ignored this factor. Such an impact on housing prices is far more important than factors such as residents' household income.

(v) Low-Interest Rates for Mortgages in Hong Kong

Following the practice of super-low interest rates in the U.S., Hong Kong's mortgage interest rate also has remained at a low level for a long time. From 2011 to 2020, the mortgage interest rate remained at 1% - 2.25%. As the loan cost had remained at low levels for such an extended period, the market attracted property buyers as these investors or users were likely to believe that property prices would increase. In essence, the cost of funds was low.

(vi) The Ease of Topping up Mortgages

According to the Hong Kong Census and Statistics Department, in 2017, approximately 65% of the mortgages of properties in Hong Kong were already fully repaid. This statistic indicates that the banks are facing a safe line for bad debt risks and implies massive purchasing power in the city. In an interview with Hong Kong Economic Times, Dr Andy Cheuk-Chiu Kwan, an economist and journalist in Hong Kong, said that more than 400,000 families in regard to which the owners are aged 50 and above do not have any mortgage liabilities. This represents a mighty purchasing power because the owners can top up their mortgages on (i) the increased value of their properties and (ii) the number of repayments made so far. For instance, a resident purchased a property in 1990 at HKD3 million with a 20-year mortgage. When the owner fully paid the mortgage in 2010, the property was valued at HKD10 million. Suppose that the owner wanted to buy another apartment whose seller asked for HKD8 million. He could approach a bank to apply for a top-up mortgage. The bank may approve topping up 60% of the market value of the old property (i.e., HKD10 million x 60% = HKD6 million), which the buyer can use as a down payment for a new property.

Based on the above top-up mortgage arrangement, it is essential to note that in an era of asset appreciation with hot money in the banking system, property owners can easily obtain approval for new mortgages without harming their finances. This mortgage type benefits parents who have fully or substantially repaid their mortgages as they can support their children who need to buy a property as they reach marriage age.

(vii) Hong Kong's "Invisible" Population

Referring to Table 5 in the Section "Land Supply and Housing Supply", the Census data reveal that the population of Hong Kong increased from 6,994,500 in 2006 to 7,336,600

in 2016. This moderate increase should not be a significant factor that caused a shortage of housing. One of the dominant factors that caused the housing problems was the "invisible population", the people who were not Hong Kong residents but occupied living spaces.

Tourists

According to the Hong Kong Tourism Board, the number of tourists (including non-overnight tourists) increased gradually from 28.17 million in 2007 to 55.91 million in 2019 – approximately doubling in 12 years. Tourists also need accommodations, which take up residential spaces. Some developers applied for a change of usage of some residential buildings to capture the profit from tourism expansion during the period. The overall residential living spaces in Hong Kong became further limited as a result.

Mainland Chinese – One-way permit holders for cross-border marriages or family reunion

According to Article 22 of the Basic Law and the interpretation by the Standing Committee of the National People's Congress in 1999, people from mainland China who want to enter Hong Kong must apply to the relevant authorities of their residential districts for approval under the applicable national laws and administrative regulations. They must hold valid documents issued by the relevant authorities. Accordingly, mainland Chinese who want to settle in Hong Kong for a family reunion must apply for One-way Permits (OWPs) from the public security authority Exit and Entry Administration Offices at the places of their household registration in the Mainland. Table 2.7 shows that the number of OWP holders was 420,263 from 2007 to 2016. It increased housing needs for society because these OWPs occupied housing in Hong Kong. The housing needs would further increase as the immediate family members may join the OWP holders after becoming H.K. permanent residents.

Table 2.7 The number of holders of OWPs entering Hong Kong from 2007 to 2016

The numbers of holders of OWPs entering Hong Kong from 2007 to 2016:

	2007	2008	2009	2010	2011
Holders of Certificates of Entitlement	4,487	4,490	5,025	4,662	3,758
Spouses separated for ten years or more and their accompanying children	823	1,041	829	651	619
Other categories (Note 1)	28,555	36,079	42,733	37,311	39,002
Total by year	**33,865**	**41,610**	**48,587**	**42,624**	**43,379**

	2012	2013	2014	2015	2016	2007-2016
Holders of Certificates of Entitlement	3,750	4,329	4,938	3,655	3,508	42,602
Spouses separated for ≥ ten years and their accompanying kids	733	742	791	753	870	7,852
Other categories (Note 1)	50,163	39,960	34,767	33,930	53,009	369,809
Total by year	**54,646**	**45,031**	**40,496**	**38,338**	**57,387**	**420,263**

Note 1: Quoted by the Immigration Department, 2020 - "Arrivals under 'other categories' include those (1) who come to H.K. for a reunion with their spouses separated for less than ten years and their accompanying children aged under 18. (2) who are aged above 18 and under 60 and need to come to H. K. to take care of their parents settled in H.K. both of whom are aged above 60 and have no children in H.K.. (3) who are aged above 60 and have no children in the Mainland, and have to depend on their children aged above 18 settled in H.K, or (4) who are aged under 18 and have to depend on their parents settled in

H.K.; "overage children", etc."

Admission Scheme for Mainland Talents and Professionals

On 15 July 2003, the Immigration Department of Hong Kong implemented the Admission Scheme for Mainland Talents and Professionals. The Scheme aimed to attract talents and professionals from mainland China to work in Hong Kong to meet local workforce needs and enhance Hong Kong's competitiveness in the world market (Info.gov.hk, 2018). This Scheme increased the housing demand in Hong Kong as the talents from China needed a place to live. As of 31 December 2019, this talent scheme had attracted over 134,000 mainland Chinese (Immigration Department, HKSAR, 2020). And after they stay in Hong Kong for seven years, they may become a permanent Hong Kong resident. Afterwards, their family members may apply for entry as residents, which may give rise to further housing demand in Hong Kong.

Capital Investment Entrant Scheme and Quality Migrant Admission Scheme

The Capital Investment Scheme was implemented on 27 October 2003 to grant entry for residence to people who make a capital investment in Hong Kong. Although the Hong Kong Government suspended this plan in 2015, there were already 35,000 approved applications. Another scheme, the Quality Migrant Admission Scheme, was implemented on 28 June 2006 to attract highly skilled or talented persons from mainland China and overseas. As of the end of 2019, there were over 5,400 applicants who were allocated such quotas (Immigration Department, HKSAR, 2020).

Mainland Students Pursuing Their Studies in Hong Kong

In recent years, there has been an increasing number of mainland Chinese students who come to Hong Kong to pursue their tertiary education. Of these more than 80,000 students, over 50,000 stayed in Hong Kong and eventually became permanent residents.

In Hong Kong, the supply of university dormitories is inadequate. Therefore, most mainland students rent apartments in the city. This phenomenon deepened the scarcity of housing issues because every student had housing needs.

(viii) Qualified Domestic Institutional Investor (QDII) Scheme

The QDII Scheme enables financial specialists to put resources into foreign securities markets through fund management companies, insurance agencies, securities firms and other asset management companies, affirmed by the China Securities Regulatory Commission ("CSRC").

On 13 April 2006, the Chinese government announced the QDII Scheme, enabling Chinese companies and citizens to invest abroad through Chinese commercial banks. From this scheme's commencement to 30 June 2018, the lines granted to Chinese financial institutions amounted to USD103 billion. The QDII Scheme has successfully captivated massive capital inflow into Hong Kong, especially from mainland Chinese investors (Hui, Ng and Lau, 2011).

2.6 Chapter Summary

This chapter records the background of the housing market in Hong Kong and details the critical issues in Hong Kong's land usage, land supply and housing supply. The researcher investigated the reasons and factors that caused the widely-discussed problem of high property prices in Hong Kong. Among all such factors, the worldwide quantitative easing and money supply, low mortgage interest rates, and the number of new immigrants from mainland China are the most important ones that caused property prices to surge from 2003 to 2020 in Hong Kong. In many people's eyes, residential satisfaction is seriously doubted due to the unreasonable prices and the residents' small living area. It was interesting to find out whether Hong Kong people are contented with their residential satisfaction. The researcher surveyed Hong Kong people's overall residential satisfaction and examined which residential satisfaction dimension carries more significance than the others.

Chapter Three: Literature Review

3.1 Introduction

This chapter presents the literature review of residential satisfaction. The contexts to be discussed before residential satisfaction are the literature relating to consumer behaviour and customer satisfaction with the quality of residential infrastructure, environs, and services. The literature review seeks to facilitate an in-depth understanding of consumer behaviour models, the historical development of residential satisfaction, behavioural intentions, and customer satisfaction associated with the quality of housing and residential services. Ajzen (1991) defined behavioural intentions as the subjective probability that a person will behave in a particular way, and are a function of the person's attitude toward the behaviour. Behavioural intentions will be further discussed in Section 3.9. Further, the chapter will examine how the characteristics and quality of a residence, socio-cultural environment, housing infrastructure policies, environmental safety, public amenities, and property management practices influence residential customer satisfaction and resultant behavioural intentions.

This chapter reviews previous research related to the key constructs used in this research and consists of the following sections: (i) differences between residential quality and residential satisfaction, (ii) comprehensive consumer behaviour models, (iii) the importance of customer satisfaction, (iv) historical development of residential satisfaction, (v) theories of residential satisfaction, (vi) introduction of the three realms of residential satisfaction, (v) literature review of residential satisfaction studies, (vi) a summary of the studies that describe the seven residential satisfaction dimensions as well as the items under each dimension, (vii) other satisfaction-related studies, (viii) behavioural intentions, and (ix) research hypotheses. These contents provide insights into

research objectives for the frameworks for understanding satisfaction. Specifically, a framework of residential satisfaction for Hong Kong is proposed in this study. Residential satisfaction is conceptualised and operationalised to demonstrate seven dimensions: housing quality/characteristics, neighbourhood, environmental safety, transport and public facilities, view and landscape, and property management. Besides, behavioural intentions are explored to examine whether residential satisfaction will cause the resident intention of moving to another district, purchasing an additional property, or choosing a developer other than the current residence's developer for the next property purchase.

3.2 Residential Quality and Residential Satisfaction

Perceived Quality vs. Satisfaction

Tsoitsou's (2005) study investigated the effects of perceived product quality and overall satisfaction on purchase intentions. Perceived quality had been found to have a positive direct effect on purchase intentions, whereas others reported only an indirect effect through satisfaction. Rust and Oliver (1994) proposed two differences between perceived quality and satisfaction. They considered perceived quality as a more specific concept based on product and service features, whilst satisfaction can result from any dimension (e.g. loyalty, expectation). Moreover, a company can have a certain degree of control over perceived quality. Thus, it is suggested that "when perceived quality and satisfaction are regarded as overall assessments, perceived quality is understood as an antecedent of satisfaction and therefore precedes it" (Llusar et al., 2001).

Residential Quality

Various elements determine the quality of a residential unit. According to Harrison (1999), the physical aspects of a residential unit, be it a flat or a stand-alone (detached) unit, and the environment in which the unit is located, are important parts of determining the quality of a housing unit. The type and adequacy of the physical facilities provided, such as running water, power, and accessibility to the residential unit from the main communication means, are all part of the physical needs that need to be provided. Other essential aspects in this respect include air and ventilation, natural lighting, home safety, space provided per person, and the absence of noise control and ventilation. Factors like the unit's design also influence the quality of the unit. Residential housing quality refers to the adequacy of a residential unit's physical and environmental conditions. As such, important elements that one may use to determine the quality of a residential unit will include safety, security, physical facilities, quality of air and ventilation, lighting, noise, and view.

Residential quality is important as it directly affects the health and well-being of the occupants of a residential unit (Keall et al., 2010). Noise levels, if they are above the recommended level, will impact a resident's mental health. Poor lighting and ventilation may lead to health complications too. Thus, one must live in a unit that satisfies the basic requirements to an appreciable level. This determines the level of satisfaction that a resident has with their unit. Features such as poorly designed balconies may present a tangible threat to occupants such as children, the elderly, and the physically challenged. An important consideration is a staircase, which, if poorly designed, increases the possibility of injury from falls. Again, lack of maintenance leads to the deterioration of the physical quality of a unit. Air conditioning may be necessary where the unit has no good access to

open ventilation. Without air conditioning, there is an increased risk of experiencing fetid air, risking exposure to the ills associated with breathing such air.

In many jurisdictions, including Hong Kong, the quality of residential units is specified by law. This means that the physical quality of the facilities and amenities must meet certain legal thresholds. Physical space, lighting, accessibility, and required safety needs per unit are defined or restricted by laws or regulations. Developers are required to fulfil these requirements. According to the Secretary for Development, Michael Wong Wai-lun, effective January 2022, the new regulation for developers specifies that the tiniest living space of a residential unit built on government land must be at least 280 square feet (26 square metres).

In Hong Kong, the Buildings Ordinance (Cap. 123) and its subsidiary law, the Building (Standards of Sanitary Fitments, Plumbing, Drainage Works, and Latrines) Regulations, spell out the minimum facilities that must be installed in all homes. Kitchens, bathrooms, and pipes are the bare minimum in homes. In Hong Kong, private homes must meet certain environmental standards, such as those for natural lighting and fire standards.

A liveable room in Hong Kong must have one or more windows that let in enough natural light. Each window cannot be less than 1/10 of the floor area of the room or 1/16 of the floor area if the top of the window is 2m above the floor. The same rule must be followed in a kitchen. A habitable room must have at least one window at least 1/10 of the floor area or 1/16 of the floor area if the top of the window is at least 2m above the floor. The same rule must be followed in a kitchen. In Hong Kong, the Fire Services Ordinance (Cap. 95) and the Buildings Ordinance (Cap. 123), along with its subsidiary laws, called the Building (Planning) Regulations, spell out the rules for fire safety. Some examples are obtaining fire

certificates, having fire-fighting equipment, and building a staircase and a way out in case of fire. It is noticed that fire safety rules apply to the whole building and the common areas but not to each apartment. Neighbourhood considerations also impact the quality of a residential unit. The neighbourhood quality is shaped by how well the neighbourhood is provided with features such as landscaping, greenery, and the absence of hindrances to good living, such as noisy commercial entities like nightclubs and airports or dump sites.

Residential Satisfaction

Residential satisfaction means the level of satisfaction of the residents of a housing unit with the physical and environmental conditions in their residential unit and neighbourhood. Satisfaction is thus arrived at by assessing and evaluating the physical and environmental conditions and comparing them with the person's perceptions of what they should be. It is an evaluation of how well the unit's physical and environmental aspects meet the needs of the individual or group of individuals (Zainul Abidin et al., 2022).

It is necessary to understand residential satisfaction properly. A residence is composed of the physical part and social aspects. This, therefore, should include the structural quality and appearance, the location and the neighbourhood in which the structure is located, and other environmental elements of the residence.

On the other hand, residential satisfaction is a psychological process involving assessing and evaluating the perceived gains against what was expected. Satisfaction will occur when the resident perceives that what they have is equivalent to what they expected. When occupying a residence, dissatisfaction occurs when there is a discrepancy between what is perceived as a 'loss' against what was expected initially. Residential satisfaction thus indicates how well the resident's expectations tally with what they expected before

occupying the residential unit. It also includes the ease with which residents can form meaningful relationships with their neighbours within the social networks available in the immediate neighbourhood. The level of contentment of an individual based on what they experience compared to what they expected thus measures the level of residential satisfaction. Policymakers in the housing sector, architects, developers, regulators, and managers of housing estates can all benefit by understanding residential satisfaction, which is crucial for long-term success.

From the definitions of the two terms and subsequent descriptions, it emerges that there is thus a strong connection between the physical and environmental aspects of the housing unit and the level of residential satisfaction. It would seem that the better the material quality and the environment perceived by the residents, the higher the level of residential satisfaction. This is because the perception of better physical and environmental aspects means that the person is more satisfied with the housing unit. Studies by Chou et al. (2003) support the assertion that the quality of a housing unit leads to higher residential satisfaction. Satisfaction with a housing unit must take cognisance of the physical and environmental aspects surrounding the unit. Other studies in mainland China such as the one by Hui et al. (2002) in Hangzhou, point out that residential satisfaction is subject to the physical and environmental factors found within a residential area and the residential unit itself. Features such as bedroom sizes, location, and size of the kitchen space provided, among other things, contribute to residential satisfaction. Other features a developer offers, such as a laundry area, electrical connection points, enhanced privacy such as screened windows, and services such as CCTV surveillance for common areas, enhance the level of residential satisfaction.

Focusing on Residential Satisfaction

From the preceding, it is clear that residential satisfaction is a factor that is related to many things, with residential quality being one of them. The indication here is that once physical and environmental factors perceived by the person are equal to or more than what they expected, it would be logical to assume that the level of residential satisfaction is higher. Residential satisfaction cannot thus be separated from the quality of housing and the neighbourhood environment, as the two impact the former. Residential satisfaction is, therefore, dependent on the physical and environmental factors that the person perceives. The physical characteristics of the residential unit, such as privacy offered, quality of the decor and aesthetics, size of the unit, and other aspects that indicate the physical quality of the unit, are thus indicators of the level of residential satisfaction.

Understanding the level of residential satisfaction presupposes understanding the physical and environmental requirements as perceived by the residents of a housing unit. To assess residential satisfaction, one must understand the factors that are crucial in giving the resident some measure of satisfaction (Riazi and Emami, 2018). That means residents have determined and evaluated the physical and environmental elements of the physical unit that they are occupying. It thus becomes possible to assess their level of satisfaction. Developers work according to the same building codes and regulations; therefore, housing units would be expected to be fairly even in physical and environmental characteristics. However, different people have different perceptions of quality issues and would be expected to display different levels of residential satisfaction.

3.3 Comprehensive Consumer Behaviour Models

Consumer behaviour models are theoretical frameworks for explaining how and why customers make certain purchasing decisions. Models attempt to explain consumer behaviour and associate purchasing decisions with environmental stimuli emanating from

marketing, socio-cultural environments, technological trends, and promotions. The models base consumer behaviour on psychological variables that influence decision-making in relation to lifestyle, personality, and motivation. Models that focus on personal psychological attributes account for problem recognition, individual decision-making processes, evaluation of alternatives, and post-purchase behaviour. Comprehensive models tend to integrate environmental stimuli and personal psychological attributes in explaining consumer behaviour. Although the inclusion of many variables burdens comprehensive models, they are convenient for aiding the understanding of the interplay of diverse factors that influence consumer behaviours.

Comprehensive models of consumer behaviour started to emerge in the scholarly world in the late 1960s. Studies on consumer behaviour led to the development of models such as the Nicosa model (Nicosa, 1966), the Howard-Sheth model (Howard and Sheth, 1969), the Engel-Kollat-Blackwell model (Engel, Kollat and Blackwell, 1968), and the model of consumer data collection by Bettman (1979). According to Schiffman, Bednall and Kanuk (1997), the ideas premised by these models have advanced over time. They remain valid and serve as frameworks for permitting integrative perspectives on consumer behaviour. The models also aid in recognising factors influencing purchasing decision-making and consumer behaviours.

Consumer behaviour models can be grouped into traditional and contemporary categories. Conventional models of consumer behaviour include the learning model, the economic model, the psychoanalytic model, and the sociological model. The learning model is based on the argument that consumer behaviour emanates from the desire to satisfy basic needs that are required for survival. In addition to basic needs, people seek to meet learned needs derived from life experiences. The learning model emerged to align

with the idea behind Maslow's Hierarchy of needs as it emphasises that consumers focus on meeting basic needs before moving on to satisfying learned needs. The psychoanalytical model of consumer behaviour holds that consumers have deep-rooted unconscious and conscious motives that influence purchasing behaviour. Based on the psychoanalytical model, consumers prefer products or services that appeal to the said deep-rooted desires. The sociological model is based on the perception that the individual's position influences consumer behaviours concerning societal groups. People are thus considered to make purchasing decisions depending on what is recognised as appropriate or desirable by the group to which one is affiliated.

On the other hand, contemporary consumer behaviour models include the Engel-Kollat-Blackwell (EKB) Model, Black Box Model, Hawkins Stern Model, Howard Sheth Model, Webster and Wind Model, and Nicosia Model. These models are characterised by consumers' inclination towards rational decision-making processes instead of emotions or unconscious desires. The Engel-Kollat-Blackwell Model presents consumers' purchasing behaviour as a process comprised of awareness, information processing, evaluation, purchasing decision, and outcome analysis stages. The Black Box Model is based on stimuli and frames consumers as autonomous thinkers who process internal and external conditions while making purchasing decisions. Contrary to the EKB and Black Box Model, the Hawkins Stern Impulse Buying Model is grounded on the premise that purchasing behaviour is not always a result of rational thinking. Instead, people tend to be impulsive when buying a product or service. The Hawkins model outlines that impulse buying occurs as either escape purchase, reminder purchase, suggested purchase or planned purchase. While planned purchase sounds like a rational process, Hawkins argues that consumers are more likely to make a planned impulse purchase when enticed by discounts or product promotions.

The Howard Sheth Model perceives consumers as highly rational and methodological when making purchasing decisions. Buying is pursued as an extensive, limited or habitual problem-solving process. Nicosa Model differs from other contemporary models because it focuses on business organisations more than consumers. The model posits that marketing and promotional messages are the main sources of consumer purchasing behaviour. The Nicosa Model disregards internal factors inherent in consumers and considers business organisations as primary influencers of purchasing behaviours. The Webster and Wind Model focuses on business-to-business buying behaviour and will therefore not be elaborated on in the context of this study. Whether a model is traditional or contemporary, each of the consumer behaviour models provides a basis for explaining why and how consumers may prefer certain products or services.

The Engel-Kollat-Blackwell (EKB) Model is recognised as a convenient framework for examining consumer satisfaction, pre-decision influences, social influence and purchasing patterns. Gomez-Diaz (2016) described that the EKB comprises five stages: problem recognition, search for information, alternatives evaluations, choice and outcomes. Consumers are considered to go through the five stages sequentially. The stages are followed as sequential steps that lead to consumption decision-making. Once a need for a product or service is recognised, a consumer gathers relevant information on the available alternatives that can satisfy the need (Osei and Abenyin, 2016). Exploring options available in the market encompasses a consumer's internal and external environment. In this regard, an individual intending to make a purchasing decision is expected to base their decisions on attitude, previous experiences, socio-cultural environment, economic situation and personal preferences, among other factors.

A consumer employs personal criteria during the evaluation stage to deduce the most desirable preferences. Consumers consequently make decisions on which alternative of evaluated products or services will be purchased. Gomez-Diaz (2016) outlines that the outcomes stage occurs after the purchase has been made and the consumer engages in post-purchase evaluation where the efficiency and appropriateness of the purchased service or product and purchasing decision are examined. Insights derived from the outcomes stage form a basis for future purchasing behaviour. The purchasing decision process ends if the initially recognised need is sufficiently satisfied. If not, the consumer repeats the purchasing decision process in search of a better product or service. The purchasing decision-making process in the Engel-Kollat-Blackwell Model is represented in Figure 3.1 below.

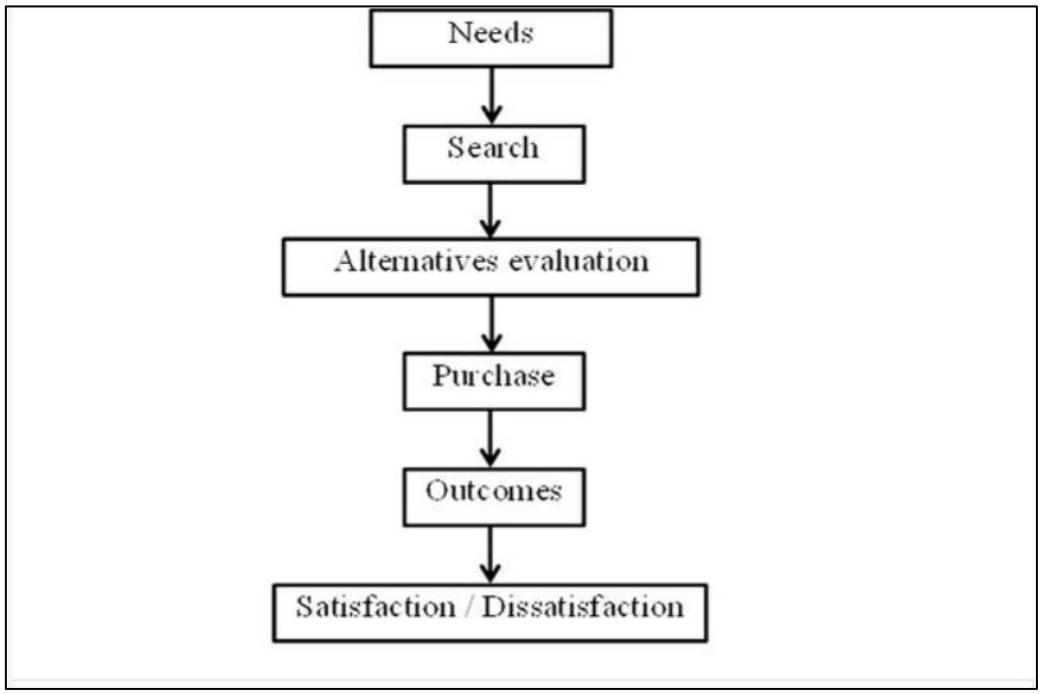


Figure 3.1 The purchase decision process from Engel-Kollat-Blackwell Model of consumer behaviour (Engel et al., 1993)

The Engel-Kollat-Blackwell Model is representative of consumer behaviour models and

presumes that consumers are rational and active players in consumption decision-making. Despite the model's convenience in providing a framework for understanding the purchasing decision-making process, it faces criticisms. Researchers agree that consumers engage in cognitive and deliberate decision-making processes in a critical analysis documented by Erasmus, Boshoff and Rousseau (2001). However, rational models are faulted for making the assumption that purchasing decision-making occurs as a sequential process. Opposing this assumption, Erasmus et al. (2001) assert that information processing occurs in parallel or simultaneous decision-making. In addition, the model fails to recognise that consumer goals are often imprecise. Therefore, the problem recognition presented as the initial stage of the purchasing decision-making process may not yield a definitive product or service that a consumer intends to buy.

The stages of application of information processing and evaluation of alternatives are also challenged on the grounds of impulsive purchasing behaviours exhibited by consumers. Erasmus et al. (2001) note that customers are significantly influenced by existing situations and the appeal gained during in-store search activities regardless of the preparedness for purchasing decisions. The model emphasises rationality and falling for the risk of generalising product and situation-specific conditions that influence purchasing behaviour. Nevertheless, the EKB Model provides a reliable framework for understanding consumer decision-making.

3.4 The Importance of Customer Satisfaction

Demand for quality housing infrastructure and associated services cannot be disentangled from discussions of residential customer satisfaction. Emphasising the importance of studying customer satisfaction regarding residences, Adams (1984) asserts that a home, or

residential property, constitutes a substantial investment. Products and services in the residential property market are expected to serve occupants' needs for a prolonged period. It is also worth noting that transactions involved in residential properties can be costly, cumbersome, and difficult to reverse (Tsiros and Mittal, 2000). Consequently, meeting customers' demands in residential property markets calls for the provision of quality because, as Wang et al. (2004) argue, the customers not only live in the residences but also create meaningful personal and family experiences.

Concurring with the high importance of quality in ensuring residential customer satisfaction, Haurin et al. (1987) note that dissatisfaction with purchasing a home or residential property can cause devastating consequences. An unsatisfied customer might find himself or herself incurring significant trading costs while attempting to sell a property. Other unplanned expenses may arise from the need to move to another place if deciding to dispose of an unsatisfactory residence. Tsiros and Mittal (2000) advocate customers seeking to acquire a residence keen on ensuring that they are contented with the quality of a residence because reversing a home purchase, if at all possible, might be surrounded by a lot of inconveniences.

Attempting to avoid this, the perception of customer satisfaction is echoed in the Latham report, which asserts that clients are the core of a building process, and their needs must be met (Latham, 1994). Therefore, professionals in the construction or property industry are faced with a demand to uphold the best practices to ensure that residential products can adequately satisfy customer needs.

In addition to meeting consumer needs, ensuring customer satisfaction in residential products and services enable business organisations to improve their market share and

enhance their performance. According to Buzzel and Gale (1987), customer satisfaction positively impacts the corporate image. It thus makes it possible for dealers in residential properties to attract a vast pool of customers. In the residential property business context, Victor and Boyton (1998) term customer satisfaction as a basis for comparative advantage. Business organisations that attain high levels of customer satisfaction regarding residential products and services can thus be considered to have a competitive advantage over connoisseurs who are unable to meet customer expectations. A business or individual engaged in the residential property market with a reputation for providing high-quality and satisfactory residences is thus likely to enjoy a broad market share and achieve outstanding business performance.

Having recognised customer satisfaction as an essential aspect of residential property development, experts in the industry are responsible for inquiring about various consumer segments' housing and residence needs. Cadotte et al. (1987) advocate for industry experts in residential property markets to recognise that customer satisfaction relies on individualistic and situational assessments made by specific consumers. Depending on pre-existing experiences, socio-cultural relations, and economic situations, customers in residential markets may exhibit unique preferences and expectations. As evident from a study by Kumar and Khandelwal (2018), customers tend to give varying priorities to aspects of a residential property. The level of preference or dissatisfaction attributed to a residential property may be influenced by the quality of the residential infrastructure, maintenance cost, location, reputation of the developer, location, availability of reliable water and power supply, proximity to public amenities, size, cost of the property, and aesthetics, among other considerations.

The economic cost of acquiring and maintaining a residence also influences customer

satisfaction. According to Kumar and Khandelwal (2018), the price range is a key consideration in decisions over purchasing residential properties. Findings from Kumar and Khandelwal's (2018) study reveal that customers tend to settle for properties whose prices fall within their buying capacity, irrespective of the unique preferences associated with residences. Carvalho, George and Anthony (1997) echoed emphasis on the link between price and customer satisfaction. They assert that residential property is likely the highest investment in most households. Kumar and Khandelwal (2018) observe that sensitivity to economic costs and an elevated desire for high-quality residences challenge developers to strike a balance between appealing to consumer desires and undertaking economically viable projects. While attempting to make homes attractive and satisfy customer needs, property developers should ensure that the price and maintenance costs of resultant housing infrastructure are within the reach of the targeted customer segment.

Customer satisfaction in residential properties is closely linked to safety. Insights derived from residential satisfaction studies indicate that a neighbourhood's safety influences the level of satisfaction with residential purchases. Carvalho, George and Anthony (1997) argue that the prevalence of crime incidents can undermine customer satisfaction and degrade the value of a neighbourhood. Even though safety is not an issue of concern in the Hong Kong residential market, observations of other markets exhibit safety as a key factor influencing customer satisfaction and residential satisfaction. The existence of crime risk may harm the customer satisfaction of the buyer who has moved in and found that the property's value is affected. Since the property owner of a house may fear that the surrounding neighbourhoods of the house may cause financial losses, gated areas or communities are becoming more popular. For instance, Carvalho et al. (1997) note that most residences in Brazilian cities are developed as exclusive condominiums secured with surrounding walls or fences, security gates, and controlled access. Atkinson and

Flint (2004) report similar observations of UK urban and suburban neighbourhoods where most people prefer to live in gated communities.

Despite many factors influencing customer satisfaction regarding residential properties and services, understanding the patterns in purchasing decision-making is essential. Studies on customer satisfaction and residential satisfaction serve to inform professionals in the industry on aspects of residential properties that should be given priority when undertaking housing development projects. As revealed by evidence, the ability to meet residential satisfaction is beneficial for enterprises involved in residential markets because it builds reputation and market share for developers. For buyers, acquiring a satisfactory home or residential premises creates a great environment where positive and long-term individual and family experiences can be nurtured.

3.5 Residential Satisfaction

Galster and Hesser (1981) suggested that an individual's evaluation of a residential situation is based on his or her felt needs and desires. They considered the desires derived from idealised conditions and attributes of a residential unit or neighbourhood. Housing needs and desires are also identified by Onibokun (1974, 1976) as instrumental in influencing people's evaluation of a home or residential property. In Onibokun's (1974) study, the evaluation is affected by the structural features and social, behavioural, cultural, and other factors in the whole system of society and environment. The evaluation depends on a system of interaction between tenants, residents, the environment, and property management.

The significance of neighbourhood quality as a determinant of residential satisfaction

resonates in Galster and Hesser's (1981) study. The researchers identify the physical features of a neighbourhood as objective factors that determine the level of residential satisfaction. With reference to their model, the researchers proposed two objective factors contributing to residential satisfaction. A neighbourhood's physical and contextual features were recognised to influence residential satisfaction in an aggregate sense.

The argument of residential and neighbourhood satisfaction emanating from perceptions and desires is echoed in Ajzen and Fishbein's (1981) work cited by Vallerand et al. (1992). These researchers purport that there are three types of responses illustrated by people to any social object. These are affective, cognitive and behavioural responses. The researchers argue that satisfaction is an attitude affected by affective, cognitive and behavioural variables. Concurring with this view, Altman and Gauvain (1981) term residential satisfaction as a state whose achievement relies on the linkage between affective attitudes or satisfaction and behaviour via behavioural intentions concerning a housing or residential unit. On a different account, Weidemann and Anderson (1985) considered that satisfaction with community, neighbourhood, site, building unit or lot, and satisfaction with the house were key dimensions that should be factored in when formulating a conceptual residential satisfaction model. In addition, the individual characteristics of the residents were also recognised as significant predictors of satisfaction.

3.5.1 Historical Development of Residential Satisfaction

Scholarly inquiry into residential satisfaction dates back to as early as the 1970s. In the early phases of development, the idea of residential satisfaction was coined as satisfaction with a residence, its location and its surroundings. In the mid-1970s, Francescato et al.

(1974) conceptualised a framework to account for affective responses exhibited by inhabitants to their housing environment. The framework comprised objective attributes of a residence, objective quality of residential environments, perceptions of the physical environment, housing management practices and relationships among residents.

According to Mohit and Raja (2014), the development of the residential satisfaction concept was brought about by the post-war housing boom between the 1950s and early 1960s. Western countries were undergoing what Mohit and Raja term as concomitant growth of suburban developments. During the post-war period, new living patterns and residential developments emerged, focusing on eradicating slums and reconstructing central cities. On the other hand, developing nations of the post-war period were experiencing rapid urbanisation as a consequence of industrialisation and consequential economic growth. Government agencies in developing countries, beginning in the 1970s, started to facilitate residential and housing infrastructure development for different income groups (Mohit and Raja, 2014). These developments catalysed the studies seeking to ascertain how the residential developments satisfied the housing aspirations of disparate groups of citizenries in developed and developing counties.

It was not until the early 1980s that Kano (1984) established a conceptual model for representing customer satisfaction. Gauzelin and Bentz (2016) documented that the Kano Model of consumer satisfaction premises that there is no real symmetry between satisfaction and customer dissatisfaction. The idea advanced by Kano provides that a product or service may be surrounded by factors or inherent components that strongly influence customer dissatisfaction when absent without necessarily elevating satisfaction when they are present (Gauzelin and Bentz, 2016, p. 2). Based on the Kano Model, products and services have basic attributes that customers expect and must be present.

The absence of such essential attributes makes customers much less satisfied with a product or service. Framing the Kano Model in the context of residences where spacious rooms are identified as a primary factor, a house or residential property whose rooms are not spacious would cause a substantial decline in customer satisfaction. However, the presence of spacious rooms should not be expected to necessarily increase the level of customer satisfaction because other attributes like quality and aesthetics of finishing remain in play.

Elements of the Kano Model manifest in studies exploring the propensity for residential mobility around the mid-1970s. Research studies indicate that housing quality influences people's tendency to move from one residence or neighbourhood to another (Morris, Crull and Winter, 1976). Notably, the failure of a housing or residential unit to meet socially accepted standards acted as a critical determinant for residential mobility. A study by Speare (1974) indicated that residential satisfaction was initially confined to features of the housing unit, proximity to the workplace and public amenities, and characteristics of the neighbourhood where the residence was located. The concept was, over the decades, advanced to include aspects of the surrounding environment and community connectivity as determiners of residential satisfaction. Scholars like Grillo et al. (2010) and James et al. (2009) exhibit recognition of residential satisfaction as having expanded to permit the inclusion of environment and community connectivity. Over the past two decades, the concept of residential satisfaction has been enhanced to a multidimensional construct that focuses on features of a residential unit and recognises the implications of the social-cultural environment. Similar views are echoed by scholars such as Heller et al. (1984), Hughey and Bardo (1987), and Sirgy and Cornell (2002). In Grillo et al.'s (2010) argument, the modern concept of residential satisfaction attempts to encompass the social environment as influenced by subjectively perceived belongingness and acceptability,

surrounding physical environment, quality of housing infrastructure, and availability of social support services.

Even though the Kano Model was developed to aid the overall understanding of customer satisfaction, its ideas find a place in residential satisfaction. In an account documented by Mohit and Raja (2014), the authors assert that the concept of residential satisfaction has been advanced and utilised in the residential context in at least four different ways. Residential satisfaction is observed to emerge as a predictor of individual perceptions of the general quality of a product or service. It is also employed as an evaluative measure for assessing success in housing developments. Mohit and Raja note that residential satisfaction has also developed as an indicator of residential mobility emanating from changes in housing demands or neighbourhood quality. In addition, residential satisfaction emerges as a basis for assessing the perceptions of inadequacies in a housing environment.

Residential satisfaction is an important research area because it significantly influences people's lives. It contributes to a person's psychological well-being and is influenced by physical factors such as the facilities, environment, and neighbourhood. Campbell, Converse and Rogers (1976) defined a residential environment as three nested environmental realms: the residential unit, the neighbourhood, and the community. The authors examined residential satisfaction as a determinant of perceived quality of life. Weidemann and Anderson (1985) transformed the first realm into a residential satisfaction framework. The second and third realms of the residential environment were suggested by Gruber and Shelton (1987), where two sets of neighbourhood evaluation variables were applied. The first set was related to neighbourhood and community, while the second focused on neighbourhood attributes.

The relevance of socio-cultural norms in residential satisfaction has increased over time and emerged as a major factor influencing residential mobility. As early as the mid-1970s, researchers recognised housing dissatisfaction as a cause of propensity for residential mobility. While the quality of housing or residential infrastructure impacts occupants' satisfaction, housing norms emerged to significantly influence the propensity to move from one residence to another. As Morris, Crull and Winter (1976) assert, dissatisfaction with a residence arising from its inadequacy to satisfy societal and cultural housing standards has become a significant determinant of residential mobility.

Amerigo and Aragones (1990) present a holistic model of residential satisfaction. According to Amérigo and Aragonés' model of residential satisfaction, when the resident has evaluated the objective attributes of the residential environment, the objective qualities then become subjective, leading to a certain level of satisfaction. These subjective attributes are cognitive elements determined by the so-called 'personal characteristics', including the social, demographic and residential pattern of consistency. The resultant level of residential satisfaction is an affective state that people feel in their home environment. In some instances, it can drive them to behave in specific ways or conform to or enhance their compliance with that environment. The Amerigo and Aragones model is illustrated in Figure 3.2 below.

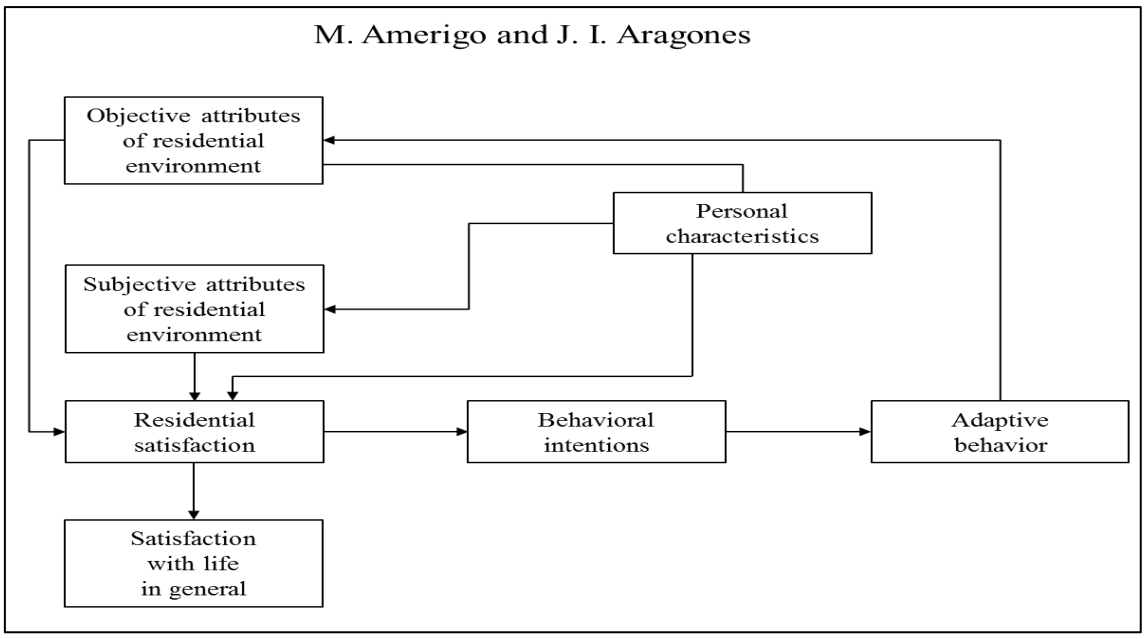


Figure 3.2 Systematic model of residential satisfaction (Amerigo and Aragones, 1990, 1992a)

The first section of the Amérigo and Aragonés model aims to capture perceived environmental quality indexes by assessing a collection of neighbourhood, house and neighbours' attributes. In contrast, the second segment is intended to represent the subjects' happiness with their residential environment. The calculation of residential satisfaction is accomplished by challenging the level of the subject's satisfaction with home, house and community directly or indirectly. The third segment addresses socio-demographic and personal characteristics that are important to previous work in this area. Ultimately, the fourth segment deals with the behavioural dimension covering people's actions in residential settings.

3.5.2 Theories of Residential Satisfaction

The development of the concept of residential satisfaction is grounded on psychological construct theory, housing deficit theory and housing needs theory. According to Mohit and Raja (2014), the housing needs theory developed by Rossi (1955) posits that changes

in housing needs that occur as households progress through life push households out of conformity with existing housing and neighbourhood situations. The resultant lack of fit between current and desired housing standards imposes stress on occupants and, in turn, causes dissatisfaction with living conditions. Mohit and Raja note that households respond to the emergent dissatisfaction by moving to a housing unit or residence that better suits current needs. Based on housing needs theory, customer demands and satisfaction are expected to vary depending on the stage of life at which an individual or household is living. As life progresses, housing needs change, and a previously convenient unit becomes incapable of satisfying changing needs. Consequently, an occupant is compelled to move to a different housing unit or residence that can satisfy current needs and aspirations.

On the other hand, the psychological construct theory theorises that people cognitively construct a reference condition for each aspect of the residential situation. Individuals attribute the quality of a reference depending on self-assessed housing aspirations or needs. According to the psychological construct theory, people will achieve a psychological state of satisfaction if their current living situation is considered proximate or superior to the reference situation (Mohit and Raja, 2014). In situations when the current living conditions fall below reference residential conditions beyond a given deficiency threshold, individuals may adapt by reducing aspirations – such adaptive response results in a modicum of satisfaction. Alternatively, individuals may fail to adapt to the existing residential situation and remain dissatisfied with current living conditions. Attempts to reduce the dissatisfaction with residential conditions compel individuals to alter the features of the residential unit or move to a more satisfactory residence.

The housing deficit theory argues that satisfaction with housing conditions is judged based on normatively defined norms. Cultural norms are dictated by societal, family or personal standards. As Mohit and Raja (2014) outline, the disparity between actual housing and standards set by norms results in a deficit in residential satisfaction. Individuals or households with housing deficits express residential dissatisfaction. Consequently, such people will likely consider making housing adjustments to reduce their residential dissatisfaction. Apart from adjusting to housing conditions, occupants of a housing unit can resort to revising their housing needs and aspirations. Alternatively, individuals or households facing residential dissatisfaction may move to another residential unit where housing standards are proximal or conform to societal or normative standards.

Studies on residential satisfaction rely on one or a combination of the theories and exhibit a consensus that the issue is a multi-dimensional phenomenon. Satisfaction with housing or residential conditions is influenced by factors that extend beyond the physical characteristics of a residential unit to encompass the quality of the physical and social environment. Aspects of residential settings' social-cultural, economic and organisational standards jointly influence how inhabitants feel satisfied or dissatisfied with their living conditions. As Mohit and Raja (2014) suggest, further research on residential satisfaction should establish a multi-faceted framework that comprehensively captures individual, household, and community issues that influence satisfaction with housing units and residential settings.

3.5.3 The Three Realms of Residential Satisfaction

In the context of this study, residential satisfaction is presented as the match between an individualised ideal environment and the objective or subjective characteristics of the actual living environment. An increase in disparity between the ideal and actual or subjective living conditions yields dissatisfaction, while congruence results in residential satisfaction. As Krumins, Sechi and Berzins (2018) assert, determinants of residential satisfaction are numerous. The interaction of the said influencing factors makes understanding residential satisfaction complex. Nevertheless, researchers agree that determinants of residential satisfaction are associated with three realms: residential unit, neighbourhood and community.

The characteristics of the housing unit are about the quality of the infrastructure and fixtures of the building occupied for residential use. Balestra and Sultan (2013) suggested that a lack of appropriate housing threatens the proper functioning of a family and exposes occupants to health hazards. Aspects like poor lighting, poor air quality, lack of safety devices, and substandard insulation, among other hazards, expose families to increased risks of incurring accidents or suffering health problems (Balestra and Sultan, 2013). Negative implications of poor housing conditions extend to causing social isolation because people living in sub-standard housing tend to be reluctant to invite guests to their homes.

The neighbourhood realm of residential satisfaction is concerned with quality and standard residential areas and their environs. The level of residential satisfaction among people living in slums can be expected to significantly differ from that of people living in gated communities or owned homes (Balestra and Sultan, 2013). In addition to the

tranquillity of a residence, the neighbourhood realm factors in aspects like availability of public amenities, pollution level, the prevalence of violence and crime, and standard of the built environment.

The community realm comprises social, cultural, demographic and socio-economic norms to which residents are exposed by living in a given residential location. The community aspect relates to income, education level, ethnic and racial affiliation, religion, and culture associated with most inhabitants occupying a given residence (Davoodi and Dagli, 2019). A high level of residential satisfaction is achieved when individuals or households can develop a sense of belonging and acceptance in the community where they live.

3.5.4 Residential Satisfaction Studies

People exhibit disparate attitudes and levels of contentment with housing units and residential environments. Theories such as housing needs theory, housing deficit theory, and the psychological construct theory have been put forward to explain the propensity and constraints surrounding the movement of people from one housing or residential condition to another. With perceptions of deficiencies in residential satisfaction, individuals exhibit affective, cognitive and behavioural responses. This section explores literature to highlight dimensions or factors that influence residential satisfaction. Understanding determinants of residential satisfaction will shed light on issues that developers and property managers should be attentive to in order to cultivate behavioural intentions of customers giving preference and recommending their residences to other prospective clients. The section will explore studies relating to housing quality and characteristics, neighbourhood, environmental safety, transport and public facilities, and property management. These factors are the dimensions that were considered to affect

residential satisfaction, as seen in the following literature review.

Housing Quality/Characteristics

Characteristics and quality of a residence as determinants of residential satisfaction are approached from qualitative and quantitative perspectives. According to Galster and Hesser (1981), qualitative features of the residential property include heating, plumbing, kitchen equipment, interior and exterior condition, age of the unit, and overall modernity. On the other hand, quantitative attributes may include the number of rooms, the number of bathrooms, the ratio of persons to rooms, and yard area. Other factors associated with residence characteristics are dummy variables, encompassing aspects such as single-unit, duplex, apartment, townhouse, or public housing. Western et al. (1974) echoed the influence of a housing unit's quality and characteristics, whose study revealed that density, household size, and the number of rooms could enhance or undermine the level of residential satisfaction. Regarding the quality of housing units, Berger and Neuhaus (1977) observed that in households with higher quality and good plumbing and heating, a greater number of bathrooms and good kitchen facilities were associated with higher residential satisfaction.

Neighbourhood

Deriving insights from Galster and Hesser's (1981) study, neighbourhood satisfaction constitutes a dimension of residential satisfaction. Factors determining neighbourhood satisfaction extend beyond the type and quality of housing infrastructure to consider a residence's physical, social, and cultural attributes. Aspects like crime, nearby rundown properties, and levels of friendly neighbours, similar and familiar neighbourhoods are

significantly associated with neighbourhood satisfaction. From Galster and Hesser's (1981) study, inhabitants living in a family setup showed a declining level of residential satisfaction as the number of children in a family increased. Scholars exploring the influence of neighbourhood characteristics on residential satisfaction did put forward conclusions implying that dilapidated residences, nearby rundown properties, and the proportion of racial and ethnic composition of inhabitants reflected close correlations with neighbourhood satisfaction.

Marans (1976) found that neighbourhood satisfaction can predict the propensity for residential mobility and customer behaviour in selecting residential premises. According to Marans, the significance of neighbourhood satisfaction as a factor influencing residential mobility varies across age, level of income, nature of the neighbourhood and type of residence. Balestra and Sultan (2013) assert that dissatisfaction with residential conditions affects people's lives by undermining physical and mental health and limiting opportunities for self-development. The physical characteristics of a neighbourhood can promote or undermine the quality of life. In Balestra and Sultan's argument, well-developed neighbourhoods provide inhabitants with excellent living conditions free from pollution. Other aspects like security, access to clean water and social amenities contribute to a high quality of life. Deriving insights from a study on rental housing in China, Gan et al. (2019) concur that sub-standard public facilities and poor neighbourhood environments negatively influence residential satisfaction.

Neighbourhood satisfaction is also attributed to population density or the number of residents inhabiting a given neighbourhood or housing infrastructure. Based on observations from a study by Berger and Neuhaus (1977), neighbourhoods with fewer residents are associated with a high level of residential satisfaction. On the contrary,

residents from densely populated neighbourhoods are noted to exhibit low satisfaction with the environment and conditions in which they live. Along with population density, the population composition emerged as a factor that promotes or undermines residential satisfaction. According to Berger and Neuhaus, ethnic group and race act as a variable influencing neighbourhood satisfaction. People tend to perceive higher residential satisfaction when residing in neighbourhoods in which most inhabitants are of similar ethnic or racial origins.

A community's environmental conditions are influenced by socio-demographic measures such as social class, length of residence, the quality and adequacy of basic facilities and services, and safety. In addition, the dependency ratio is also a factor as it relates to the number of children (aged 1 - 14) and the elderly (65 years or over) and indicates the potential effects of changes in population age structures for social and economic development. It points out broad social support trends that are vital for facilitating the government's administration.

With reference to a study by Weideman and Anderson (1985), residential satisfaction emanating from environmental conditions is associated with the affective, cognitive and behavioural trilogy conceptualised by Ajzen and Fishbein (1981). Marans and Spremeyer (1981) studied the relationships between objective environmental conditions, subjective experiences, and residential satisfaction and behaviour on a different account. The physical environment is assessed on the basis that objective features of a given environment affect the resident's satisfaction through the person's perceptions and assessments of those environmental attributes. According to Weidemann and Anderson, a person's behaviour is affected by satisfaction, the perceptions and assessments of the objective environmental attributes, and the objective features of the environment itself.

In an attempt to establish a comprehensive understanding of the interplay between environment and residential satisfaction, Wiedemann and Anderson (1985) formulated an integrated model. As illustrated in Figure 3.3 below, the model encompasses objective social and physical attributes of the residential environment, perceptions about environmental attributes, environmental effects, intentions of occupants to behave with respect to the residential environment, and behaviour related to the environment.

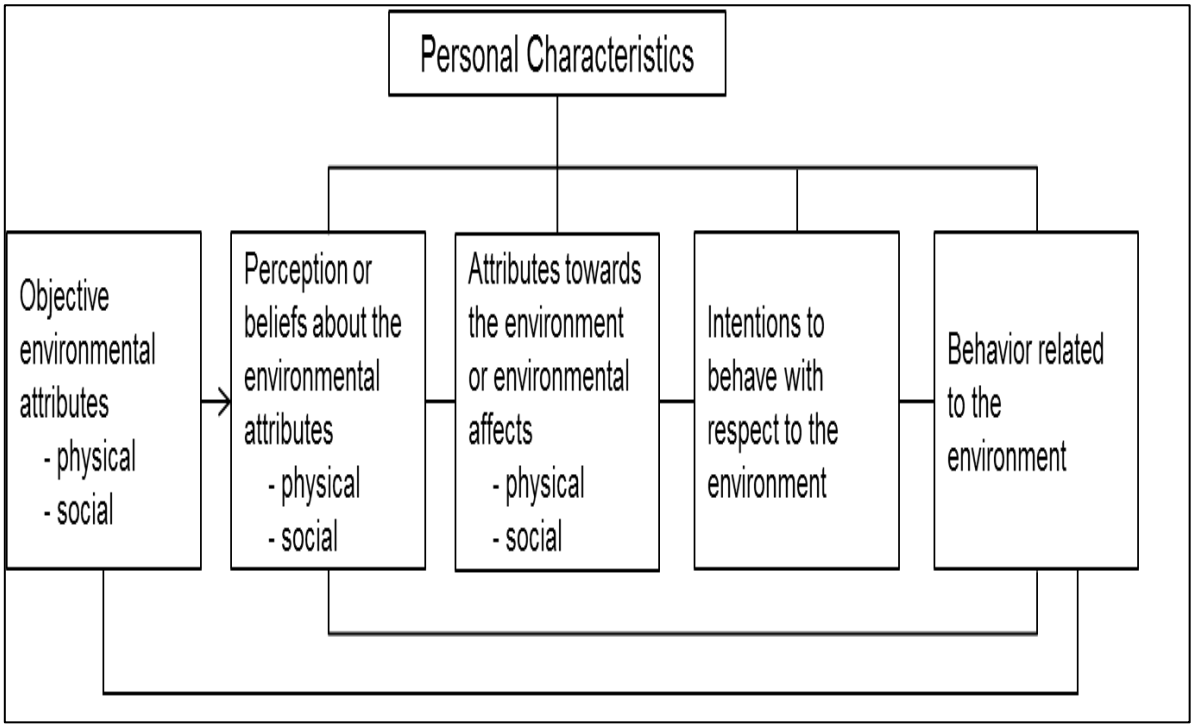


Figure 3.3 Weidemann and Anderson's (1985) Integrated Model of Resident Satisfaction

Perceptions and assessments of the objective residential environment are determinants of affection. As indicated by Weidemann and Anderson, residential satisfaction is a determinant of the quality of life, a broad scope of the "affective" concept. One common distinguished feature of both models is the causal relationships between different components. This fundamental linkage in residential satisfaction respect was evidenced in

Altman and Gauvain (1981). Weidemann and Anderson were the pioneer researchers who depicted the distinct connection of affective attitudes or satisfaction to behaviour via behavioural intentions concerning residential satisfaction. Weidemann and Anderson considered that satisfaction with the community, satisfaction with the neighbourhood, satisfaction with the site, satisfaction with the building/unit/lot and satisfaction with the house were the residential satisfaction dimensions for their conceptual model. Individual characteristics of the residents were also examined and used as predictors of satisfaction. Objective characteristics of a residential environment act in combination with subjective views, attitudes and behavioural reactions to influence residential satisfaction.

Environmental Safety

The distance to unpleasant facilities, air pollution level in the residential district, landslide risk level, being near traffic blackspots, and typhoons and rain causing flooding and inconvenience are determinants of residential satisfaction. Ha and Weber (1994) and Ge and Hokao (1993) showed that the closer a residence to unpleasant facilities such as trash blackspots and odour decrease residential satisfaction. In Hong Kong, odours from some trash collection sites, back alleys of buildings and reclamation areas influence the residents in some districts. Ha and Weber (1994) and Ge and Hokao (2006) also explained that safety from disasters is a determinant of residential satisfaction. This is applicable to Hong Kong as the city is usually hit or influenced by typhoons five to seven times a year. Heavy rain causes landslides and flooding occasionally. These are determinants of residential satisfaction in Hong Kong.

Air pollution was found to be determinants by Ha and Weber (1994), Carvalho, George and Anthony (1997), Ge and Hokao (1993) and Muhammad, Rostam and Yusoff (2010). Hong Kong's air quality is seen as a major issue. Visibility is less than eight kilometres

for more than 30% of the year. It is common to notice haze above the city. The most significant contributors to Hong Kong's air pollution are motor vehicles, marine vessels and power plants.

Transport and Public Facilities

The presence, adequacy and quality of public facilities in a community are determinants of residential satisfaction. As evident from a study on residential satisfaction in Malaysia, Muhammad, Rostam and Yusoff (2010) explored the impacts of the demographics of residents and housing profiles including public health service, transportation, and communication services. These were in addition to factors such as waste disposal service, environmental protection, safety and neighbourhood characteristics. The major findings indicated that male respondents reported significantly higher satisfaction with public health services than female respondents. In Muhammad et al.'s (2010) study, residents reported significantly higher residential satisfaction with housing features, public facilities and solid waste handling, while renters indicated considerably greater safety satisfaction. The findings also revealed no significant differences concerning all aspects of residential satisfaction in developed or developing areas.

Middle-cost housing households reported significantly higher satisfaction with housing features, public facilities, public healthcare, solid waste collection, and transport and connectivity networks than low-cost housing. However, residents who resided in a low-cost project form felt better safety protection. Malaysian residents reported significantly higher satisfaction with public health in measuring variations between the races of residents, while other races were no different in the other seven dimensions (Muhammad et al., 2010). In assessing the differences between household income satisfaction at residential levels, there were significant differences in all aspects of residential satisfaction except for solid waste management, environmental protection, and

transportation and communication facilities. Analysis of the differences in residential satisfaction by the length of residency showed a significant difference in public facilities only between 11 and 15 years (Muhammad et al., 2010). The result indicated that people who lived between 11 and 15 years ranked public facilities satisfaction higher than in another residency period. H1e: Residents' satisfaction with their view and landscape is significantly related to their overall residential satisfaction.

View and Landscape

In the context of this research, the view refers to the scene that can be observed from within an apartment, while the landscape refers to the topographical characteristics of the surrounding area. When you are travelling across a region of land, the scenery that you can see around you is referred to as the landscape. There are a number of mountains in the territory of Hong Kong. Residences that are built on the mountains and are situated in the town centre are typically significantly more expensive than other residences. These locations are generally considered exclusive, e.g. residences in mid-levels, mid-levels east and mid-levels west. These residential units usually have better views and landscapes, and strong privacy. In Hong Kong, owning a residential unit on a mountain in urban areas often symbolises a higher social rank within the community.

Reported by Ha and Weber (1994), the view from windows, trees and shrubs, and levels/landscape are all determinants of residential satisfaction. Privacy from neighbours was also considered a determinant by Carvalho, George and Anthony (1997) and Ha and Weber (1994). The research conducted by Kearney (2006) investigated how factors such as residential density and the presence of natural areas influence individuals' levels of contentment with their community. The results revealed that density and closeness to shared natural areas did not have a significant influence on neighbourhood satisfaction.

Rather, opportunities to explore nearby common space and have views of nature from inside the home were seen to be more important.

Property Management

How a residential locality is managed significantly influences the level of residential satisfaction among inhabitants. Carvalho, George and Anthony (1997) researched the residential satisfaction of residents living in gate-guarded neighbourhoods in Alphaville, São Paulo and Brazil. They aimed to investigate the residential satisfaction with exclusive condominiums and understand what features of gate-guarded neighbourhoods carry the highest importance in predicting residential satisfaction with their living environment and whether these features were uniquely special to exclusive condominiums. In the study, Carvalho, George, and Anthony listed four dimensions with 18 sub-dimensions. Privacy, maintenance, prestige, and security system were among the essential factors influencing residential satisfaction. Francescato et al.'s (1975) study focused on identifying predictors of residential satisfaction in high-rise and low-rise housing and developing reliable and valid measures for assessing residents' satisfaction by identifying design, managerial, social, and psychological factors. In the study, Francscato et al. established that residences whose security, waste management and public amenities are properly managed exhibited a high level of residential satisfaction, unlike housing facilities with less stringent management practices.

In Hong Kong, customer satisfaction with the property management company undoubtedly contributes to residential satisfaction. Most buildings in the city have formed owners' associations to run the properties. Some scholars also found that affiliation with these owners' associations has its pitfalls. For instance, Walters and Kent (2000) asserted that the committee representatives of the owners' associations and external land

management associations appear to make favourable choices. In addition to these issues, the inactivity of the owner's association also hinders building administration and maintenance (Housing, Planning and Lands Bureau, 2005). Worst of all, there could be competition between property owners' associations (Housing, Planning and Lands Bureau, 2004) and residents and external property associations. This can exacerbate instead of alleviate issues of building management. It will then produce misleading results by merely utilising the establishment of owners' associations and the appointment of external property management associations as a substitute for building management in empirical studies. Yau and Ho (2009) presented a preliminary analysis of the impact of construction maintenance activities in Hong Kong on property valuations. They noticed that activities such as maintaining designed architectural sketches and logs of accidents, executing property-all-risks insurance for shared areas, creating evacuation protocols, and holding fire drills increase the value of buildings.

In the study by Tucker and Pitt (2010), the authors gathered data from quantitative surveys to obtain information on consumer satisfaction with facilities management services in the United Kingdom. The objectives were to identify each facility management method by efficiency, criticism and service provision. The services involved the upkeep of the building fabric, mechanical and electrical engineering, waste disposal, the repair of land and gardens, sanitation, and health and safety.

3.5.5 Residential Satisfaction Studies in Hong Kong

Several studies have examined the factors that contribute to residential satisfaction in Hong Kong. Liu (1999) conducted a survey of 450 residents living in 15 public housing estates in Hong Kong and found that residents' satisfaction was influenced by factors such as the physical environment, social environment, and management services provided

by the Housing Authority. Phillips et al. (2004) focused on older persons living in big and densely populated cities in Asia, including Hong Kong. Their study found that factors such as air quality, noise level, and accessibility to public transport significantly contributed to the residential satisfaction among older persons. Sanni-Anibire and Adenle (2022) investigated the factors that contributed to residential satisfaction among residents living in high-rise buildings in Hong Kong and found that the quality of public facilities, access to transportation, and proximity to amenities were important factors.

Despite the common theme of residential satisfaction, each study had a different focus and sample population. Liu's study focused on public housing estates, while Phillips et al. investigated older persons in big and densely populated cities. Sanni-Anibire and Adenle's study targeted residents living in high-rise buildings. Furthermore, the present study focuses on behavioural intentions towards developers, which is different from the research areas covered by these studies. However, these studies suggest that various factors such as the physical environment, social environment, management services, and access to amenities significantly contribute to residential satisfaction in Hong Kong.

Overall, there is a research gap in regard to investigating the underlying dimensions of residential satisfaction and their relative importance for behavioural intentions towards developers in Hong Kong. Further research is needed to explore this area and contribute to a better understanding of residents' needs and preferences in the design and management of housing in Hong Kong.

3.6 Dimensions of Residential Satisfaction

The dimensions in this study are established based on the literature review discussed in

the previous section. They provide the framework for designing the questionnaires and the basis of methodology. These dimensions are summarised in Table 3.1 Specifically, the study by Galster and Heseer (1981) aims to identify the factors that contribute to residential satisfaction in American cities. The study found that housing characteristics, neighbourhood quality, and access to community services are important factors that contribute to residential satisfaction. Weidemann and Anderson (1985) aimed to develop a conceptual framework for understanding residential satisfaction. The study explored the relationship between the physical, social, and psychological aspects of the residential environment and residents' satisfaction with their homes. The study found that the physical, social, and psychological aspects of the residential environment are complex and multifaceted and should be considered when evaluating residential satisfaction. Ha and Weber (1994) present a study aimed at developing residential quality indexes that can be used to evaluate residential satisfaction. The study found that residential quality can be measured through various dimensions, including physical, social, and environmental. The authors suggest that the development of residential quality indexes can help policymakers and planners to identify areas where improvements are needed and to prioritise resources accordingly. Carvallo, George, and Anthony (1997) present a study of residential satisfaction in gated neighbourhoods in Brazil. The study found that residents in gated communities generally reported higher levels of satisfaction with their living environment compared to those living in non-gated communities. However, the study also found that there were differences in residential satisfaction among residents of different gated communities. Amérigo and Aragonés (1997) proposed a model of residential satisfaction that considers both objective and subjective factors. The study identified several dimensions of residential satisfaction, including physical, social, and psychological. The authors propose a methodology for measuring residential satisfaction that includes a combination of quantitative and qualitative research methods. Ge and Hokao (2006)

present a study aimed at understanding residential lifestyles in Japanese cities. The study found that residents' residential preferences were influenced by a variety of factors, including the quality of the physical environment, the availability of public services and amenities, and the level of social interaction and community engagement. Muhammad, Rostam, and Yusoff (2010) present a study aimed at understanding residential satisfaction with housing in Malaysia. The study found that residents' satisfaction with their housing was influenced by a variety of factors, including the quality of the physical environment, the availability of public services and amenities, and the level of social interaction and community engagement.

Overall, these studies highlight the importance of considering various factors when evaluating residential satisfaction, including housing characteristics, neighbourhood quality, access to community services, physical, social, and psychological aspects of the residential environment, and cultural and contextual factors that influence residents' perceptions of their living environment. The studies also suggest that policymakers and planners should prioritise the provision of high-quality physical environments and public services to improve residents' satisfaction with their living environment and overall quality of life.

Table 3.1 The identified dimensions in the literature review

	Authors	Context	Dimensions
1	Galster and Hesser, 1981	Ohio, USA	Contextual Person's residence and physical features of the nearby neighbourhood, e.g., heating, plumbing, number of rooms, bathrooms, yard area, type of residence. Compositional Characteristics of the residents' background, e.g., social status.
2	Weidermann and Anderson, 1985	Proposed Integrated Conceptual Model of Residential Satisfaction	1. Objective Environmental Attributes – physical and social. Perceptions/beliefs about the environmental attributes – physical and social. 2. Attitude/Affect to/on the environment 3. Intentions to behave with respect to the environment 4. Behaviour related to the environment
3.	Ha and Weber, 1994	USA	1. Environmental safety 2. Public services/facilities 3. View/landscaping 4. Neighbourhood 5. Housing Policy/Housing economics 6. Housing quality/characteristics
4.	Carvalho, George and Anthony, 1997	Brazil	1. Safety and security; appearance; quality of housing 2. Reasons for choosing Alphaville; specific characteristics of an exclusive condominium; lack of safety in the prior residence 3. Location and proximity 4. Community life and neighbours' interaction
5.	Amérigo and Aragonés, 1997	Madrid, Spain	1. Privacy 2. Security 3. Comfort with the neighbourhood 4. The comfort of the house 5. Thermal insulation 6. Basic residential infrastructure 7. Relationship with neighbours 8. Residential safety 9. Neighbourhood infrastructure 10. Level of deterioration 11. Connectivity with other areas 12. Urban activity and noise 13. Natural open spaces 14. Comfort/no overcrowding of the house 15. Quality of the house 16. Urban insecurity 17. Infrastructure, facilities 18. Health infrastructure

	Authors	Context	Dimensions
6.	Ge and Hokao, 2006	Saga City and Kitakyushu City (Japan)	**Safety & Comfort** 1. Safety from disasters 2. Transportation safety 3. Sunshine/Ventilation 4. Noise, vibration, odours 5. Safety from criminals 6. Cleanliness of streets 7. Enrichment of welfare facilities 8. Beauty of cityscape **Convenience** 1. Convenience of transportation 2. Convenience of shopping 3. Nearness to workplace 4.Convenient for children commuting 5. Convenient access to other cities **Leisure & Entertainment** 1. Enjoying local festivals 2. Good personal relationships 3. Attachment to the region 4. Enjoyment of leisure time **Geographic Condition** 1. Nearness to parents/children 2. The abundance of natural elements 3. Good educational environment for children **Housing characteristics** 1. Good layout/construction of a house 2. Economic rent or price of the house 3. House area 4. Number of rooms 5. Type of house 6. Arrangement of rooms 7. Lot area 8. With or without a garden 9. Ease of housework 10. Open-plan of space
7.	Muhammad, Rostam and Yusoff, 2010	Malaysia	1. Housing characteristics 2. Public facilities/infrastructure 3. Public health services 4. Waste disposal services 5. Environmental protection 6. Safety 7. Neighbourhood characteristics 8. Transportation 9. Communication services

3.7 Other aspects of residential satisfaction

In addition to the identified dimensions that are considered major factors influencing residential satisfaction, other aspects of residential satisfaction should also be explored. Such aspects include purchasing a property, satisfaction with residential construction quality, and perceived value and risks associated with acquiring a housing or residential unit.

3.7.1 Satisfaction with the purchase of a property

Property ownership concerns the perceived value of housing and the economic value per se. From the buyer's standpoint, previous studies have examined the evaluation of the perceived value of housing to enhance the satisfaction arising from construction quality. Siahaan et al. (2019) pointed out that the perception of consumer value depends on the economic value of the housing and the location function of the residence. Consumers must meet their housing needs, and good mobility and accessibility are also important.

Research has been conducted on the satisfaction with home builders. For example, Nahmens and Ikuma (2009) pointed out that home buyers nowadays view service quality more broadly than home builders, who focus on upgrades and mortgage options. In addition to the past research, which identified five dimensions of service quality – appearance, reliability, timeliness, knowledge, and empathy – home-buyer satisfaction with service quality is perceived as whether the buyer's expectations are met or exceeded. Developers need to identify and understand home-buyer needs to improve service quality continually. The findings indicated that higher-income buyers with higher purchase prices and larger house sizes valued reliability the most.

In contrast, those on lower incomes with lower purchase prices and smaller house sizes

valued dimensions such as empathy and property appearance. Hence, developers can react to improve their reputation and increase local referrals (Nahmens and Ikuma, 2009). Some customers deem the sales and purchases of properties costly, complicated, and uncertain because people generally do not make frequent purchases of premises in their life. Hence, people do not possess the required skills and related property knowledge to conduct transactions. Besides several elements, such as the complexity of a property, the variability of the buyer's requirements, and the geographically dispersed nature of housing vacancies, the fluctuation of property prices is a barrier to the buyer's decision-making process (Barlow and Ozaki, 2003). For instance, in Hong Kong, some real estate agencies have virtual reality viewing of properties to enhance customer satisfaction in their searches. The potential buyers can feel like they are touring the property before making a genuine visitor decision to purchase it. In Hong Kong, every property transaction is registered in the Lands Department, which also posts the details on its website. There are rules for Hong Kong property developers to follow in respect of their sales activities, such as the disclosure of the price list before the launch of property sales, and there are regulations on advertising and promotion.

3.7.2 Satisfaction with residential construction quality

The quality of a housing or residential unit, along with fittings and fixtures, is recognised as a factor influencing the level of satisfaction among inhabitants. While searching for a residence to purchase or rent, people are driven by unique needs, including the quality of the housing unit. Thus, prospective buyers or renters will explore several options and evaluate the attributes of each available option to secure the most satisfactory premises. As Sheth et al. (1999) outlined, customers in residential property markets go through a decision-making process, as illustrated in Figure 3.4 that results in satisfaction or dissatisfaction with their respective housing infrastructure and residential environment.

The process begins with housing needs recognition, where the current living conditions are considered to motivate the initiation of a housing construction or acquisition project. The prospective house owner or occupant then searches for contractors or real estate agents who will help construct or acquire a residential unit. This process requires the project owner to gather information about tenders, contracts, projected costs, and desired residential unit market prices.

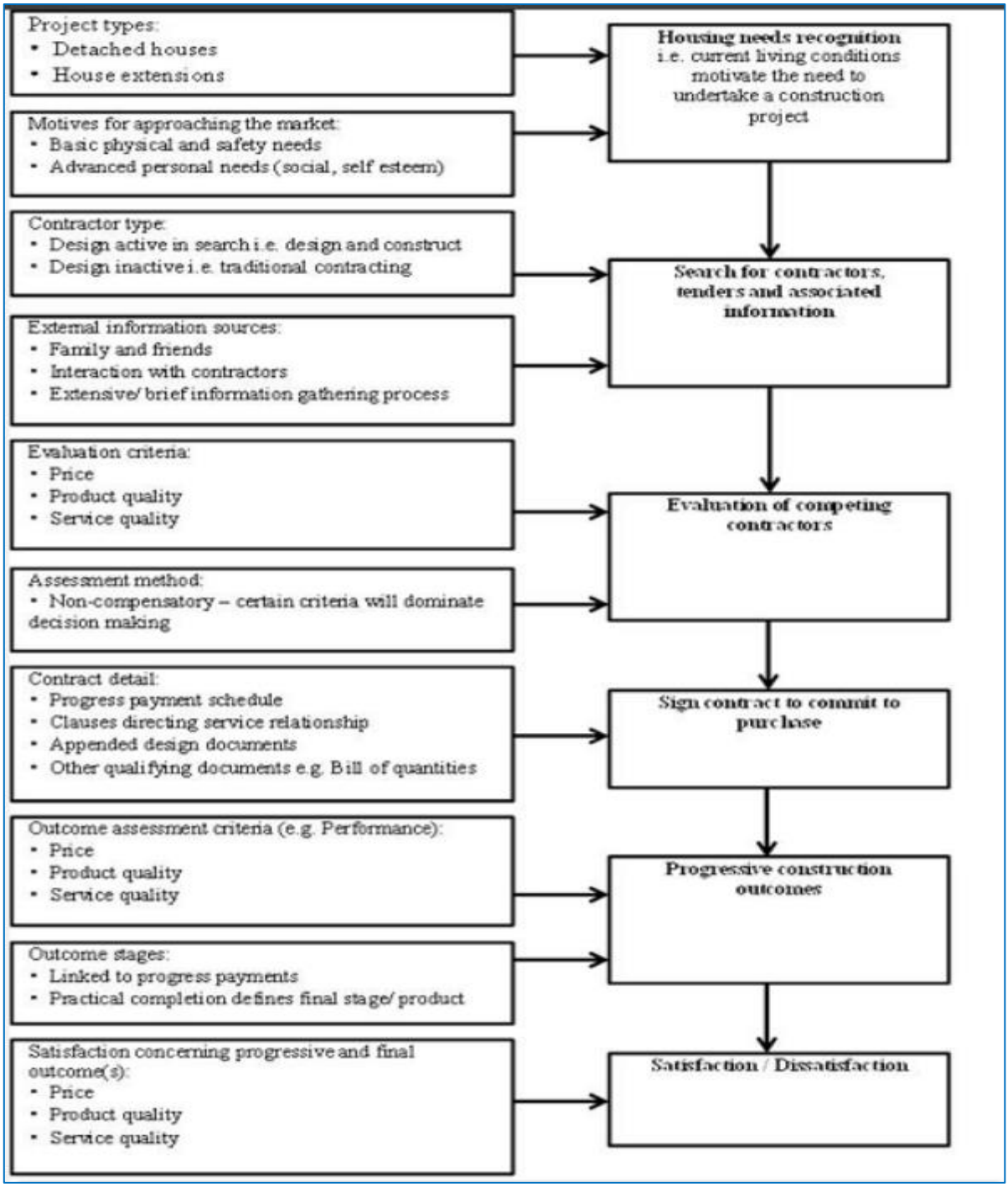


Figure 3.4 The purchase decision process modified for residential construction

Once housing needs are established, the owner evaluates and chooses from competing contractors and real estate agents. Once settled on a contractor or real estate agent, the prospective owner formalises the project by documenting the development contract or purchasing an already developed residential unit. The owner will then assess progressive

outcomes from the development project or the acquired residential unit and adjust them according to emergent needs and preferences. The owner's final housing or residential product will determine the level of satisfaction or dissatisfaction and form the basis for future residential acquisition behaviour, residential behavioural intentions, and propensity for resultant residential mobility.

Sheth et al. (1999) emphasised that advertisers split the hierarchy into less-ordered needs, such as physiology and safety issues, and higher needs, such as social issues, self-esteem and self-realisation. The recognition of needs follows the extension of Maslow's hierarchy of needs (1943). It is believed that this breakdown will offer a systematic understanding of what causes residential buyers to search for either physical needs or high-quality housing that represents social and economic status. The phase of searching for a contractor, real estate agent or residential unit follows after the recognition of needs. According to Schmidt and Spreng (1996), residential consumers should employ a structured approach as a useful tool for examining the reliability of preferred contractors or real estate agents and the quality of eventually acquired residential units. Schmidt and Spreng assert that customers' ability to search impacts the quality and consistency of the knowledge which they receive and use. For example, certain consumers are more likely to access and interpret experiences than others to make informed purchasing decisions.

Decision-making in the context of residential purchases relies on applying compensating and non-compensating assessment methods. According to Schiffman et al. (1997), a compensatory appraisal is rendered where the buyer can recognise both the advantages and disadvantages of a purchase by utilising the same scoring framework, thus allowing more and less to compensate and have a suitable option with the maximum resulting performance. On the other hand, a non-compensatory solution is when customers need

those qualities in the product regardless of the other benefits and drawbacks, and there is also no common denominator.

While adopting a strategy to use in residential constructions, the non-compensatory option is more suitable. The non-compensatory approach factors in aspects like the most relevant cost to a consumer. In the Hong Kong housing market context, the compensatory evaluation will consider the best alternatives concerning apartments, condominiums or other forms of residential properties as viewed from a developer's perspective. Compensatory strategy limits the room for buyers to contribute to design and construction as the main focus is on economic interest derived from the development of such residential infrastructure. Nevertheless, the subjectivity of the servicing supplier shall be guarded by contract terms and corresponding documentation, which may include reports, architectural drawings or descriptions of the housing infrastructure. Purchasing, viewed as a contract agreement, allows the consumer to demand positive results and quality because the buyer completes payment or purchase for a housing unit upon satisfaction with all or most of the attributes of a housing unit and its associated residential environment.

Regarding the decision-making process advocated by Sheth et al. (1999), satisfaction or dissatisfaction depends on the outcomes of a housing development. These include the housing and residential infrastructure quality, quality of services, and residential unit price. Evaluation of construction quality mainly depends on what is physically delivered. For this reason, developers are expected to adhere to designs and development plans. Conversely, the success of a residential property market may be evidenced by data derived from tenders. Service quality is attributed to conformity to the schedule of completing development and conveyancing transactions, frequency of disagreements, and

responsiveness of a real estate agent or property manager to consumer needs.

However, realising residential satisfaction with housing outcomes through intrinsic assessments is difficult. To better understand residential satisfaction, it is essential to concentrate on particular types of customers in a given residential property market. Marketing theorists consider two significant consumer interaction factors: genetic makeup and environmental effects (Sheth et al., 1999). Genetic makeup refers to the characteristics that a person inherits from his parents (Eysenck, 1982). In comparison, Skinner's principle of behaviouralism implies that an individual develops receptive behaviours dependent on their environment (Skinner, 1993). The above is thought to provide the best way of defining residential construction customers. It can be extended concerning important consumer characteristics and their reaction to the business climate.

Taking Australia as an example, most new residential buildings are detached houses, despite recent trends toward multi-unit housing (ABS 2002; Paris 1993). Designs are therefore limited in contrast with many other construction types. Consequently, procurement processes are relatively straightforward and consist primarily of conventional design and construction approaches. The private sector (NHS, 1991) supplies much construction and is based on a 'made-to-order' rather than a theoretical basis (Greig, 1992; Paris, 1993). Customers prefer to negotiate directly with building contractors instead of proxy diaries like engineers and project managers. As a result, consumers invest strongly in the process despite having no consistent experts in the sector (NHS, 1991b, p. 18; Greig, 1992). Despite their high level of involvement in technical and contracting matters, they tend to be untrained or not so knowledgeable of technical issues.

3.7.3 Perceived value and risks in the housing market

The perception of risks and value associated with acquiring a housing or residential unit varies with the needs of the purchasing individual or household. As characterised in Maslow's hierarchy of needs, human physiological needs are recognised to constitute the first category of human needs (Maslow, 1943). Human physiological needs are homeostatic and include food, clothing and shelter. The concept of shelter here refers to a covered space protected from the environment and the weather, i.e., a place to live. Personal influences exist in the decision to buy a property, and these preferences are not the same among different people (Zrobek et al., 2015). Perspectives and effects are different among all people.

A wide range of factors influences the perceived value of a housing unit. Individuals make unique considerations, including the age of building, place, zone, environmental characteristics, economic development, transport, population, and other attributes. Researchers agree that economic value and location are two of the most critical factors from a customer perspective (Birinci et al., 2018; Dedeoglu et al., 2018; Lee and Phau, 2018; Hwang et al., 2019). A residential property's value can be characterised either as product-related value, social-related value or personal-related value. Product-related value derives from convenience, customer experience, sacrifices and benefits (Creusen and Schoormands, 2005). Social-related value relates to social acceptance (Gallarza and Gil, 2006). On the other hand, Khalifa (2004) outlines that personal-related value relates to an individual's desires and personal preferences.

Beyond the quality and characteristics of a residential or housing unit, the prevailing economic situation influences satisfaction with value and quality. The timing of purchases regarding personal, national, and global economic situations significantly affects the

perceived and actual risks of buying a property. With reference to the global economic crisis witnessed in 2009, customer satisfaction with properties was relatively low during the period of the crisis (Chen, Hui and Wang, 2011). Consequently, dealers in property markets experienced unpleasant outcomes, including high risks and unprecedented economic losses.

3.8 Behavioural Intentions

Several authors have developed theories and concepts relating to behavioural intentions. Fishbein and Ajzen (1975) proposed the theory of reasoned action, which suggested that behaviour was determined by intentions, which were in turn influenced by attitudes and subjective norms. Ajzen (1991) defined behavioural intentions as the subjective probability that a person will behave in a particular way, and proposed the theory of planned behaviour, which identified attitudes, subjective norms, and perceived behavioural control as key predictors of behavioural intentions. The theory of planned behaviour suggested that changing behavioural intentions could result in changes in behaviour.

Webb and Sheeran (2006) conducted a meta-analysis that examined the relationship between behavioural intentions and actual behaviour. Their study found that intentions were a strong predictor of behaviour and that changing intentions could lead to changes in behaviour. However, the study also noted that the effect of changing intentions was not consistent across different types of behaviours.

In the context of this study, the effect of behavioural intentions or behaviours associated with residential satisfaction will be demonstrated to reflect the anticipated research value. Ajzen and Fishbein (1981) pointed out that there are three types of responses illustrated

by people to any social object. These are affective, cognitive and behavioural responses, known as the “age-old trilogy”. The concept of behavioural intentions needs to be studied here because the behavioural responses will affect future consumers' behaviours, particularly in response to the third research question of this study as to the relative importance of each dimension of residential satisfaction in affecting residents’ behavioural intentions. These may include the willingness to encourage friends and relatives to purchase properties developed by the developer of the current residence (“same developer”), purchase an additional property from the same developer in the future, or form the intention to purchase a higher-priced property built by the same developer.

Some researchers stressed that the definition of satisfaction could not be wholly understood without considering the influence of user emotion (Liljander and Strandvik, 1997). There are studies in the literature about predicting behavioural intention by evaluating positive and negative emotions associated with the services (Allen et al., 1992; Oliver, 1993; Richins, 1997; Barsky and Nash, 2002). Some researchers also found that neglecting emotional satisfaction components could be insufficient to accurately forecast customer responses (Yu and Dean, 2001). This plays an important role in determining satisfaction and forecasting potential behaviour intentions. While the present study concerns residential satisfaction, which relates to the post-consumption experience of a big purchase, it is worth investigating the prediction of residents' behavioural intentions.

While several experiments connected with ads concern the relational structure and emotional memory, the connections between emotions and post-consumption factors such as satisfaction and potential behavioural intentions were missing in science. Whereas

controversy over the consistency of the relationship between emotions and happiness persisted, emotions were later generally recognised as one of the key components of the customer satisfaction definition (Stauss and Neuhaus, 1997; Barsky and Nash, 2002; White and Yu, 2005). Therefore, researchers are now recommending that consumer satisfaction scales have an additional affective dimension or scale (Yu and Dean, 2001; Barsky and Nash, 2002).

In 2008, Martin, O'Neill, Hubbard and Palmer penned a research paper drawing attention to the role of emotions in evaluating customer satisfaction and future behavioural intention. Their study recognised and identified the need to use emotional and cognitive quality metrics when evaluating consumer loyalty and potential behavioural intentions. It also discussed the relative lack of consumer satisfaction models that combine effective emotional elements as indicators and predictors of behavioural intention. The 407 respondents revealed that emotional satisfaction was a greater indicator of potential behavioural intention than cognitive satisfaction measures (Martin, O'Neill, Hubbard and Palmer, 2008). Having understood the previous paragraphs about behavioural intentions, one should realise that it is important to understand how cognitive dimensions, affect, and emotions influence the behaviour in residential mobility, which may indicate an intended move from a less desired location to a better place, or in a property purchase transaction.

Inaccurate speculation of consumer behaviour in the residential property market leads to speculative price bubbles. Brzezicka and Wisniewski (2014) argue that herding behaviour and behavioural intentions drive price bubbles. The researchers purport that price bubbles in residential property markets cannot occur without the influence of behavioural aspects. In the pursuit of satisfying housing needs, consumers and actors in property markets tend to give into temptations that lead to minimal reasoning and herding behaviour. In

expectation of certain trends in consumer behaviour, developers are inclined to undertake high-risk investments to pursue quick economic gains (Brzezicka and Wisniewski, 2014). Anticipations in consumer behavioural intentions can thus lead to a detrimental impact on the property market and, by extension, on consumer satisfaction with residential premises purchases.

Lind (2009) echoed concerns about market bubbles and attributed such events to housing supply, housing prices, household income, and the credit market. In addition, the author also associates the occurrence of housing price bubbles and dissatisfaction with consumer behaviours, including impatience among buyers during conveyancing transactions, risk-taking, unrealistic buyers' expectations about prices and quality of housing infrastructure, and speculative behaviour on the part of developers and real estate agents. Buyers' impatience and risk-taking refer to people wanting to own a house at an earlier age. Also, buyers seem to select riskier financing options than earlier. For buyer expectations about prices, buyers anticipate that property prices will rise or at least remain steady at a level higher than the historical tendency.

Moreover, they trust that there is virtually no risk in investing in a property in the next three to five years. Buyers who purchase a property with speculative behaviour have a high propensity for residential mobility because they intend to sell houses in the short run and gain a profit. Challenges arising from high transaction costs and the absence of speculated demand could subject an individual to personal and economic frustrations if the initial acquisition involved high financial risks.

A significant issue in the process of bubble development in the real estate sector is the relevance and inevitability of behavioural aspects. Behavioural causes, close to the

recession environment, are apparent in the real estate sector around the bubble, and this region makes it much simpler for them to arise. The cognitive, psychological or other behavioural variables are critical in creating the price bubble phenomenon in real estate markets. Besides psychological factors and actions like herd behaviour, fundamental factors are the leading causes of the formation of property bubbles. These elements include causes of political government policies (Tsai and Peng, 2011), macroeconomic conditions such as low-interest rates that encourage speculation, and prolonged, optimistic economic growth (Leung and Quigley, 2007). Such factors, coupled with psychological factors, influence the formation of housing price bubbles that may cause disruptions in residential housing markets and undermine the level of satisfaction among consumers.

3.9 Research Hypotheses

A research hypothesis is a statement that introduce a research question and proposes an expected outcome. Recapitulating the research questions that were discussed in Chapter One, they include:

- What are the housing characteristics in Hong Kong?
- What are the underlying dimensions of residential satisfaction in private housing in Hong Kong?
- What is the relative importance of the residential satisfaction dimensions in affecting overall residential satisfaction and behavioural intentions?

The literature review in this chapter helped to gather and find out the dimensions of residential satisfaction and the respective items under each dimension. As residential satisfaction in Hong Kong's private housing has not been fully studied in the past, this study examines the validity of the dimensions in the context of Hong Kong. Reviews

from eight of Hong Kong's experts in this industry are also conducted to further verify the items of residential satisfaction in this study. This is presented in Section 5.3. The pilot test and the main study are designed to answer the research questions by examining the validity of the following research hypotheses with the reference of literature review.

Several studies have explored the relationship between residential satisfaction and various housing characteristics. Ge and Hokao (2006) found a significant and positive relationship between residential satisfaction and a series of housing characteristics. Galster and Hesser (1981) identified a significant and positive relationship between residential satisfaction and the physical aspect of the residential environment, such as layout, size, and condition of the dwelling. Similarly, Amérigo and Aragonés (1997) demonstrated a significant and positive relationship between residential satisfaction and the quality of the residence. Hence, it could conceivably be hypothesised that residential satisfaction with the housing quality/characteristics is significantly related to their overall residential satisfaction.

H1a: Residential satisfaction with the housing quality/characteristics is significantly related to their overall residential satisfaction.

Several studies have highlighted the importance of neighbourhood characteristics in relation to residential satisfaction. Galster and Hesser (1981) found a significant and positive relationship between residential satisfaction and neighbourhoods with attractive physical features, such as green spaces and parks. Similarly, Ge and Hokao (2006) demonstrated a significant and positive relationship between residential satisfaction and neighbourhood quality, as well as access to community services. These studies suggest that neighbourhood characteristics, such as physical features and available services, play

a crucial role in shaping residential satisfaction.

H1b: Residential satisfaction with the neighbourhood is significantly related to their overall residential satisfaction.

Studies on residential satisfaction have identified environmental safety as a significant factor in shaping residents' satisfaction. Weidemann and Anderson (1985) found that factors such as the environment, control and privacy were positively associated with residential satisfaction. Ha and Weber (1994) emphasised the importance of environmental safety in contributing to residential satisfaction. Additionally, Amérigo and Aragonés (1997) demonstrated a significant positive relationship between residential satisfaction and environmental safety. Overall, these studies suggest that various factors, including control, privacy, and environmental safety, contribute significantly to residential satisfaction.

H1c: Residential satisfaction with environmental safety is significantly related to their overall residential satisfaction.

Studies have shown that the availability of transport and public facilities is an important factor in shaping residential satisfaction. Ge and Hokao (2006) found a significant and positive relationship between residential satisfaction and the availability of transport services and public amenities. Muhammad, Rostam, and Yusoff (2010) emphasised the significance of transport and public services dimensions in overall residential satisfaction. These studies seem to suggest that access to public amenities and transportation services play a crucial role in shaping residents' overall satisfaction.

H1d: Residential satisfaction with transport and public facilities is significantly related to their overall residential satisfaction.

View and landscape are important factors affecting residential satisfaction because they contribute to the overall aesthetic appeal of the living environment. Studies have shown that access to green spaces and natural environments can have significant positive effects on residential satisfaction (Ge and Hokao, 2006). Indeed, a pleasing view and landscape can create a sense of calmness and relaxation, which can positively impact residents' well-being and mental health. Additionally, a visually attractive view and landscape can enhance the perceived value of a property, which can be beneficial for homeowners in terms of property value appreciation. Thus, the following hypothesis was proposed:

H1e: Residential satisfaction with their view and landscape is significantly related to their overall residential satisfaction.

The quality of management services is an important factor affecting residential satisfaction because it directly impacts the living experience of residents. Poor management services can lead to a range of issues, such as maintenance problems, security concerns, and inadequate community facilities, which can negatively impact residents' quality of life and overall satisfaction with their living environment. On the other hand, high-quality management services can contribute to a positive living experience by ensuring that the community is well-maintained, facilities are functional, and security measures are in place. In addition, quality management services can impact the perceived value of the property, which can be important for homeowners in terms of property value appreciation. A well-managed housing estate can create a positive reputation, which can be beneficial for future property sales or rentals. Hence, the

following hypothesis was developed:

H1f: Residential satisfaction with property management is significantly related to their overall residential satisfaction.

Although many studies have focused on the relationship between residential satisfaction and life satisfaction, relatively few studies have examined its effect on residents' behavioural intentions towards the developers. Residential satisfaction reflects residents' overall level of satisfaction with their living environment and their perception of the developer's role in creating and maintaining that environment. If residents are satisfied with their living environment, they are more likely to have positive attitudes towards the developer and engage in positive behaviours towards them, such as recommending the developer to others or providing positive feedback. On the other hand, if residents are dissatisfied with their living environment, they are more likely to have negative attitudes towards the developer and engage in negative behaviours towards them, such as complaining about the development, withholding management fees, or even taking legal action. Based on these reasons, the following hypothesis was proposed:

H2: Overall residential satisfaction is significantly related to the behavioural intentions towards the developer.

The theoretical diagram for the above-presented hypotheses is illustrated as follows:

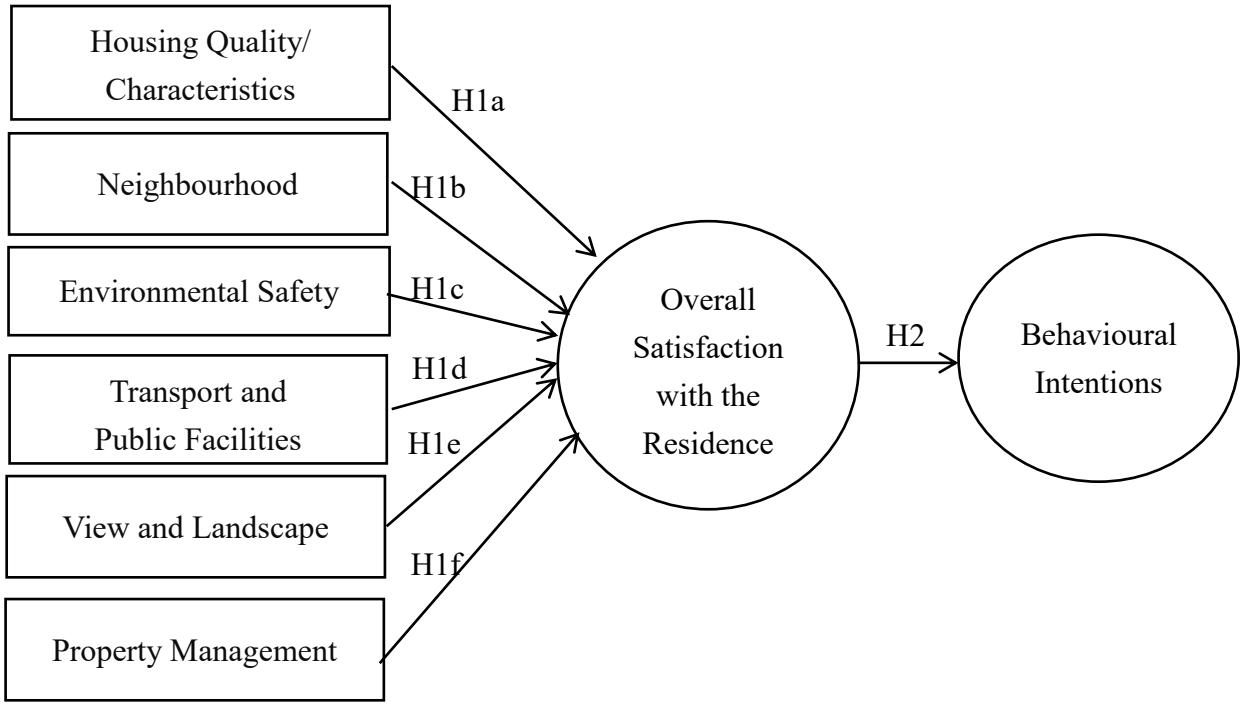


Figure 3.5 Relationships among residential satisfaction dimensions, overall satisfaction and behavioural intentions

3.10 Chapter Summary

The literature review discussed consumer behaviour and customer satisfaction with the quality of residential satisfaction, environs, and services. This chapter has gone through the understanding of consumer behaviour models, the historical development of residential satisfaction, behavioural intentions, and customer satisfaction associated with the quality of housing and residential services. From the review of the literature in this chapter, the main six dimensions are acknowledged to be (i) housing quality and characteristics, (ii) neighbourhood, (iii) environmental safety, (iv) view and landscape, (v) transport and public facilities, and (vi) property management. Research hypotheses have been developed based on the previously published research.

Chapter Four: Methodology

4.1 Introduction

This chapter describes how the methodology and research design were utilised to accomplish the goals of this study. Starting with a description of the research design and the research framework that was used, the chapter moves on to the application of ontology and epistemology and the discussion of the research method in this study. Detailed explanations of scale development, sample design, and data collection methods are provided in the next portion of the paper. The data analysis methods are discussed in detail in the concluding portion of the chapter.

In research, a methodology is a plan developed in accordance with the ontology and epistemology that the researcher has employed in his or her investigation (Sarantakos, 2005).

The methodology primarily explains how the study will be carried out in a structured manner. The methodology comprises the primary practices, concepts, and processes used throughout the research project (Marczyk, DeMatteo and Festinger, 2005). The methodology is a critical component of every research project since it comprises the tools and techniques used to collect, organise, and analyse data (Burn and Grove, 2003; Henning, 2004; Holloway, 2005). The purpose of this chapter is to develop a system for data collection as well as a method for analysing the data.

The first section of this chapter discusses the research philosophy, which is the belief system and assumptions that underpin the research. The overall methodology for this

study was governed by the ontology and epistemology mentioned in the research philosophy, which was the foundation of the study. The research design is a crucial component of a study because it allows the researcher to determine which tool will be used in the research and how the data will be analysed to provide the most accurate answers to the research questions and achieve the goal of the research. Following this, the researcher provides an overview of the research context.

After this, the sampling method for this project and a discussion of data collection are explained in more detail. The next aspect is the bias in data collection methods, followed by a description of how the data were processed. A discussion of the methods for determining the validity and reliability of data is presented at the conclusion of this chapter.

4.2 Research Context and Research Design

Research Context

This study examines the relative importance of each residential satisfaction dimension affecting overall satisfaction and behavioural intentions in Hong Kong. Consideration is also given to the personal characteristics that are related to resident satisfaction. The study context is Hong Kong, and the target population is residents living in private housing. This study does not consider the public housing sector due to the incomparability of residential satisfaction dimensions between the two housing types.

Research Design

The research design for every study is important and is supposed to attain the objectives and answer the research questions (Kothari, 2004). To probe the relationships among the dimensions, the researcher conducted cross-sectional research with a quantitative

approach. According to Jennings (2001), a quantitative approach is more appropriate than a qualitative approach for examining relationships among variables, especially for empirical studies.

Research Philosophy

The term "research philosophy" refers to the research's belief system and assumptions (Burrell and Morgan, 1979; Collis and Hussey, 2003). Every stage of the research process necessitates the researcher's assumptions about knowledge, reality and the study process (Burrell and Morgan, 1979; Creswell, 2003). The assumptions used in the study are governed by the researcher's belief system, which is discussed more below. Assumptions are essential in research because they define the knowledge of the research questions, govern the techniques that utilised in the study, and ultimately impact how the findings are understood (Crotty, 1998; Creswell, 2003). The first assumption is regarding the nature of reality, which is the initial assumption.

Ontology

The researcher believes that objectivity is one of the essential factors in this study. Objective measures may be used to uncover the truth about reality, and the results of objective measurements can be used in other circumstances in which they are appropriate. The ontology that underlies the study design and describes the nature of the human and social reality that people aim to examine serves as the foundation for the investigation. This involves the interest in what exists, what it seems to be, what units it is composed of, and how these units interact with one another, among other things (Guba and Lincoln, 1994; Sutrisna, 2009). Thus, people are guided by ontological beliefs when considering what defines social reality.

Since the concept of residential satisfaction was initially presented in Western culture, it is only natural that most research in this area has been conducted in Western countries or societies. According to Hofstede (2011), the cultural factor dramatically impacts the ability to influence human behaviour. In addition to gender, race and ethnicity, geography is another element that might restrict generalisation. Cultural variations across places may play a substantial role in limiting the generalisation of the survey results.

As a result, applying ideas in different countries or societies is important and necessary to justify the generalisation of the theories. Hence, in this study, literature reviews of different countries are included. Most of the residential satisfaction dimensions used in this survey were based on these literature reviews, except for some unique factors in Hong Kong.

Epistemology

The impartiality of the research and the generalisability of the findings are critical for the researcher's success. As a result, in this study, realism is chosen as the underlying view of reality.

Epistemology is the relationship that a researcher should have with the object of his or her research (Killam, 2013). Epistemology is the research philosophy concerned with the nature of knowledge and how it may be acquired (Gog, 2015). It is related to the techniques used to gain information and knowledge, the extent of that knowledge, its validity, and the justification between reasoning and opinion. Generally speaking, epistemology focuses on how the researcher came to know what they know (Tsoukas and Chia, 2002). It is about our understanding of knowledge and how that information is obtained and communicated to others.

The study of epistemology is generally divided into positivist and interpretivist views (Saunders et al., 2012). These unique views will have an even more significant impact on the study's method and outcomes. This research has a positivist perspective, which means that everything is positive.

Positivism is predicated on the notion that science is the only means of discovering the nature of reality. The material that follows explains positivism, with a particular emphasis on business studies. Positivism is a philosophical school of thought where only “factual” information obtained via observation (the senses), including measurement, is reliable. For positivist research, the researcher's responsibilities are confined to data collection and analysis objectively. The research findings in these sorts of studies are typically observable and measurable (Collins, 2010).

Positivism is based on measurable observations that can be analysed statistically. It has been stated that "positivism, as a philosophy, is consistent with the empiricist idea that knowledge is derived from human experience. In its atomistic, ontological perspective, the universe is composed of distinct, observable elements and events, which interact and interact in an observable, predictable, and regular manner” (Collins, 2011).

Apart from that, the researcher in positivist studies is entirely independent of the study, and there are no provisions for human interests inside the study itself. Generally speaking, Crowther and Lancaster (2008) suggested that positivist studies are more likely to use a deductive method. In contrast, an inductive research approach is more likely linked with a phenomenological philosophical perspective. Positivism is associated with the belief that researchers should concentrate on facts, whereas phenomenology is

concerned with meaning and makes space for the inclusion of humans in the study.

It is common for researchers to take a positivist approach if they assume that they are independent of their research so that the research can be impartial. Independent means that the researcher has little or no contact with the people participating in their research (Wilson, 2010). In other words, studies conducted under the positivist paradigm only focus on facts.

In this study, all survey respondents had to live in private housing in Hong Kong. It was decided to use the etic method for this study to attain objectivity and impartiality. The etic method emphasises objectivity, in which the researcher attempts to eliminate the impact of contextual variables from his or her study findings (Killam, 2013). The quantitative method uses objective measures and the deductive approach to gather and analyse the data required for the investigation (Creswell, 2014). As a result, the design of this study was based on quantitative design principles.

4.3 Research Method

As mentioned in the previous section, quantitative research was conducted for this study. For the main survey in this study, the data were gathered by means of a street intercept method, which utilised a paper-based survey. The researcher asked four research assistants to help conduct the survey. There was only one version of the questionnaire, which was written in both English and Chinese to cater to the language culture in Hong Kong. The convenience sampling method was selected as the quantitative research method for obtaining the sample. Convenience sampling is a measure used in research in which data are gathered from a pool of respondents that is easy for researchers to access. It is the most prevalent sampling method since it is quick, easy and inexpensive to

implement. When studying populations of people, testing the whole population is usually tricky because of the diverse residential locations. Convenience sampling is used when extra data are not essential to the study. Participation from all population segments is possible, with accessibility determined by how close the researcher is to the target demographic.

This research was planned so that all respondents were living in private housing and had to be 18 years old or above. However, one month after the commencement of data collection, the researcher noted that only nine of the 180 collected questionnaires (i.e., 5%) belonged to the age group 60 or above. This was not proportionate to the age group structure of Hong Kong's population. Section 4.8 explains how the targeted sample was adjusted to reflect this issue.

Steps of Collecting Data

A street intercept survey is a research method used to gather on-site answers from non-selectively recruited people directly from a public place. The researcher distributed 320 hard copies of questionnaires to four research assistants. Therefore, each assistant was required to do 80 street intercept surveys. The researcher himself conducted 100 surveys, so altogether the targeted number of questionnaires was 420. The four research assistants were assigned to perform the survey in 12 districts, and the researcher aimed at two other districts. This added up to 14 districts, where the total number of districts in Hong Kong is 18. The total number of questionnaires received was recorded as 420. However, 17 of them were disqualified by the researcher. Among the 17 disqualified questionnaires, 15 were found to contain answers given by the respondent that were incomplete, and two questionnaires contained answers that were all rated "3". Hence, the total number of effective questionnaires was 403. Almost all the respondents were local residents, with

only five respondents being non-Chinese speakers living in Hong Kong. It was designed that the respondents read and filled in the questionnaire by themselves. The research assistants and the researcher provided explanations should the respondents react slowly or in case they had a query.

Throughout the data collection process, the researcher monitored the age distribution and population distribution of the filled-in questionnaires received. The purpose was to ensure that the sample was representative of Hong Kong's population by age group and district. Therefore, the quota sampling method was applied, and a table showing the population distribution by age and district illustrates the situation. See Table 6.1 and Table 6.2.

4.4 Research Framework

In the first stage of the research, a thorough review of the relevant literature was conducted to specify the dimensions of residential satisfaction and the relationships among them, as shown in Table 4.1 The results obtained from the literature review were evaluated and transformed into the proposed conceptual model. Expert panel opinions were then obtained to ensure that the items derived from the literature were appropriate and relevant.

The second stage entailed performing a pilot study to fine-tune the measurement instrument used in the first stage. The instrument was improved to increase its reliability and validity based on the pilot study results. A cross-sectional survey among Hong Kong residents who live in private housing was conducted using the finalised questionnaire (Appendix 2). Data analysis was conducted using the Statistical Package Jamovi 2.2.2. Profile statistics, means and standard deviations were first generated to understand the study's demographics. Factor analysis was performed to quantify and evaluate the

relationship between two or more residential satisfaction variables. Regression analysis was conducted to test the relationships between each set of dimensions and the overall residential satisfaction perceived by the residents. Figure 3.5 summarises the methodological procedure of this study.

The residents' evaluations of the residential satisfaction dimensions, categorised in different attributes, were measured by the groups. The Cronbach alpha was verified from the table as shown in Chapter 6, Findings and Discussions.

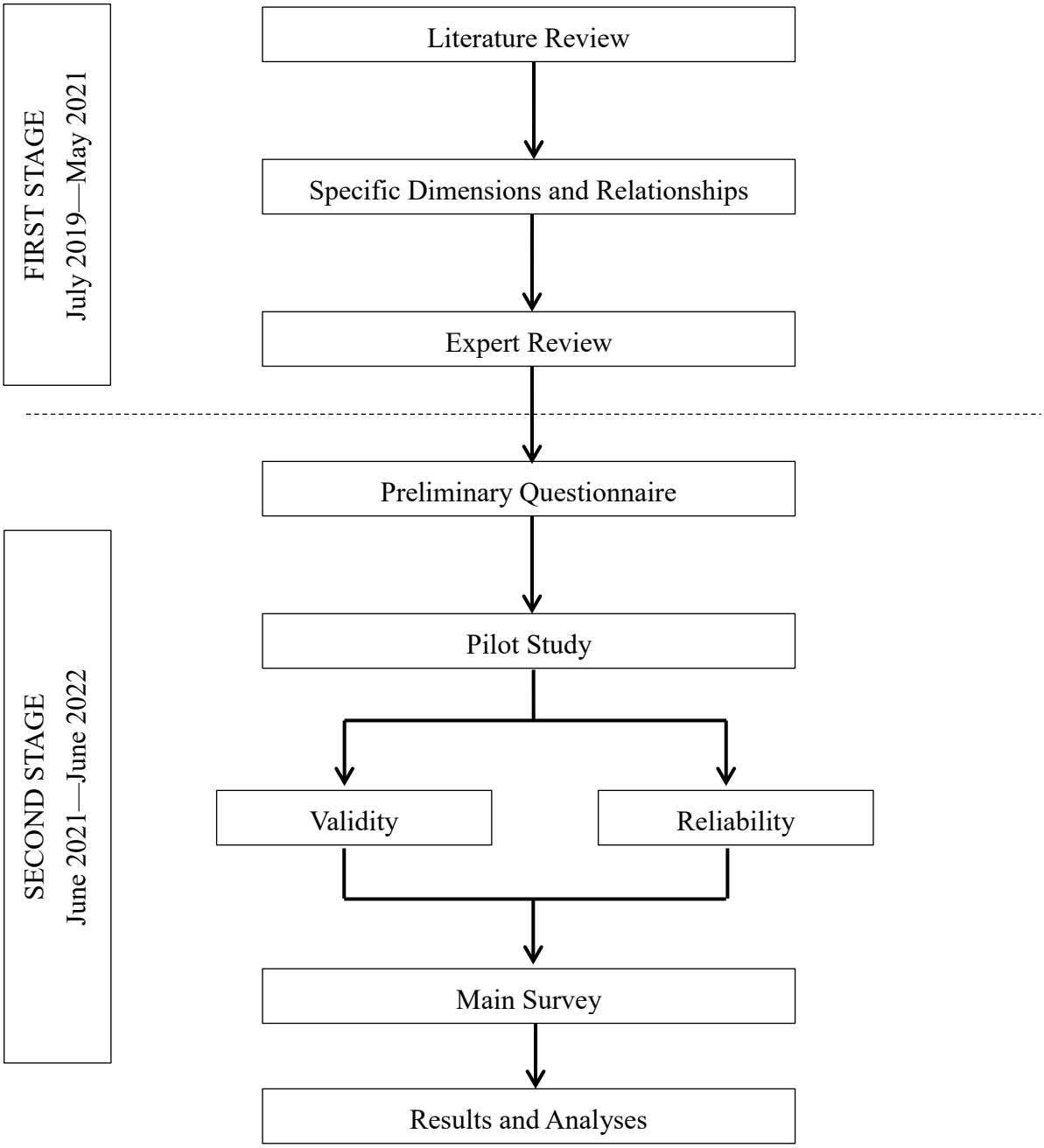


Figure 3.6 Research procedure

Table 4.1 Summary of the methodological procedures

Summary of the Methodological Procedures		
First Stage		
	Expert Panel	
Sample		
Data collection period	May 2021	
Purpose	To clarify the items and provide suggestions for reinforcing the representativeness of the developed dimensions.	
Expected outcome	The conceptualisation of the research model and dimensions Consolidation of the preliminary measurement Initial ideas about the relationships in the proposed model	
Second Stage		
	Pilot Study	Main Survey
Survey type	Web-based survey	Street intercept survey
Purpose	To explore the reliability and validity of the preliminary questionnaire	To collect data to validate the research model
Sample	Hong Kong residents who live in private housing in Hong Kong	Hong Kong residents who live in private housing in Hong Kong
Sample size	66	403
Sampling procedure	Snowball sampling	Convenience sampling and Quota sampling
Data collection period	June 2021	September – November 2021
Data analysis	Demographics analysis and reliability analysis	Factor analysis, correlation and multiple regression
Expected outcome	A valid and reliable survey instrument for assessing the proposed residential satisfaction dimensions and items via the main survey in the research model	A verified model representing the relationship among residential satisfaction dimensions, overall satisfaction and behavioural intentions.

4.5 Panel of Experts

A jury of experts was invited to evaluate whether it was necessary to revise the measuring items for all dimensions to verify that they were valid in terms of substance (DeVellis, 2003). The expert panel consisted of a CEO of a property developer, two leasing managers of a property developer, two senior managers of a property management company, a director, a regional manager and a senior manager of a property agency. All measurement items were reviewed by these eight experts.

4.6 Pilot Study

The researcher invited 80 people to complete the online Google questionnaire, and eventually 66 of them answered the questionnaires. The success rate was hence 82.5%. To ensure that the questionnaires collected for the pilot study were valid, the researcher first asked each respondent a question after they had agreed to participate in the survey. The question was, “Currently, do you live in private housing?”. Only the respondents who lived in private housing were qualified to complete the questionnaire, i.e., the 66 respondents were all living in private housing. Any unclear points that the respondents raised would be reviewed by the researcher and adjusted later in the main survey. This objective was to improve the clarity and legibility of the wording further.

Reliability and Validity

Reliability and validity assessments were conducted as the fourth and final step in developing an instrument. Pilot research was used to collect empirical data. A quick overview of reliability and validity is provided below to portray the critical aspects of producing reliable and valid measurements.

Reliability

Reliability is "the degree to which measurements are error-free and provide consistent results" (Zikmund, 2000, p. 280). The author recommended two methods for assessing the reliability of a scale or measure: test-retest, where the same scale or measure is administered to a respondent twice to determine its stability, and internal consistency, which refers to the measure's consistency over time.

Using the internal consistency method (which concerns the consistency of variables in a summed scale) is more common than using the external consistency method, according to Hair, Black, Babin, Anderson and Tatham (2006). As a result of the greater degree of sensitivity that it provides compared to its alternatives, Cronbach's alpha is the most widely used instrument for measuring the internal consistency of a whole scale due to its greater sensitivity compared to its alternatives (Nunnally, 1978). Cronbach's alpha can be analysed on two levels in terms of reliability: item reliability and construct reliability (Hair et al., 2006). By definition, item reliability is "the amount of variance in an item that is attributable to the underlying construct rather than a mistake, and may be determined by squaring the factor loading" (Chau, 1997, p. 324). It is known as construct reliability when an observable instrument accurately portrays the underlying component (Nusair and Hua, 2010). Generally, items with low correlation coefficients indicate items with low internal consistency. On the other hand, high correlation coefficients for items indicate a significant degree of correlation between all of the items, implying a high degree of internal consistency. Because more than half of the variance is explained, item and construct reliability coefficients greater than 0.70 are deemed acceptable evidence for exploratory study (Nunnally, 1978).

Validity

After establishing that a scaling instrument is sufficiently reliable, the researcher needs to assess its scale validity. The term "validity" refers to "the extent to which a scale or set of measures accurately represents the subject being studied" (Hair et al., 2006, p. 137). The validity of a study is established when the empirical data set adequately supports the research objectives and theoretical assumptions. Even though there are several distinct forms of validity, this study focused on three of the most widely recognised categories: content validity, criterion validity and construct validity.

a. Content (Face) Validity

A summarised scale's content validity is described as an assessment of the relationship between the variables to be included in the scale and the scale's conceptual description (Hair et al., 2006). This type of validity subjectively assesses the relationship between specific items and the concept by thoroughly reviewing related literature and setting up an expert panel. These factors combine to provide content validity, which is often referred to as face validity. Before conducting any theoretical analysis, it is suggested that content validity be verified (Hair et al., 2006). Without a prior understanding of the background and significance of each item, one may find it challenging to reflect on and grasp what it means. Without prior information, it is hard to characterise a measurement theory accurately. As a result, the content (facial) validity test is critical.

b. Criterion Validity

Criterion validity is defined as "the capacity of a measure to correlate with other measures of the same construct" under this type of validity in the context of research (Zikmund, 2000, p. 282). A criterion's validity might be classified as contemporary or

predictive depending on the context. The only distinction between these two measurements is that they are time-based, i.e., measured in terms of time. The former technique determines correlation with a concurrently collected criterion measure, while the latter is used to anticipate an already-occurring future event. While criterion validity can be determined in two distinct ways, it is posited that concurrent validity is more desirable because it is structured to produce a more rigorous empirical test of the relationships between the measures under consideration rather than the time relationships between the measures under consideration (DeVellis, 2003). Coefficients of correlation are often used to evaluate the validity of criteria selection.

c. Construct Validity

Construct validity is attained when a set of assessment items properly reflects the underlying theoretical notion being assessed (Hair et al., 2006). Construct validity's objective is to provide empirical evidence compatible with the theoretical logic of the concepts under examination. In other words, it refers to the accuracy with which the measurement is performed. It is common practice to assess idea validity using convergent and discriminant validity metrics.

The convergent validity of two measurements of the same concept may be assessed by comparing them. By and large, high correlations indicate that the scale properly represents the concept for which it was developed. Discriminant validity refers to the degree to which two conceptually identical concepts vary (Hair et al., 2006). In contrast to convergent validity, a low correlation indicates excellent discriminant validity.

4.7 Main Survey

4.7.1 Sample Size

A key consideration in sampling for a primary survey is determining the correct sample size. Determining the appropriate sample size is one of the most important factors in statistical analysis. If the sample size is too small, it will not achieve valid results or sufficiently represent the studied population. On the other hand, while larger sample sizes yield smaller margins of error and are more representative, a sample size that is too large may significantly increase the cost and time taken to conduct the research. Different researchers have different opinions on the sampling size. For example, Hair (1995) suggested that the minimum sample size should contain five times as many cases as variables to be analysed. Schmnacker (2010) recommended a sample size of 250 to 500 after he had surveyed works of literature. The researcher examined that for the purpose of factor analyses in this study, the sample-to-item ratio should be at least 5-to-1 (Gorsuch, 1983; Hatcher, 1994). Since this survey had 56 items, the required sample size would be 280. A conservative approach was taken to ensure reliable results, whereby the sample size was increased to 420.

4.8 Bias in Data Collection

Design bias exists when a researcher cannot capture the biased view in research analyses. In the data collection process of this study, as described in Section 4.3, it was decided in the interim that residents over 59 years old were to be excluded. This would lead to the problem of sampling bias because the views from the elderly were not collected. The researcher managed to concentrate on respondents from 18 to 59 years old. No procedural bias was noted in the survey because the participants were given sufficient time to

complete the surveys. The questions' design was said to be fluent and easy to understand. The researcher found no reporting bias as there was no condition in which favourable outcomes were more likely to be reported than negative ones. In the end, with the sound scale developed for the survey, there was no measurement bias in the research process. The research approach was appropriate for this research population.

4.9 Data Analysis

Multiple Regression

A multiple regression equation can describe the extent of the linear relationships between dependent and independent variables (Frankfort-Nachmias and Nachmias, 2008). In this study, multiple regression was used to test the simultaneous effect of the independent and control variables on the dependent variable – overall residential satisfaction. This control method was also used to test the extent of the relationship between the independent and control variables.

A linear regression model to test the hypotheses means that a straight line is used to summarise the data set for a predictor (i.e., the independent variable) and an outcome (dependent variable). The least squares method established the line that best describes the data. If the squared differences of the deviations or residuals between the line and the data were minor, then the line was representative. The gradient of the line showed the relationship between the independent and dependent variables. A line with a positive gradient described a positive relationship, while a negative gradient described a negative relationship (Field, 2009).

Multiple regression builds on these basic principles, including the equation of a straight

line, method of least squares, and assessment of model fit data to determine if the independent variables can be used to predict the dependent variable. Multiple regression was done using Jamovi, and the resulting beta values were plugged into an extended equation of a straight line to make predictions about the dependent variable outcome (Green and Salkind, 2011).

Using Jamovi, the model summary and ANOVA tables were used to determine the fit of the regression model to the data. The proportion of the variance explained by the model was provided by *R*-squared, which showed model improvement at successive stages of the hierarchical regression analysis. A significant change was indicated by Sig F Change values of <.05 significance. The coefficients table for the final model showed whether each independent variable had a significant contribution to predicting the dependent variable (Sig values <.05 are significant). The importance of each independent variable was assessed by examining the standardised beta values for which larger values equate to greater importance (Field, 2009; Green and Salkind, 2011).

Outliers and influential cases were identified and analysed to determine the effect on model accuracy. The regression model must be unbiased for the findings to be generalised to the broader acquisition workforce population. The word ‘unbiased’ means that, on average, the sample and population models are the same. For this to be true, necessary underlying assumptions must be met. These assumptions include variable types (independent variables are quantitative or categorical, and dependent variables are quantitative, continuous, and unbounded); nonzero variance (independent variables); no perfect multicollinearity; homoscedasticity; independent variables are uncorrelated with external variables; independent errors; normally distributed errors; independence (dependent variable values from the separate entity); and linearity (Field, 2009; Green

and Salkind, 2011). Each of these assumptions was checked using Jamovi validation techniques.

4.10 Chapter Summary

This chapter was devoted to explaining the research methodology used in the study. First, the research design and research framework were introduced. The scale development for this study, including the expert panel and pilot study, was discussed. Afterwards, the survey procedures, sample size and data collection for the main survey were described. In the final section, data analysis techniques were also provided and highlighted.

Chapter Five: Instrument Development

5.1 Introduction

This chapter describes the procedures used to develop the instrument and how it is refined for the main survey purpose. A recapitulation of the dimensions is first described. The results of the expert review are presented next, followed by item generation, item purification, the pilot test results, and the instrument's reliability and validity assessment.

5.2 Measurement for Residential Satisfaction Dimensions

To ensure that the residential satisfaction dimensions were relevant, representative, valid and reliable, the researcher invited eight real estate/leasing experts to comment on the 61 items classified under residential satisfaction dimensions after the literature review. A fundamental requirement for the experts' acknowledgement of the items was that at least six of the eight experts should rank an item as "representative" or "highly representative". On the contrary, if six of the eight experts rated an item as "not representative" or "not at all representative", the item would be deleted from the list. Moreover, items rated as "not representative" by four experts would be deleted from the list. Furthermore, based on the experts' comments, the measurement items that were redundant or ambiguous were either deleted or revised to more professional wording.

5.2.1 Conceptual Definitions

The following definitions briefly describe the dimensions applied in this study. Each dimension was utilised to construct items corresponding to the most prevalent conceptualisations in the prior literature.

Housing Quality/Characteristics

Housing quality (or housing characteristics) refers to a residence's external or internal quality. It includes the building or house itself, such as the quality of the construction works and the internal decoration quality. It also considers the appearance of the estate or building, ventilation, space utilisation, noise level, ceiling height, daylighting, etc. (King, 1976). Here are some other recent literature reviews that provide definitions of "housing quality" and "housing characteristics":

Galster and Killen (1995) define housing quality as "the physical suitability, safety, and adequacy of the dwelling unit and its site for the activities and needs of the household". Dieleman and Clark (2003) define housing characteristics as "attributes of the dwelling unit, such as size, age, location, and quality of construction, that are used to differentiate one unit from another". Lippman and Cohen (1997) define housing quality as "the physical, functional, and aesthetic characteristics of the dwelling unit and its surrounding environment that affect the health, safety, and well-being of its occupants". The OECD (2015) defines housing quality as "the physical condition of the dwelling, including its design, construction, and maintenance, as well as the presence of basic amenities such as water, sanitation, and heating". In addition, housing characteristics can include factors such as the size, location, and tenure of the dwelling, as well as the affordability and accessibility of housing.

Neighbourhood

Neighbourhood is the immediate physical and social setting where residents live or where something occurs or develops. Related terms are social context, sociocultural context and milieu. These encompass the culture in which the person was educated or now resides, as well as the people and organisations with whom they interact (Barnett, 2001).

Sampson (2012) defines a neighbourhood as "a relatively small, bounded geographic area within a larger city or metropolitan region that is socially and culturally homogenous and is often defined by a shared history, identity, or physical features. Diez Roux (2001) defines a neighbourhood as a spatially defined area characterised by a combination of physical and social attributes that make it a distinct place.

Leventhal and Brooks-Gunn (2000) define a neighbourhood as a geographic area that is subjectively perceived by its residents as a distinct social unit or community. Hillier and Shier (2007) define a neighbourhood as a physical and social environment in which people live, work, and play, and which provides the context for social interaction and the development of social networks. Branas et al. (2011) define a neighbourhood as a "unit of analysis that reflects the social, economic, and ecological conditions that individuals experience in their daily lives".

Environmental Safety

Environmental safety in this study refers to policies and practices enforced to ensure that the surrounding environment is free from hazards that will guarantee the safety and well-being of residents, as well as the prevention of accidental environmental damage. It means the residents' protection against the threats from man's and nature's impacts on the nearby environment. In Hong Kong, for example, the Geotechnical Engineering Office is responsible for conducting studies and works to reduce landslide risk in Hong Kong. The landslide risk has been considerably reduced by more than 40 years of sustained efforts.

The WHO defines environmental safety as the prevention or control of exposure to physical, chemical, and biological factors in the environment that may cause harm to

human health. The U.S. Environmental Protection Agency defines environmental safety as the protection of human health and the environment from the harmful effects of pollution and other hazardous materials.

The American Public Health Association (2019) defines environmental safety as the prevention of human exposure to hazardous agents in the environment that can cause injury, illness, or death.

View and Landscape

Kaplan and Kaplan (1989) define view as the visual perception of the environment, including both natural and built elements. Ulrich (1984) defines view as the visual scene that one sees from a particular vantage point. Lafleur, B. et al. (2018) define landscape as the visible features of an area of land, including physical elements such as landforms, water features, and vegetation, as well as human-made elements such as buildings and infrastructure (Kaplan and Kaplan, 1989).

The United Nations Educational, Scientific and Cultural Organization (2017) defines landscape as a natural or cultural area that is perceived by people, whose character is the result of the action and interaction of natural and/or human factors.

Transport and Public Facilities

Here are some references from the literature review that provide definitions of "Transport" and "Public Facilities". The ITF defines transport as the movement of people or goods between two points, using various modes of transport such as road, rail, air or water.

The National League of Cities defines public facilities as physical structures or spaces

that provide public services, such as recreation, education, health care, or transportation. The Government Finance Officers Association defines public facilities as capital assets that are used to provide public services, such as transportation, education, recreation, and healthcare.

The United Nations Economic and Social Commission for Asia and the Pacific defines transport as the movement of people or goods by land, sea, or air, using various modes of transport such as road, rail, waterborne, or air transport.

Property Management

Measuring residential satisfaction is one of the key metrics for keeping tabs on industrial property's competitiveness in today's real estate market. Property management affects residential satisfaction, and this dimension's focus includes facility management, security measures, management of issues and complaints, and the perceived quality. The Institute of Real Estate Management defines property management as the operation, control, and oversight of real estate as used in its most broad terms.

Russell (2019) defines property management as the process by which the owner of a property entrusts the management of the property to a third party with responsibility for maximizing its economic value.

5.2.2 Generating Items

Measurement scales for residential satisfaction were developed in regard to (i) housing quality/characteristics, (ii) neighbourhood, (iii) environmental safety, (iv) transport and public facilities, (v) view and landscape, and (vi) property management. These dimensions were designed with a five-point Likert item: very dissatisfied, somewhat

dissatisfied, neither dissatisfied nor satisfied, somewhat satisfied, and very satisfied. This scale is commonly used in research (Peterson and Wilson, 1992; Braunsberger, Wybenga and Gates, 2007). Design considerations for the questionnaire were:

- Limitation of the number of items to include only the essential questions;
- Using understandable and straightforward wording of questions; and
- Creation of five to seven-point answer scales to make it easier to complete.

Scales for other constructs which are overall satisfaction (question 9) and behavioural intentions (question 10) were developed. For overall satisfaction, three questions were designed to ask about the respondents' overall feelings about their residence with a seven-point Likert scale, from dissatisfied to satisfied, displeased to pleased, and unfavourable to favourable. These three questions were referenced by Crosby and Stephens (1987). Question 10 asked how the respondents felt about the building/estate or the developer that developed the respondent's residence. It is about loyalty and willingness to pay regarding behavioural consequences of service quality (Zeithaml and Berry, 1996).

Several studies have attempted to measure overall satisfaction using different types of questions. For example, Danvas and Caber (2019) developed a single-item scale for assessing satisfaction with hotel services. However, a limitation of this type of measure is that it is less reliable than a multi-item scale. In the context of retail, Morrison et al. (2011) and Mattila and Wirtz (2001) developed multiple-item scales to measure shopper satisfaction. However, these scales are limited to use only in retail contexts and are not relevant to the housing market. Ringle et al. (2011) developed a scale that measures more than customer satisfaction, including customer expectations about a journey, perceived congruence with an ideal voyage, and overall satisfaction with the airline. In summary, various studies have developed scales to measure overall satisfaction. Crosby and

Stephens' (1987) scale is considered the most appropriate due to its widespread use and validation in numerous studies.

Independent Variables

As shown in Table 5.1, a total of 56 items were developed to cover the six dimensions under (i) housing quality and characteristics (HQC), (ii) neighbourhood (NEIG), (iii) environmental safety (ES), (iv) transport and public facilities (TPS), (v) view and landscape (VL), and (vi) property management (PM). The sources of the studies in the literature that support the items are shown in this table. Each dimension was represented by a different number of items. These items were rated on a five-point scale, ranging from '1' being very dissatisfied to '5' being very satisfied. A five-point scale was adopted since it was simple to follow, and the respondents would take less time to complete than using most of the other scales.

Table 5.1 The sources for the 56 residential satisfaction items

The 56 Residential Satisfaction Items

Item No.	Item	Sources
	Housing Quality/Characteristics	
HQC1	Quality of building works	Carvalho, George and Anthony, 1997 Ge and Hokao, 1993 Mohit and Al-Khanbashi Raja, 2014
HQC2	The appearance of the estate or building	Galster and Hesser, 1981 Carvalho, George and Anthony, 1997 Ge and Hokao, 1993
HQC3	Space utilisation of the residence's layout	Ha and Weber, 1994 Ge and Hokao, 1993
HQC4	Kitchen and bathroom decoration	Ha and Weber, 1994
HQC5	Living room and dining room decoration	Muhammad, Rostam and Yusoff, 2010
HQC6	Bedroom decoration	Newly established*
HQC7	Ventilation	Ha and Weber, 1994 Ge and Hokao, 1993
HQC8	Noise level	Ha and Weber, 1994 Amerigo and Aragones, 1997
HQC9	Ceiling height	Ha and Weber, 1994
HQC10	Soundproofed walls	Ha and Weber, 1994
HQC11	Sunlight for each room	Ha and Weber, 1994 Ge and Hokao, 1993

	Neighbourhood	
NEIG1	Noise in the nearby environment	Galster and Hesser, 1981 Ha and Weber, 1994
NEIG2	Condition of nearby buildings	Galster and Hesser, 1981
NEIG3	Crime rates	Galster and Hesser, 1981 Ge and Hokao, 1993 Carvalho, George and Anthony, 1997 Muhammad, Rostam and Yusoff, 2010
NEIG4	Household income level in your neighbourhood	Galster and Hesser, 1981
NEIG5	Nearby properties are of a similar type	Galster and Hesser, 1981 Ha and Weber, 1994 Amerigo and Aragones, 1997
		Galster and Hesser, 1981 Mohit and Al-Khanbashi Raja, 2014
NEIG6	Housing density	Galster and Hesser, 1981
NEIG7	Number of famous schools nearby	Muhammad, Rostam and Yusoff, 2010
NEIG8	Shows status in the community	Amerigo and Aragones, 1997
NEIG9	Close to malls and restaurants	Ge and Hokao, 1993 Ha and Weber, 1994
NEIG10	Close to family or relatives	Ha and Weber, 1994 Ge and Hokao, 1993
NEIG11	Close to hospitals/health facilities	Mohit and Al-Khanbashi Raja, 2014 Ha and Weber, 1994
NEIG12	Close to work	Ha and Weber, 1994 Mohit and Al-Khanbashi Raja, 2014 Muhammad, Rostam and Yusoff, 2010
NEIG13	In a good neighbourhood	Ha and Weber, 1994 Carvalho, George and Anthony, 1997 Ge and Hokao, 1993 Mohit and Al-Khanbashi Raja, 2014
NEIG14	Away from public housing	Galster and Hesser, 1981
NEIG15	Community life	Amerigo and Aragones, 1997 Carvalho, George and Anthony, 1997
NEIG16	Close to supermarkets/markets	Ge and Hokao, 1993
NEIG17	Cleanliness of streets	Muhammad, Rostam and Yusoff, 2010
NEIG18	Close to parents/children	Carvalho, George and Anthony, 1997
NEIG19	Leisure and entertainment options	Muhammad, Rostam and Yusoff, 2010 Ge and Hokao, 1993
NEIG20	Away from other apartment buildings	Ha and Weber, 1994
NEIG21	Away from factories	Ha and Weber, 1994
NEIG22	Nearby properties are of similar housing types	Ha and Weber, 1994 Amerigo and Aragones, 1997

	Environmental Safety	
ES1	Away from unpleasant facilities (e.g. trash, odour)	Ha and Weber, 1994 Ge and Hokao, 1993
ES2	Air pollution level	Ha and Weber, 1994 Carvalho, George and Anthony, 1997 Ge and Hokao, 1993 Muhammad, Rostam and Yusoff, 2010
ES3	Landslide risk level	Ha and Weber, 1994
ES4	Near traffic blackspots	Ha and Weber, 1994
ES5	Typhoons and rain can easily cause flooding and inconvenience	Ha and Weber, 1994 Ge and Hokao, 1993
	Transport and Public Facilities	
TPF1	Public park facilities	Ha and Weber, 1994
TPF2	Public recreational facilities (e.g. public stadiums, fields, swimming pools)	Ha and Weber, 1994 Carvalho, George and Anthony, 1997
TPF3	Communication services (e.g. reception quality of mobile phone/broadband network)	Muhammad, Rostam and Yusoff, 2010
TPF4	Number of transportation choices	Carvalho, George and Anthony, 1997 Muhammad, Rostam and Yusoff, 2010
	View and Landscape	
VL1	View from windows	Ha and Weber, 1994; Kearney, 2006
VL2	Privacy from neighbours (e.g. windows face each other)	Ha and Weber, 1994 Carvalho, George and Anthony, 1997
VL3	Trees and shrubs	Ha and Weber, 1994; Kearney, 2006
VL4	Levels/Landscape	Ha and Weber, 1994; Kearney, 2006
	Property Management	
PM1	Maintenance of the building/estate	Ha and Weber, 1994 Muhammad, Rostam and Yusoff, 2010
PM2	Cleanliness of public areas	Ha and Weber, 1994
PM3	Security measures of the building to control trespassers	Carvalho, George and Anthony, 1997
PM4	Maintenance of public areas	Ha and Weber, 1994
PM5	Adequacy & properness of managing refuse disposal	Carvalho, George and Anthony, 1997 Muhammad, Rostam and Yusoff, 2010
PM6	Management fees	Newly established*
PM7	Safety and functions of elevators	Newly established*
PM8	Follow-up of complaints	Newly established*
PM9	Mgt responses to issues raised in the meetings	Newly established*
PM10	Financial statements are displayed in the lobby	Newly established*

**These newly established items were recommended by the Expert Panel. During the expert review, six of the eight experts commented that these items should be included under the dimension of property management in Hong Kong.*

Overall Satisfaction

To measure overall residential satisfaction in this study, the researcher adopted three items from the Crosby and Stephens' (1987) satisfaction scale. This is in relation to Question 10 in the survey.

In this research, it was essential to examine which items were more important than other items. However, getting to know the respondents' overall residential satisfaction was also necessary. The reason is that the relationship between specific personal demographics and overall satisfaction can be measured, and which group of dimensions have the most significant relevance to overall satisfaction can also be quantified.

The scales focused primarily on the respondents' overall residential satisfaction, following the respondents' completion of the 56 items from Questions 3 to 8 (listed in Table 5.1). The overall satisfaction responses were scored on 7-point scales, with a higher score representing a more positive attitude. The endpoints for the three scales were 'dissatisfied/satisfied', 'displeased/pleased', and 'unfavourable/favourable' (see Table 5.2). Although these endpoints look similar (Table 5.2) to each other, they have different inner meanings. For instance, "satisfied" refers to a feeling of contentment or fulfilment that results from having one's expectations met. When someone is satisfied, they feel that their needs or desires have been fulfilled, and they are content with the outcome. For example, a customer may be satisfied with a product if it meets their expectations and performs as advertised. "Pleased" also refers to a feeling of contentment, but it is more closely associated with positive emotions such as happiness or delight. When someone is pleased, they are not only satisfied with the outcome but also experience positive emotions in response to it. For example, a customer may be pleased with a product if it exceeds their expectations and surprises them by its quality or performance. "Favourable"

refers to a general positive attitude towards something, which may or may not be the result of satisfaction or pleasure. A favourable attitude can be based on various factors, such as reputation, recommendations, or perceived value. For example, a customer may have a favourable attitude towards a company if they have heard positive things about its products or services or if they perceive it to offer good value for money.

In summary, while "satisfied," "pleased," and "favourable" are similar in meaning, they differ in the intensity and emotional valence of the attitudes which they describe. "Satisfied" refers to a feeling of contentment resulting from the fulfilment of expectations, "pleased" describes a more intense feeling of happiness or delight resulting from positive surprises, and "favourable" describes a general positive attitude towards something based on various factors.

Table 5.2 Overall satisfaction (with reference to survey question no. 9)

These scales had good validity and stable reliability in diverse demographics and are well-referenced in several studies (Oliver and Swan, 1989; Oliver, 1993).

Item No.	Item	Source
OSAT1	Your overall feelings about the residence were dissatisfied/satisfied.	Crosby and Stephens, 1987
OSAT2	Your overall feelings about the residence were displeased/pleased.	Crosby and Stephens, 1987
OSAT3	Your overall feelings about the residence were unfavourable/favourable.	Crosby and Stephens, 1987

Behavioural Intentions

In this study, five items or questions, modified from a scale established by Zeithaml et al. (1996), were used to assess behavioural intention. Baker and Crompton (2000) validated the scale. The purpose of establishing these items in this study was to assess how the respondents felt about the developer that developed their residence. A three-item scale

was used to measure loyalty, whereas a two-item scale was used to measure willingness to pay (Table 5.3). Referenced from the study by Baker and Crompton (2000), the coefficient alpha for measuring loyalty and willingness to pay was 0.8 and 0.77, respectively. To align with the research topic, the researcher reworded the respective subject and service terminology.

Table 5.3 Behavioural intentions (with reference to survey question no. 10)

Item No.	Item	Sources
	Loyalty	
BEH1	I will say positive things about this developer to other people.	
BEH2	I will recommend this developer to someone who seeks my advice.	Zeithaml, Berry and Parasuraman, 1999;
BEH3	I will encourage friends and relatives to purchase properties developed by this developer.	Baker and Crompton, 2000
	Willingness to Pay	
BEH4	If I were to purchase properties in the future, I would continue to purchase properties from this developer even if its prices increase somewhat.	
BEH5	I will purchase higher-priced properties developed by this developer.	

5.3 Expert Review

The panel of experts was made up of eight persons from the real estate/property industry, including a CEO of a property developer, two leasing managers of a property developer, two senior managers of a property management company, a director, a regional manager and a senior manager of a property agency. The researcher created a rating pool for the expert review to better understand the developed dimensions and items derived from the previous literature. These experts were given definitions of each dimension and were asked to assess the representativeness of the items using a 5-point measurement scale:

5 - represented ‘highly representative’.

4 - represented ‘somewhat representative’.

3 - represented ‘neutral’.

2 - represented ‘somewhat not representative’.

1 – represented ‘not representative’.

Apart from rating each item, the experts were also requested to clarify the items and provide recommendations on reinforcing the constructs' representativeness. See the format in Appendix 1.

5.3.1 Comments of the Expert Panel

As mentioned, the discussion with the industry experts ensured that the residential satisfaction dimensions were relevant, representative, valid and reliable. After meeting with the eight experts separately, the initial 61 items under the six dimensions of residential satisfaction were reduced to 56 items. Some experts reworded items, while some suggested deleting or adding items. The changes are described in the following table:

Table 5.4 Summary of the comments from eight experts

Dimension	Description of Item before the Expert Review	Comments from Expert(s)
Housing Quality/Characteristics	'Construction quality of the residence'	Suggested to reword the item as 'Quality of building works'.
	'Appearance of the building'	Advised to replace it with 'Appearance of the estate/building'.
	'Layout of the residence' and 'Storage space'	Proposed to combine the two items into 'Space utilisation of the residence's layout'. An expert pointed out that the space utilisation issue has been an essential consideration for Hong

Dimension	Description of Item before the Expert Review	Comments from Expert(s)
		Kong people over the years.
	'Kitchen design' and 'bathroom design'	Recommended to group into one item as 'Kitchen and bathroom decoration'.
	--	' Living room, dining room decoration' should be added.
	--	' Bathroom decoration' should be added.
	'Security system'	Suggested to delete 'Security system' as it was duplicated with another item, 'crime rates'.
Neighbourhood	'Density'	Advised to reword the item as 'Housing density'.
	--	'Close to supermarkets/markets' should be added.
	--	Recommended to add 'Traffic flow nearby'.
	'Close to shopping areas'	Recommended rewording the item as 'Close to malls and restaurants'. The experts considered that 'malls' would better reflect local terminology. They also mentioned that restaurants were very important to Hong Kong people due to their habit of dining out.
	'Relationship with neighbours’	Suggested to delete 'Relationship with neighbours’ as it was similar to another item.
Environmental Safety	'Unpleasant conditions'	Suggest replacing it with 'Away from unpleasant facilities' so that the calling of similar items could be standardised.
	--	'Traffic flow nearby' should be added.

Dimension	Description of Item before the Expert Review	Comments from Expert(s)
	'Safety for children'	Recommended to delete this item as it is not relevant in Hong Kong. All experts considered this irrelevant because children's safety incidents rarely happen.
	--	'Near traffic black spots' should be added.
	'Transportation safety'	Advised to delete 'transportation safety' and replace it with 'Traffic flow nearby' and 'Near traffic black spots'.
	--	Proposed to add an item 'Typhoon and rain can easily cause flooding and inconvenience' to reflect Hong Kong's weather phenomenon from May to October.
Transport and Public Facilities	'Welfare facilities'	Seven of the eight experts considered this item to be not relevant in Hong Kong.
	'Drainage system'	Suggested deleting this item because it was not a social issue in Hong Kong.
	'Distance from adjacent building'	Advised to delete this item due to redundancy.
	'Sea view' and 'Natural view/mountain view'	Recommended to combine as 'View from window'.
	'The environment fits your residence'	Six experts considered this vague. Advised to delete it.
	'Crowdedness of neighbourhood'	Suggested to delete 'crowdedness of neighbourhood' due to its similarity to another item.
	'Convenience for reaching neighbouring cities'	Proposed to delete this because it was not relevant to Hong Kong.
	'Convenience for kids' commuting'	Advised to delete this due to its irrelevancy in Hong Kong.

Dimension	Description of Item before the Expert Review	Comments from Expert(s)
Property Management	'Maintenance service quality of the building/estate' --	Recommended rewording the item as 'Maintenance of the building/estate'. Advised to add the following items: 'Cleanliness of public areas' 'Security measures of the building to control trespassers' 'Maintenance of public areas' 'Adequacy and properness of managing refuse disposal'

In the process of developing the residential satisfaction questionnaire for Hong Kong, an expert panel review was conducted to assess the data collection instruments. The review resulted in the deletion of ten items from the initial 61 items and the addition of five new items, which made the questionnaire more precise and relevant to the context of Hong Kong. The experts who participated in the review process had a professional commitment to improving property management services, and their advice was instrumental in improving the pilot study and main survey. The questions for the survey were carefully checked and reworded to ensure fluency and professionalism, which saved time for the respondents. The use of expert panel reviews is an important component of the instrument development process and provides valuable insights to improve the quality of the questionnaire. Overall, the expert panel review was a crucial step in developing a comprehensive and reliable residential satisfaction questionnaire for Hong Kong.

5.4 Pilot Test Results

To recapitulate, the data collection period was from mid-June to early July 2021. The

researcher targeted his ex-colleagues, acquaintances and other doctoral candidates to complete the questionnaire for the pilot test. The sample was selected by using the snowball sampling method. They were all private housing residents in Hong Kong. An online questionnaire was administered by the researcher using Google online survey. A google form was designed and set up by the researcher and sent to the targeted respondents to complete. The researcher used instant communication applications such as WhatsApp and WeChat to distribute the link to questionnaire stored on the Google Form platform. The questionnaire was set up in a way such that each respondent had to answer every question when they were completing it.

Demographic profile of the pilot test respondents (n=66)

The first two questions in the online survey were about the descriptive statistics the results of which would be used to summarise the general characteristics of the respondents' residence. The sample (n=66) comprised 44% males and 56% females. The majority of the respondents (67%) fell into the categories aged between 30-39 and 40-49. In addition, 82% of them reported that they were married. Regarding employment, 82% claimed that they worked full-time, 34% reported a monthly household income of less than HKD50,000 and 30% earned HKD100,000 or above. Of the sample, 26% reported their career status as middle and senior management level, 20% were professionals, 12% were at a junior level, and 12% were self-employed. Most of the respondents (64%) owned their residence unit.

Housing Characteristics of Their Residence

Regarding the basic housing characteristics of the respondents' residences, 58% of the sample lived in a residence of 500-1,000 sq. ft. while those of 30% were less than 500 sq.

ft. A total of 59% of the sample claimed that their residence did not have a balcony, and no respondent's home had a yard. The sample comprised 24% living in properties aged 1-10 years, 17% living in properties aged 11-20 years, and 32% living in properties aged 21-30 years. In total, 64% of respondents claimed that their building or estate had a clubhouse, and 92% answered that their residence had an incorporated owners committee. Regarding the number of bedrooms, 50% of the sample had three bedrooms, 35% had two bedrooms, and 8% had one bedroom. Half of the sample said that their residence had one bathroom, 39% had two bathrooms, and 11% had three bathrooms.

Table 5.5 below shows the demographics and characteristics of residence of the pilot test.

Table 5.5 Demographic Profile of the Pilot Test Sample

	Level	**Count**	**Proportion**
1.1 Gender	Male	29	44%
	Female	37	56%
1.2 Age	18-29	4	6%
	30-39	23	35%
	40-49	21	32%
	50-59	12	18%
	60 or above 以上	6	9%
1.3 Marital status	Single	11	17%
	Married	54	82%
	Divorced	1	2%
1.4 Number of children	0	17	26%
	1	27	41%
	2	21	32%
	3	1	2%
1.5 Number of siblings living together	0	62	94%
	1	2	3%
	2	1	2%
	3	1	2%
1.6 Employment	Full-time	54	82%
	Part-time	2	3%
	Unemployed	2	3%
	Own business	2	3%
	Retired	6	9%
1.7 Monthly household income (HKD)	<$30,000	7	11%
	$30,000-49,999	15	23%
	$50,000-79,999	10	15%

	Level	Count	Proportion
	$80,000-99,999	14	21%
	$100,000 or above	20	30%
1.8 Best-described career status	Top Management [e.g. CEO, CFO, COO]	6	9%
	Middle and Senior Management level	17	26%
	Functional/Operational level	6	9%
	Junior level	8	12%
	Professional	14	21%
	Housewife	2	3%
	Self-employed	8	12%
	Unemployed	5	8%
1.11 Do you own the residence unit?	Yes	42	64%
	No	24	36%
1.12 Properties you own in H.K.	0	19	29%
	1	36	55%
	2	7	11%
	3	3	5%
	4 or above	1	2%
1.13 If you answered “0” in 1.12, which best describes your situation?	I rent a property	9	47%
	I live with parents	5	26%
	I live with relatives	2	11%
	Others	3	16%
2.1 Enter the net floor area of your residence: (square ft)	100-500	20	30%
	500-1000	38	58%
	1000-1500	7	11%
	>1500	1	2%
2.2 Area of balcony (square ft)	0	39	59%
	10	3	5%
	15	2	3%
	20	7	11%
	22	3	5%
	30	2	3%
	35	1	2%
	40	1	2%
	50	2	3%
	78	1	2%
	100	3	5%
	300	1	2%

	Level	Count	Proportion
	440	1	2%
2.3 Area of flat roof (square ft)	0	59	89%
	16	2	3%
	20	1	2%
	30	2	3%
	473	1	2%
	700	1	2%
2.4 Area of roof (square ft)	0	63	96%
	200	1	2%
	700	1	2%
	900	1	2%
2.5 Area of yard (square ft)	0	66	100%
2.6 Age of the property (years)	10 years or below	16	24%
	11-20 years	11	17%
	21-30 years	21	32%
	31-40 years	14	21%
	Above 40 years	4	6%
2.7 The type of your residence	Apartment	65	99%
	Townhouse	0	0%
	Detached house	1	2%
2.8 Is there a clubhouse in your building or estate?	Yes	42	64%
	No	24	36%
2.9 Is there an incorporated owners committee in your building or estate?	Yes	61	92%
	No	5	8%
2.10 Years you have lived in the current property	1-5 years	24	36%
	6-10 years	17	26%
	11-15 years	10	15%
	16-20 years	4	6%
	Above 20 years	11	17%
2.11 Number of persons living in the residence unit now	1	3	5%
	2	12	18%
	3	17	26%
	4	15	23%
	5	14	21%
	6	5	8%
2.12 Number of bedrooms	1	5	8%
	2	23	35%
	3	33	50%

	Level	Count	Proportion
	4	5	8%
2.13 Number of bathrooms	1	33	50%
	2	26	39%
	3	7	11%

As shown in Table 5.6, the means of the six satisfaction dimensions ranged from 3.59 to 3.74, with housing quality/characteristics the highest and the neighbourhood the lowest. All Cronbach's alpha were valued at 0.872 to 0.939, showing very good reliability.

Table 5.6 Mean and standard deviation of residential satisfaction

Dimensions	mean	sd	Cronbach's α
Housing Quality/Characteristics	3.73	0.67	0.928
Neighbourhood	3.59	0.641	0.939
Environmental Safety	3.74	0.824	0.872
Transport and Public Facilities	3.73	0.793	0.73
View and Landscape	3.73	0.838	0.878
Property Management	3.74	0.705	0.927

The satisfaction levels for each item under the six residential satisfaction dimensions is presented in Table 5.7 Satisfaction levels were measured using a 5-point scale, where a higher number denotes higher satisfaction. The mean satisfaction scores of items in the property management dimension ranged from 3.44 to 4.03. The top three items that the respondents were most satisfied with were "financial statements were displayed in the lobby" (mean = 4.03), "security measures of the building to control trespassers" (mean = 3.92), followed by "adequacy and properness of managing refuse disposal" (mean = 3.88). The mean satisfaction scores of the items under the housing quality/characteristics dimension ranged from 3.50 to 3.98. Satisfaction with sunlight for each room was rated the highest (mean = 3.98), followed by that of ventilation (mean = 3.80) and appearance

of the estate or building and space utilisation of the residence's layout (both of the means were 3.77). Satisfaction with soundproofed walls was rated the worst among the items (mean = 3.50).

The mean satisfaction scores of the items under the neighbourhood dimension ranged from 3.06 to 4.12. Satisfaction with crime rates was rated the highest (mean = 4.12), followed by that of away from public housing (mean = 3.86), and condition of nearby buildings (mean = 3.70); and the number of famous schools nearby was rated the worst among the variables (mean = 3.06). The mean satisfaction scores of the items under the transport and public facilities dimension ranged from 3.45 to 3.98. Satisfaction with being close to supermarkets/markets was rated the highest (mean = 3.98), followed by that of number of transportation choices (mean = 3.86); and the leisure and entertainment options were rated the worst among the variables (mean = 3.45).

The mean satisfaction scores of the items under the view and landscape dimension ranged from 3.48 to 3.89. Satisfaction with trees and shrubs was rated the highest (mean = 3.89), followed by levels/landscape (mean = 3.75), and view from windows (mean = 3.71); and the satisfaction with the privacy from neighbours was rated the worst among the variables (mean = 3.55). The mean satisfaction scores of the items under the environmental safety dimension ranged from 3.55 to 4.12. Satisfaction with landslide risk level was rated the highest (mean = 4.12), followed by near traffic blackspots (mean = 3.74), and away from unpleasant facilities (mean = 3.67); and the satisfaction with air pollution level was rated the worst among the variables (mean = 3.55).

Table 5.7 Mean and standard deviation for all items of measurement

Item Reliability Statistics

Housing Quality/Characteristics	**mean**	**sd**
3.1 Quality of building works	3.74	0.829
3.2 Appearance of the estate or building	3.77	0.74
3.3 Space utilisation of the residence's layout	3.77	0.873
3.4 Kitchen and bathroom decoration	3.67	0.81
3.5 Living room, dining room decoration	3.74	0.791
3.6 Bedroom decoration	3.71	0.76
3.7 Ventilation	3.8	0.898
3.8 Noise level	3.56	1.083
3.9 Ceiling height	3.76	0.946
3.10 Soundproofed walls	3.5	1.041
3.11 Sunlight for each room	3.98	0.832
Neighbourhood		
4.1 Noise in nearby environment	3.49	1.12
4.2 Condition of nearby buildings	3.65	0.986
4.3 Crime rates	4.1	0.837
4.4 Household income level in your neighbourhood	3.65	0.919
4.5 Public services	3.49	0.859
4.6 Housing density	3.46	1.119
4.7 Number of famous schools nearby	3.02	1.085
4.8 Shows status in the community	3.14	1.075
4.9 Close to malls	3.6	1.129
4.10 Close to family or relatives	3.56	0.912
4.11 Close to hospitals/health facilities	3.41	0.816
4.12 Close to work	3.27	0.971
4.13 In a good neighbourhood	3.7	0.775
4.14 Away from public housing	3.75	1.164
4.15 Community life	3.46	0.737
4.16 Close to supermarkets/markets	3.98	0.889
4.17 Cleanliness of streets	3.63	1.021
4.18 Close to parents/children	3.79	0.806
4.19 Leisure and entertainment options	3.43	0.995
4.20 Away from other apartment buildings	3.44	1.028
4.21 Away from factories	4.1	0.946
4.22 Nearby properties are of similar housing types	3.9	0.928
Environmental Safety		
5.1 Away from unpleasant facilities	3.67	1.028
5.2 Air pollution level	3.55	1.04
5.3 Landslide risk level	4.12	0.969
5.4 Near traffic blackspots	3.74	0.917
5.5 Typhoon and rain can easily cause flooding and	3.64	1.104

inconvenience		
Transport and Public Facilities		
6.1 Public park facilities	3.82	1.01
6.2 Public recreational facilities	3.61	1.08
6.3 Communication services	3.73	1.03
6.4 Number of transportation choices	3.77	1.15
View and Landscape		
7.1 View from windows	3.71	0.996
7.2 Privacy from neighbours	3.55	1.118
7.3 Trees and shrubs	3.89	0.85
7.4 Levels/Landscape	3.75	0.936
Property Management		
8.1 Maintenance of the building/estate	3.64	0.955
8.2 Cleanliness of public areas	3.85	0.808
8.3 Security measures of the building to control trespassers	3.92	0.847
8.4 Maintenance of public areas	3.71	0.837
8.5 Adequacy and properness of managing refuse disposal	3.88	0.795
8.6 Management fees	3.44	1.04
8.7 Safety and functions of elevators	3.79	1
8.8 Follow up of complaints	3.61	1.006
8.9 Management responses to issues raised in the meetings with residents	3.55	0.826
8.10 Financial statements are displayed in the lobby	4.03	0.928

Table 5.8 shows the mean and Cronbach's alpha for the overall satisfaction with the residence and behavioural intentions towards developers. This pilot test's data exhibited a high overall satisfaction as rated by the respondents (mean = 5.33, on a scale of 7), indicating that they were very much satisfied with their residence on average. For behavioural intentions towards developers, the mean recorded was 3.29 on a 5-point scale. The Cronbach's alpha for overall satisfaction was 0.962, which is considered excellent in regard to reliability. The Cronbach's alpha for behavioural intention towards developers was 0.616, indicating that the value was moderate and acceptable.

Table 5.8 Coefficient alpha and item-total correlation of dependent variables (Q9 to Q10)

Scale Reliability Statistics

	mean	sd	Cronbach's α
Overall Satisfaction with Residence	5.33	1.07	0.962
Behavioural intentions towards developers	3.29	0.643	0.616

(i) *Overall Satisfaction with Residence*

Item Reliability Statistics

	mean	sd
9.1 Your overall feelings about the residence are:	5.30	1.08
9.2 Your overall feelings about the residence are:	5.36	1.12
9.3 Your overall feelings about the residence are:	5.32	1.14

(ii) *Behavioural intentions towards developers*

	Mean	sd
10.1 I will say positive things about this developer to other people.	3.59	1.052
10.2 I will recommend this developer to someone who seeks my advice.	3.45	0.948
10.3 I will encourage friends and relatives to purchase properties developed by this developer.	3.14	1.036
10.4 If I were to purchase properties in the future, I would continue to purchase properties from this developer even if its prices increase somewhat.	3.38	0.989
10.5 I will purchase higher-priced properties developed by this developer.	2.89	1.165

The pilot test conducted in this study was crucial in preparing for the main survey by assessing various aspects of the study instruments and methodology. The pilot test determined the feasibility of the fore plan of the main survey and tested the study instruments, including whether the questions were comprehensible to the 66 respondents. It also examined the appropriateness of the contents of the questionnaires. Additionally, the pilot study tested the data collection process, such as the time taken to complete the

questionnaire and the willingness of the subjects to participate in the study. It also proved the appropriateness of the coding of the items and the type of statistical tests used in subsequent data analyses.

The valuable feedback provided by the Expert Panel at an earlier stage resulted in no need for refinement of the questionnaire content for the main survey. The respondents found the questionnaire easy to complete, and the content was smooth and easy to understand. In summary, the pilot test contributed significantly to the success of the main survey by identifying and addressing potential issues before the actual survey, thereby ensuring a smooth and effective data collection process.

5.5 Chapter Summary

This chapter describes the procedures used to develop the instrument and how it was refined for the main survey purpose. The researcher invited eight real estate/leasing experts to comment on the items classified under the residential satisfaction dimensions. The results of the expert review were presented in detail. The process of item generation and item purification was described. The pilot test results further ensured the instrument's reliability and validity.

Chapter Six: Findings from the Survey Results

6.1 Introduction

This chapter presents the results of the statistical analysis and hypothesis tests. As defined by Little and Rubin (2019), statistical analysis is a scientific approach in which quantitative and qualitative data are summarised, parameters are calculated, hypotheses are tested, and predictions of future behaviour are made using knowledge of mathematics. Analyses of the sampled data were carried out using quantitative statistical approaches. The response rate for the sample was provided, which was later followed by data cleaning. Data cleaning included the identification of missing values and the identification and removal of extreme values. Regression assumptions were tested under data examination, including the test for normality and correlation. Each factor was examined separately. Descriptive analysis was then carried out on the cleaned data using both a graphical approach and summary statistics. For the dependent variables, factor analysis was used in variable reduction. Regression models were then fitted to verify empirically which of the variables significantly predicted the dependent variables.

6.2 Response Rate

As discussed in the previous chapter, the targeted sample size was 420. The data

collection process lasted two months, and the data collection method was street interception. The recorded number of total potential respondents who were invited to participate in the survey was 2,370, and only 420 of them agreed to answer. The response rate was 17.7%.

6.2.1 Identification of missing values

Despite the research assistants having tried their best to ensure the completeness of the answers filled in by the respondents, 15 questionnaires were found to have the problem of missing data, and in two all answers were found to be rated '3' throughout the entire questionnaire. The researcher disqualified a total of 17 questionnaires. Hence, the effective number of questionnaires was 403.

Geographical considerations

Since the proposed study would examine the private housing residents' satisfaction with their living environment, surveys were only completed by residents who resided in private housing in Hong Kong. The survey represented approximately 58% of the population in Hong Kong, i.e., 4.29 million private housing residents out of the total population of 7.42 million.

Geographically, Hong Kong is divided into three regions: Hong Kong Island, Kowloon Peninsula ("Kowloon") and the New Territories. Hong Kong Island has the most extended history but is the smallest in size, whereas the New Territories is the largest land area and makes up 86.2% of Hong Kong's territory. According to the Census and Statistics Department, in 2018, over half of the population (52.3%) resided in the New

Territories, 30.6% in Kowloon and 17.1% in Hong Kong Island. The populations living in private housing in these three regions were 41.4%, 68.9% and 89.7%, respectively. Since the total land area of Hong Kong is divided into 18 districts, street intercept surveys were used to recruit the residents of the districts.

Population Distribution by District

Respondents were asked to fill out a questionnaire. The expected number of respondents per district was as close as possible to the private housing population proportion in each district. So, at a certain point of time during the data collection phase, the number of the sample was counted to find out the respondents' residential districts. This interim result would be compared to the overall population distribution in the different districts in Hong Kong. The researcher noted disproportionation because the interim statistics showed that the sample obtained in a few districts was lower or higher than the actual percentage of the district's population. Using the quota sampling method, the researcher and his assistants collected the sample to ensure that the data were roughly in line with the population distribution by district in Hong Kong. After that, the researcher and research assistants prudently obtained the remaining questionnaires to ensure that all Hong Kong residential districts were represented. They asked prospective respondents about their living districts before filling out the survey. In such way, the quota sampling method was effectively utilised to provide better precision than just using convenience sampling. This would guard against an unrepresentative sample, i.e., a disproportionate population. It was essential to the study because the researcher believed that respondents living in different districts would make different ratings for the residential satisfaction variables. The detailed population by district is summarised in Table 6.1 below:

Table 6.1 Quota sampling based on population by district in Hong Kong

District	Population of the 18 districts per Census	in %	% of Residents Living in Private Housing	Population Living in Private Housing	Target Sample Size	403 Qualified Responses Collected	in %
HONG KONG ISLAND							
Central & Western	240,500	3.2%			14	13	3.2%
Wanchai	178,400	2.4%			10	14	3.5%
Eastern	545,600	7.4%			31	37	9.2%
Southern	264,600	3.6%			15	20	5.0%
	1,229,100		89.70%	1,102,503(25.7%)			
KOWLOON							
Yau Tsim Mong	329,900	4.4%			19	14	3.5%
Sham Shui Po	416,500	5.6%			24	20	5.0%
Kowloon City	419,900	5.7%			24	19	4.7%
Wong Tai Sin	416,100	5.6%			24	17	4.2%
Kwun Tong	688,600	9.3%			39	33	8.2%
	2,271,000		68.90%	1,564,719(36.5%)			
NEW TERRITORIES							
Kwai Tsing	502,400	6.8%			28	26	6.5%
Tsuen Wan	311,800	4.2%			18	15	3.7%
Tuen Mun	495,100	6.7%			28	24	6.0%
Yuen Long	645,000	8.7%			36	34	8.4%
North	314,100	4.2%			18	19	4.7%
Tai Po	306,800	4.1%			17	14	3.5%
Sha Tin	688,100	9.3%			39	33	8.2%
Sai Kung including TKO	472,500	6.4%			27	43	10.7%
Islands	186,500	2.5%			11	8	2.0%
	3,922,300		41.40%	1,623,832(37.8%)	422	403	
Population - Grand Total	7,422,400						
Population Living in Private Housing				4,291,054(100%)			
Population Living in Public Housing				3,131,346			

Age Group of the Respondents

In early October 2021, the researcher noted that only nine of the 180 collected questionnaires (i.e., 5%) belonged to the age group ‘60 or above’. This interim number was disproportionate to the actual Hong Kong population, of which 27% (Aged over 60 in Hong Kong: 2,005,500; Hong Kong population: 7,428,300) fall into this age group.

The research assistants reflected that it was difficult to collect responses from people aged 60 or above because the elderly were generally reluctant to fill out the

questionnaires under the risks caused by the pandemic. The research assistants reported that respondents aged 60 or above took over 20 minutes on average to complete this survey. In contrast, residents aged 18 to 59 only took 12 minutes to complete it. This can be explained by the sight and language ability of residents aged 60 or above not being as good as people under 60 years old. Based on these reasons, the researcher decided to limit the questionnaires to people aged between 18 and 59 (Table 6.2).

Table 6.2 Quota sampling based on age distribution by district in Hong Kong

Age Group	Hong Kong Population per Census	Percentage (Age 18-59)	Target Sample size	403 Qualified Responses Collected	% of Age Group for the 403 samples
Under 18	1,017,000	See NOTE 1			
18-29	940,700	21.4%	94	90	22.3%
30-39	1,137,300	25.8%	115	110	27.3%
40-49	1,142,900	25.9%	99	97	24.1%
50-59	1,184,900	26.9%	112	106	26.3%
60 or above	2,005,500	See NOTE 1			
	7,428,300		420	403	

NOTE 1 People who were aged under 18 or above 59 were not qualified for sampling.

6.3 Demographic Profile of the Respondents

Demographic statistics define and examine sampled data based on the frequencies of each variable's categorisation. Demographic analysis can include summary tables to represent the frequencies or apply graphics to represent the different categories of the variables. Thus, it suffices to conclude that frequency tables enable the examination of categorical variables, with an interest in visually assessing the distribution of the sample data based on the count of the different levels represented in the categorical variables. The sample of the main survey consisted of 403 respondents. There were 186 (46.2%) male respondents, compared to the 53.8% of the sample who identified as females. While the sample

consisted of respondents aged at least 18 years old, individuals in the age group between 18 and 29 accounted for 22.3%, with the larger share of the sample in the age group of 30-39 being 27.3%. See Table6.3 The sample consisted of 35.5% of the respondents who reported to be single, while 60.3% of the sample claimed that they were already married. The rest were divorced.

The distribution by type of employment was visually skewed as the number of full-time employees was 70.2% of the sample compared to part-time employees consisting of 9.4% of the sample. The unemployed percentage was 11.2%, while the retired was 2.0%. Income appeared to be fairly distributed as the lowest percentage in the income groups was 14.1%, while the highest was 23.6%. Income data are usually skewed, with a higher proportion of the population sample being in the lower-income categories while the low percentages being in the higher-earning categories. For instance, 19.6% of the sample members had a monthly household income of HKD100,000 or more, while 20.6% of the sample members' monthly household income was less than HKD30,000. See Table 6.3 below.

The sample distribution based on the employment type suggests low frequencies in the higher levels of employment, such as management, and lower frequencies in the lower levels of employment type. For instance, only 4.5% of the respondents claimed that they were in top management (such as CEO, CFO, or COO), while 3.7% said that they were housewives, and 1.5% claimed that they were unemployed. Junior- and professional-level employees comprised 16.4% and 14.9%, respectively.

A. Ownership and Respondents

Of the respondents 52.4% claimed that they owned their residence compared to the remaining 47.6% who rented their homes. Mostly the respondents owned single properties in Hong Kong (49.4%) as opposed to residents who possessed more than four or more properties in Hong Kong, who comprised 0.2% of the sample. Their properties in Hong Kong also had clubhouses (51.6%), while the rest did not have clubhouses. Only 1.2% of the respondents were living in townhouses. Table 6.3 shows the demographic profile of the respondents.

Table 6.3 Demographic profile of the respondents

	Level	Count	Proportion
1.1 Gender	Male	186	46.2%
	Female	217	53.8%
1.2 Age	18-29	90	22.3%
	30-39	110	27.3%
	40-49	97	24.1%
	50-59	106	26.3%
1.3 Marital status	Single	143	35.5%
	Married	243	60.3%
	Divorced	17	4.2%
1.4 Number of children	0	196	48.6%
	1	108	26.8%
	2	86	21.3%
	3	11	2.7%
	4 or above	2	0.5%
1.6 Employment	Full-time	283	70.2%
	Part-time	38	9.4%
	Unemployed	45	11.2%
	Own a business	29	7.2%
	Retired	8	2.0%
1.7 Monthly household income	<$30,000	83	20.6%
	$30,000-49,999	95	23.6%
	$50,000-79,999	89	22.1%
	$80,000-99,999	57	14.1%
	$100,000 or above	79	19.6%
1.8 Best-described career status	Top Management [e.g. CEO, CFO, COO]	18	4.5%
	Middle and Senior Management level	97	24.1%
	Functional/Operational level	39	9.7%
	Junior level	66	16.4%
	Professional	60	14.9%
	Student	43	10.7%

	Level	Count	Proportion
	Housewife	15	3.7%
	Self-employed	51	12.7%
	Unemployed	6	1.5%
	Retired	8	2.0%
1.11 Own their residence?	Yes	211	52.4%
	No	192	47.6%
1.12 No. of properties owned	0	171	42.4%
	1	199	49.4%
	2	24	6.0%
	3	8	2.0%
	4 or above	1	0.2%
1.13 Your situation if the answer to 1.12 is 0	I rent a property	58	33.9%
	I live with parents	85	49.7%
	I live with relatives	12	7.0%
	Others	16	9.4%

Note. H_a is proportion $\neq 0.5$

B. Household Size and Living Arrangements

In the present sample, the average number of persons living in residences is 3.43, and 80.6% claimed that they did not live with their siblings, while only 19.4% claimed that they lived with their siblings. However, 27.8% of the respondents claimed that four persons lived together in their residence. This could be a family consisting of parents and two children or parents with a child and a maid. About 16.1% of the sample claimed that their house of residence consisted of five members of the household. Table 6.4 shows the frequency data for house size and living environments.

Table 6.4 Frequency Table for house size and living arrangements

Frequencies of Number of persons living in the residence

Levels	Counts	% of Total	Cumulative %
1	20	5.0 %	5.0 %
2	81	20.1 %	25.1 %
3	109	27.0 %	52.1 %
4	112	27.8 %	79.9 %
5	65	16.1 %	96.0 %
6	11	2.7 %	98.8 %
7 or above	5	1.2 %	100.0 %

Frequencies of Number of siblings living together

Levels	Counts	% of Total	Cumulative %
0	325	80.6 %	80.6 %
1	58	14.4 %	95.0 %
2	14	3.5 %	98.5 %
3	3	0.7 %	99.3 %
4 or above	3	0.7 %	100.0 %

Table 6.5 indicates that less than 10% of the respondents' residential buildings or estates did not have an incorporated owners committee. In contrast, the rest had an incorporated owners committee in their building or estate. The frequency statistics show that 97.5% of the respondents lived in apartment buildings, and the rest lived in townhouses and detached houses. Private property owners are responsible for their building management. The government's policy has always been to promote and support owners to form suitable resident organisations, such as owners' companies or incorporated owners committees, to manage their buildings effectively. The Building Management Ordinance (Cap. 344) provides a legal framework for establishing and operating an incorporated owners committee. It aims to make it easier for private property owners to incorporate to improve building management. In Table 6.5, 10% of the respondents claimed that their apartment buildings did not have an incorporated owners committee. This partly was due to some respondents living in very old buildings that do not have such a committee.

Table 6.5 Incorporated owners committee and frequencies of type of residence

Frequencies of An incorporated owners committee in building?

Levels	Counts	% of Total	Cumulative %
Yes	363	90.1 %	90.1 %
No	40	9.9 %	100.0 %

Frequencies of Type of residence

Levels	Counts	% of Total	Cumulative %
Apartment	393	97.5 %	97.5 %
Townhouse	5	1.2 %	98.8 %
Detached house	5	1.2 %	100.0 %

Of the 403 respondents, 46.4% claimed that they lived in two-bedroomed houses, with just 6% claiming that they lived in houses with four or more bedrooms and 9.7% of the respondents claiming that they lived in houses with a single bedroom, see Table 6.6 Most of the respondents (37.2%) claimed that they had lived in their current residence for 1-5 years, compared to 7.2% who claimed that they had lived in their current residences for 16-20 years. This 7.2% was low because the survey in the study did not recruit the elderly, who normally reside for longer in their last residence compared to people of other age groups. Overall, however, the distribution of frequencies according to the years of residence in the current building/estate of the residence appeared fairly non-skewed. Sixty-five per cent of the residents had a single bathroom, while 4.0% of the residential areas had three or more bathrooms. The largest percentage of the properties were 21-30 years old, with properties aged 40 years or older comprised 10.2% of the sample. Table 6.6 has the frequencies of these details.

Table 6.6 Frequencies of number of bedrooms, bathrooms and years lived in the current property

Frequencies of Number of bedrooms

Levels	Counts	% of Total	Cumulative %
1	39	9.7 %	9.7 %
2	187	46.4 %	56.1 %
3	153	38.0 %	94.0 %
4 or above	24	6.0 %	100.0 %

Frequencies of Number of bathrooms

Levels	Counts	% of Total	Cumulative %
1	262	65.0 %	65.0 %
2	125	31.0 %	96.0 %
3	16	4.0 %	100.0 %

Frequencies of Years lived in the current property

Levels	Counts	% of Total	Cumulative %
1-5	150	37.2 %	37.2 %
6-10	89	22.1 %	59.3 %
11-15	76	18.9 %	78.2 %
16-20	29	7.2 %	85.4 %
Above 20	59	14.6 %	100.0 %

6.3.1 Factor Analysis

Factor analysis involves a grouping of similar variables into dimensions. This process is used to identify latent variables or constructs. The purpose of factor analysis is to reduce individual items into fewer dimensions. It is a method used to simplify data, such as reducing the number of variables in regression models.

Factor Analysis Results

Table 6.7 shows the factor loadings of independent variables of all items under the six dimensions of residential satisfaction. For property management, the highest factor loading was the maintenance of public areas at 0.798, followed by the adequacy of managing refuse disposal at 0.79, and management response to issues raised at 0.751. For housing quality/characteristics, the highest factor loading was the living room and dining

room decoration at 0.847, followed by bedroom decoration at 0.837, and kitchen decoration at 0.79. For neighbourhood, the highest factor loading was the household income level in your neighbourhood at 0.829, followed by “shows status in the community” at 0.79, and condition of nearby buildings at 0.714. For transport and public facilities, the highest factor loading was the leisure and entertainment options at 0.743, followed by the public services at 0.734, and the public recreational facilities at 0.709. For view and landscape, the highest factor loading was the levels and landscape at 0.848, followed by the view from windows at 0.807, and trees and shrubs at 0.708. For environmental safety, the highest factor loading was near traffic blackspots at 0.704, followed by away from unpleasant facilities at 0.701, and landslide risk level at 0.661. The six factors explained 57.8% of the total variance.

Table 6.7 Factor loadings of residential satisfaction dimensions

Item No.	Factor	Factor Loadings	Eigenvalue	Variance Explained
	Property Management		17.57	36.61
8.1	Maintenance of the building	0.739		
8.2	Cleanliness of public areas	0.772		
8.3	Security Measures	0.724		
8.4	Maintenance of public areas	0.798		
8.5	Adequacy of managing refuse disposal	0.790		
8.6	Management fees	0.496		
8.7	Safety functions of elevators	0.682		
8.8	Follow up of complaints	0.726		
8.9	Management responses to issues raised	0.751		
8.10	Display of financial statements	0.565		
Item No.	Factor	Factor Loadings	Eigenvalue	Variance Explained
	Housing Quality/Characteristics		2.78	5.80
3.1	Quality of building	0.715		
3.2	Appearance of estate	0.668		
3.3	Space utilisation	0.699		
3.4	Kitchen decoration	0.79		
3.5	Living room and dining room decoration	0.847		
3.6	Bedroom decoration	0.837		
3.7	Ventilation	0.632		
3.8	Noise level	0.576		
3.9	Ceiling height	0.604		
3.10	Soundproof walls	0.681		
3.11	Sunlight in each room	0.666		
Item No.	Factor	Factor Loadings	Eigenvalue	Variance Explained
	Neighbourhood		2.42	5.04
4.2	Condition of nearby buildings	0.714		
4.3	Crime rates	0.654		
4.4	Household income level	0.829		
4.7	Number of famous schools	0.621		
4.8	Shows status in the community	0.758		
4.13	In a good neighbourhood	0.68		
4.14	Away from public housing	0.644		
Item No.	Factor	Factor Loadings	Eigenvalue	Variance Explained
	Transport and Public Facilities		1.90	3.96
4.5	Public services	0.734		
4.9	Closeness to malls and restaurants	0.618		

Item No.	Factor	Factor Loadings	Eigenvalue	Variance Explained
4.10	Close to family or relatives	0.448		
4.16	Proximity to supermarkets and markets	0.673		
4.19	Leisure and entertainment options	0.743		
6.1	Public park facilities	0.653		
6.2	Public recreational facilities	0.709		
6.3	Communication services	0.551		
6.4	Number of transportation choices	0.702		
Item No.	Factor	Factor Loadings	Eigenvalue	Variance Explained
	View and Landscape		1.68	3.49
7.1	View from windows	0.807		
7.2	Privacy from neighbours	0.708		
7.3	Trees and shrubs	0.742		
7.4	Levels/Landscape	0.848		
4.6	Housing density	0.696		
Item No.	Factor	Factor Loadings	Eigenvalue	Variance Explained
	Environmental Safety		1.37	2.85
5.1	Away from unpleasant facilities	0.701		
5.2	Air pollution level	0.661		
5.3	Landslide risk level	0.622		
5.4	Near traffic blackspots	0.704		
5.5	Typhoon and rain	0.621		

As shown in Table 6.8, for the dependent variable ‘overall satisfaction with residence’, all three questions denote a very high factor loading ranging from 0.922 to 0.932. For the dependent variable ‘behavioural intentions towards the developer’, the highest factor loading was ‘I would continue to purchase properties from this developer even if its prices increase somewhat’ at 0.861, followed by ‘I will purchase higher-priced properties developed by this developer’ at 0.842. The two factors explained 82.1% of the total variance.

Table 6.8 Factor loadings of dependent variables

Item No.	Factor	Component Loadings	Eigenvalue	Variance Explained
	Overall Satisfaction with Residence			
9.1	Your overall feelings about the residence were: (dissatisfied to satisfied)	0.922	5.40	67.57
9.2	Your overall feelings about the residence were: (displeased to pleased)	0.929		
9.3	Your overall feelings about the residence were: (unfavourable to favourable)	0.932		
Item No.	Factor	Component Loadings	Eigenvalue	Variance Explained
	Behavioural intentions towards developers			
10.1	I will say positive things about this developer to other people.	0.609	1.164	14.55
10.2	I will recommend this developer to someone who seeks my advice.	0.725		
10.3	I will encourage friends and relatives to purchase properties developed by this developer.	0.715		
10.4	If I were to purchase properties in the future, I would continue to purchase properties from this developer even if its prices increase somewhat.	0.861		
10.5	I will purchase higher-priced properties developed by this developer.	0.842		

6.3.2 Factor Reliability Analysis

Each of the six variables had sub-items making up the final variable. Crowder et al. (2017) and Connelly (2011) contend that reliability analysis is the statistical approach that seeks to establish the suitability of the individual variables in defining the common variable. Reliability analysis seeks consistency in the construct measured across the defined items to constitute the main variable. For instance, for the variable of property management with item satisfaction with the maintenance of the building and satisfaction with the cleanliness of public areas, the two items, despite differing in the definition of what they measure, should at the minimum measure property management and consistently do so (BrckaLorenz et al., 2013; Wen and Ye, 2011). Cronbach's alpha is the statistic applied to measure reliability in the items forming a particular variable (Sideridis and AL-Harbi, 2018). Cronbach's alpha measures the inter-item correlation by splitting the data into segments and computing each possible pair of split data (Adamson and Prion, 2013). The inter-item correlations are then averaged to find the overall consistency of the items in measuring the required factor. At the minimum, the most desirable measure of internal reliability is a Cronbach's alpha of 0.70, considered as good reliability. A Cronbach's alpha of 0.80 is considered very good, while a Cronbach's alpha of 0.90 is considered excellent (Tavakol and Dennick, 2011). The present analysis included the value of Cronbach's alpha when a given item is removed. If Cronbach's alpha improves, the item should be removed.

Factor 1: Property Management

There were 10 items under satisfaction with property management. The overall reliability analysis for the items was alpha=0.906. This showed excellent consistency among the 10 items in measuring satisfaction with property management. The change in Cronbach's

alpha was also assessed by investigating how much Cronbach's alpha increases or decreases after removing a given variable. Table 6.9 below shows the changes for omitting the given Cronbach's alpha.

Table 6.9 Item reliability values for satisfaction with property management

Reliability Analysis

Scale Reliability Statistics

	mean	sd	Cronbach's α
scale	3.53	0.656	0.906

Item Reliability Statistics

				if item dropped
	mean	sd	item-rest correlation	Cronbach's α
8.1 Maintenance of the building	3.45	0.900	0.693	0.894
8.2 Cleanliness of public areas	3.63	0.834	0.724	0.893
8.3 Security Measures	3.60	0.981	0.678	0.895
8.4 Maintenance of public areas	3.51	0.827	0.751	0.891
8.5 Adequacy of managing refuse disposal	3.67	0.855	0.745	0.891
8.6 Management fees	3.29	0.894	0.474	0.908
8.7 Safety functions of elevators	3.69	0.911	0.649	0.897
8.8 Follow up of complaints	3.36	0.919	0.693	0.894
8.9 Management responses to issues raised	3.37	0.817	0.719	0.893
8.10 Display of financial statements	3.77	0.972	0.543	0.904

The first item (Maintenance of the building/estate) had a correlation of 0.693 with the other nine items when combined together. Deleting this item from the list of items, the

internal consistency of the remaining nine items would decline from 0.906 to 0.894. Satisfaction with building maintenance is a statistically important item for the variable, satisfaction with property management. The item, cleanliness of public areas, had a correlation of 0.724 with the remaining nine items. Removing this item from the 10 items that constitute the variable, satisfaction with property management, would reduce internal reliability from 0.906 to 0.893. This is an important item in the overall variable, property management, since its presence increases the overall internal consistency. Looking at Table 6.11, only one of the items (management fees) should be removed since it reduces the internal consistency measure. Deleting this item increases the internal consistency to 0.908, higher than the overall average with all 10 variables at 0.906. Additionally, this variable has a moderate yet positive linear association with the other variables at $r = 0.474$. A difference of 0.002 in the already excellent internal consistency would not likely cause significant variation in internal consistency; hence item 9.6 should be included as part of the variable, property management.

Factor 2: Housing Quality/Characteristics

This factor (variable) had 11 items. The overall Cronbach's alpha was 0.913. A 0.913 score in Cronbach's alpha indicates excellent internal consistency across the 11 items making up the variable housing quality/ characteristics. The first item, quality of building works, had a correlation of 0.684 with the remaining 10 items in the variable, housing quality/ characteristics. If deleted, the internal consistency of the remaining variables becomes 0.905, which is lower than when all 11 variables are included, i.e., 0.913. The item of noise level, however, has a moderate positive association with the remaining 10 items at $r = 0.558$. If this item is removed as one of the items building up the variable, housing quality, the overall internal consistency of the remaining variables becomes

0.912. This is an excellent internal consistency but is still not higher than the internal consistency when all items are included as the building items of the variable, housing quality. In comparison, by removing the item of perspective of bedroom decoration from the building block of the variable housing quality, the internal consistency is reduced to 0.899. The perspective of both 'living room and dining room decoration' and 'bedroom decoration' have a strong linear association with the remaining 10 items at $r = 0.796$ and 0.786 respectively, hence showing that these two items are key in making up the variable, housing quality/characteristics.

Table 6.10 Internal consistency for the items of satisfaction with housing quality/ characteristics

Reliability Analysis

Scale Reliability Statistics

	mean	sd	Cronbach's α
scale	3.59	0.676	0.913

Item Reliability Statistics

				if item dropped
	mean	sd	item-rest correlation	Cronbach's α
3.1 Quality of building works	3.61	0.858	0.684	0.905
3.2 Appearance of the estate/ bldg	3.46	0.923	0.631	0.907
3.3 Space utilisation of the residence	3.70	0.899	0.661	0.906
3.4 Kitchen & bathroom decoration	3.53	0.960	0.738	0.902
3.5 Living room, dining room decoration	3.59	0.895	0.796	0.899
3.6 Bedroom decoration	3.55	0.920	0.786	0.899

Item Reliability Statistics

	mean	sd	item-rest correlation	if item dropped Cronbach's α
3.7 Ventilation	3.73	0.952	0.609	0.908
3.8 Noise level	3.51	1.008	0.558	0.912
3.9 Ceiling height	3.65	0.895	0.580	0.910
3.10 Soundproof walls	3.35	0.948	0.659	0.906
3.11 Sunlight in each room	3.80	0.900	0.645	0.907

Overall, Table 6.10 indicates the behaviour of internal consistency of the items making up the variable housing quality and shows that the questionnaires' rating was positive based on the direction of the correlation coefficient scores. All correlation coefficient scores were positive. According to Table 6.10, none of the items should be deleted since the overall internal consistency when all variables are present is better than the internal consistency when an individual variable is deleted.

Factor 3: Neighbourhood

This variable had an estimated internal consistency alpha of 0.868. There were seven items in the variable, neighbourhood, with internal consistencies varying from 0.835 to 0.859 when individual items are removed from the variable, neighbourhood building items. Based on Table 6.11, all items were measured in the same direction, as seen in the positive correlation coefficients. For instance, the item of the condition of nearby buildings had a positive linear association $r = .652$ with the other six items combined. Removing this item so that the variable, neighbourhood, is made up of the remaining seven items, the internal consistency based on the seven items drops from 0.868 to 0.848.

There is thus no sufficient reason to drop the variable, the condition of nearby buildings, as an important part of the variable, neighbourhood satisfaction.

Table 6.11 Internal consistency table for items under satisfaction with neighbourhood

Reliability Analysis

Scale Reliability Statistics

	mean	sd	Cronbach's α
scale	3.42	0.736	0.868

Item Reliability Statistics

	mean	sd	item-rest correlation	if item dropped Cronbach's α
4.2 Condition of nearby buildings	3.45	0.933	0.652	0.848
4.3 Crime rates	3.82	1.029	0.602	0.855
4.4 Household income level	3.52	0.918	0.755	0.835
4.7 Number of famous schools	2.97	1.067	0.578	0.859
4.8 Shows status in the community	3.02	1.020	0.700	0.841
4.13 In a good neighbourhood	3.49	0.871	0.631	0.851
4.14 Away from public housing	3.64	1.045	0.599	0.855

Item 4.14 ‘away from public housing’ had a positive correlation $r = 0.599$ with the other seven items. This correlation was moderate. Suppose that this item is deleted as one of

the items of building up neighbourhood satisfaction, the internal consistency of the variable changes to 0.855. Satisfaction with 'household income level in your neighbourhood' had the highest linear association with the remaining seven items. Deleting this item would reduce the internal consistency from 0.868 to 0.835, indicating that household income level in the neighbourhood provides critical information in the variable, neighbourhood satisfaction. Overall, all the items under this dimension contribute sufficiently to give more information about the independent variable neighbourhood satisfaction. Satisfaction with the house being in an overall good neighbourhood and being away from public housing based on the corrected correlation coefficients appears to contribute an equal level of information to the overall variable, neighbourhood satisfaction.

Factor 4: Transport and Public Facilities

The satisfaction with transport and public facilities when all nine items were included had an internal consistency of 0.865. According to Tavakol and Dennick (2011) and Adamson and Prion (2013), this value represents good internal consistency. The individual item had a positive linear association with the other variables combined, indicating that none of the items were reverse coded. The correlation coefficient values were overall moderate positive correlation coefficients. Based on Table 6.12, the correlation coefficient between the satisfaction with closeness to family or relatives and the remaining eight items was $r = 0.419$. If this item were deleted so that satisfaction with transport and facilities was only made up of the other eight items, the internal consistency would increase to 0.867 from 0.865. This suggests that satisfaction with closeness to family members or relatives does not add sufficient information to the overall variable. However, the correlation between public services and the rest of the item variables was $r = 0.673$ and an approximately strong and positive linear association with the rest of the items in this

variable. This item also appears to contribute sufficient information on the overall variable, satisfaction with transport and public facilities, since deleting it reduces the internal consistency score from 0.865 to 0.844. Satisfaction with leisure and entertainment options is also key in the variable, transport and public facilities, as its deletion reduces the Cronbach's alpha from 0.865 to 0.842. The correlation between satisfaction with leisure and entertainment options with the other items was high at $r = 0.682$. See Table 6.14 below for the internal consistency behaviour for all the items making up satisfaction with transport and public facilities.

Table 6.12 Internal consistency table for items under satisfaction with transport and public facilities

Reliability Analysis

Scale Reliability Statistics

	mean	sd	Cronbach's α
scale	3.55	0.673	0.865

Item Reliability Statistics

	mean	sd	item-rest correlation	if item dropped Cronbach's α
4.5 Public services	3.39	0.901	0.673	0.844
4.9 Closeness to malls and restaurants	3.49	1.084	0.572	0.853
4.10 Close to family or relatives	3.28	1.004	0.419	0.867
4.16 Proximity to supermarkets and markets	3.81	0.908	0.628	0.848

Item Reliability Statistics

	mean	sd	item-rest correlation	if item dropped Cronbach's α
4.19 Leisure and entertainment options	3.33	0.981	0.682	0.842
6.1 Public park facilities	3.68	0.940	0.594	0.851
6.2 Public recreational facilities	3.54	0.985	0.646	0.845
6.3 Communication services	3.75	0.949	0.513	0.858
6.4 Number of transportation choices	3.70	0.978	0.652	0.845

Overall, all the items in the variable, satisfaction with transport and facilities, provide additional information to the variable, satisfaction with transport and facilities apart from the item closeness to family and relatives.

Factor 5: View and Landscape

This variable had five items, and its overall internal consistency was 0.871. The individual item correlation with the rest of the items ranged from moderate correlation to strong correlation. For instance, the variable, satisfaction with trees and shrubs, had a correlation of 0.684 with the combination of the rest of the items. This correlation was a strong correlation. After deleting this item as an important part of the variable, satisfaction with view and landscape, the remaining four variables would have an internal consistency of 0.856. This is a drop from an overall internal consistency of 0.871. The item of housing density provides useful information in the variable, satisfaction with view and landscape. The item of satisfaction with the levels and landscape had the highest linear association with the remaining four variables at $r = .768$, which was a strong positive linear association. By deleting this item from the list of items, the remaining four items had an internal consistency of 0.826. This is a drop from the overall internal

consistency of 0.871 when all items are included. See Table 6.15 for the changes in internal consistency when a given item is deleted.

Table 6.13 Internal consistency table for items under satisfaction with view and landscape

Reliability Analysis

Scale Reliability Statistics

	mean	sd	Cronbach's α
scale	3.57	0.802	0.871

Item Reliability Statistics

				if item dropped
	mean	sd	item-rest correlation	Cronbach's α
7.1 View from windows	3.65	1.017	0.736	0.834
7.2 Privacy from neighbours	3.46	1.027	0.657	0.854
7.3 Trees and shrubs	3.70	0.889	0.684	0.848
7.4 Levels/Landscape	3.63	0.982	0.768	0.826
4.6 Housing density	3.38	1.014	0.648	0.856

Importantly, none of the variables was reverse coded owing to the positive correlation values, as seen in Table 6.13

Factor 6: Environmental Safety

The variable, satisfaction with environmental safety, had five items. The overall internal consistency measured by Cronbach's alpha was 0.795. All items under this variable were positively correlated, with the correlation coefficient ranging from 0.571 to 0.611. The correlations were moderate. All correlations were positive, indicating that none of the

items were reverse coded. The item of satisfaction with near traffic blackspots had the strongest positive correlation with the remaining four variables, $r = .611$. If this item were deleted from the items that made up the variable, satisfaction with environmental safety, the internal consistency due to the other four variables would undergo a drop to 0.745 from 0.795. This shows that meaningful information contributing to the overall environmental safety can be gathered from the item of satisfaction with near-traffic blackspots. Satisfaction with typhoons and rain that could easily cause flooding and inconvenience had the lowest linear association with the combination of the four items, at $r = .543$. However, deleting this item so that the variable, environmental safety, had four variables reduced the internal consistency of the items to 0.767 from 0.795. The item perspectives of typhoon and rain can easily cause flooding and inconvenience contributes meaningful information to the overall variable, environmental safety perspectives. See Table 6.14 for the full list of the items and the behaviour of the measure of internal consistency for the variable, perspectives of environmental safety.

Table 6.14 Internal consistency table for items under satisfaction with environmental safety

Reliability Analysis

Scale Reliability Statistics

	mean	sd	Cronbach's α
scale	3.70	0.711	0.795

Item Reliability Statistics

	if item dropped

	mean	sd	item-rest correlation	Cronbach's α
5.1 Away from unpleasant facilities	3.55	0.949	0.607	0.746
5.2 Air pollution level	3.55	0.985	0.571	0.757
5.3 Landslide risk level	4.06	0.927	0.545	0.765
5.4 Near traffic blackspots	3.75	0.931	0.611	0.745
5.5 Typhoon and rain	3.58	1.005	0.543	0.767

6.3.2.1 Reliability: Overall Satisfaction with Residence

The overall satisfaction had a Cronbach's alpha of 0.975. As shown in Table 6.15, the means of the three questions are-

Your feelings about the residence (dissatisfied to satisfied on a 7-point scale): 5.02

Your feelings about the residence (displeased to pleased on a 7-point scale): 5.03

Your feelings about the residence (unfavourable to favourable on a 7-point scale): 5.01

The Cronbach's alphas for the three questions asked were recorded at 0.962, 0.965 and 0.96,2 respectively, showing excellent reliability in internal consistency.

Table 6.15 Internal consistency behaviour in items under overall satisfaction with residence

Reliability Analysis

Scale Reliability Statistics

	mean	sd	Cronbach's α
scale	5.02	1.20	0.975

Item Reliability Statistics

	mean	sd	item-rest correlation	if item dropped: Cronbach's α
Your overall feelings about the residence were (satisfied/dissatisfied on a 7-point scale):	5.02	1.22	0.947	0.962
Your overall feelings about the residence were (pleased/displeased on a 7-point scale):	5.03	1.25	0.943	0.965
Your overall feelings about the residence were (favourable/unfavourable on a 7-point scale):	5.01	1.23	0.947	0.962

6.3.2.2 Reliability: Behavioural Intentions towards the Developer

For this variable, the overall internal consistency was 0.899. Item 10.1 had a strong linear

association with the other four items at $r = 0.741$. Deleting this item from the overall list of items; the remaining four items reduce internal consistency to 0.88. However, deleting item 10.5 increases the overall internal consistency of the other four variables to 0.9. See Table 6.16 for information about individual items and the behaviour of internal consistency measures.

Table 6.16 Internal consistency behaviour in items under behavioural intentions towards the developer

Reliability Analysis

Scale Reliability Statistics

	mean	sd	Cronbach's α
scale	3.23	0.818	0.899

Item Reliability Statistics

				if item dropped
	mean	sd	item-rest correlation	Cronbach's α
10.1	3.45	0.884	0.741	0.880
10.2	3.33	0.933	0.825	0.861
10.3	3.21	0.982	0.797	0.866
10.4	3.12	1.022	0.751	0.877
10.5	3.02	1.019	0.651	0.900

Regression of Overall Satisfaction

Overall satisfaction was regressed against the six residential satisfaction dimension scores (Table 6.17). The model was significant at <0.001, and explained 68.9% of the variance in the dependent variables. Based on the Beta (β) score, the housing quality/characteristics had the greatest effect on overall satisfaction (β = 0.3427), followed by neighbourhood (β = 0.3317), view and landscape (β = 0.1396), and property management (β = 0.0886) while transport and public facilities had the least impact (β = 0.0844). The inclusion of all variables in the regression model supports the argument that each dimension plays a role in determining residential satisfaction, except for environmental safety due to its p-value being recorded at more than 0.05.

Table 6.17 Model coefficients - overall satisfaction with residence

Predictor	Estimate	SE	t	p	Stand. Estimate
Intercept	-0.866	0.222	-3.899	< .001	
Property Management	0.162	0.075	2.166	0.031	0.089
Housing Quality/Characteristics	0.609	0.077	7.895	< .001	0.343
Neighbourhood	0.553	0.072	7.691	< .001	0.332
Transport and Public Facilities	0.151	0.065	2.315	0.021	0.084
View and Landscape	0.205	0.059	3.486	< .001	0.140
Environmental Safety	-0.013	0.062	-0.208	0.835	-0.008

Model Fit Measures

				Overall Model Test			
Model	R	R^2	Adjusted R^2	F	df1	df2	p
1	0.830	0.689	0.684	146	6	396	< .001

Regression of Behavioural Intentions towards the Developer

Behavioural intentions towards the developer were also regressed against the residential satisfaction dimensions (Table 6.18). The model was significant at <0.001, and explained 50.3% of the variance in the dependent variables. All variables were statistically significant predictors of behavioural intentions towards the developer. Comparing the magnitudes of the Beta (β) weights for the six residential satisfaction dimensions, the behavioural intention was derived principally from the housing quality/characteristics (β = 0.308). Other relevant factors were property management (β = 0.261), and the transport and public facilities (β = 0.134). These findings suggested that the housing quality/characteristics dimension was the most significant determinant of behavioural intention, while neighbourhood, view and landscape, and environmental safety were not significant factors as their p values were higher than 0.05.

Table 6.18 Model coefficients – behavioural intentions towards developers

Predictor	Estimate	SE	t	p	Stand. Estimate
Intercept	-0.338	0.191	-1.771	0.077	
Property Management	0.325	0.065	5.036	< .001	0.261
Housing Quality/Characteristics	0.373	0.066	5.611	< .001	0.308
Neighbourhood	0.114	0.062	1.846	0.066	0.101
Transport and Public Facilities	0.163	0.056	2.904	0.004	0.134
View and Landscape	0.077	0.051	1.525	0.128	0.077
Environmental Safety	-0.045	0.053	-0.840	0.401	-0.040

Model Fit Measures

				Overall Model Test			
Model	R	R^2	Adjusted R^2	F	df1	df2	p
1	0.709	0.503	0.495	66.7	6	396	< .001

6.4 Chapter Summary

The mandate of the present analysis was to investigate the three main objectives pertaining to housing and areas of residence in the modern city of Hong Kong. Most of the buildings within the city are predominantly high-rise buildings. The issue of limited land supply and strong housing demand fetch a relatively high price for renting or leasing. There is a need to understand and investigate the residential satisfaction in Hong Kong. The objectives of the analysis were as follows:

i. To present the empirical evidence of the preferred housing characteristics of the population;

ii. To present the underlying dimensions of residential satisfaction in private housing in Hong Kong;

iii. To present the relative importance of each dimension of residential satisfaction in affecting overall residential satisfaction and behavioural intentions.

Each objective is discussed independently, given the quantitative evidence so presented. On the determinants of residential satisfaction, the main predictor was housing quality encompassing the quality of building works, space utilisation, satisfaction with noise level, and the general environment of the rooms. Residential satisfaction from this analysis focuses on the home's living area more than the external environment, such as the neighbourhood, property management services, view and landscaping, transport and public facilities and environmental safety. The general population of Hong Kong who lives in private housing considers the living environment as a more important measure of their satisfaction than the external environmental factors. Residents' behavioural intentions towards the developer are driven by housing quality/characteristics, property management, and transport and public facilities.

Chapter Seven: Conclusions and Implications

7.1 Introduction

In Hong Kong, most of the buildings within the city are predominantly high-rise buildings, featuring a relatively high price for renting or leasing. Several factors caused property prices to surge from 2003 to 2020. Among all such factors, the worldwide quantitative easing and money supply, limited land supply, low mortgage interest rates, and the number of new immigrants from mainland China were the most direct causes. Given the high price of real estate, the living space and related conditions may be reduced, and residential satisfaction in Hong Kong has become a topic worth studying.

The demand for quality housing and the associated services cannot be disentangled from discussions of residential satisfaction. It is thus essential to understand the driving forces behind residents' satisfaction with their residences. To understand the forces behind residential satisfaction, their feelings towards various factors determine how much they are satisfied with their residence and neighbourhood.

The mandate of the present analysis was to investigate four main objectives regarding housing and areas of residence in the modern city of Hong Kong.

7.2 Discussions

The results showed that different residential satisfaction dimensions influence the overall satisfaction and behavioural intentions towards developers differently. Property management moderately affects overall satisfaction with the residence ($\beta = 0.089$) and substantially affects the behavioural intentions towards developers ($\beta = 0.261$). Carvalho, George and Anthony (1997), Francesto et al. (1975) and Tucker and Pitt (2010) also

emphasised the importance of property management in terms of its efficient service provision, security, and maintenance of amenities. Good property management can be an important foundation for satisfying residents.

The housing quality/characteristics dimension impacted overall satisfaction (β =0.343) and behavioural intentions towards developers (β = 0.308). The housing quality/characteristics were considered the most important dimension because people living in private housing in Hong Kong are becoming more and more conscious of the satisfaction in their residence. Since many people live stressful lives, they expect the quality of housing to bring them comfort and not to be bothered by the developer's poor construction works or other related problems.

The neighbourhood was found to have the second greatest impact on overall satisfaction with the residence (β = 0.332) and the fourth greatest impact on behavioural intentions towards developers (β = 0.101). Its impact on overall satisfaction in this study was parallel to the findings of Amerigo and Aragones (1997) and Galster and Hesser (1981). The neighbourhood dimension had the lowest mean of the score of overall satisfaction with the residence (mean = 3.42). Factors such as household income level in the neighbourhood, condition of nearby buildings, and whether the residence shows the status in the community are items that most influence neighbourhood satisfaction in Hong Kong.

Transport and public facilities had the fifth greatest impact on overall satisfaction with the residence (β = 0.084) and the third greatest impact on behavioural intentions towards developers (β = 0.134). This result showed the importance of the developer's planning before the commencement of the construction project and their determination to

communicate with the government for the best possible transportation options to be provided near the estate or building location, such as residents' bus (shuttle bus) or additional public transport connections. Although Hong Kong is well connected and has a wide range of transportation options in most areas, the respondents ranked 'transportation and public facilities' only the fourth in terms of satisfaction score (mean = 3.55), indicating that Hong Kong people are extremely demanding in terms of transportation options and level of convenience. Research in 2022 from the University of California, Berkeley's Institute of Transportation Studies and the Oliver Wyman Forum, indicated that Hong Kong ranked first in terms of accessibility to public transit, cost, availability, crowding, and commute times.

View and landscape was shown to have the third greatest impact on overall satisfaction with the residence ($\beta = 0.140$) and the fifth greatest impact on behavioural intentions towards developers ($\beta = 0.077$). Like other dimensions, namely housing quality/characteristics, neighbourhood, property management, and transport and public facilities, the view and landscape dimension was also significant in determining overall satisfaction with the residence. However, it was not a significant factor in determining behavioural intentions towards developers ($\beta = 0.077$). Carvalho, George and Anthony (1997) and Kearney (2006) also emphasised the importance of views and landscape.

The satisfaction score for environmental safety was the highest among the six residential satisfaction dimensions (mean = 3.70), but it was not a significant factor in determining overall satisfaction with the residence ($p = 0.835$), and behavioural intentions towards developers ($p = 0.401$). Its effect on overall satisfaction with the residence was low, recorded at -0.008. This can be explained that Hong Kong people are not concerned with environmental safety, and particularly the city ranked eighth among the safest cities in the

world according to the Economist Unit 2021.

Previous local studies are different from this study in some ways. According to the findings of the research conducted by Liu (1999), residents' levels of contentment with the housing estates they live in are affected by a number of different variables. These factors include the housing estates' physical environments, social environments, and the management services offered by the Housing Authority. According to this study, a resident's overall residential satisfaction is determined primarily by the quality and characteristics of their home and the neighbourhood, followed by the property's view and landscape, and property management. The findings of Liu's research, which concentrated on public housing, are similar, at least to some degree, to the findings of this study. Because public housing developments in Hong Kong are typically situated in less desirable areas, the views and landscape dimension tends to be of less significance as a design consideration. Residents of public housing are aware that having a pleasant view and landscape is the stuff of dreams for them.

Liu's study concluded by emphasizing the importance of considering residents' needs and preferences in the design and management of public housing estates. This is also different from this study as people are well acquainted with the design and property management standard of residences before they purchase a private housing unit. In addition, Liu's study is different from the research area of the present study in the way that it researched public housing estates, whereas the researcher focused solely on private housing. The different settings and environment of public housing estates result in different standards of housing quality/characteristics as well as neighbourhood. In other words, there is incomparability among the residential satisfaction dimensions of a public housing unit and a private housing residence.

The research carried out by Phillips et al. (2004) highlighted the significance of considering the requirements and inclinations of senior citizens during the planning and administration of metropolitan environments. The writers recommended that policymakers and urban planners should prioritise the development of the physical and social environment to increase residential satisfaction and support the well-being of older people living in large and heavily populated cities in Asia. This was done in order to improve the well-being of older people. Their research is distinct from the one that we are reporting. They only sampled individuals over the age of 60, and their coverage was limited to ten of Hong Kong's 18 districts, in contrast to the researcher, who sampled residents between the ages of 18 and 59 and whose coverage included all of the city's districts. The differences in the age of respondents may have a significant impact on the conclusions that can be drawn about which dimensions of residential satisfaction have the greatest influence on overall residential satisfaction.

Sanni-Anibire and Adenle (2022) conducted research to investigate the factors that residents of high-rise structures in Hong Kong felt contributed to their overall level of residential satisfaction. The research involved interviewing 240 inhabitants of four distinct vertical urban communities and analyzing their responses to inquiries regarding their living conditions, levels of social interaction and safety, and general levels of satisfaction. According to the results of the research, the majority of people residing in vertical urban communities in Hong Kong are satisfied with their living circumstances on the whole. According to the findings of the research, the standard of public infrastructure, access to transportation, and closeness to attractions like commercial centres and parks were the most significant variables that contributed to residential satisfaction. The research conducted by Sanni-Anibire and Adenle (2022) was distinct from the current study in several key respects, including the fact that the former focused solely on high-

rise structures and the latter included a reduced number of residential satisfaction dimensions and items.

When the residential satisfaction dimensions of local studies are compared with those of other literature around the globe, it is discovered that the importance placed on environmental safety as a factor of residential satisfaction is significantly lower here than it is in other locations. In other words, environmental safety is an important concern in residential environments in other countries, such as Spain (Carvalho, George, and Anthony, 1997), Brazil (Carvalho, George, and Anthony, 1997), and Malaysia (Muhammad, Rostam, and Yusoff, 2011). In this study, it was found that environmental safety is the least influential dimension in regard to residential satisfaction. This means that while environmental safety is a crucial factor in residential environments in other countries, it is the least influential dimension in relation to residential satisfaction in Hong Kong. The rationale for this could be that people tend to prioritise issues that are perceived as more urgent or immediate. If the environment is relatively safe and there are no immediate threats or hazards, people may not perceive environmental safety as a pressing issue. In the case of Hong Kong, the city has relatively low levels of crime, natural disasters, and environmental hazards compared to other cities in the region. This may lead to a false sense of security among the population and a lower prioritisation of environmental safety.

7.3 Conclusions and Implications

7.3.1 Conclusions

On the determinants of residential satisfaction, the main predictor was found to be housing quality/ characteristics encompassing the quality of building works, space utilisation, satisfaction with the noise level, and the general environment of the rooms.

Residential satisfaction from this analysis focuses on the home's living area more than the external environment, such as satisfaction with the neighbourhood, satisfaction with property management, satisfaction with view and landscape, satisfaction with transport and public facilities, and satisfaction with environmental safety. The general population of Hong Kong who lives in private housing prefers the actual residence as a measure of their satisfaction with the environment compared to external factors.

This study investigated the underlying dimensions of resident satisfaction and their relative importance for behavioural intentions. It focused on developing a reliable and valid instrument to measure the residential satisfaction of private housing residents in Hong Kong. A literature review revealed that residential satisfaction depends on people's satisfaction with the housing units and neighbourhood in which they live. The most important dimensions are often related to housing quality, neighbourhood, infrastructure, environmental safety, view and landscape, and property management. They were identified as having a significant bearing on residents' overall satisfaction.
The results of the main study show that residents' overall satisfaction is driven largely by housing quality/characteristics and neighbourhood, followed by view and landscape, and property management, whereas behavioural intentions towards the developer are determined by housing quality/characteristics and property management, followed by transport and public facilities.

7.3.2 Implications for Theory

Several theories explaining issues in housing, such as affordability and accessibility to adequate housing, have been advanced by various scholars over the years. However, none have ever attempted to explain the features or characteristics that influence residential satisfaction with the housing provided by private developers and which is unique to Hong

Kong.

With every city having its unique character, findings of studies of other cities may not apply to any other city. Hong Kong is unique in that it is a Western-type city with an oriental culture. The Chinese culture and practices dominate social affairs, but laws, the structure of government departments, commercial businesses and the majority of industries are conducted in a Western style, following the British tradition. The city, for instance, has followed the British practice of the council providing cheap rental houses for residents. In this type of housing, utility, not comfort, is the primary concern, although certain standards and regulations must be followed. No theory can fully explain what would be expected as far as satisfaction with private housing provision is concerned where a city has two different practices, as is the case for Hong Kong.

This study is an empirical attempt to establish, analyse and evaluate the unique characteristics of the housing market in Hong Kong, specifically privately developed housing. The city has the unique character of being a crowded yet thriving urban centre. The city's more than 7 million inhabitants are housed in both public and private housing, with private developers increasingly becoming important in housing provision.

The study adequately demonstrated that people residing in privately developed housing estates generally perceive most indicators in question as favourable. From earlier arguments, no such study has ever been done. As such, the results present a unique opportunity to formulate theoretical explanations about satisfaction with necessary services that private housing developers and managers need to put in place not only in new developments in Hong Kong but in other cities facing similar challenges and with similar backgrounds. For instance, the city of Macao, also in China, has a similar history and development as Hong Kong and faces the same housing and land supply challenges.

From earlier arguments, it has been a challenge to establish a good measure that can be used to measure how well residents are satisfied with the housing provided. This study has established reasonable measures to assess how well residents are satisfied with different housing components. This is very significant as theoretical implications are profound. Developers need to know whether residents are happy with what is provided. Explanations about trends in levels of satisfaction can easily be established. Therefore, this implies that this study is a solid basis for building theories to explain housing customers' preferences. It establishes that satisfaction drives people to move into a certain residential estate. However, satisfaction cannot be the sole driving force as there are other factors. However, the primacy satisfaction in regard to essential variables such as management, security, cleanliness of common areas, and distance from toxic environments such as dump sites and noisy regions has been well established in Hong Kong.

Thus, this study firmly establishes a solid background to formulate theories explaining residents' satisfaction levels with certain services and features provided, as well as other extraneous factors such as nearness to well-known shopping areas, schools, and other social amenities. For Hong Kong, these are explained clearly and can be the basis for inquiries of the same sort in other cities.

Though there have been other studies on the factors affecting residential satisfaction with housing provided, this study is unique as it zeroes in on a city experiencing severe housing shortages, which are only increasing. These findings can be used to ensure higher satisfaction levels, especially by private developers.

7.3.3 Implications for Practitioners

Affordable housing is one of the basic human needs. The united nation lists affordable housing as one of the global problems that need urgent attention as the population in cities continue to rise. This problem worsens in towns with poor housing policies and practices. This study will inform the private housing developers in Hong Kong about how their customers perceive the units that they offer.

From a humanist point of view, individuals need to live in a comfortable environment. Where a resident perceives their house as adequate, they can stay longer in that unit before moving on to another because that unit is sufficient for their needs. The resident's satisfaction with the housing unit and neighbourhood are essential in determining the suitability and adequacy of the physical house unit. Adequacy is not only in numbers or the size of the residence. Apart from the physical structure, aesthetics and environment are important factors in ensuring that a person occupying a physical house is comfortable.

The environment, provision of basic utilities, security, and good neighbours, among many others, all constitute one package that indicates the adequacy of the unit. For this reason, the findings of this study will have very significant implications for practitioners in the housing industry of the city of Hong Kong as it has been proven by this study that customer satisfaction is important in deciding to move into a house built by a private developer. Practitioners include all the stakeholders in the housing market, such as real estate developers, architectural firms, contractor firms, real estate managers, policymakers, and even academicians involved in housing matters in the city of Hong Kong.

This study has very significant implications as far as the provision of housing is

concerned. It has been shown that satisfaction with certain provisions in any apartment building is generally average, meaning that the residents respond in the same way.

Internationally, Hong Kong is known to be one of the cities with costly housing markets, with the global housing affordability index placing the city's housing as the least affordable. The question of whether the residential satisfactions reflect this high cost in terms of various considerations is well answered by this study. It would be thought that with such expensive housing, there would be plenty of houses to go round. However, this is not the case. This study gives an insight into how residents perceive housing which will be helpful to developers if they have to provide value to their customers. In addition, this is an empirical study, and the findings and generalisations are proven. The implication is that the results can be adapted to work towards improving the housing offerings in Hong Kong.

7.3.4 Limitations of this Study

This study is concerned with understanding the housing conditions and satisfactions of the residents of Hong Kong living in private housing. This study is limited because both private and public housing facilities exist in Hong Kong. This study was limited to the residents of private housing. Hong Kong has the highest urbanisation rate in the world and is a city with one of the highest population densities. Due to the deficiency of limited land supply and strong housing demand, people strive through hardship. With 42% of the population living in public and subsidised housing, moving into private housing estates represents a family or an individual's social and economic upward movement. As such, studies on satisfaction with specific characteristics in private housing development will be very different from those obtained from residents of public housing developments. The difference is that those living in private housing do so by choice. They have, therefore, to

like the housing development in the first place before moving in. Hence, this study did not touch on residents living in public housing as this is a different population altogether.

Hong Kong has a relatively high percentage of people aged over 60 years of age. However, the population aged between 18 years and 59 years constitutes the majority. This group has the financial ability and social need to either move from public developed housing into privately developed housing or from a private housing estate/building into another better residence. This study is limited to this age group for the reason that this is the population that can make a deliberate move to alternative housing. Again, this population can decide whether what they are experiencing is what they perceive. Typically, people above this age do not have many choices to move elsewhere. Hence, this study is limited to that age group that can choose between what they perceive and what they prefer.

Although the study is not limited to that population residing in mass housing estates, people living in privately-held individual residencies such as private townhouses and villas would possibly like to decide the design and specifications of their house. As such, the owner will positively perceive all the variables under study with little or no variance. Fortunately, the percentage of the sample living in houses was only 2.5%, as recorded in the main survey. They reported that the specifications were fixed by the developers who built their houses.

Lastly, another limitation of this study is that the convenience and quota sampling approaches may still not represent the entire private-housing population. In other words, the information received from the convenience sample of 403 may not reflect how a generalised population group feels about anything specific.

Also, researchers who perform convenience sampling would find out that the average person does not want to respond to surveys or speak with researchers to fill out surveys. This somehow indicates that there is a bias because certain types of individuals are agreeable participants.

7.3.5 Suggestions for Further Research

In light of the findings and conclusions, there are still many gaps that need to be filled to understand the housing situation in Hong Kong fully. For instance, the choice to move from affordable public housing or government-subsidised housing into more expensive privately developed housing estates could be driven by the need to avoid the congestion and bad physical environment in the former. However, this is not certain. The future need is to study and analyse the factors that drive people to move into private housing. Apart from that, a study can be performed on the residents who live in public housing to improve the living conditions of the more than 3 million public-housing population.

Another area that needs to be studied is the trend in housing developments in Hong Kong, given that Hong Kong has been experiencing a sizeable emigrant population. These migrants are mainly from mainland China. Therefore, future researchers should find a need to understand the direction that private housing development will take, focusing on the upcoming trends in other cities across the globe.

On the same question, Hong Kong's land for any development is always at a premium, making housing development very costly on this small island. In light of this fact, what options would Hong Kong have in future attempts to house its residents? The city might need even more land reclamation from the sea as planned, e.g., the Lantau Tomorrow

Vision plan announced in the Chief Executive's Policy Address 2018. The government estimated that developing 170,000 hectares of land on Lantau Island would provide between 260,000 and 400,000 homes to 700,000 to 1.1 million people, of which 70% of the homes would be public housing. The cost of the Lantau Tomorrow Vision plan was estimated as HKD624 billion, according to Secretary of Development, Michael Wong, in March 2019.

Housing in Hong Kong is scarce to the extent that households are crowded. From this research, the average floor area is low compared to Western standards. However, the majority of residents of Hong Kong are Chinese, with other nationalities represented too. The issue is that Chinese culture has a different family life concept. It is not uncommon for elderly parents to be housed in their children's homes comfortably. Therefore, there seems to be some connection between culture and the number of residents occupying specified floor space. This is the question that needs to be answered through empirical data.

This study focused on a sample who were aged 18-59 years. In the future, a study can be performed to research the residential satisfaction or housing needs of the elderly or teenagers.

This study, therefore, recommends that more research be done to understand the issues discussed above. In this manner, the housing situation in Hong Kong, as far as future trends, effects of the culture of floor space occupancy, and decisions to move into private housing from cheaper government development housing, among other issues, will become clear.

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Appendices

Appendix 1

Expert Review
Evaluation Form

Definitions of Residential Satisfaction

Residential satisfaction involves virtually all residents in society. Its inherent research value has prompted some researchers to understand the subjective evaluation of the residential environment according to individuals' responses to their residential environment (Lu, 1999). In this evaluation, there are eight dimensions which should affect residential satisfaction. Yet, an expert review is to be conducted before going through any tests or surveys. The purpose is to ensure that these dimensions are structurally valid and reliable.

Assessment of 'Representativeness' of the construct

1 = Not at all representative
2 = Not representative
3 = Neutral
4 = Representative
5 = Highly representative

Assessment of 'Applicability' to the industry

1 = Highly inapplicable
2 = Inapplicable
3 = Neutral
4 = Applicable
5 = Highly applicable

Appendix 1.1 – Expert Review Evaluation Form

Expert #1	Dimensions	Representativeness					Applicability					Comments
1.	Housing Quality/Characteristics	1	2	3	4	5	1	2	3	4	5	
2.	Neighbourhood	1	2	3	4	5	1	2	3	4	5	
3.	Environmental Safety	1	2	3	4	5	1	2	3	4	5	
4.	Transport and Public Facilities	1	2	3	4	5	1	2	3	4	5	
5.	View and Landscape	1	2	3	4	5	1	2	3	4	5	
6.	Property Management	1	2	3	4	5	1	2	3	4	5	

Appendix 2

The Questionnaire

Residential Satisfaction and Behavioural Intentions – A Study of Private Housing in Hong Kong

As part of my DBA studies at the University of Wales, Trinity Saint David, United Kingdom, I am conducting a survey on residential satisfaction in Hong Kong. Your responses can help property developers and management companies improve their products and services. Participation in this survey is voluntary with guaranteed anonymity, and all data will be treated ethically and confidentially.

Lawrence Lui

Questionnaire

問卷調查

Residential Satisfaction and Behavioural Intentions – A Study of Private Housing in Hong Kong

居住滿意度及行為意向—香港私人住宅研究

1. Please provide us with the following information 請向我們提供您以下資訊:

1.1	Gender 性別	Male 男性( ) Female 女性 ( )
1.2	Age 年齡	18-29 ( ) 30-39 ( ) 40-49 ( )50-59 ( ) 60 or above 或以上( )
1.3	Marital status 婚姻狀況	Single 單身( ) Married 已婚( ) Divorced 離異( )
1.4	Number of children 孩子數目	0 ( ) 1 ( ) 2( ) 3( ) 4 or above 或以上( )
1.5	Number of siblings living together 共同居住的兄弟姊妹數目	0 ( ) 1 ( ) 2( ) 3( ) 4 or above 或以上( )
1.6	Employment 就業情況	Full-time 全職( ) Part-time 兼職( ) Unemployed 未就業( ) Own business 經營生意業務( ) Retired 退休( )
1.7	Monthly household income 每月家庭收入	<$30,000 ( ) $30,000-49,999 ( ) $50,000-79,999 ( ) $80,000-99,999 ( ) Above $100,000 ( )
1.8	Best-described career status 就業職級最適合的描述	Top Management 最高管理層[e.g. CEO, CFO, COO] ( ) Middle and Senior Management level 中高級管理層( ) Functional /Operational level 功能或操作有關的( ) Junior level 基層員工( ) Professional 專業人士( ) Student 學生( ) Housewife 家庭主婦( ) Self-employed 自雇人士( ) Unemployed 待業( ) Retired 退休( )
1.9	District of your residence 住宅地區	Central & Western 港島中西部( ) Wanchai 港島灣仔區 ( ) Eastern 港島東部( ) Southern 港島南部( ) Yau Tsim Mong 油尖旺區( ) Sham Shui Po 深水埗區( ) Kln City 九龍城區( ) Kwun Tong 觀塘區( )

		Wong Tai Sin **黃大仙區**( ) Kwai Tsing **葵青區**( ) Sai Kung incl. Tseung Kwan O 西貢區 包括將軍澳( ) Tsuen Wan 荃灣區( ) Tuen Mun **屯門區**( ) Yuen Long **元朗區**( ) North **北部**( ) Tai Po **大埔區**( ) Sha Tin **沙田區**( ) Islands **島嶼**( )
1.10	Please provide the name of the developer which developed your current residence/estate. 請提供您目前住宅/屋苑的地產發展商名稱	Sun Hung Kai Properties 新鴻基地產( ) Cheung Kong Prop **長江集團**( ) Henderson Land Dev. **恒基兆業**( ) New World Development **新世界發展**( ) MTRC **港鐵**( ) Sino Group **信和集團**( ) Wheelock & Co. **會德豐地產**( ) Kerry Properties **嘉里建設**( ) Others 其他(name 名称:)
1.11	Do you own the residence unit? 您是住宅業主嗎	Yes 是 ( ) No 否 ( )
1.12	Properties you own in H.K. 您在香港擁有的住宅物業數目	0 ( ) 1 ( ) 2 ( ) 3 ( ) 4 or above **或以上**( )
1.13	If you answered "0" to 1.12, which best describes your situation? 如果您在 1.12 中選擇了"0"，您目前的居住情況是?	I rent a property **租屋**( ) I live with parents 和父母同住( ) I live with relatives **和親戚同住**( ) Others **其他**( )

2. Please fill in the following information about the housing characteristics of your residence 請填寫以下關於您居所的資訊:

2.1	Enter the net floor area of your residence 居所實用面積: (平方英呎)	( ) sq. ft. 平方英呎
2.2-2.5	Area of balcony 露台面積	( ) sq. ft. 平方英呎
	Area of flat roof 平台面積	( ) sq. ft. 平方英呎
	Area of roof 天台面積	( ) sq. ft. 平方英呎
	Area of yard **院子面積**	( ) sq. ft. 平方英呎
2.6	Age of the property (years) 樓齡(年)	10 or below 10 年或以下( ) 11-20 ( ) 21-30 ( ) 31-40 ( ) 40 or above **或以上**( )
2.7	The type of your residence 住宅	Apartment 分層單位( )

	類型	Townhouse **聯排別墅**( ) Detached house **獨立別墅**( )
2.8	Is there a clubhouse in your building or estate 您居住的大廈/屋苑裡是否有會所?	Yes **是**( ) No **否**( )
2.9	Is there an incorporated owners committee in your building or estate? **您居住的大廈/屋苑是否有業主委員會？**	Yes **是**( ) No **否**( )
2.10	Years you have lived in the current property 您居住在此物業的年數	1-5 ( ) 6-10 ( ) 11-15 ( ) 16-20 ( ) Above 20 **以上** ( )
2.11	Number of persons living in the residence unit now 住在此居所中的人數	1 ( ) 2 ( ) 3 ( ) 4 ( ) 5 ( ) 6 ( ) 7 or above **或以上**( )
2.12	Number of bedrooms 睡房數目	0 ( ) 1 ( ) 2 ( ) 3 ( ) 4 or above **或以上**( )
2.13	Number of bathrooms 浴室數目	0 ( ) 1 ( ) 2 ( ) 3 ( ) 4 or above **或以上** ( )

3. Please evaluate your residence in regard to the following attributes 請對您的住房在如下方面作出評價:

HOUSING QUALITY/CHARACTERISTICS 房屋品質/ 特點		**Very Dissatisfied 非常不滿意**				**Very Satisfied 非常滿意**
3.1	Quality of building works 房屋建築品質	1	2	3	4	5
3.2	Appearance of the estate or building 屋苑/大廈本身的外觀	1	2	3	4	5
3.3	Space utilisation of the residence's layout 住宅間隔的空間利用	1	2	3	4	5
3.4	Kitchen and bathroom decoration 廚房及浴室裝潢	1	2	3	4	5
3.5	Living room, dining room decoration 客廳及飯廳裝潢	1	2	3	4	5
3.6	Bedroom decoration 睡房裝潢	1	2	3	4	5
3.7	Ventilation 通風性	1	2	3	4	5
3.8	Noise level 噪音水平	1	2	3	4	5
3.9	Ceiling height 樓底	1	2	3	4	5
3.10	Soundproofed walls 隔音牆	1	2	3	4	5

3.11	Sunlight for each room 房間採光	1	2	3	4	5

4. Please evaluate your environment/neighbourhood in regard to the following attributes
请對您的居住環境及周邊社區作出評價：

NEIGHBOURHOOD **社會文化環境/ 周邊社區**		**Very Dissatisfied** **非常不滿意**				**Very Satisfied** **非常滿意**
4.1	Noise in nearby environment 附近環境的噪音	1	2	3	4	5
4.2	Condition of nearby buildings 附近樓宇的狀況	1	2	3	4	5
4.3	Crime rate 罪案率	1	2	3	4	5
4.4	Household income level in your neighbourhood 您周邊社區的家庭收入水平	1	2	3	4	5
4.5	Nearby properties are of a similar type 附近住宅種類與您的大廈、屋苑相類似	1	2	3	4	5
4.6	Housing density 樓宇之間的密度	1	2	3	4	5
4.7	Number of famous schools nearby 附近著名學校的數目	1	2	3	4	5
4.8	Shows status in the community 住在這社區能顯示身份	1	2	3	4	5
4.9	Close to malls and restaurants 與購物商場較近	1	2	3	4	5
4.10	Close to family or relatives 與家庭或親戚較近	1	2	3	4	5
4.11	Close to hospitals/health facilities 與醫院/醫療設施較近	1	2	3	4	5
4.12	Close to work 工作較近	1	2	3	4	5
4.13	In a good neighbourhood 社區的和諧度	1	2	3	4	5
4.14	Away from public housing 與公共房屋的距離	1	2	3	4	5
4.15	Community life 社區生活	1	2	3	4	5
4.16	Close to supermarkets/markets 鄰近超市或街市	1	2	3	4	5
4.17	Cleanliness of streets 街道整潔度	1	2	3	4	5
4.18	Close to parents/children 與父母/孩子較近	1	2	3	4	5
4.19	Leisure and entertainment options 休閒娛樂之選擇	1	2	3	4	5

4.20	Away from other apartment buildings 離其他住宅大廈的距離	1	2	3	4	5
4.21	Away from factories 離工廠的距離	1	2	3	4	5
4.22	Nearby properties are of similar housing types 附近住宅種類與您的大廈、屋苑相類似	1	2	3	4	5

5. Please evaluate the environmental safety of your building or estate in regard to the following attributes 请對您大厦或屋苑的環境安全性作出評價：

ENVIRONMENTAL SAFETY 環境安全性		**Very Dissatisfied 非常不滿意**				**Very Satisfied 非常滿意**
5.1	Away from unpleasant facilities (e.g. trash, odour) 令人不愉快的環境（例如垃圾、氣味）	1	2	3	4	5
5.2	Air pollution level 空氣污染水平	1	2	3	4	5
5.3	Landslide risk level 山泥傾瀉風險程度	1	2	3	4	5
5.4	Near traffic blackspots 鄰近交通意外黑點	1	2	3	4	5
5.5	Typhoons and rain can easily cause flooding and inconvenience 颱風、下雨容易水浸或造成不便	1	2	3	4	5

6. Please evaluate the transport and public facilities near your residence in regard to the following attributes 请對您住宅附近的交通及公共设施作出評價：

TRANSPORT AND PUBLIC FACILITIES 交通及公共设施		**Very Dissatisfied 非常不滿意**				**Very Satisfied 非常滿意**
6.1	Public park facilities 公園設施	1	2	3	4	5
6.2	Public recreational facilities (e.g. public stadiums, fields, swimming pools) 休閒設施 (如：公共體育館、球場、泳池等)	1	2	3	4	5
6.3	Communication services (e.g. reception quality of mobile phone/broadband network) 通訊設施（例如：流動電話信號接收/寬頻網路品質）	1	2	3	4	5
6.4	Number of transportation choices 交通方式的選擇	1	2	3	4	5

7. Please evaluate the planning/ landscaping near your residence in regard to the following attributes 请對您住宅附近的規劃/景觀作出評價：

VIEW AND LANDSCAPE 视野/景觀		**Very Dissatisfied 非常不滿意**				**Very Satisfied 非常滿意**
7.1	View from windows 窗外景色	1	2	3	4	5
7.2	Privacy from neighbours (e.g. windows face each other) 鄰舍隱私性（例如面對面窗戶）	1	2	3	4	5
7.3	Trees and shrubs 樹木及灌木	1	2	3	4	5
7.4	Levels/Landscape 樓層/ 景觀	1	2	3	4	5

8. Please evaluate the property management of your residence in regard to the following attributes 请對您住宅的物業管理作出評價：

PROPERTY MANAGEMENT 物業管理		**Very Dissatisfied 非常不滿意**				**Very Satisfied 非常滿意**
8.1	Maintenance of the building/estate 對大廈/屋苑的維修及保養質素	1	2	3	4	5
8.2	Cleanliness of public areas 公共區域整潔度	1	2	3	4	5
8.3	Security measures of the building to control trespassers 大樓對陌生訪客的安全管理措施	1	2	3	4	5
8.4	Maintenance of public areas 公共區域的維保	1	2	3	4	5
8.5	Adequacy and properness of managing refuse disposal 垃圾處理的充足性及妥善性	1	2	3	4	5
8.6	Management fees 物業管理費	1	2	3	4	5
8.7	Safety and functions of elevators 電梯的安全及功能	1	2	3	4	5
8.8	Follow up of complaints 對投訴的跟進	1	2	3	4	5
8.9	Management responses to issues raised in the meetings with residents 物業管理公司會適當地回應業主在會議上提及的事項	1	2	3	4	5
8.10	Financial statements are displayed in the lobby 大堂有展示出財務報告	1	2	3	4	5

9. OVERALL SATISFACTION 整體滿意度

Your overall feelings about the residence are 您對住宅的整體感受是:

Dissatisfied 不滿意 → **Satisfied 滿意**

1 2 3 4 5 6 7

Your overall feelings about the residence are 您對住宅的整體感受是::

Displeased 失望 → **Pleased 高興**

1 2 3 4 5 6 7

Your overall feelings about the residence are 您對住宅的整體感受是::

Unfavourable 差 → **Favourable 好**

1 2 3 4 5 6 7

10. The following questions ask how you feel about the developer who developed your residence. Please indicate your degree of agreement or disagreement with each of the statements listed below by checking only one answer for each statement. 以下問題是關於您對建造你現在居所的發展商的感受。請通過對以下每一條表述選擇唯一的答案，表達您同意及不同意的程度。

BEHAVIOURAL INTENTIONS 行為意向		**Strongly Disagree 強烈不同意**				**Strongly Agree 非常同意**
10.1	I will say positive things about this developer to other people. 我會對他人作出關於我目前的住宅發展商正面及積極性評價.	1	2	3	4	5
10.2	I will recommend this developer to someone who seeks my advice 我會對向我尋求建議的人推薦目前的住宅發展商.	1	2	3	4	5
10.3	I will encourage friends and relatives to purchase properties developed by this developer. 我會鼓勵朋友和親屬購買我目前發展商的物業.	1	2	3	4	5
10.4	If I were to purchase properties in the future, I would continue to purchase properties from this developer even if its prices increase somewhat 如果我將來購買物業，我會繼續購買目前發展商的物業，即使售價比現在貴.	1	2	3	4	5
10.5	I will purchase higher-priced properties developed by this developer 我會購買我目前發展商發展的更高價物業.	1	2	3	4	5