

Investigating the influence of associated-risk, reward, and external intervention on homeownership in Hong Kong

Olugbenga Timo OLADINRIN¹, Oluwole SOYINKA² & Jayantha Wadu MESTHRIGE³

¹School of Architecture and Built Environment, University of Wolverhampton, United Kingdom

²Faculty of Architecture, Department of Urban Planning and Design, The University of Hong Kong

³School of Property Construction and Project Management, RMIT University

Abstract

Homeownership approach differs across the global south and north. Several factors influence the decision to own a house, and the impact of homeownership is different in developed or developing countries of the world. The stakeholders, including housing experts and policymakers, struggle with balancing the aspiration to own a house and the decision to buy into the pressured market considering the diverse factors associated with such choices. This study provides a comprehensive empirical investigation of the factors influencing homeownership in Hong Kong from three broad categories of associated risks, rewards, and external intervention factors of homeownership to guide ownership decision and policy formulations. Based on literature review evidence, seven associated-risk, eight rewards, and seven external intervention factors were identified as the basis of the variance based-partial least square-structural equation model (V-PLS-SEM) analysis of the study. A case study methodology with quantitative method of data collection and analysis was adopted with 502 valid responses analysed using mean item score (MIS), standard deviation (SD) and V-PLS-SEM. The result shows that the observed factors have a significant positive influence at 1.000 threshold level and have substantial predictive power and influence on homeownership. The approach used in this study is useful for individuals, organisations, academicians, facilities managers, and policymakers in the process of implementing homeownership strategies. Thus, this study recommends the integration of empirical factor analysis with other strategies for homeownership decision and policy statements to guide homeownership issues in Hong Kong.

Keywords: *Housing; homeownership rate; structural equation modelling; policy reform strategies; Hong Kong*

1. Introduction

The concerns of homeownership are global issues, and the Hong Kong Special Administrative Region (SAR) is not exempted. The rate of homeownership is influenced by several factors that positively or negatively influence housing and urban development. While these factors are often generalised as social, economic, and administrative factors. The specific elements of these factors, such as social ties, sense of place, mortgage, income, property rights, and organisational structures, are often limited in the discussion (Myers et al., 2019). Fisher and Quayyum (2006) described homeownership as broadly associated with socioeconomic factors and concluded that it significantly influences the desire to acquire a house. Hawley et al. (2018) argued that land values (economic factors) and property rights have a more significant association with homeownership because every homeownership factor has economic or financial implications. These social, economic, and environmental factors and their elements such as family ties

(Cheung et al., 2020), sense of place and belief does influence the decision to own a house or not. However, to what degree are these factors influencing homeownership's decision or inconsequential to homeownership issues remain critical (Ghimire, 2020; Minas et al., 2013).

In Hong Kong, the threats to homeownership include the social ties and belief of the people, the economic prosperity of the SAR, foreign interest in the property market (Hong Kong Census and Statistics Department, 2020), and a highly rationed land supply (Hong Kong Lands Department, 2020; Xian & Forrest, 2019; Yip & La Grange, 2006). Kitahara and Shinohara (2014) examined the provision of community rental housing provided by the Hong Kong housing authority, and they concluded that more efforts are required in housing supply to improve homeownership in the SAR without identifying the influence of each factor that is associated with homeownership.

Several efforts to identify and contextualise homeownership issues in Hong Kong have adopted different strategies (Forrest et al., 2017; Forrest & Xian, 2018; Li, 2014). These strategies are from different perspectives, such as the assessment of homeownership factors, the cost-benefits approach, affordability, demographic issues (gender and population), equal-rights or human-rights laws and subsidies (Li, 2018; Xian & Forrest, 2019; Yip, 2012; Yip & Forrest, 2002). However, homeownership and the question of whether to own a home or not remains ambiguous with increased urban housing challenges.

Home Affairs Bureau (2001, 2006); Hong Kong Government (2007, 2011); Hong Kong Housing Authority (2015) reflect that the Hong Kong Government also has long engaged in seeking strategies to resolve the challenges of homeownership in the region. The efforts of the government through policies, actions, and homeownership schemes (HOSs) such as 1) the Green Form Subsidised Home Ownership Scheme (GSH), 2) the Home Assistance Loan Scheme (HALS), 3) Compassionate Rehousing, and 4) the Tenants Purchase Scheme (TPS) among other approaches adopted by the SAR Government and stakeholders justify the need for a different system of homeownership management. These schemes have not been able to resolve the stakeholder's concerns on several factors contending with homeownership, while accessing these scheme for homeownership is still a significant challenge of the SAR (Wu, 2001, p. 286). Several individuals, government agencies, including researchers and private organisations, currently struggle with balancing the quality of life with competing homeownership. Thus, there is a need to understand the factors of homeownership, and the influences of its elements are essential to achieve strategies for identifying and implementing homeownership. This approach includes comprehensive, in-depth, and efficient homeownership elements to resolve homeownership challenges in Hong Kong with an effective policy statement and land resources administration.

Therefore, it is inevitable to investigate homeownership from a different and current perspective of theories and methods that identify homeownership factors and examine these

factors' influence on policies and decision-making. This study paradigm shift investigates the public and private homeownership perspective with the in-depth standpoint that categorises homeownership factors into associated risks, reward, and external intervention. This approach is novel because it integrates a different theoretical and contemporary methodological approach, mean item score (MIS) and variance based-partial least square-structural equation modelling (V-PLS-SEM), to establish the relationship that exists between the factors of homeownership. To the best of our knowledge, this is the first study to adopt this integrated novel strategy to discuss homeownership, particularly in Hong Kong.

This study investigates the research question of what are the broad factors of homeownership? How best can these factors be categorised for effective homeownership study and decision making? How can the variance-based relationship of each factor be identified for stakeholder's engagements in homeownership choices? This study answers these research questions by identifying 22 critical factors of homeownership and categorised them into three categories of associated-risk, reward, and external intervention based on a comprehensive literature review. Adopting MIS and V-PLS-SEM methodological analysis, this study identified the variance-based influence of each categorised factors and their elements in homeownership. This study bridge the gap in knowledge by advancing the study of Li (2015) to contribute to theoretical knowledge (literature and methodology) of homeownership decision and policy formulation.

2. Literature review

2.1. Concept of homeownership

The concept of homeownership varies globally; however, it is commonly referred to as the capacity (mental, financial, and other capacities) to own a liveable shelter. Homeownership concept application is complex, and it involves diverse factors which affect the different sectors of a city. The United Nations described a liveable home as a habitable physical structure that is not slum houses, animal shelters, cage housing and industrial/commercial buildings used for a household dwelling (Herbert & Belsky, 2008; UN-Habitat, 2012).

The homeownership concept includes the housing tenure and the right to control a leasehold or freehold agreement (Chambers et al., 2009). It is the social, economic, and legal power of an individual or group of individuals to live in, claim ownership, and have the authority to lease or sell a specific apartment (Kirk, 2020; Ogunnaike, 2017). La Grange and Pretorius (2000) identified that two major factors account for the rate of homeownership internationally, while several other studies such as (Citation remove for blind reviews) argued that there are several principal factors with significant elements of conflicting interest in the decision of homeownership. The study described these two principal factors as:

“... the interaction and combined outcome of housing affordability and housing preferences – the ‘market explanation’ for tenure choices; which assumes that ownership is the innately preferred tenure form” (La Grange & Pretorius, 2000, p. 1561).

Yip and Forrest (2002) state that the idea of homeownership centres on the associated benefits derived from owning a house. These include privacy, freedom, independence, and the autonomy every individual gained by owning a building. The study added that homeownership's inherent or overt benefits are often linked to broader societal benefits, creating a sense of fulfilment over one's life, with positive social status and providing economic power. Yung and Lee (2014) described homeownership concept with regards to equal right to housing, and they concluded that five essential housing conditions are required before the minimum housing satisfaction can be achieved. These critical dimensions include 1) adequate, 2) affordable, 3) free of arbitration or forced eviction, 4) right to opt the apartment for rent, and 5) quality of the neighbourhood. The study added that homeownership is about the equal right of everyone to housing without discrimination in the fulfilment of all rights to the house.

O'Sullivan and Gibb (2012) further establish that homeownership is associated with economic benefits and drawbacks with the study of housing taxation and the economic benefits associated with homeownership. The study concludes that there is a need to formally investigate and justify these factors with the United Kingdom housing policy regarding fulfilling the aspiration of homeownership and producing better housing, economic growth, stability, fairness, and cherished public interest considering the public tax policy.

2.1.1. rate of homeownership

The homeownership rate is the proportion of households that owned a house compared to the total number of households requiring houses in a city. It is estimated by splitting the sum of families that are landlords by the total number of houses required. Homeownership rate differs across the globe and is associated with the city's social, economic, and administrative structure. For instance, there are differences in capitalist, socialist, and democratic economies with who owns the housings and how much an individual can own across the globe. The rate of homeownership is described to assist in making an investment decision and description of the livelihood condition of the area (Theodos et al., 2019). Goodman and Mayer (2018); La Grange and Pretorius (2000); Wah (2000) established that the rate of homeownership depends on several factors, such as risk, benefits, and external factors. Others include societal assets, community facilities, housing stability, economic benefits and housing satisfaction, among other factors (Elsinga & Hoekstra, 2005; Tan & Khong, 2012).

Theodos et al. (2019) argued that the rate of homeownership is an indicator for describing the housing market globally. A high homeownership rate does not necessarily imply better housing supply, and neither do below-average homeownership rates indicate a weak property

market or housing need. However, this rate can be used as a yardstick to measure the housing difference and advise the national housing development policy (Cheung et al., 2020; Rohe & Lindblad, 2013). **Table 1** shows the rate of homeownership across the world, and these rates are compiled based on the actual home values recorded by expert consensus, historical values and homeownership forecasts (social, economic and physical factors) factors (Trading Economics, 2018). By contrast of 50 selected countries, (developed and developing economies) Trading Economics (2018) illustrated in **Table 1** reflect Mauritius, Romania and Singapore with high homeownership rates, at 99.10%, 96.80% and 91.00%, respectively while Germany, Hong Kong and Switzerland rank within the average and below average at 51.40%, 49.20% and 42.50 % respectively. This result revealed that the homeownership rate differs across countries of the world, and it does not define a nation as a developed or developing economy. But it reflects on the housing gap of these countries to inform the policy operation of housing demand and supply in these countries.

Table 1. The rate of homeownership across the world

Hong Kong's homeownership rate is low compared to other Asian nations identified in **Table 1**, and it is ranked at 49th place, with a homeownership rate of 49.20%. While **Table 1** reflects below average rate of homeownership. Figure 1, according to Trading Economics (2018), illustrates that the rate of homeownership in Hong Kong has experienced a gradual decrease since 1 January 2010, at 53.5%, to 1 January 2019 at 49.20%. This result indicated that the challenge of homeownership and housing concerns has existed in Hong Kong for over a decade.

Figure 1. Rate of homeownership in Hong Kong
Source: Trading Economics (2018)

2.1.2. The downsides of homeownership

The disadvantages of homeownership include the long-term financial commitment to home and community management and a sense of responsibility to a community that is often not flexible. Although the mortgage payment is fixed in rate and period, payments are usually higher than rent payments, and buying a home through a mortgage requires a substantial down payment. Therefore, borrowing for home equity (debt consolidation) can eventually render one poor (“house poor”). In some cases, the downsides include no tax incentives, no fixed housing cost and a lack of building equity (Acolin et al., 2019; Henry & Goodspeed, 2008). Winkler (2011) states that homeownership has a negative effect on geographic mobility and labour market outcome. The study indicated that owning a home hinders moving in response to a labour market, and the negative effect on labour with owners suffering from a decrease in home equity is 40% less mobile. Xian and Forrest (2019) studied Hong Kong youth and argued that the

downsides of homeownership include its capacity to break Chinese socio-cultural ties, increase peer pressure among youths and create negative social status aspirations. The experience and outcomes of homeownership can thus be both positive and negative. The result is a function of how the factors of homeownership interplay. Although homeownership is identified as more beneficial to social, economic, and national development, its downsides must also be considered in homeownership theory and policy formulation. Thus, given the understanding of homeownership, its advantage and disadvantage, it is essential to investigate the factors influencing homeownership to understand their influence and develop an adequate homeownership approach for stakeholder engagement.

2.2. Factors Influencing homeownership

The factors influencing homeownership are the social, economic, environmental and governance (administrative policy or system) approach of a nation, which differs globally. These factors influence homeownership differently and represent the push and pull elements of decision-making towards owning a physical structure. The fact that homeownership varies across countries (as illustrated in **Table 1** and **Figure 1**) also supports the fact that several factors affect homeownership decisions differently around the globe (Kirk, 2020; Lee, 2013; Theodos et al., 2019). Wah (2000) described prosperity or inequality (risk or reward, pull and push factors) as a myth that required deconstruction in the Hong Kong homeownership system. The study also established that several factors which can be described as risk and reward factors associate with Hong Kong homeownership and conclude that:

.... “the existing pro-ownership and anti-rental housing policy does not benefit the economy or many of the lower and middle-income homeowners. On the contrary, it undermines the stability of the economy and widens social inequalities along various dimensions such as class and gender, and between the younger and older generations” (Wah, 2000, p. 29).

On the other hand, Andrews and Sánchez (2011) argued that there is no noticeable relationship between homeownership and the financial wealth. Chiu (2002) further established the arguments of Wah (2000) that social, economic, and political benefits or drawbacks are significant to homeownership, and it affects the decision to own a house. Ogunnaike (2017) classified the factors affecting homeownership into socio-cultural, economic, political and institutional factors. Owusu-Ansah et al. (2019) established that formal and informal institutional factors relating to land tenure and a complex process of property acquisition are also significant in homeownership. Roy (2012); Wu and Canham (2009) further support Owusu-Ansah (2012); Owusu-Ansah et al. (2019) in arguing that the informal sector is also significant in homeownership supply and is often not recognised as a contributor to the rate of homeownership resolution.

The socio-cultural factors influencing homeownership include equity, equality, social attitude, social security, and status attachment to homeownership (Chiu, 2002, 2004; La Grange & Yip, 2001). La Grange and Yip (2001) argued that the government perceives homeownership as associated with social cohesion and the promotion of homeownership as influencing values and behaviour in a territorial or geographical sense. Socio-cultural factors refer to the socially acceptable standard of living regardless of the market price. These factors are invariably associated with economic issues and other factors (Ghimire, 2020). In Hong Kong, more than half of the population have access to varied large-scale housing programmes provided for low- and lower-middle-income families; these can be referred to as liberal welfarism (Hong Kong Census and Statistics Department, 2020; Hong Kong Lands Department, 2020). However, in a liberal-welfare housing situation, where the middle income seeks housing services and interest in the property market, they are the major loser when the market becomes very competitive (Chiu, 2002). Thus, the ideas of choice, freedom, needs, equity often conflict with each other in homeownership decision for residents, and considering them in homeownership policy and implementation becomes a complicated issue (Yung & Lee, 2012). Forrest and Xian (2018) investigated young people's challenges in transitioning from parental home to independent living and found that increasing house prices, affordability and several other factors are commonly blamed.

Lee (2012); Lee and Yip (2001); Zhang and Lerman (2019) considered the economic perspectives of homeownership and discovered that the costs and benefits, rewards and financial implications of homeownership do not stand alone and are instead associated with and affect other factors, all of which determine the rate of homeownership. These studies identified economic uncertainties, affordability, social security, social exclusion, the role of government subsidy, housing policy and asset-building as the significant elements associated with economic factors. These studies established that the challenge of homeownership is complex and multi-faceted. The issue is fundamental and dynamic and interrelates with every sector of the city. The study found that the residents' everyday activities and survival mechanisms are related to economic matters and homeownership (Lee & Yip, 2001).

Yip and Forrest (2002) approached the administrative (governance) perspective of owning a property and described homeowner corporations' roles in Hong Kong as a significant factor in homeownership. The study stated that individual home possession has become a privilege of the elite class and that homeownership is far beyond the affordability of an ordinary Hong Kong resident. High-rise apartment structures are dominated by the owner's occupation sector (association) with a complicated system. The arrangement of apartment, repair and maintenance of housing stock is confusing; the rights and responsibilities of flat owners are delusional and democratised. The study implies that institutional arrangement, appropriate policy, and the latter's enforcement are essential to reducing the dilemma of homeownership in Hong Kong.

These factors do not have the same effect on homeownership, and they differ from one city to the other because the socio-cultural, economic, environmental and administrative context differs across countries (Fisher & Jaffe, 2003). Occasionally, these contexts affect homeownership differently within a city and include several significant elements that directly influence the homeownership rate. For example, these factors (social, economic, environmental, and administrative) of homeownership entails elements such as family ties, sense of place, culture, relative equity, taxation, financial regulations, property market, mortgage market, mobility, quality of the environment, government policy and so on.

Family ties, culture, and sense of place: These elements of social factors are identified as significant influencer of homeownership (Cheung et al., 2020). The challenge of being more settled and not moving on short notice due to association with family members, cultural beliefs or lifestyle in the area often influences the decision to buy differently for different people (Zhang & Lerman, 2019). Li (2014); Xian and Forrest (2019) explored the attitudes and aspirations of younger Hong Kong residents and families concerning housing. The studies established that these factors could positively and negatively affect homeownership and are significant factors to investigate. For example, inadequate housing supply and homeownership rate might lead singles to remain at home rather than find a place of their own and start a family (Li, 2014; Xian & Forrest, 2019). These can also create social challenges such as declines in marriage, high rates of juvenile delinquency, street sleepers and poor urban development (Fisher & Quayyum, 2006; Yip, 2012). Cheung et al. (2020) further argued the significance of these elements in homeownership and related them to housing:

“We use an instrumental variable strategy to test the hypothesis that more unmarried individuals at the prime age for marriage increases housing prices. We find that an additional one thousand marriage-aged but unmarried individuals leads to a seven per cent increase in housing prices” (Cheung et al., 2020, p. 720).

Financial regulations, property market and mortgage: These are some of the economic factors that influence homeownership and describe the business (economic) implications of deciding whether to own a home (Dey & Brown, 2020; Theodos et al., 2019). These factors described the financial implications in homeownership decisions with business valuation models such as the relative value, absolute value, demand and supply and affordability models, among others (Li, 2015; Winkler, 2011). These economic decisions that influence homeownership include keeping a mortgage in the case of unemployment, how to repay mortgage interest or other loans received and how to address property value (depreciation or appreciation) and property maintenance. O'Sullivan and Gibb (2012) further validate the significance of economic factors in homeownership and the need to further investigate these using extreme fiscal pressure and a political system wedded with the housing tax. The study concludes that there are vital factors for reshaping the homeownership political, economy, and tax reform as 1) reduced housing

market volatility, 2) promoting a more balanced and rational housing system and 3) ensuring fairness in both current income and wealth distribution.

Mobility, quality of the environment, government policies: These are identified as part of the environmental and administrative factors influencing homeownership. Winkler (2011) investigated the association between homeownership, geographical mobility, and labour market outcomes. The study revealed that owning a home has a significant adverse effect on the probability of moving in response to the labour market and a small negative effect on labour income. This factor also recognises that the government's effort is significantly associated with housing, homeownership, quality of environment and condition of living as a stimulus for national development. It allows housing supply to meet the demand, which consequently determines homeownership rate (Neuteboom, 2003).

2.3. Factors influencing homeownership: The classification

This study, therefore, investigates and highlights these elements that influence homeownership, grouping them into three categories: associated risk, reward, and external intervention to determine their rate of influence on homeownership in Hong Kong. These elements, as described above, have a direct impact on the rate of homeownership, and each element can have both a negative and a positive influence. Accordingly, the different elements discussed above are categorised in this study based on their identified dominant or significant influence.

2.3.1. Associated risk

Associated risk refers to the likely jeopardy an individual or group of individuals might encounter in the process of coming to own a home or owning a home. These are negative factors that might influence the decision of a person to acquire a property. It can also be referred to as a constraint to which an individual is exposed or limits the desire to own a building or structure for household use. Rohe and Lindblad (2013) argued that homeownership's associated risk includes a decrease in house price, mortgage foreclosures, and debts that can create other challenges for the owner and the city.

“Between 2006 and 2011 house price fell more than 30 percent nationally, wiping out over \$ 8 trillion in home equity (Joint Center, 2012). At the height of the crisis, a full one-quarter of all homeowners owed more on their mortgage than their homes worth” (Rohe & Lindblad, 2013, p. 2).

These factors are categorised as associated risk factors because they exhibit more risk than reward.

2.3.2. Reward

As adopted in this study, these are the benefits that an individual or group of individuals will enjoy because owning a property that encourages or positively influences a person towards

homeownership. The reward of homeownership includes self-fulfilment, improved social status, connecting family ties, enhanced sense of place, and living condition. It also provides economic power as collateral for mortgage and business investment. The ‘reward’ factors are described as reward because the reward elements are more than risks, and these include promoting the individual sense of housing satisfaction (Li, 2014). Elsinga and Hoekstra (2005) identified housing satisfaction as part of the reward derived for owning a house as the owner tends to enjoy security and freedom, among others. Based on the study of English-speaking European countries, Elsinga and Hoekstra (2005) conclude:

“Homeownership ensures basic security, freedom, self-esteem and financial advantage and therefore higher housing satisfaction” (Elsinga & Hoekstra, 2005, p. 421).

2.3.3. External intervention

These factors can be positive or negative, and their impacts are often associated with the national economy, environment, and policy formulation towards owning a property. These factors describe how external forces (global economy, policy, crisis etc.) reflect on the direct factors (family/relatives, mortgage, house builder etc.) influencing the decision to own a home (Wu, 2001). These are homeownership decisions made based on foreign forces associated with government policy, district/local authority and financial authority regarding the prospective homeowner. Wyly et al. (2001) further described these types of factors regarding the development of homeownership policy. **Table 2** described the identified factors influencing homeownership, the literature sources, and their classification for this study.

Table 2. Selected literature sources factors influencing homeownership

The factors highlighted and grouped into associated risk, reward, and external intervention in **Table 2** are based on a comprehensive literature review with reference literature to identify a list of possible critical factors that influence homeownership in these categories and determine their influence. This categorisation is essential to identify these influencers beyond the social, economic, environmental, and political factors and contextualise them within their possible influence on homeownership using V-PLS-SEM analysis. Although previous literature has contributed to homeownership factors, there still exists a knowledge gap on the influence of these factors on homeownership, particularly the influence of risk, reward, and external intervention on homeownership using the V-PLS-SEM in Hong Kong. This study, therefore, bridged this knowledge gap by identifying how risk, reward, and external intervention influences homeownership to improve housing supply and the rate of homeownership in Hong Kong. The findings will shape the homeownership research, policies, and practices in Hong Kong by enlightening the stakeholders about the factors influencing homeownership and how they can be integrated to improve homeownership.

3. Methodology

3.1. Case study

This study adopted case study methodology because it contextualised the subject of study to a specific area, and its method can be reproduced anywhere depending on the study area context (Earl, 2008). As the study area, Hong Kong is located between Latitude 22°08'North and 22°35'North and Longitude 113°49' East and 114°31' East on the southern coastline of China (Hong Kong Lands Department, 2020). With approximately 7,507,400 residents and 1,106.81 square kilometres of land area (Hong Kong Census and Statistics Department, 2020), the housing challenges related to homeownership in the SAR is significant, with evidence of a gradual decline (See **Table 1** and **Figure 1**) in the rate of homeownership (Hong Kong Census and Statistics Department, 2020; Trading Economics, 2018). The case study area sampled frame covers all the public and private residential building/estate in the three central geographical regions of the SAR, namely: new territories, Kowloon Peninsula and Hong Kong Island (Hong Kong Census and Statistics Department, 2014). These areas were embraced to ensure adequate representation of Hong Kong SAR housing and homeownership condition.

3.1.1. Questionnaire Survey

This study used a questionnaire survey to obtain the perspective of both the homeowners and the general residents (non-homeowners) in Hong Kong on the factors of homeownership and their influence in the region. The questionnaire is in two parts and was prepared based on the evidence of the literature review and previous studies from this research (Bob Pannell, 2016) (Citations removed for blinded review). **Table 3** present an exert of the questionnaire, while the complete questionnaire is attached as an appendix.

Table 3. Excerpt of the study questionnaire

The complete questionnaire is in two part with part one comprising of sociodemographic questions. Part two consists of questions designed to extract data on the influence of associated risk, reward, and external intervention on homeownership in Hong Kong. A preliminary study was organised with ten respondents to check the validity and reliability of the questions and the questionnaire survey for this research. This helps to determine the clarity of the questions, the time required to complete the questionnaire and the validity and reliability of the instrument, allowing necessary corrections to be implemented. The final questionnaire incorporates 22 critical factors influencing homeownership (seven associated-risk factors, eight rewards and seven external intervention) in an open-ended and closed-ended designed questionnaire with five-point Likert scale responses. The Likert scale level of agreement ranges from 1 – “strongly disagree” to 5 – “strongly agree”.

3.1.2. Data collection

The data response includes both homeowners and non-homeowners in both the private and public residential areas of Hong Kong to avoid a sampling bias (Fricker, 2008; Wolf et al., 2013). This approach involved administering the questionnaire to individual respondents in all the residential areas by the research helpers employed to assist in the questionnaire distribution. Li (2015); Oyebanji et al. (2017) adopted this approach and validated the reliability of this approach in this study. An estimated figure above 1,000 questionnaires was distributed, and a total of 522 questionnaires were retrieved, with 502 questionnaires suitable for analysis. These questionnaires were considered appropriate based on the study of Herkenhoff and Fogli (2013) infinite or unknown sample size formulae presented below:

$$n = \frac{z^2 \times p \times (1 - p)}{e^2}$$

Equation 1

Where: “n = required sample size, z = z value of the desired level of confidence, p = estimated value of the population proportion (assumed at 0.5), and e = accuracy, the +/- error you can live with (chance error)” (Herkenhoff & Fogli, 2013, pp. 149, 158). Based on this formula with z = 1.96 at 95% confidence level, p = 0.5, and e = 0.05 error margin, the sample size is determined as:

$$n = \frac{1.96^2 \times 0.5 \times (1 - 0.5)}{0.05^2} = 384$$

Equation 2

Thus, the total of 502 questionnaires analysed is more than the estimated calculation of 384 with 23.5%. It is also more than the number of responses collected by similar studies by Tan and Khong (2012) with 250 in Malaysia, Ogunnaike (2017), 437 in Nigeria and 179 by (Oyebanji et al., 2017) in the United Kingdom. The response received is also spread across the homeowners at 48.6% and non-homeowners at 51.4%; thus, this study's sampling bias is minimised.

3.1.3. Data analysis

This study adopted quantitative data analysis methods with Statistical Package for Social Sciences (SPSS) and SMART-PLS software's for statistical analysis. The descriptive aspect of the quantitative method of analysis involves the use of tables, figures and charts supported by explanations based on: 1) a Cronbach alpha test, 2) MIS ranking with SD, and 3) V-PLS-SEM. The reliability was first tested by examining the scale of measurement's internal consistency using Cronbach's alpha coefficient (Tavakol & Dennick, 2011). The second analysis adopted the use of the MIS ranking techniques to determine the criticality of the factors influencing

homeownership. The MIS value and SD of each factor were computed with a high MIS value, indicating a more significant influence. This is to determine the suitability of the variables and categorise them into three categories for the structural equation modelling analysis.

3.2. Structural equation modelling

Structural equation modelling (SEM) is an effective approach to illustrate the relationship between several variables and test the relationship's strength (Lewicki & Hill, 2006). Structural equation modelling has been adopted by studies such as Lindblad et al. (2013); Tan and Khong (2012) to establish the effects of these factors on homeownership. (Citation removed for blind review) state that SEM consists of two models: 1) the assessment model, which reveals the connection between unobserved and observed variables, and 2) the structural model, which shows the relationship between latent constructs. Chinda and Mohamed (2008) state that SEM is preferred above multiple regression analysis with respect to excessive multi-collinearity limitations in testing the relationship. Thus, SEM was computed with factor analysis, where the lowest influential factors are eliminated and the significant factors analysed for the model. This was adopted to investigate the significant factors that impact homeownership and generate the structural equation model using V-PLS-SEM.

3.2.1. Variance based - Partial least square – Structural equation model.

The V-PLS-SEM was analysed using the Smart PLS 3.2 software to determine the influence of associated risk, reward, and external intervention on homeownership. V-PLS-SEM is preferable over the standard least square methods, which involved the estimation of a causal relationship in path model because its path modelling uses covariance analysis, where latent construct is indirectly measured by the association of indicators in the standard least square (Aibinu & Al-Lawati, 2010; Lim et al., 2010). Other advantages of V-PLS-SEM include the use of small assumptions about the population or the distribution of the datasets, and the use of a minimal sample size such as 30 is adequate for practical processing of complicated models (Wixom & Watson, 2001). It is also preferable to covariance-based SEM in a multi-variable endogeneity research issues because covariance-based SEM cannot be applied to determine the relationship between multi-variable interrelationship and indeterminacy (Lowry & Gaskin, 2014). While covariance-based SEM is recommended (Lowry & Gaskin, 2014) for empirically testing the theoretical model, the partial least squares SEM is best for exploratory analysis and model development testing (Lauria & Duchessi, 2007; Lowry & Gaskin, 2014). Thus, considering this research's exploratory nature, V-PLS-SEM was used to achieve the primary objective of identifying key constructs that affect homeownership.

4. Findings

Cronbach's alpha coefficient was adopted to determine the internal consistency of the data analysed and establish the reliability scale. The coefficient ranges from 0 to 1, and the threshold should be greater than 0.5, which is an acceptable threshold. In contrast, the coefficient value below the adopted range was identified as non-influential and removed from the SEM. The factors within the range indicated acceptable internal consistency and reliability used to compute the SEM.

4.1. Sociodemographic characteristics of homeowners in Hong Kong

The sociodemographic study of the homeowners conducted in Hong Kong includes investigating the social (age, gender, marital status, educational and family size), economic (employment, employment field and income) and homeownership status of the respondents. The findings from the respondents in this study reflect Hong Kong as an active, educated community that is more employed than unemployed. The margin between the homeowners and non-homeowners is relatively close. The average family size is between three and four persons, including married partners or domestic partners with two other people who are either children or young adults. The homeownership survey results presented in **Table 4** corroborate those found by Trading Economics (2018), namely, 49.2% homeownership in 2019, as seen in **Figure 1**. This figure depicts a decrease in the rate of homeownership in Hong Kong from previous years. The findings of the sociodemographic characteristics of homeownership in Hong Kong (age, education level, family size etc.) also corroborate the studies of the Hong Kong Census and Statistics Department (2020); Hong Kong Lands Department (2020) and suggest that there is a need to investigate further these significant factors on influencing homeownership for housing and homeownership policy decisions. **Table 4** presents the result of the sociodemographic characteristics of Homeownership in Hong Kong.

Table 4. Sociodemographic characteristic of homeownership in Hong Kong

4.2. Homeownership in Hong Kong: MIS and V-PLS-SEM analysis

This study investigates the influence of homeownership using statistical analyses such as the MIS and V-PLS-SEM to identify the significant factors and elements that influence the rate of homeownership for housing and urban planning decisions.

4.2.1. Mean item score and ranking of factors.

This analysis is necessary to obtain a more objective measure of acceptance of responsibility and provide a basis for comparison. While the MIS is adopted to determine the average response rate, the SD determines how to spread out the values of the response. The SD is also used to measure the degree of variability of the response received, while the MIS and SD are

both considered for the ranking of factors and their influence on homeownership. As shown in **Table 5**, the MIS values, SD figure and ranking of 22 factors influencing homeownership was analysed to determine the significance of the identified factors. The mean values analysed ranged from 4.12 (FB5, Government) to 2.41 (RE8, I do not think there are any rewards to owning your own home). The result shows that the mean values of 17 factors are significant to influence homeownership at above the 3.00 (MIS) neutral point of the 5-point Likert scale adopted in the questionnaire, and above normal distribution SD of 1.0 with factors ranging from 4.12 (FB5, Government) to 3.0 (FB3, Estate Agent). The values below the neutral point include five other factors, with values ranging from 2.95 (R6, Local developments might devalue the area, e.g., a factory, motorway etc.) to 2.41 (RE8 I do not think there are any rewards to owning your own home). Thus, not all the factors significantly influence homeownership in Hong Kong, and these results are considered in the factor classifications and the SEM analysis. In addition, considering the widespread values and the fact that some of the values fell into “strongly agree” (> 4.12) and some into “disagree” (< 2.41), further analysis is necessary, and all the factors are essential for this further analysis.

Table 5. Exploratory factor analysis and ranking of factors influencing homeownership in Hong Kong

4.3. Variance based partial least square structural equation model

The first analysis performed aimed to establish the measurement of the (outer) model to ensure reliability and validity that are suitable for inner stability. This measurement establishes the factors that are related to the underlying concepts created in the theoretical model to certify that the model measures the structure and not another inner structure. The tests performed to ensure the validity and reliability of the construct were as follows. The first test aimed to determine the Cronbach's alpha and composite reliability values (CR), which have the same interpretation, with the benchmark of acceptability adopted at 0.6. The second test was calculated by loading the simple correlation of the observed indicators required for the SEM at 0.5 as the rubrics. A total of 16 variable loadings are above the rubrics of 0.5, ranging from 0.573 to 0.924, as shown in **Figure 2**, and they are adopted for the V-PLS-SEM. The result of the tests indicate that the indicators loaded perfectly with their parental constructs, and having assessed the model, it can be stated that the structures were significantly reliable and valid.

4.3.1. Model representation and discussion

The operational model was adopted to test the influence of the latent constructs, that is, to determine the influence of each variable in each factor on homeownership in Hong Kong. The internal pattern evaluates the underlying correlation amongst hidden or unseen structures by

investigating the study hypothesis and evaluating the model's analytical powers on homeownership in Hong Kong. The causal effects of the three identified factors are represented with a single-headed arrow with their significant loading values, as illustrated in **Figure 2**. The model was only able to record an improved model with an acceptable loading value above 0.5 after eliminating the values below 0.5, thus presenting a model with significant negative and positive values on homeownership in Hong Kong. The results reveal a powerful positive influence of reward on homeownership, at 0.157, and significant loading variable elements values ranging from 0.742 to 0.924. Also, there is a significant negative influence of associated risk and external intervention on homeownership, at -0.167 and -0.263, respectively. The influence of these three factors with adequate consideration of their latent (variables or elements of the factors) values reveals a significant positive influence of these factors on homeownership at 0.126, which is also attributed to the influence of monthly income (MI) at 1.000. **Figure 2** presents the variance-based V-PLS-SEM result of the influence of the identified factors on homeownership.

Figure 2. SEM diagram showing the influence of associated risk, reward, and external intervention on homeownership in Hong Kong

5. Discussion

5.1. Factor 1 – Associated risk

The associated risk factors analysis reflects a negative weighted value of 0.167 with several positive elements (R1–R7) with weighted values that significantly influence the rate of ownership decision in Hong Kong. This reveals several positive individual elements of the associated risk effects on homeownership; however, the interaction/combination of all these elements reflects a negative influence, which perhaps explains the struggles of balancing homeownership's aspiration with the competing several risk factors in the SAR. These weighted values indicate that more effort is required from stakeholders at the equilibrium level or higher level of the associated risks before an increase in homeownership can be achieved as required. The following are the significant areas of the associated risk factors that influence homeownership for adequate policy decisions by the stakeholders.

5.1.1. Mortgage issues

The issue of mortgage is one of the significant associated risks of homeownership in Hong Kong based on this study's results. Although it can positively or negatively influence the rate of homeownership, the wider perspective of the respondent is negative, while the other factors are positive. As illustrated in **Table 5** and **Figure 2**, the positive associated risk with mortgage includes R1 – “Mortgage repayment and risk of unemployment” at positive SEM 0.633 MIS above the average 3.68 and normal distribution SD of 1.084. Similarly, R2 - “The interest on

mortgage” SEM 0.658 revealed MIS response rate of 3.75 and SD 0.936. This finding corroborated the study of Lee and Yip (2001) and argued that while homeownership is risky in Hong Kong, the mortgage and economic concerns is still significant factors influencing homeownership and one of the essential options to consider for homeownership. Therefore, considering the significance of this issue with respect to the rate of homeownership, the stakeholders need to improve the mortgage strategies if it is necessary to increase the rate of homeownership in Hong Kong. This study also suggests that adopting an institutional framework for sharing mortgage risk between the mortgagee, mortgagor, and the government should be considered to ensure that an effective mortgage approach to improve homeownership is achieved.

5.1.2. Family ties concerns

Another significant associated risk of homeownership that influences homeownership decisions positively or negatively concerns family ties. R3 – “Problems if your relationship/marriage ends” recorded a positive weighted value of 0.672 SEM with slightly lower than the average rate of response MIS 2.92 and higher variation distribution of SD at 1.126 across the population. Although the issues of family ties and relationship with the spouse are significant in homeownership decision with SEM considering the element variable interactions, it is generally regarded by broad SD normal distribution as below the MIS influencers of the decision on homeownership. Cheung et al. (2020); (La Grange & Yip, 2001) corroborated this SEM result of family ties is associated with housing affordability and homeownership: “We find that an additional one thousand marriage-aged but unmarried individuals lead to a seven per cent increase in housing prices”. These findings, therefore, suggest that family ties independently might not be significant however, its association to other variables might be essential to influence the rate of homeownership. Thus, a sense of belonging design/strategies, social security, and inclusive homeownership policy should be adequately considered an element of associated risk by stakeholders.

5.1.3. Repair and maintenance responsibilities

The issue of repairs and maintenance, as illustrated in **Figure 2**, R4 – “Affording repairs and maintenance” is significant with SEM 0.816, and it indicates a strongly associated risk of homeownership. While **Table 5** MIS 3.26 with SD 1.027 described that a larger proportion of the population agreed to repair and maintenance influence homeownership. That is, the concern regarding maintenance and repair in terms of cost, time and energy has a greater chance of exerting a negative influence on residents regarding homeownership. These findings reflect that the interests of the prospective homeowners regarding what happens to repair and maintenance responsibilities under economic uncertainties is important. This result is corroborated by the

study of Lee and Yip (2001), which suggests that stakeholders should adequately consider this element to increase the rate of homeownership in the SAR. This study, therefore, suggests facility management regulation with price control, government subsidised flat in sales, repair, and maintenance.

5.1.4. Loss of property value

This is another important associated risk of homeownership in Hong Kong SAR, according to this study's findings. It describes the concern of what would be the property value of the purchased home after a period of acquiring the structure. The result of the SEM, MIS and SD supported the study of Wu (2001) and revealed that the Hong Kong property market is currently competitive and relatively stable, with little or no effects of inflation. **Figure 2** illustrate the result with a slightly positive significance at SEM 0.692; R5 – “Property might lose value over time”, 0.738; R6 – “Local development might devalue the area”, and 0.744; R7 – “Costs/difficulties of selling up if you have to move”. While **Table 5** describe the degree of the acceptance of this result with MIS and SD of the loss of property value as only possible (agree) at R7 - MIS 3.10 and SD 1.002 a slightly above the neutral (indifferent) opinion with normal SD distribution. R5 – MIS 2.77 and SD 1.076, and R6 – MIS 2.95 and 1.045 significantly disagree with the possibility of a loss of property value with greater normal SD distribution. Although this factor of homeownership is described as not significant to influence homeownership, there are property value uncertainty most especially when considered with the effect of globalisation, Hong Kong–China relationship and the recent competitive strength of several Chinese cities that might affect property value (Lee, 2013; Wu, 2001). This study corroborates La Grange and Pretorius (2000) that two principal factors of property values are significant to influence homeownership, such as 1) the outcome of housing affordability and household preference, and 2) the market regularisation strategy also influence the rate of homeownership.

5.1.5. Local development and relocation concern

The questions of what the future local development pattern of an area add to the value of the property (e.g., a factory, motorway etc.) and the costs and difficulties of selling at a profit if the homeowner must move (for either personal or professional reasons) are also seen as a significant risk of homeownership in Hong Kong. The result of **Figure 2** and **Table 5** SEM, MIS and SD revealed that SEM R5 – “Property might lose value over time” and R6 – “Local developments might devalue the area” reflects a threshold significance of 0.7380 and 0.744, respectively. Although this associated risk is related to the market mechanism, it remains a significant risk of uncertainty that no one can answer and that has much to do with government policy, market regulations and housing and urban development pattern. This finding agrees with

the opinion of Wah (2000), which suggests that there is no assurance of the required local development to acquire a home based on the current housing policy.

5.2. Factor 2 – Rewards

Rewards are perceived or expected benefits acquired from owning a property, and they are the motivator to acquire a property. In Hong Kong, the influence of rewards reflects a positive relationship of SEM 0.157 thresholds towards homeownership. Although the significance level of the rewards to homeownership is not very high, it demonstrates that some motivators or elements of reward factors are available and can only be reinforced to improve homeownership if there is a need to increase the rate of homeownership. As illustrated in **Figure 2** and **Table 5** illustrate the SEM, MIS and SD results of the potential reward of homeownership, the most significant elements of this reward factor that influences homeownership positively include 1) RE1 – “Once you have paid the mortgage off, the property will be yours” with SEM 0.924, MIS 3.94 and a broad normal distribution SD 1.006, 2) RE2 – “It offers financial security” reflect a significant association with SEM 0.840, with strong MIS 3.99 and SD 0.892. While RE3 – “It is an investment” also reflect SEM 0.742, MIS 3.87 and SD 0.960 This result reflect that rewards are significant influence of homeownership decision and housing policy should be designed to improve stakeholders benefits in homeownership.

5.2.1. Freedom and right of homeownership

Freedom and the right of homeownership as described in **Figure 2** and **Table 5** is a very significant element of reward factors tested with RE1 – “Once you have paid the mortgage off, the property will be yours” with SEM 0.924, MIS 3.94 and SD 1.006 and this creates a sense of liberation and belonging to the owners. Although other factors can motivate homeownership, the freedom and right to own property is one of the highest among the reward factors, according to this study. These results corroborated Yung and Lee (2012, 2014) and conclude that this freedom and right are the product of the satisfaction derived from homeownership, the right to enjoy one’s property without interference, and the ability to lease or rent it out is incomparable. This study, therefore, recommends that this satisfaction and freedom be reinforced to encourage an improved rate of homeownership.

5.2.2. Financial security

The financial security that homeownership creates is a significant element of the reward factor identified in this study. According to the SEM test result described in **Figure 2** and **Table 5** RE2 – “It offers financial security” is significant at SEM 0.840, which shows that the desire to be financially liberated without having to pay for accommodation motivates people to acquire a property. The MIS 3.99 and SD 0.892 reflect a strong agreement and wide distribution of this response from the respondents. The findings of this element corroborate with O’Sullivan and

Gibb (2012) and other elements such as investment opportunity to influence the rate of homeownership and also creates an avenue for a comfortable lifestyle..

5.2.3. *Investment opportunities*

The investment opportunities that homeownership presents are significant, according to the findings of this study presents in **Figure 2** and **Table 5** with RE3 – “It is an investment” SENM 0.742, MIS 3.87, SD 0.960 and it associated with RE1 and RE 2 to influencing the rate of homeownership. These reward elements include the use of the property for collateral to secure a loan, leasing a part of the property for income purposes and the business assets of an enterprise, all of which are important areas that should be reinforced to encourage an increased rate of homeownership. This element requires more human capacity development and enlightenment to maximise the increased rate of homeownership. This result corroborates the studies of Elsinga and Hoekstra (2005); O'Sullivan and Gibb (2012) and recognises that the possible investment returns of homeownership also drive satisfaction.

5.3. *Factor 3 – External intervention*

Based on the theoretical findings of this study, the external interventions as described and adopted are the actions that are not necessarily benefits or risks that influence the rate homeownership. This is the impact of the SAR government's response and application to international policies, actions to either create an opportunity or a threat. That is, they are elements/variable that have the potential to influence the rate of homeownership either positively or negatively and are not the direct results of decisions of the prospective homeowners, but rather are the result of international relations, globalisation and other similar factors on internal structures and organisations that the prospective homeowners should consider. As illustrated in **Figure 2** and **Table 5**, the influence of the external intervention factor on homeownership reflects a negative significance influence of SEM -0.263, even though several positive elements (FB1 to FB7) reflect the factor that reflect this factor a positive significance, the general perspective is negative.

5.3.1. *Financial institution*

The influence of the financial institution as an external intervention reflects the regulations of financial organisations (interest rate etc.) on homeownership. This includes the mortgage banks and other financial institutions and their policies. The result of **Figure 2** and **Table 5** reflect a positive significance of the financial institutions, as seen in FB1 – “Mortgage lenders” with SEM 0.573, MIS 3.20, SD 1.045 and FB7 – “Financial regulators” SEM 0.779, MIS 3.41, SD 1.089. This shows that the financial institution greatly influences the rate of homeownership, suggesting that the effort of the government in financial policy and the roles of financial institutions should be improved with strategies to increase the rate of homeownership. The

significance of financial institution to homeownership cannot be overemphasised as it associated with several other factors of homeownership.

5.3.2. *Developers and estate agents*

The activities of the estate developers and estate agent in homeownership are also identified as very significant, as seen in **Figure 2** and **Table 5** FB2 – “House builders” SEM 0.724, MIS 3.59, SD 1.112 and FB3 – “Estate agents” SEM 0.682, MIS 3.00, SD 1.070. This factor reflects a significant influence on homeownership with reasonable efforts for restructuring and improvement required. These findings are very similar to those of Yip and Forrest (2002) and indicate that if the activities of the developer and the estate agent are adequately organised, the result is an increased rate of homeownership. This result includes the property developers and estate agents structuring and restructuring with policies and actions that will promote the interest of homeowners and increase housing supply in the SAR.

5.3.3. *Government agencies and local authorities*

The roles of government and other agencies in homeownership regulations are significant, and without coordination of these agencies, little or no substantial improvement can be recorded towards homeownership. Based on the findings of this study **Figure 2** and **Table 5**, the efforts of government agencies and district/local authorities are significant, with FB5 – “Government” SEM 0.734, MIS 4.12 as the highest SEM of the study analysis and a strong SD distribution that signifies general acceptance of the role of government as important in homeownership. The result of FB6 – “District/local authority” SEM 0.821, MIS 3.74 and SD 1.103 further emphasise the findings of FB5, while the findings of FB7 – “Financial regulations” as the influence of homeownership further emphasise this significance with SEM 0.779, MIS 3.41 and SD 1.089. This threshold is very significant, and it corroborates La Grange and Pretorius (2000) arguments, emphasising the need for the Hong Kong government and agencies to improve their strategies for governing and promoting homeownership.

6. Conclusion

Shelter is one of the necessities of life, and the quality of a person’s life is associated with his housing condition. As homeownership is a desire of many, several issues such as mortgage, family ties, repair and maintenance responsibilities, loss of property values, local developments, and relocation concerns significantly relate to the associated risk of homeownership, influencing the decision to own a home or not in Hong Kong. While the freedom and right of homeownership, financial security, investment opportunities are described as the rewards that influence homeownership decision, external intervention is identified as significant with government effort through the financial institution, developers’/estate agents and the different government agencies. Several individuals, government agencies and private organisations

struggle with balancing the aspiration to own a house within these several contending factors in a pressured market condition of the SAR. Thus, it is necessary to identify the most robust variance-based relationship of these factors that influence homeownership.

This study, therefore, investigated the significant factors that influence homeownership and how they influence decision making and policy recommendations on homeownership. The study identified 22 elements based on a comprehensive literature review as the basis of investigating the factors and their variance-based influence on homeownership. The elements were grouped into three categories based on related influence: associated risk, reward, and external intervention for analysis as established on grounded prior research and previous publications from this research. The Cronbach's alpha coefficient, MIS and SD were used to ensure internal consistency. The empirical study adopted a case study methodology with a questionnaire survey approach and simple random sampling techniques with quantitative V-PLS-SEM analysis. The V-PLS-SEM analysis was tested on these factors to assess the influence of the 22 elements on each other and then determine their influence within the three critical factors of homeownership.

Based on this study's findings as presented in **Figure 2**, **Table 4** and **5**, this study concluded that there is a significant positive influence of 15 elements of the three categories on homeownership using V-PLS-SEM on homeownership. While the other six elements (RE4, RE5, RE6, RE7, RE8 and FB4) significantly influence homeownership from the MIS and SD internal consistency analysis but were not significant in the V-PLS-SEM result (See **Figure 2** and **Table 5**). The 16 elements are critical, with positive rates of influence worthy of consideration by stakeholders. However, at the categorised group, the associated risk (-0.167) and external intervention (-0.263) reflect a negative influence, while reward (0.157) revealed positive influence. The study suggestions from the discussion include the integration of empirical factor analysis with other strategies for homeownership policy statements and decisions to improve homeownership in Hong Kong. Adopting the institutional framework for sharing mortgage risk between the mortgagee, mortgagor, and the government ensures that an effective mortgage approach is achieved. The finding and suggestion of this study is relevant to academic research and teaching, policymakers such as professional urban managers and government agencies on housing provision, affordability, market regulations and supply decisions. It is also essential to Hong Kong residents, both homeowners and non-homeowners, for housing purchase, investment, and sales decisions. Finally, the knowledge gap bridged in this study can be contextualised in any other regions through the V-PLS-SEM analysis based on the study area context.

6.3. Limitation of the study

This study has adequately considered all the possible limitation of this research in the form of content, context, and approach with evidence of significant results. However, it is worthy of note that this study used only quantitative data collection methods due to the nature of this research, which is subject to sample bias. While the sample size is appropriate for the analysis, care must be taken not to interpret the results of this study as the general population of Hong Kong. Therefore, further studies should explore the use of mixed methods quantitative (questionnaire) and qualitative (Interview) in a comparative study.

References

- Acolin, A., Goodman, L., & Wachter, S. M. (2019). Accessing homeownership with credit constraints. *Housing Policy Debate*, 29(1), 108-125.
- Aibinu, A. A., & Al-Lawati, A. M. (2010). Using PLS-SEM technique to model construction organisations' willingness to participate in e-bidding. *Automation in construction*, 19(6), 714-724.
- Bob Pannell, C. (2016). *Homeownership or burst? Consumer research into tenure aspiration*. Retrieved from <https://www.housingnet.co.uk/pdf/Home-ownership-or-bust-Oct16.pdf>
- Chambers, M., Garriga, C., & Schlagenhaut, D. E. (2009). Accounting for changes in the homeownership rate. *International Economic Review*, 50(3), 677-726.
- Cheung, W. K. S., Chan, J. T. K., & Monkkonen, P. (2020). Marriage-induced homeownership as a driver of housing booms: evidence from Hong Kong. *Housing Studies*, 35(4), 720-742.
- Chinda, T., & Mohamed, S. (2008). Structural equation model of construction safety culture. *Engineering, construction and architectural management*, 15(2), 114-131.
- Chiu, R. L. (2002). Social equity in housing in the Hong Kong special administrative region: A social sustainability perspective. *Sustainable Development*, 10(3), 155.
- Chiu, R. L. (2004). Socio-cultural sustainability of housing: a conceptual exploration. *Housing, Theory and Society*, 21(2), 65-76.
- Dey, J., & Brown, L. M. (2020). The Role of Credit Attributes in Explaining the Homeownership Gap Between Whites and Minorities Since the Financial Crisis, 2012–2018. *Housing Policy Debate*, 1-62.
- Earl, B. (2008). *The Basics of Social Research* (Fourth Edition ed.): Thomson Higher Education, Thomson Corporation USA.
- Elsinga, M., & Hoekstra, J. (2005). Homeownership and housing satisfaction. *Journal of Housing the Built Environment*, 20(4), 401-424.
- Fisher, J. D., & Quayyum, S. (2006). The great turn-of-the-century housing boom. *Economic Perspectives*, 30(3).
- Fisher, L. M., & Jaffe, A. J. (2003). Determinants of international home ownership rates. *Housing finance international*, 18(1), 34-37.
- Forrest, R., Koh, S. Y., & Wissink, B. (2017). Hyper-divided cities and the 'immoral' super-rich: Five parting questions. In *Cities and the Super-Rich* (pp. 273-287): Springer.
- Forrest, R., & Xian, S. (2018). Accommodating discontent: youth, conflict and the housing question in Hong Kong. *Housing Studies*, 33(1), 1-17. doi:10.1080/02673037.2017.1342775
- Fricker, R. D. (2008). Sampling methods for web and e-mail surveys. *The SAGE handbook of online research methods*, 195-216.
- Ghimire, R. (2020). Homeownership and community involvement: Results from the 2019 Metro Atlanta Speaks survey. *Housing Policy Debate*, 1-25.
- Goodman, L. S., & Mayer, C. (2018). Homeownership and the American dream. *Journal of Economic Perspectives*, 32(1), 31-58.
- Hawley, Z., Miranda, J. J., & Sawyer, W. C. (2018). Land values, property rights, and home ownership: Implications for property taxation in Peru. *Regional Science and Urban Economics*, 69, 38-47. doi:10.1016/j.regsciurbeco.2017.12.007
- Henry, R. M., & Goodspeed, C. H. (2008). Owning your own home: reality or myth.

- Herbert, C. E., & Belsky, E. S. (2008). The homeownership experience of low-income and minority households: A review and synthesis of the literature. *Cityscape*, 5-59.
- Herkenhoff, L., & Fogli, J. (2013). *Applied statistics for business and management using Microsoft Excel*: Springer.
- Home Affairs Bureau. (2001). *LegCo Panel on Home Affairs Subcommittee to Study Discrimination on the Ground of Sexual Orientation*. Hong Kong Retrieved from https://www.legco.gov.hk/yr00-01/english/panels/ha/ha_gso/papers/981e01.pdf
- Home Affairs Bureau. (2006). *Survey on Public Attitudes towards Homosexuals*. Retrieved from <https://www.legco.gov.hk/yr05-06/english/panels/ha/papers/ha0310cb2-public-homosexuals-e.pdf>
- Hong Kong Census and Statistics Department. (2014). *Population and Household Statistics Analysed by District Council District*.
- Hong Kong Census and Statistics Department. (2020). *Population and Household Statistics Analysed by District Council District 2019*. Retrieved from <https://www.censtatd.gov.hk/hkstat/sub/sp150.jsp?productCode=B1130301>
- Hong Kong Government. (2007). *The Survey on Waiting List Applicants for Public Rental Housing*. Retrieved from <https://www.statistics.gov.hk/pub/B70702FB2007XXXXB0100.pdf>
- Hong Kong Government. (2011). LCQ4: allocation of public rental housing flats. [Press release]. Retrieved from <https://www.info.gov.hk/gia/general/201101/26/P201101260200.htm>
- Hong Kong Housing Authority. (2015). *Guide to Application for Housing Department Estate Management Division Reference List of Contractors for Quotation Works*. The Government of Hong Kong Special Administrative Region
- Hong Kong Lands Department. (2020). *Hong Kong Geographic Data Sheet 2020*. Retrieved from https://www.landsd.gov.hk/mapping/en/publications/hk_geographic_data_sheet.pdf
- Kirk, E. M. (2020). Obstructing the American Dream: Homeownership Denied and Neighborhood Crime. *Housing Policy Debate*, 1-21.
- Kitahara, R., & Shinohara, S. (2014). A study on the supply situation in public rental housing by Hong Kong Housing Authority. *AIJ Journal of Technology and Design*, 20(46), 1047-1052. doi:10.3130/aijt.20.1047
- La Grange, A., & Pretorius, F. (2000). Ontology, policy and the market: Trends to homeownership in Hong Kong. *Urban Studies*, 37(9), 1561-1582. doi:10.1080/00420980020080261
- La Grange, A., & Yip, N. M. (2001). Social belonging, social capital and the promotion of home ownership: A case study of Hong Kong. *Housing Studies*, 16(3), 291-310. doi:10.1080/02673030120049689
- Lauria, E. J., & Duchessi, P. J. (2007). A methodology for developing Bayesian networks: An application to information technology (IT) implementation. *European Journal of operational research*, 179(1), 234-252.
- Lee, J. (2013). Housing policy and asset building: exploring the role of home ownership in East Asian social policy. *China Journal of Social Work*, 6(2), 104-117. doi:10.1080/17525098.2013.797359
- Lee, J. K. C. (2012). Housing policy at a crossroad? re-examining the role of the Hong Kong: Government in the context of a volatile housing market. In *Repositioning*

- the Hong Kong Government: Social Foundations and Political Challenges* (pp. 165-186).
- Lee, J. K. C., & Yip, N. M. (2001). Homeownership under economic uncertainty: The role of subsidised sale flats in Hong Kong. *International Development Planning Review*, 23(1), 61-78. doi:10.3828/twpr.23.1.c263w20r70l06j9u
- Lewicki, P., & Hill, T. (2006). Statistics: methods and applications. *Tulsa, OK. Statsoft*.
- Li, J. (2014). 'I Am Not Leaving Home': Post-80s' Housing Attitudes and Aspirations in Hong Kong. *Available at SSRN 2347914*.
- Li, J. (2018). Married to property?: Housing price and family formation revisited. *International Journal of Home Economics*, 11(1), 44.
- Li, R. Y. M. (2015). Generation X and Y's demand for homeownership in Hong Kong. *Pacific Rim Property Research Journal*, 21(1), 15-36.
- Lim, B. T., Ling, F. Y., Ibbes, C. W., Raphael, B., & Ofori, G. (2010). Empirical analysis of the determinants of organisational flexibility in the construction business. *Journal of Construction Engineering and Management*, 137(3), 225-237.
- Lindblad, M. R., Manturuk, K. R., & Quercia, R. G. (2013). Sense of community and informal social control among lower income households: The role of homeownership and collective efficacy in reducing subjective neighborhood crime and disorder. *American journal of community psychology*, 51(1-2), 123-139.
- Lowry, P. B., & Gaskin, J. (2014). Partial least squares (PLS) structural equation modeling (SEM) for building and testing behavioral causal theory: When to choose it and how to use it. *IEEE transactions on professional communication*, 57(2), 123-146.
- Minas, C., Mavrikiou, P. M., & Jacobson, D. (2013). Homeownership, family and the gift effect: the case of Cyprus. *Journal of Housing and the Built Environment*, 28(1), 1-15.
- Myers, D., Painter, G., Zissimopoulos, J., Lee, H., & Thunell, J. (2019). Simulating the change in young adult homeownership through 2035: Effects of growing diversity and rising educational attainment. *Housing Policy Debate*, 29(1), 126-142.
- Neuteboom, P. (2003). Home-Ownership in a Risk Society, Janet Ford, Roger Burrows and Sarah Nettleton. *Journal of Housing and the Built Environment*, 18(2), 209.
- O'Sullivan, A., & Gibb, K. (2012). Housing taxation and the economic benefits of homeownership. *Housing Studies*, 27(2), 267-279.
- Ogunnaike, A. (2017). *Enhancing homeownership opportunities among middle-income earners in Nigeria: A case study of Lagos Metropolis*. University of the West of England,
- Owusu-Ansah, A. (2012). Examination of the determinants of housing values in urban Ghana and implications for policy makers. *Journal of African Real Estate Research*, 2(1), 58-85.
- Owusu-Ansah, A., Soyeh, K. W., & Asabere, P. K. (2019). Developer constraints on housing supply in urban Ghana. *International Journal of Housing Markets and Analysis*, 12(1), 59-73.
- Oyebanji, A. O., Liyanage, C., & Akintoye, A. (2017). Critical Success Factors (CSFs) for achieving sustainable social housing (SSH). *International Journal of Sustainable Built Environment*, 6(1), 216-227.
- Rohe, W., & Lindblad, M. (2013). *Reexamining the social benefits of homeownership after the Housing Crisis*. Retrieved from Joint Center for Housing Studies Harvard University: <https://www.jchs.harvard.edu/sites/default/files/hbtl-04.pdf>

- Roy, A. (2012). Urban informality: the production of space and practice of planning. *The oxford handbook of urban planning*. Oxford University Press, Oxford, 691-705.
- Tan, T. H., & Khong, K. W. (2012). The link between homeownership motivation and housing satisfaction.
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International journal of medical education*, 2, 53.
- Theodos, B., Stacy, C. P., Braga, B., & Daniels, R. (2019). Affordable homeownership: An evaluation of the near-term effects of shared equity programs. *Housing Policy Debate*, 29(6), 865-879.
- Trading Economics. (2018). Hong Kong home ownership rate. Retrieved from <https://tradingeconomics.com/hong-kong/home-ownership-rate>
- UN-Habitat. (2012). *State of the World's Cities 2008/9: Harmonious Cities*: Routledge.
- Wah, C. K. (2000). Prosperity or inequality: Deconstructing the Myth of home ownership in Hong Kong. *Housing Studies*, 15(1), 29-44.
- Winkler, H. (2011). The effect of homeownership on geographic mobility and labor market outcomes. Available at SSRN 1724455.
- Wixom, B. H., & Watson, H. J. (2001). An empirical investigation of the factors affecting data warehousing success. *Mis Quarterly*, 17-41.
- Wolf, E. J., Harrington, K. M., Clark, S. L., & Miller, M. W. (2013). Sample size requirements for structural equation models: An evaluation of power, bias, and solution propriety. *Educational and psychological measurement*, 73(6), 913-934.
- Wu, F. (2001). China's recent urban development in the process of land and housing marketisation and economic globalisation. *Habitat international*, 25(3), 273-289.
- Wu, R., & Canham, S. (2009). *Portraits from Above-Hong Kong's Informal Rooftop Communities*: MCCM Creations, Peperoni Books.
- Wyly, E. K., Cooke, T. J., Hammel, D. J., Holloway, S. R., & Hudson, M. (2001). Low-to Moderate-Income Lending in Context: Progress Report on the Neighborhood Impacts of Homeownership Policy. *Housing Policy Debate*, 12(1), 87-127.
- Xian, S., & Forrest, R. (2019). The post-80s generation: exploring the attitudes toward family and housing. *Journal of Youth Studies*, 1-17.
- Yip, N. M. (2012). Young People and Housing in Hong Kong. *Journal of Youth Studies* (10297847), 15(1).
- Yip, N. M., & Forrest, R. (2002). Property owning democracies? Home owner corporations in Hong Kong. *Housing Studies*, 17(5), 703-720. doi:10.1080/0267303022000009763
- Yip, N. M., & La Grange, A. (2006). Globalisation, de-industrialisation and Hong Kong's private rental sector. *Habitat international*, 30(4), 996-1006. doi:10.1016/j.habitatint.2005.10.005
- Yung, B., & Lee, F. P. (2012). "Right to Housing" in Hong Kong: Perspectives from the Hong Kong Community. *Housing, Theory and Society*, 29(4), 401-419. doi:10.1080/14036096.2012.655382
- Yung, B., & Lee, F. P. (2014). 'Equal right to housing' in Hong Kong housing policy: perspectives from disadvantaged groups. *Journal of Housing and the Built Environment*, 29(4), 563-582. doi:10.1007/s10901-013-9365-2
- Zhang, S., & Lerman, R. I. (2019). Does Homeownership Protect Individuals From Economic Hardship During Housing Busts? *Housing Policy Debate*, 29(4), 522-541.

