



THE NATIONAL
RESEARCH INSTITUTE
PAPUA NEW GUINEA

DISCUSSION PAPER

DETERMINANTS OF
RESIDENTIAL PROPERTY
PRICES AS PERCEIVED BY
REAL ESTATE AGENTS AND
LANDLORDS IN PORT MORESBY

Thomas Wangi
Eugene E. Ezebilo

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Author's Contributions

Eugene Ezebilo conceived and designed the project. Thomas Wangi developed questions for interviews and conducted interviews with landlords and real estate agents. He also analysed data generated from the interviews and wrote a manuscript draft. Eugene Ezebilo finalised the draft by rewriting some of its sections such as Results, Discussion and Conclusion as well as revised other sections of the manuscript. He also addressed reviewer and language editor's comments.

Abbreviations and Acronyms

CEDAW	Convention on the Elimination of all forms of Discrimination Against Women
CLRC	Constitutional and Law Reform Commission
FODE	Flexible Open and Distance Education
LLG	Local-level Government
MP	Member of Parliament
NCW	National Council of Women
ODW	Office of the Development of Women
OLIPPAC	Organic Law on the Integrity of Political Parties and Candidates
OLPGLLG	Organic Law on Provincial Governments and Local-level Governments
PNG	Papua New Guinea
TIPNG	Transparency International Papua New Guinea
THE Party	Triumph Heritage Empowerment Party
UN	United Nations

Abstract

In developing countries, real estate agents and landlords often play an important role in supplying and presenting residential properties for sale and rent. However, the role of real estate agents and landlords in determining the sale or rent price of land and houses is not well understood. The objective of this study was to examine the factors that real estate agents and landlords consider when determining the price of residential land and housing being offered for sale or rent. Data were collected using face-to-face interviews with real estate agents and landlords in Port Moresby and analysed using qualitative and quantitative methods. We found that most real estate agents and landlords determine residential property prices by considering the prices that other landlords have fixed and the market forces of demand and supply. Landlords mostly consider the background of a potential buyer or tenant as well as the security of the neighbourhood when determining house sale prices and rental rates. However, real estate agents mostly consider location of the residential property, improvements made to the property, and the infrastructure and services available in the area where the property is located. Our findings suggest that real estate agents and landlords tend to fix property prices at the expense of buyers and tenants. The PNG Government can protect consumers by facilitating the private sector to construct more houses relative to demand in Port Moresby; the greater supply of houses should reduce house prices. Activities of real estate agents and landlords should also be regulated to minimise their tendency to manipulate the property price for their own benefit by creating artificial demand to push up property prices. Our findings can assist policy makers and planners develop strategy to address the housing affordability problems by considering the contribution of real estate agents and landlords in determining house and land prices.

Introduction

The property market in Port Moresby has experienced unprecedented growth since the construction phase of the Papua New Guinea Liquefied Natural Gas (PNG LNG) project (Ezebilo et al., 2016). More houses have been constructed in the city to boost supply relative to demand (Savadogo & Ezebilo, 2018). However, house sale prices and rent have remained beyond the reach of most residents of Port Moresby (Ezebilo et al., 2017). Furthermore, the State-owned land coveted by property developers is almost exhausted (Wangi & Ezebilo, 2017). This pushes up the price of land for development and contributes to the high cost of house construction. However, it is not clear how real estate agents and landlords, who play an important role in transactions and negotiations in the property market, determine the sale or rent price of residential properties. The PNG Government, through its relevant agencies, has been attempting to address issues associated with housing affordability in major cities of the country, including Port Moresby. However, no strategies to resolve the affordability problem have been identified. Understanding how real estate agents and landlords determine residential property values will assist policy makers and planners develop interventions to address the housing affordability problems. We conducted a study into factors that real estate agents and landlords consider when determining residential property and land prices.

Real estate agents often act as intermediaries between residential property sellers and potential buyers by providing the relevant information required for transactions to take place (Baryla & Ztanpano, 1995). They provide advice to property sellers and buyers about strategies that can be used to maximise profit. Some estate agents conduct market appraisals and develop competitive market prices for residential properties. Some landlords independently lease their residential property for rent (Diamond et al., 2019). This indicates that both real estate agents and landlords have significant roles to play in PNG's residential property market. However, the extent to which their activities contribute to residential property sale and rent prices in Port Moresby is not well understood. This study contributes to the understanding of the mechanisms real estate agents and landlords use to determine house sale prices and house rent.

The objectives of this study were to:

- Examine mechanisms that real estate agents and landlords use to determine land and house sale prices and rents; and,
- Explore strategies that can be used to reduce rent-seeking behaviours by key players in the property market.

Literature review

A residential property (land and a house) is a multidimensional product (Paz, 2003). Several factors influence the value of land and a house. Property also refers to fixed entities such as land and improvements permanently attached to the land, such as a house (Messah & Kigige, 2011). A residential area is a type of land use in which housing predominates (Paz, 2003). House and land values tend to increase in areas with expanding transportation networks, good amenities and other improvements. Ajilowo and Olujimy (2010) found that housing is an economic good which is made up of a bundle of attributes that vary in both quantity and quality. In their study of factors that influence market value of residential properties, Ferlan et al. (2017) found that the value can be estimated by comparing the subject property to similar properties that have recently sold, are listed for sale, or are under contract. Tse et al. (1999) concluded that housing demand and its supply influences house prices and rent. In a Malaysian study about factors that affect house prices, Ong (2013) found that economic growth, population size, and real property tax gain all influence house prices. In a Nigerian study of factors affecting residential property values, Oloke et al. (2013) found that quality of the environment influences the value of land. In a Papua New Guinean study, Wangi and Ezebilo (2017) found that investors preferred land

with proper titles. In a Chinese study of factors that affect residential land price, Jiang et al. (2013) found that serviced land increases in value. Gwamna et al. (2015) found, in their Malaysian study, that people are willing to pay for land because it is one of the most important factors of production. They found that the market forces of demand and supply determine the value of land.

In an American study of the relationship between real estate agents segregations and house price, Besbris and Faber (2017) found a positive correlation between clustering of agents in a neighbourhood and house prices. Jaurgui and Hite (2010) found that real estate agents obtain higher prices than expected when houses are located close to an environmental disamenity.

Ezebilo et al. (2017) found that houses located in and near the central business district have higher sale prices and rent than those located farther away. Musa and Yusoff (2015) found that proximity to workplaces, shopping centres and public transport systems determine house prices. Won and Lee (2018) found, in their Korean study, that distance to the central business district and accessibility to university influence house rental rates in Seoul. In a Polish study of structural, locational and environmental impacts on housing price, Ligus and Peternek (2016) concluded that larger floor area and presence of a garage add value to a residential house while age of the house reduces the price. Gupta and Gupta (2017) found that demand for rental housing in the settlements of Delhi is relatively higher in dwellings that have amenities such as a kitchen, bathroom and toilet. In PNG, Ezebilo and Thomas (2019) found that an increase in number of rooms is linked to an increase in house rent in formal and informal areas of Port Moresby. In a Sri Lankan study, Wickramaarachchi (2016) found that physical attributes such as age of house, number of rooms and other amenities influence house rent. In a USA study, Liu and Hite (2013) found that houses located closer to large green spaces are highly priced. Ozdenerol et al. (2015) found that traffic nuisance has a significantly negative impact on housing values in Shelby County, Tennessee. Gibbons et al. (2014) and Won and Lee (2018) found that environmental amenities such as green space and water areas are highly valued by homeowners and have a substantial impact on housing price in England and Korea respectively.

In a Nigerian study of the effects of location and neighbourhood attributes on housing values, Aluko (2011) found that the incidence of crime and presence of schools and recreational facilities in the community influence house value. In a Slovenian study, Ferlan et al. (2017) found that houses located in friendly neighbourhoods with less noise and crime rates, compared to more noise and crime rates, attract high demand from local residents. In their review of the impacts of neighbourhood characteristics on residential property values, Musa and Yusoff (2015) found that the presence of schools that meet minimum acceptable academic standards in a residential neighbourhood could positively influence house prices. Ezebilo and Thomas (2019) found that houses in formal areas serviced by infrastructure such as potable piped water, sewerage systems, and electricity increase house value.

The degree of population growth and level of economic development influence residential property value. In Kenya, research conducted by Gatauwa and Murungi (2015) into infrastructure development and real estate values found that demand-driven factors such as improved transport networks, more industrial developments, expanded educational institutions and more commercial centres had a positive influence on the price of residential real estate in Meru County. Ong (2013) found that economic growth and population size determine house prices in Malaysia. Ezebilo et al. (2017) found that the construction phase of the PNG LNG project is strongly linked to a sharp increase in residential property prices. Endekra et al. (2015) found that the supply of residential houses in Port Moresby has not been able to meet the increasing demand from expatriates and local migrants during the construction phase of PNG LNG, which has contributed to increased house prices. In China, Jiang et al. (2013) found that increases in population size leads to rising demand for urban residential properties, which results in increased pricing of residential properties.

Material and methods

Study area

The research was conducted in Port Moresby, which is the largest city in PNG. Port Moresby has the largest residential property market in the country (Ezebilo et al., 2016). The city consists of 15 formal suburbs and several informal settlements (Endekra et al., 2015). Port Moresby has experienced economic growth in recent years, leading to the construction of new roads and houses, establishment of new commercial and industrial centres, and erection of new property and other infrastructure developments (Ezebilo et al., 2016). There has been increased interest from property developers seeking to boost developments in Port Moresby. However, their interest has been restricted by a shortage of land that has proper titles (Wangi & Ezebilo, 2017). This is because the state land, which often has proper titles, is almost exhausted, whereas the available customary land does not have proper titles. Systems and processes for accessing customary land, such as the Voluntary Customary Land Registration system, have been developed to provide titles for customary land (Wangi & Ezebilo, 2017). However, financial institutions, such as commercial banks, would not accept the titles as formal documents for filing applications for loans. The National Land Summit 2019 focused on strategies to address this issue.

The economic opportunities in Port Moresby attract migrants from other parts of PNG and overseas who are in search of a better way of life. The increasing population puts pressure on the number of available houses in the city, which pushes up house prices (Ezebilo et al., 2017). According to Ezebilo et al. (2016), the minimum rent for a three-bedroom house was PGK725 per week and sales price was PGK650,000. In addition, increasing migration is rapidly changing the structure of Port Moresby — especially in terms of the proliferation of informal ‘spontaneously built’ areas.

Survey design and data collection

This study used a mixed methods approach to understand the determinants of property values in Port Moresby. We conducted a desktop literature review and identified real estate agents and landlords as key players in determining property value. However, there is little understanding of *how* real estate agents and landlords determine property values in PNG. Our research was designed to gather primary data from real estate agents and landlords to fill this knowledge gap. We collected data using face-to-face interviews. The questions asked during the interviews were informed by our literature review and developed further by test interviews.

The questions used for the interviews were divided into two sets: one set was used for interviews with real estate agents and the other set was for interviews with landlords. The draft questions were circulated among researchers whose works were related to residential property development, for their comments. The drafts were modified and tested before the final versions were produced. The questions (Box 1) include profile of real estate agents and landlords; determinants of house sale prices and rent in real estate market in Port Moresby; and, interviewee’s perception of the fundamental drivers of property prices in the city. Six open-ended questions were used to capture the views of interviewees about determinants of property value (see Box 1).

Box 1: Key questions

- Please explain how you determine the sales price of a house.
- Please explain how you determine house rent.
- Please explain how you determine the sales price of a block of land.
- Would you agree that population growth influences property value in Port Moresby? If Yes, explain.
- Would you say that economic development such as infrastructure development influence property value in Port Moresby? If Yes, explain.
- Do you compare prices of other properties available in the property market before arriving at a property price? If Yes, explain.
- For how many years have you been working as an estate agent?
- What is the highest educational qualification you have?
- What media do you use to advertise properties for sale or rent?

Sample selection

We used a two-stage stratification process to select formal real estate agents. This process involved using the 2018 telephone directory as the official data source to create a list of formal real estate agents. This approach helped us to address two critical components of sample selection. First, having a listing in the telephone directory ensured the authenticity of the real estate agents; that is, the qualification is based on the assumption that all formal requirements were fulfilled in order for Post PNG to publish the listings in the telephone directory. Second, using this approach ensured objectivity in the selection process because the listings in the Yellow Pages telephone directory grouped all business competitors together by the categories of the products or services they offered. This enabled all real estate agents to be listed in the 'Real Estate Agents' category, which meant they had equal opportunity of being selected in our random selection process for an interview. We identified 49 formal real estate agents and recorded their details in an Excel database.

We then stratified our database of formal real estate agents into two categories, as follows.

1. The first category was primary real estate agents. This include all reputable and established real estate agents operating in Port Moresby. From a total of 13 primary real estate agents, we selected 10 for interview, of whom nine agreed to be interviewed.
2. The second category included listings of small real estate agencies that are formally registered and operating from a designated office. We identified 36 secondary listings, of which 10 were randomly selected using the RAND function in Excel and seven attended the interview.

The real estate agents were the main targets of our interviews. However, within the context of Port Moresby, there are also freelance agents and landlords in the industry who influence property prices. The freelance agents perform intermediary roles similar to primary and secondary real estate agents, but their role may differ, particularly in their administration, overheads, and the services they offer to their clients. We selected five freelance agents and six landlords from the researcher's network. The landlords were classified by location of historical high, medium and low-income suburbs, so we could assess the dynamics of property prices within suburbs of Port Moresby.

Data collection

The data were collected using interviews that were conducted between 13 and 17 August 2018. The primary and the secondary real estate agents were interviewed at their offices during working hours between 9:00 am and 4:00 pm. All landlords and freelance agents were interviewed between 4:00 pm and 6:00 pm at cafes convenient to

them. One hour was allocated for each interview. The interviews were conducted upon receiving consents from real estate agents and landlords. At the end of each interview day, all data recorded in the questionnaires were transferred into an Excel worksheet.

Data analysis

The data analysis involved interpreting information provided by the interviewees using the questionnaires. In this study, data were qualitatively analysed using content analysis, in which the researcher compiled the information by editing, coding and summarising facts. Furthermore, we checked all information recorded against each question, separating relevant and irrelevant information. The relevant information was further coded and matched against key variables to establish their relationships, specifically the factors mentioned by the interviewees such as location, lot size, and property type that affected property values.

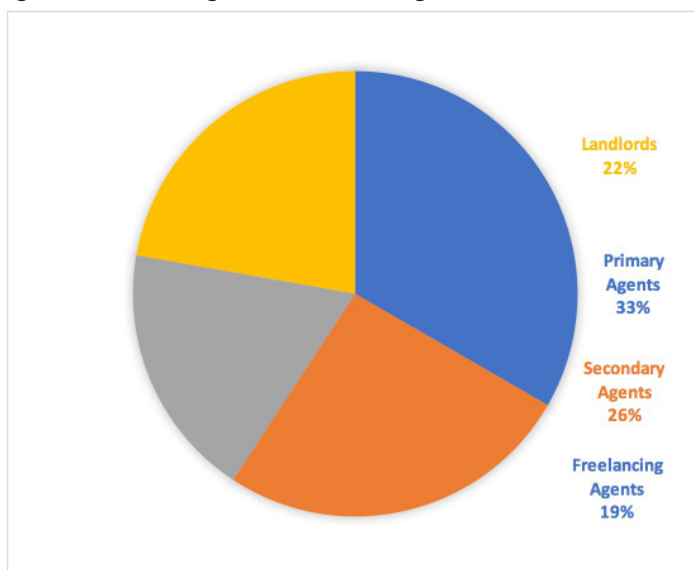
Limitations of the research

The main limitation of this study is that only the views of real estate agents and landlords were considered. The perceptions of other stakeholders such as buyers, tenants, and regulators who might play an important role in determining property values were not considered. The study was conducted only in Port Moresby with the assumption of the capital city having the largest property market in the country; we did not include other PNG cities such as Lae, Kokopo and Mount Hagen. The study focused only on residential properties and did not consider commercial and industrial properties. Future research should study the perception of buyers and tenants, and be extended to include all property types and other cities because this may provide a more complete picture of how residential property value is determined.

Findings

Of the 27 interviewees, 33 percent were primary real estate agents, 26 percent were secondary real estate agents, 22 percent were landlords, and 19 percent were freelance agents (Figure 1). The real estate agent interviewees had extensive management experience in the real estate sector that ranged from four to 20 years. All interviewees had formal education and qualifications (e.g., certificates, diplomas, and undergraduate degrees in various fields). Most of the real estate agents were registered with the Investment Promotion Authority. All of the landlords had titles over their properties. The real estate agents and landlords deal with various types of properties, including standalone houses, apartments, townhouses, and shared accommodation. Real estate agents also deal with sales of vacant land.

Figure 1: Percentage of real estate agents and landlords who were interviewed



The findings show that the value of residential property in Port Moresby is determined by both economic and non-economic factors. However, there is no direct relationship between personal characteristics of interviewees, such as year of experience and level of education, in determining property value. Real estate agents and freelance agents play intermediary roles for property buyers and potential tenants. Landlords offer their own houses for rent. Approximately 70 percent of the interviewees use both daily newspapers and social media to advertise land and houses for sale and rent. Other mediums of advertisement, such as agent websites and public notice boards, are used to some extent.

Impacts of economic development and population growth on property value

All of the interviewees reported that level of economic development influences the price of residential property in Port Moresby (Figure 2). According to the interviewees, new infrastructure developments (e.g., road networks) improve accessibility to other suburbs and encourage more business developments, which increases property value.

An interviewee from a real estate agent reported that:

“The opening of the new Koura Way road has attracted many people working in Town and Konedobu to live in suburbs of Tokarara and June Valley. It takes 15 minutes or less depending on traffic to reach Town and Konedobu.”

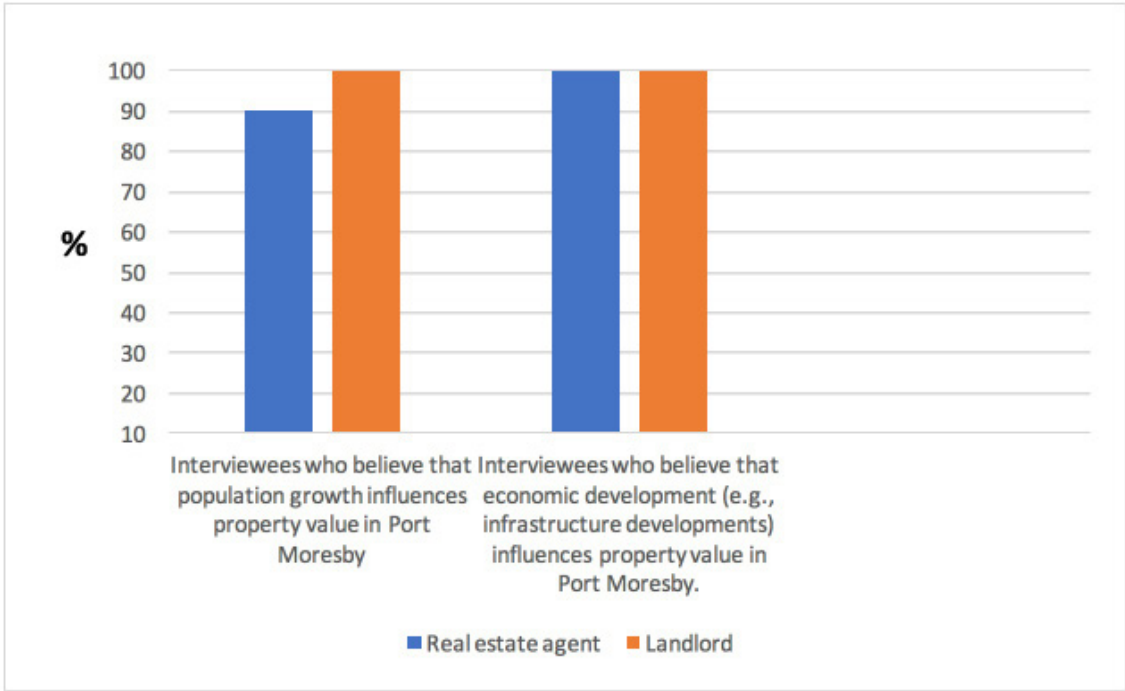
The interviewee confirmed that demand for houses for sale and for rent at Tokarara and June Valley has increased and subsequently prices of residential properties have increased. In addition, the opening of the Ring Road that

connects Konedobu, Gerehu, 8 Mile, and 9 Mile has boosted economic developments such as service stations, commercial centres, markets, and private schools in the outer fringes of the city.

One landlord reported that:

“More people are moving to 8 Mile and 9 Mile areas and demand for houses and land going up in these suburbs, resulting in high house sale price and rent. For example, in 9 Mile, a registered residential land with a semi-permanent house was valued at K40,000 in 2008, and the same property was sold for K250,000 in 2017.”

Figure 2: Share of real estate agents and landlords who believe that population growth and economic development in lence property value



Increased income earning opportunities in the city influence residential property value. The construction phase of the PNG LNG project boosted economic activities in Port Moresby because many people worked on the project site and in spin-off businesses. The parent company and contractors demanded more rental properties to accommodate their employees during the construction phase, and some contracting companies even bought properties for long-term accommodation. The high demand for residential properties during the PNG LNG construction phase resulted in a sharp increase in residential property prices.

The real estate agents and landlords indicated that more people are migrating to Port Moresby from other provinces in search of jobs, better services and business opportunities. The increase in population size puts pressure on the existing housing stock and creates excessive demand for sales and rental residential properties in both the formal suburbs and informal settlements. Most formal suburbs and some informal settlements could not contain the increased housing demand resulting in high property prices.

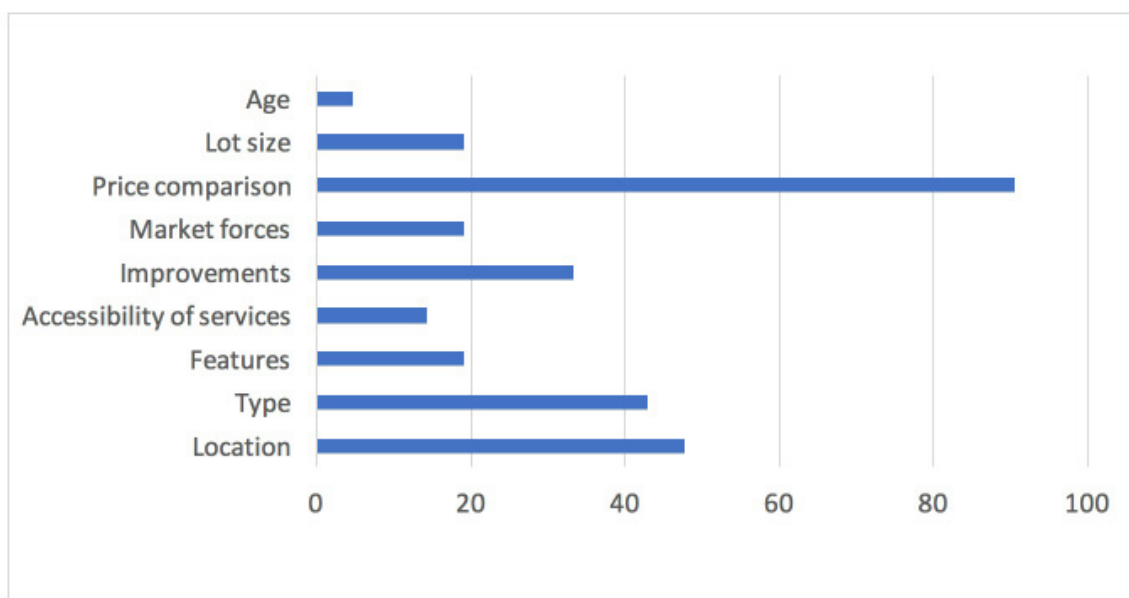
The property developers cannot construct more houses due to shortage of state land, which result in an increase in informal residential property developments on customary land in the outskirts of the city.

One interviewee who had lived in Port Moresby for 22 years reported that the population growth has affected residential property prices. In 2006, before the PNG LNG construction project, the sale price for a registered vacant block of land that he owned at 5 Mile was valued at K100,000. However, the same property without any improvement was valued at K300,000 in 2015. He further reported that state land for housing development is almost exhausted, yet the demand for it remains high because of population increases in the city.

Determinants of property values

Our findings show that house sale prices in Port Moresby are determined by location, physical attributes, environmental factors, neighbourhood characteristics, and market forces (Figure 3). Most interviewees who belonged to the real estate agents group reported that they compare prices of similar houses, particularly in terms of improvements made, location and accessibility to infrastructure and services, before making a decision about the final sale price and rent value. Almost all of the interviewees compare prices and do market appraisals using historical sales data from newspapers and agent websites. Approximately 48 percent of the interviewees reported that location of a house is highly regarded when determining the sales price. The properties that are located in friendly neighbourhoods and prime zones attract higher prices than those in outer fringes of the city. The real estate agents agreed that irrespective of current property market movements and economic conditions, house sale prices will still remain high in Port Moresby. This is because the rate at which houses are constructed has not met demand.

Figure 3: Factors that determine house sale price as perceived by real estate agents in %



Box 2: Interviewee's response to the determinants of residential property values

One real estate agent, who has worked overseas reported three methods of determining the sale prices and rent of properties in a developed country:

1. Comparable sales method: this involves physical comparisons, including location and even the testimony of previous landlords and tenants when considering property sales price or rental rate.
2. Summation method: this considers the value of the land, improvements done to the property and depreciation.
3. Investment method: this considers the income generating capacity of the property.

The comparable sales method is used extensively in PNG. The supply and demand factors also determine property values. However, to understand the price levels of properties in PNG's market, one has to understand the major capital investments that occurred in the country. First, the pricing pressure of the real estate properties began in 2005, when there was a strong demand for rented properties to accommodate Australian police engaged under the Enhanced Cooperation Program in Port Moresby. The Australian Government was closing five-year leases for apartments on prices beyond the market price due to low supply of properties in Town area. Second, the rollout of infrastructure investment by

Digicel needed accommodation for their overseas staff; this meant that apartments owned by superfunds and corporations in Town area greatly benefitted. Third, the PNG LNG construction period was the final wave of developments in the real estate market. The influx of thousands of workers demanding more rental accommodation resulted in a huge increase in house rent. These projects, in many ways, influenced the house sale prices and rental rates in Port Moresby's real estate market.

House rent is influenced by several factors, some of which are unique to Port Moresby's property market: security costs, background of the tenants, use of the property, and affordability of tenants. In Port Moresby, many rental properties in formal built areas and informal settlements are protected by private or corporate security services. The security costs are embedded into the rental value as confirmed by 50 percent of landlords and 15 percent of real estate agents in the survey.

One landlord reported:

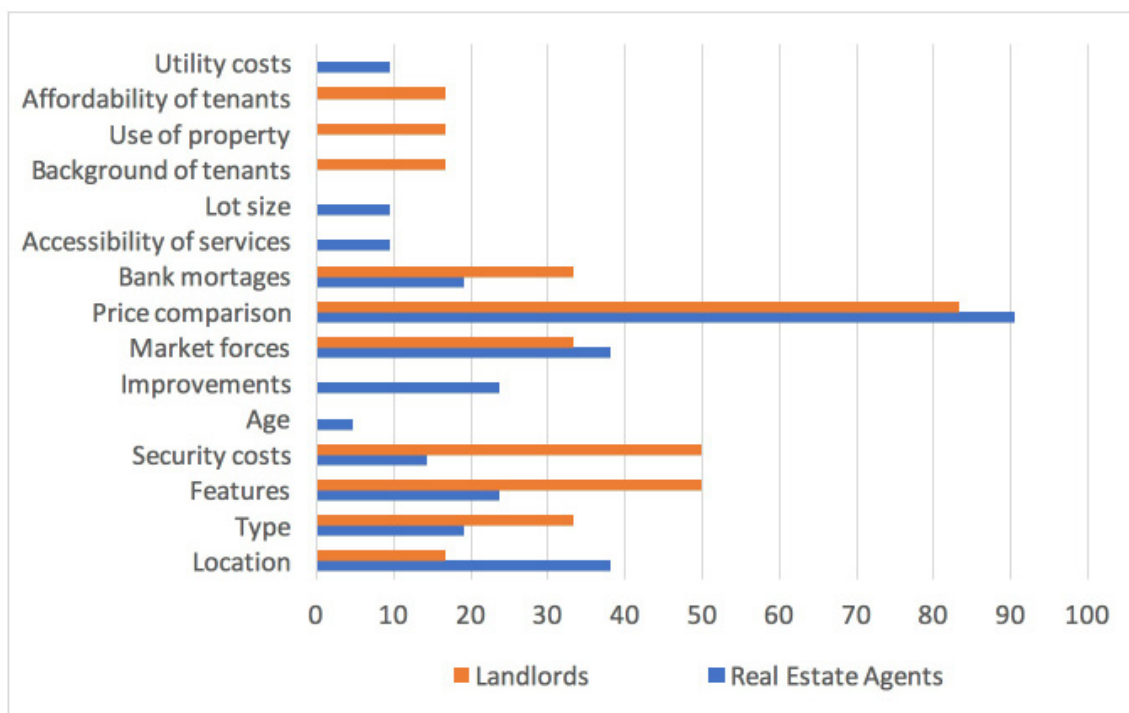
"I charge tenants according to the use of the house. Some tenants use the house for accommodation while others for commercial purposes. For example, tenants that operates hire car business from my house at East Boroko is paying higher house rent than other tenants."

One interviewee who belonged to the real estate agents group stated that:

"The determination of rent should be the work of market forces. There has been a reasonable drop in house rent after the completion of the PNG LNG construction phase. It has been estimated that rent decreased between 10 and 20 percent for high-end housing in early 2018. The decline in rent results from high vacancy rates and increase in supply of new rental accommodation in the property market. For example, the landlord's asking rent could be K1,500 but the market could offer up to K1,000, which is in favour of the tenant. However, house sales price still remains high."

Most real estate agents and landlords reported that market forces also play an important role in the rental market. The influence of other factors on house rent is shown on Figure 4.

Figure 4: Factors that determine house rent as perceived by landlords and real estate agents in %



Box 3: Interviewee’s response to determinants of house rent

The house rent is dictated by the market forces. For example, before the PNG LNG project, house rental rates ranged from K300 to K600 per week. However, during the construction phase the same properties attracted rental rates between K600 and K1,500 per week due to high demand from ExxonMobil and other contractors to accommodate their workers around the Town area of Port Moresby. The boom in demand for rental houses lasted at least three years. Thereafter, demand for rental houses decreased and resulted in many unoccupied houses. This made me sell my house located in Town (i.e., central business district) for K7 million, and I invested in a commercial property at Hohola. I built another commercial property in Gordon and residential units in 5 Mile. As a property investor, I understand the economic climate as a major determinant of rent and invest accordingly to maximise returns.

Land is one of the factors of production in the construction of a residential house. In Port Moresby, state land is scarce and price is highly responsive to demand. A residential block of land located in prime areas such as Town, Boroko, and Korobosea is more expensive than land in outer fringes of the city such as Gerehu Stage 6 and 9 Mile.

One interviewee reported that:

“Unimproved block of land measuring 300 square metres in Malolo Estate valued K100,000 in 2005, and in 2016 same unimproved land was valued at K300,000. The current price of residential land ranges from K200,000 to K50,000 depending on the size, location, accessibility to trunk infrastructure and improvements.”

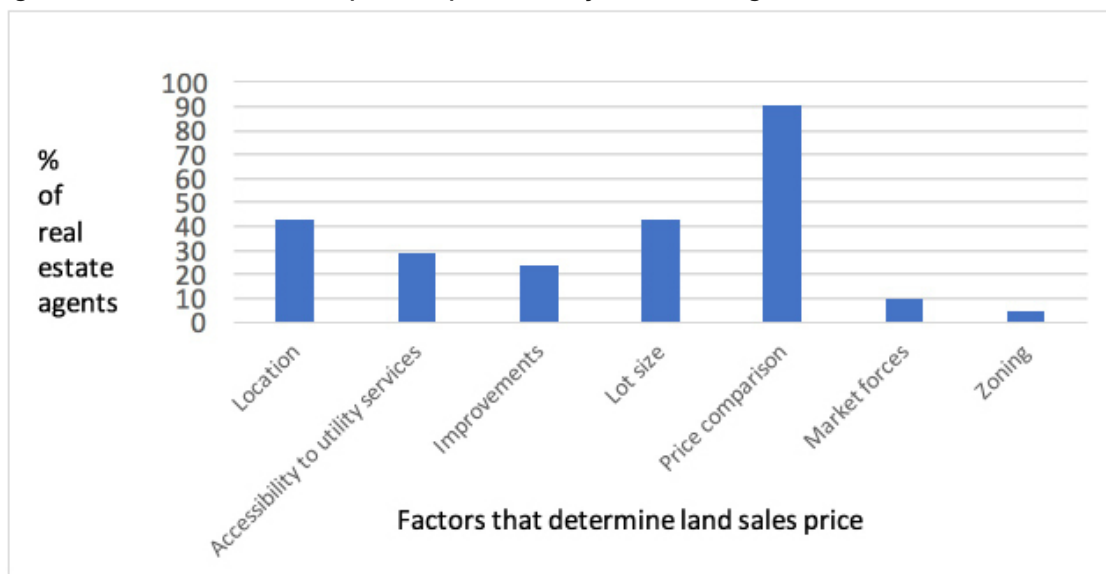
Improvements such as the erection of fences, construction of permanent drainage system, water and sewerage connectivity, and power installation add value to residential land.

One interviewee reported that:

“Private developers are charging prices above K800,000 after developing residential properties of the size of about 400 square metres, which in reality should be below K600,000. The high prices include costs incurred by private developers to provide basic infrastructure, which is the responsibility of the government.”

Twenty-three percent of real estate agents confirmed that improvement is one of the determinants of value of land. However, price comparison remains the main factor that influences price of land. Approximately 90 percent of interviewees reported that they consider testimonies from vendors and the sale price of similar land when deliberating about the final price. Figure 5 shows factors that influence the price of land in Port Moresby.

Figure 5: Determinants of land price as perceived by real estate agents



Residential property market in Port Moresby

Some interviewees were of the view that the Independent Consumer and Competition Commission (ICCC, 2010) should regulate property prices in PNG. They reported that:

“In the absence of a regulated property market, real estate agents and landlords dictate property sale prices and rent without considering affordability of the properties. They are charging tenants and employers exceedingly high rent for substandard houses in suburbs of Port Moresby. The real estate sector is distorted as the values of properties in the high, medium and lower ends of the market are equally expensive. The regulation should be used specifically for control purposes by ensuring that there is no over-pricing of properties and promoting a level playing field for all players in the market.”

In such a regulatory environment, the ICCC would pre-assign price bands in the property market and players would act within the price limits. However, some interviewees reported that price regulation might make the market unattractive and discourage property investment. This might lower supply of houses relative to demand, which would again push up house prices.

The economic forces play an important role in a highly concentrated property market of Port Moresby. One of the interviewees stated that:

“Real estate sector should be market driven, hence market forces should determine property prices. The market forces should prevail and no need for price regulation. This would attract investment in the residential property market.”

Supply and demand naturally determines price of houses and land, which reflects the existing market conditions. However, in Port Moresby, the demand from the increasing population in the city outstrips supply of accommodation. Therefore, the demand for low-end residential accommodation would remain high in the city.

The Government should only play a facilitating role to create a business environment that is conducive for large scale property investment. It should leave the professionals in the private sector to initiate and drive the changes in the property market. One interviewee identified facilitating roles of the government in the sector, which potentially include:

“Firstly, coordinate town planning to ensure proper zoning of land for residential, commercial and industrial uses. Currently, there is no proper planning, hence, encouraging mix developments that are distorting the value of land and housing. Secondly, provide basic truck infrastructure in areas identified for property development and allow private sector to build houses. The private properties are sold at high prices because costs incurred of setting up infrastructure are included in the final sales prices. Thirdly, provide tax incentives on imported building materials, which could reduce costs of constructing houses and eventually the sales prices.”

The supply of state land in Port Moresby has almost run out. Eventually, the city will be encroaching on customary land for property development; hence, the issue of land ownership will be at the forefront of development. An interviewee who was a customary landowner and director of a real estate agency involved in property development reported that:

“Proper development on customary land by way of the Incorporated Land Groups and then form landowning group companies to commercially engage in property development. This is one way to prevent the landowners to be marginalised on their own land. However, land ownership disputes among landowners are creating different factions.”

The disputes stall formal developments and allow land grabbers and informal developments on customary land.

Discussion

The findings from this study reveal that most real estate agents and landlords in Port Moresby determine sale price and rent for houses by comparing property prices that other agents and landlords have adopted. This suggests that real estate agents and landlords in the city fix house sale prices and rents without giving much consideration to the house's characteristics; this finding has already been reported in the housing supply and demand literature. For example, in a study of factors affecting residential prices in a suburb of Lagos, Nigeria, Oloke et al. (2013) found that structural, neighbourhood, locational, and environmental characteristics determine residential property value. Wickramaarachchi (2016) found that house age and the number of rooms influence house rental value. Because house rent is mainly determined by house owners and real estate agents rather than by market forces, tenants may not get a fair price; indeed, the houses for rent and for sale appear to be overvalued. Besbris and Faber (2017) also found that the clustering of real estate agents around a neighbourhood is strongly linked to an increase in house prices.

If the intention is for tenants and house buyers to get a fair price, the government should consider providing an enabling environment for the private sector to construct more houses for rent. Creating an enabling environment would include freeing up more land that has proper titles and providing financial support through low interest rate loans. This approach should be complemented by relevant government agencies, such as ICCC, regulating house rent. It is important to note that if house rent is regulated without an increased supply of houses for rent, the tenants will benefit only in the short-term. However, in the long-term, property developers may reduce the supply of houses for rent relative to demand, which would automatically push up rent again as reported by Diamond et al. (2019).

According to Ligus and Peternek (2016), older houses are often associated with a lower house price compared to newer houses. However, in the current study we found that real estate agents and landlords in Port Moresby rarely use the age of a house to determine its rent or sale price. This may be why real estate agents in Port Moresby do not often provide the age of a house when it is advertised for rent or sale, as reported by Ezebilo et al. (2017). It means that old houses in Port Moresby that are advertised for rent or sale may be overvalued and that real estate agents tend not to provide accurate information about houses meant for rent and sale. The anomaly can be corrected if the ICCC makes it compulsory for real estate agents to declare all important characteristics of a house that is advertised for sale or rent. This will provide house buyers and potential tenants with more information about their potential property purchase.

Aluko (2011), in a Nigerian study of the effect of neighbourhood and location on housing values, found that neighbourhood attributes such as security influences house rental value and sales price. However, our results revealed that more landlords than real estate agents consider security when determining the value of house rent. This may be because providing security for a tenant is the responsibility of the landlord, so security incurs an additional expense for the landlord. However, the cost associated with providing security is passed to tenants. For real estate agents, their primary concern is finding a tenant for a rental house, after which the tenant is expected to discuss security with the owner of the house. This aligns with what is expected from a rational economic agent whose main aim is to maximise profit. An agent may prefer to discuss security services separately from discussions about the house rent.

We found that landlords consider the background of a potential tenant and their ability to afford house rent before deciding the value of a house rent. This means that the landlord often provides opportunity for the potential tenant to negotiate the proposed rent, whereas real estate agents do not provide this opportunity to negotiate. Thus, for the case of real estate agents, potential tenants are rent takers. However, they are involved in determining the rent they pay when a landlord is involved in negotiating house rent. This may be because a landlord who assigns their house for rent to a real estate agent often agrees on the rent rate with the agent and agent cannot go below the agreed rate. However, a landlord has the capacity to vary the rent because the house belongs to him or her. This calls for the need for the landlord to often provide the real estate agent a range of acceptable house rent so that the agent can have the opportunity for negotiation with the potential tenant.

More real estate agents than landlords consider the location of a house when determining its rent or sale value. This aligns with findings of Ferlan et al. (2017), who found that the location of the property is strongly linked to the value of the property. Musa and Yusoff (2015) found that proximity to workplace is a determinant of the price of a house. In their study of the dynamics of market prices for residential properties in Port Moresby, Ezebilo et al. (2017) found that houses located closer to the central business district attract a higher sale price and rental rate than houses located further from the district. A possible reason is that real estate agents often have several houses in various areas of the city. This often provides them with the opportunity to compare the attributes of the houses when determining their value. Real estate agents also typically have a wider network in the city than landlords have. This gives estate agents greater opportunity to compare prices across different locations. However, landlords often have only one property in one location, which makes it difficult for them to compare locations when determining the value of their property.

Results from our study support the premise that the price of a good is determined by the market forces of supply and demand (Gravelle & Rees, 2004). We found that both real estate agents and landlords determine house rent and house sale prices based on the quantity of houses supplied for rent and sales and the number of buyers and potential tenants. This suggests that real estate agents and landlords share information about property prices and about the market situation. In some cases, estate agents assist landlords market houses for rent. This provides both parties an opportunity to discuss current prices. This indicates that, if the intention of the government is to promote provision of affordable housing, the focus should be providing an enabling environment for more houses to be constructed relative to demand. This has the potential of motivating landlords and real estate agents to reduce house sale price and house rent.

Improvements made to a house (e.g., maintenance) often increase the value of the house and makes it more attractive to buyers and potential tenants. However, maintenance attracts expenses that a landlord may not be willing to incur. In fact, according to our experience, some landlords prefer a tenant to pay for the maintenance and the tenant retrieves money spent on the maintenance on instalment basis from the house rent. For the case of real estate agents, they are subject experts and so are aware of the potential benefits of providing an improved house for rent or sale. This may be a reason that real estate agents consider any improvements made to a house when determining its value. This suggests that anyone who wants to rent a house from a landlord should discuss the possibility of future maintainance work with him or her and any agreement reached from this discussion should be documented in the tenancy agreement. Documented details should include who will pay for what maintenance and how the maintenance will be carried out.

Real estate agents and landlords reported that increases in population influence house sales and house rent value in Port Moresby. The increase in population corresponds to an increase in demand for housing relative to supply, which has the potential to increase house prices. The estate agents and landlords believe that people migrate from rural areas to the city in search of better job opportunities. This increase in population adds pressure to the existing available housing stock. The findings are in line with a United States study that found an increase in population results in an increase in demand for housing and triggers higher house prices during housing bubbles (Myrmo, 2012). It also concurs with Ong (2013), who found that population growth is strongly linked to property prices in Malaysia. This can be the reason that formal built areas of Port Moresby are not able to contain the excessive housing demand, which results in unplanned settlements being developed in the outskirts of the city. The unplanned settlements often lack basic infrastructure and services such as schools, water, electricity, sewerage systems, and good road networks.

Economic development in Port Moresby that resulted in the construction of new roads such as the Koura Way, Ring Road and Taurama Road increased residential property value in these areas. Real estate agents and landlords reported that the developments triggered demand for residential properties there, which increased house prices. This finding is supported by Gatauwa and Murungi (2015) who found that better transport networks, increased educational institutions, and construction of commercial centres attract high demand for residential properties, which results in increased house sale prices and house rent. It is also in line with Ezebilo et al. (2017) and Endekra et al. (2015), who found that the PNG LNG project was strongly linked to sharp increase in house sale

prices and house rent.

Our results reveal that real estate agents and landlords often incur security costs through engaging security staff and erecting security fences around the residential properties they manage. The cost associated with providing security is often passed to consumers, which results in increased house sales prices and house rent. If the intention of the government is to make houses in Port Moresby more affordable, it is important to address security problems and reduce the cost incurred to provide security; this will consequently lower house sale prices and house rent.

Conclusion

Housing is a basic necessity that accounts for a large share of consumer price index. However, housing is becoming a luxury good for some Port Moresby residents. This paper provides more insights into the strategies often used by real estate agents and landlords to determine house sale prices and house rent. We found that real estate agents and landlords often determine house sale prices and house rent respectively by comparing prices with their colleagues. Landlords often consider the background of a potential tenant when determining house rent but do not consider the location and improvements made to the house. However, real estate agents consider the location of the house and any improvements, such as maintenance, when determining the sale price or rental value of a house. Real estate agents and landlords both consider market forces when determining house sale price and rent value. This indicates that house sales and house rent are at the mercy of real estate agents and landlords, which means they have the incentive to fix house sale prices and rent because there are no regulation of their activities in PNG. In this situation, tenants and house buyers are price takers. If the government intends to protect consumers (tenants and house buyers), there is a need to tackle the supply side of housing affordability problem. This can be achieved by providing enabling environment for private developers to construct more houses. This includes facilitating the release of land with proper titles, providing basic social infrastructure such as piped water, good road networks, electricity, and sewerage. The government should consider regulating the activities of real estate agents and landlords. This has the potential to reduce the tendency of real estate agents and landlords to undermine government's affordable housing initiatives. This study focused on only one city of PNG; similar studies should be conducted in other major cities of the country. It is also important to involve other key stakeholders, such as ICCC officials and tenants, in future studies.

References

- Ajilowo, J., and Olujimi, B. (2010). Analysis of the relationships of infrastructural facilities in the determination of rental values of residential properties in Akure, Nigeria. *Arts and Social Sciences Journal*, 2010 (10): 1–11.
- Aluko, O. (2011). The effects of location and neighbourhood attributes on housing values in metropolitan Lagos. *Ethiopian Journal of Environmental Studies and Management*, 4 (2): 69–82. <https://doi.org/10.4314/ejesm.v4i2.8>
- Baryla, E., and Ztanpano, L. (1995). Buyer search duration in the residential real estate market: The role of the real estate agent. *Journal of Real Estate Research*, 10 (1): 1–13. <https://doi.org/10.1080/10835547.1995.12090769>
- Besbris, M., and Faber, J.W. (2017). Investigating the relationship between real estate agents segregation and house prices: Steering and upselling in New York State. *Sociological Forum*, 32 (4): 850–873. <https://doi.org/10.1111/socf.12378>
- Diamond, R., McQuade, T., and Qian, F. (2019). The effects of rent control expansion on tenants, landlords and inequality: Evidence from San Francisco. *American Economic Review*, 109 (9): 3365–3394. <https://doi.org/10.1257/aer.20181289>
- Endekra, B., Kwapena, E., and Yala, C. (2015). Understanding property movements in Port Moresby: Lessons from a price tracking experiment (PNG NRI Issues Paper 14). Port Moresby: Papua New Guinea National Research Institute.
- Ezebilo, E., Hamago, L., and Yala, C. (2016). *Assessment of market prices for residential property in Port Moresby: Do location and property type matter?* (PNG NRI Issues Paper 19). Port Moresby: Papua New Guinea National Research Institute.
- Ezebilo, E.E., Nao, L., Hamago, L., and Thomas, M. (2017). Dynamics of market prices for residential properties in Papua New Guinea: Evidence from Port Moresby (PNG NRI Discussion Paper 158). Port Moresby: Papua New Guinea National Research Institute.
- Ezebilo, E.E., and Thomas, M. (2019). *Drivers of house rental market prices in formal and informal areas of Port Moresby: A hedonic pricing method approach* (PNG NRI Discussion Paper 171). Port Moresby: Papua New Guinea National Research Institute.
- Ferlan, N., Bastic, M., and Psunder, I. (2017). Influential factors on the market value of residential properties. *Engineering Economics*, 28 (2): 135–144. <https://doi.org/10.5755/j01.ee.28.2.13777>
- Gatauwa, J. M., and Murungi, M. (2015). Infrastructure development and real estate values in Meru County, Kenya. *Research Journal of Finance and Accounting*, 6 (8): 212–221.
- Gibbons, S., Mourato, S., and Resende, G.M. (2014). The amenity value of English nature: A hedonic price approach. *Environmental and Resource Economics*, 57 (2): 175–196.
- Gupta, M., and Gupta, R. (2017). Demand for rental housing: Evidence from slum settlements in Delhi. *Urbanisation*, 2 (1): 9–27. <https://doi.org/10.1177/2455747117700942>
- Gravelle, H., and Rees, R. (2004). *Microeconomics*. Harlow: Pearson Education.
- Gwamna, E. S., Yusoff, W.Z., and Ismail, M. F. (2015). Determinants of land use and property value. *Advanced Science Letters*, (4): 400–407. <https://doi.org/10.1166/asl.2015.6065>
- Independent Consumer and Competition Commission (2010). *PNG housing and real estate industry review: Final report*. Port Moresby, Papua New Guinea: Independent Consumer and Competition

Commission.

- Jaurgui, A., and Hite, D. (2010). The impact of real estate agents on house prices near environmental disamenities. *Housing Policy Debate*, 20 (2): 295–316. <https://doi.org/10.1080/10511481003738419>
- Jiang, H., Jia, S., and Huang, Y. (2013). The study of the factors affecting urban residential land price. *Applied Mechanics and Materials*, 357–360: 2854–2858. <https://doi.org/10.4028/www.scientific.net/AMM.357-360.2854>
- Ligus, M., and Peternek, P. (2016). Measuring structural, location and environmental effects: A hedonic analysis of housing market in Wroclaw, Poland. *Procedia — Social and Behavioral Sciences*, 220: 251–260. <https://doi.org/10.1016/j.sbspro.2016.05.497>
- Liu, S., and Hite, D. (2013, February). *Measuring the effect of green space on property value: An application of the hedonic spatial quantile regression* [Paper presentation]. Southern Agricultural Economics Association 2013 Annual Meeting, Orlando, Florida. <https://doi.org/10.22004/ag.econ.143045>
- Messah O.B., and Kigige, A.M. (2011). Factors influencing real estate property prices: A survey of real estates in Meru municipality, Kenya. *Journal of Economics and Sustainable Development*, 2 (4): 34–54.
- Musa, U., and Yusoff, W. Z. W. (2015). Impact of neighbourhood characteristics on residential property values: A critical review of literature. *International Review of Social Sciences*, 3 (4): 147–155.
- Myrmo, M. (2012). Does population growth affect housing bubble? A study on population growth's influence on the U.S. housing market during the 2000s (Master thesis in financial economics). Retrieved from NHH Brage Open Institutional Repository. (Record no. 3117).
- Oloke, O.C., Simon, F.R., and Adesulu, A. F. (2013). An examination of the factors affecting residential property values in Magodo neighbourhood, Lagos State. *International Journal of Economy, Management and Social Sciences*, 2 (8): 639–643.
- Ong, T. S. (2013). Factors affecting the price of housing in Malaysia. *Journal of Emerging Issues in Economics, Finance and Banking*, 1 (5): 414–429.
- Ozdenerol, E., Huang, Y., Javadnejad, F., and Antipova, A. (2015). The impact of traffic noise on housing values. *Journal of Real Estate Practice and Education*, 18 (1): 35–53. www.jstor.org/stable/24863164.
- Paz, P. T. (2003). Determinants of housing prices in Spanish cities. *Journal of Property Investment and Finance*, 21 (2): 109–135.
- Savadogo, P., and Ezebilo, E.E. (2018). *Potential strategy for promoting effective public-private partnerships in housing delivery in Papua New Guinea* (Discussion Paper 165) Port Moresby: Papua New Guinea National Research Institute.
- Tse, R.Y.C., Ho, C.W., and Gansesan, S. (1999). Matching housing supply and demand: An empirical study of Hong Kong's market. *Journal of Construction Management and Economics*, 17, 625–633. <https://doi.org/10.1080/014461999371231>
- Wangi, T., and Ezebilo, E. (2017). Accessibility of customary land for residential property development in Papua New Guinea: Challenges and prospects. *PNG NRI Spotlight*, 10 (1).
- Wickramaarachchi, N. (2016). Determinants of rental value for residential properties: A land owner's perspective for boarding homes. Built-environment: *Sri Lanka Research Journal of the Sri Lanka Institute of Architects*, 12 (1): 10–22.
- Won, J., and Lee, J-S. (2018). Investigating how the rents of small urban houses are determined: Using spatial hedonic modelling for urban residential housing in Seoul. *Sustainability* 10: 31. <https://doi.org/10.3390/su10010031>



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