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Factors affecting residential land prices

A review of the literature

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Abstract

Residential land prices are crucial for any country's economy and development. There is, therefore, the need to identify factors affecting the increase in the overall land prices as a first step toward accurately evaluating land assets. This research aims to find the factors affecting residential property prices worldwide by analysing 185 publications from 2000 to 2022. This research is conducted on secondary sources whereby reviews, data analysis was made from previous studies. These studies were published and found in journals, conferences, articles, and theses. The aim is to identify the twenty most common factors affecting residential land price increase. Although previous studies focused on residential land prices, there have yet to be a consensus on a comprehensive list of factors affecting residential property prices.

Keywords: Residential land prices, Land values, Residential property, Property values.

Introduction

International Valuation Standards Council (IVSC) defines real estate as "Physical land and all things that are a natural part of the land as well as those items which are attached to the land by people." As well as the IVSC defines valuation as "The process of estimating value" (Parker, 2016). Real estate regularly involves land, construction on the land, infrastructure, natural resources, including water and minerals, property related to the land, and housing. Real estate price consists and includes both house and land prices (Li, 2015). Considered as an essential provider of socioeconomic development in any economy, land and real estate have become an instrument of growth in many countries. This sector assists in creating new job opportunities and playing other vital economic roles (Ahmed, 2020). The relationship between land supply and demand determines the residential land prices while commodity housing create its demand.

There are two types of commodity housing requirements. The first is consumer demand, and the second is the investment demand (Jiang et al., 2013). Based on the economic theory, if demand for goods rises while supply remains constant, the price of goods such as land, will rise (Suriyanto et al., 2019).

Property value is a crucial aspect of property markets. Therefore, determining factors that affect them is a significant part of valuing properties (Ge & Du, 2007). Depending on the purpose, various methodologies can be used to value land (Suriyanto et al., 2019). For a diverse range of reasons, stakeholders are interested in real estate property value. Governments assess property values for taxation. The purchase price of the asset that will be used as an investment is something that investors wish to know. When making decisions, developers investigate the viability of selling prices. Other goals include insurance, accounting reports, and bank loans (Ge & Du, 2007).

The need for a residential location generally, is one of the fundamental needs of people, in addition to the need for clothing and food (Alimudin et al., 2017). When estimating the value of residential properties, it is critical to determine the influence of factors associated with housing features and the effect of external factors on residential property values (Ferlan et al., 2017). Therefore, several studies evaluated the impact of one or more factors on land prices. These studies also categorised factors affecting land prices, including location and characteristics of land plots, supply and demand of the real estate market, economic, social, environmental, security, and in recent years, the effect of COVID-19 pandemic (Nam, 2022).

The interest in residential land prices and the factors that influence the prices started a long time ago and have been increasing since the global financial tsunami in 2008 (Chung, 2012). One of the most critical lessons from the housing boom and bust, the rise in foreclosures, and the financial crisis is that policymakers and market participants in the housing and mortgage sectors need substantial data to assess the risks in these sectors (Davis et al., 2017). Although many researchers studied residential land prices, there still need to be a consensus on a comprehensive list of factors that affect residential land prices. This research paper, therefore, seek to investigate on the twenty most common factors.

Methodology

This study aims to identify the factors influencing residential property worldwide by analysing 185 publications published between 2000 and 2022. This study relies on secondary sources, including a review and analysis of data from previous studies, which include journals, conferences, articles, and theses.

To find the factors that affect residential property prices. A wide range of publications were analysed using different keyword-based combinations (residential land, residential property, factors, valuation, land values, land prices, housing, real estate, residential property assessment, hedonic model, and house prices). Based on the previous keyword search, academic publications were then explored in order to extract factors affecting residential property prices. Afterwards, the identified factors were sorted according to their recurrence in the selected publications so that factors most commonly or popularly studied in the literature were gathered. Factors recurring in three or more than three publications (a single factor found in three or more than three publications) were retained while factors that were present less than three times in the publications were eliminated. At the same time, these factors were sorted according to specific categories; social, economical, environmental, and governmental. Findings from literature in the process of identifying factors has been summarized into a flow-chart showing how factors were gathered and sieved and finally classified accordingly. The flowchart constructed is provided in Figure 1 as Methodology Flow Chart.

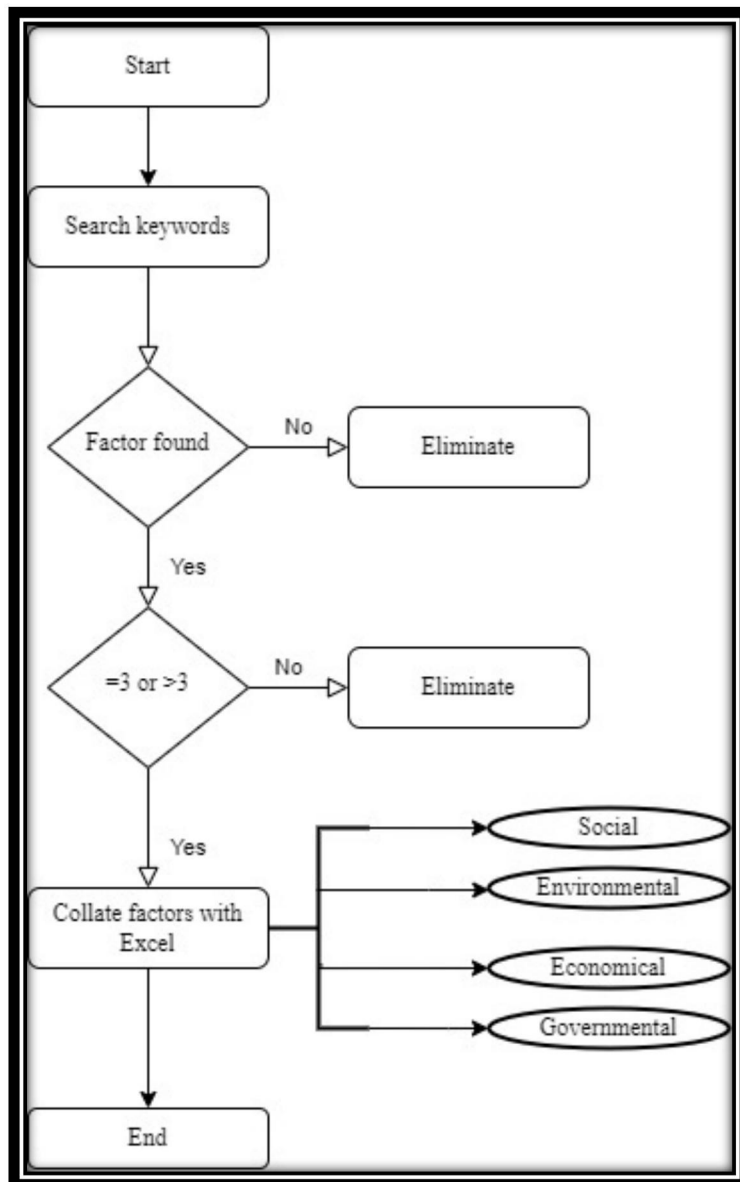


Figure. 1 Methodology flow-chart

Bibliometric analysis results

The bibliometric analysis shows a noticeable growth in the total number of publications per year on the factors that affect residential property from 2000 to 2022. More than 50% of the titles were published in the past five years, indicating increased interest in the subject. Figure 2 shows the number of publications over a period of 22 years.

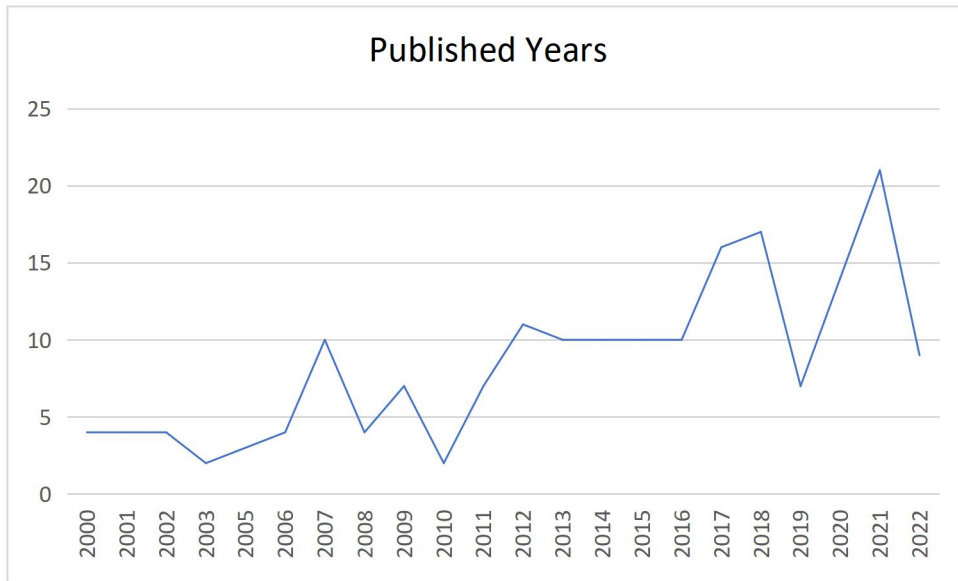


Figure. 2 Publications over a period of 22 years.

Based on these publications, a bibliometric analysis made shows that the largest number of publications over the last decade were from: the United States, China, Australia, Malaysia, and Canada. Figure 3.3 Publications by country (top 5 countries) shows that these were the top 5 countries that focused on factors relating to residential properties.

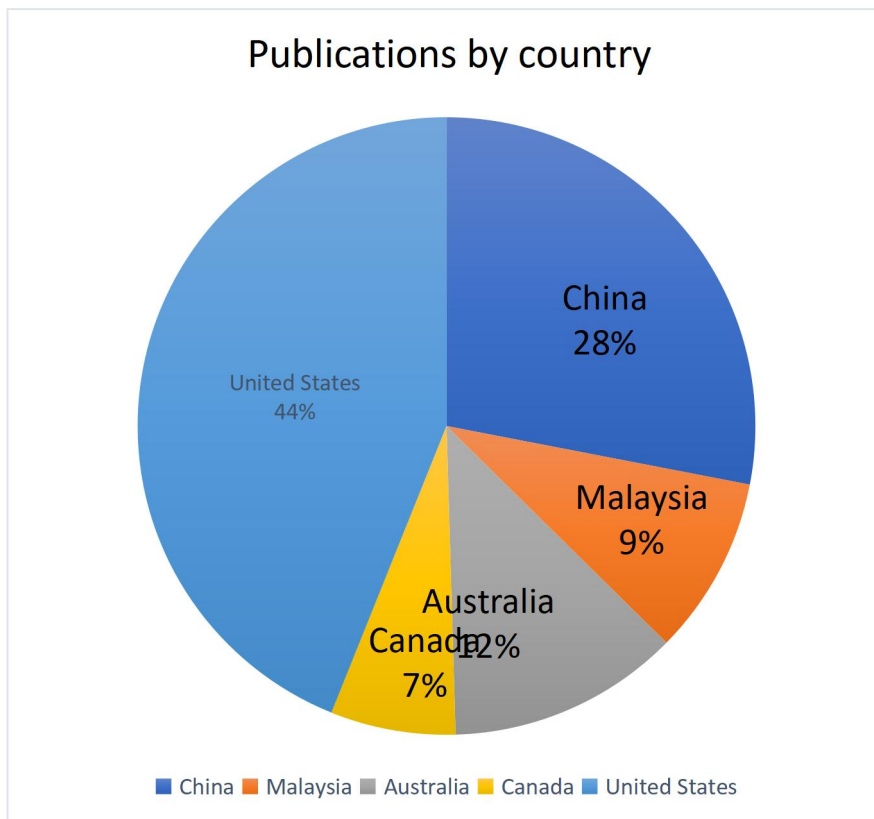


Figure. 3 Publications by country (Top 5 countries)

Conceptual Framework

From the review of literature, factors found to affect residential land prices were used to formulate the conceptual framework. The factors were incorporated into the Conceptual Framework under four main categories as represented in Figure.4.

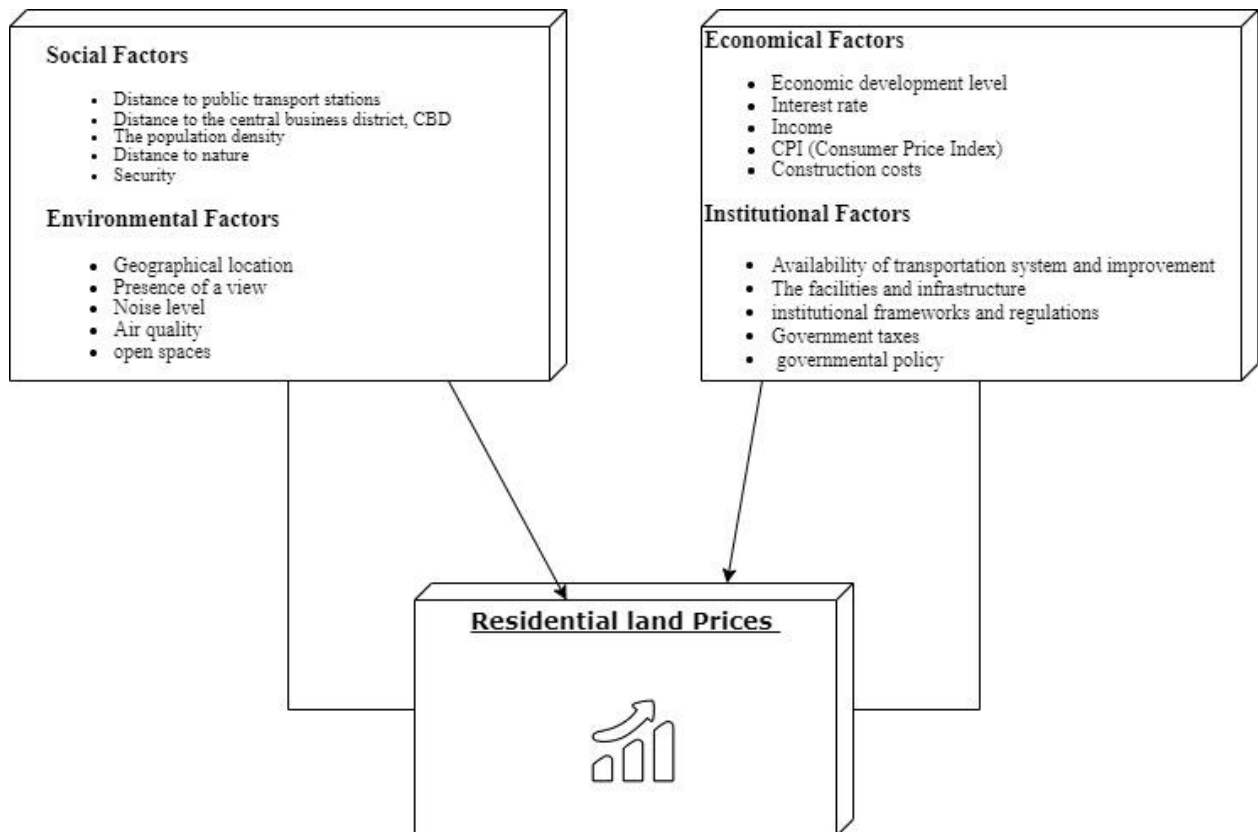


Figure.4 Conceptual framework - factors affecting residential land prices.

Factors Affecting Residential Land Prices

Land valuation is a procedure of assessing the attributes of a given piece of land (Ai, 2005). Property value has been established to be a function of some sets of essential attributes in the real estate domain Choy (as cited in Abidoye & Chan, 2016). To calculate and evaluate land and property value, it is fundamental to study factors affecting land prices. Studying factors influencing residential land prices has been done by numerous researchers (Huyen et al., 2017).

Many previous studies divided the factors that affect residential property into categories. (Huyen et al., 2017) divided the factors into social factors, economic factors, regional factors and individual factors. (Le Dinh & Nguyen Thi, 2017) however, identified location, security, and surroundings as factors affecting land prices. To add (Abidoye & Chan, 2016),

categorized their factors as structural, neighbourhood, and locational. Others who specified their categories of factors were Binoy et al. (2022). They termed identified factors according to parameters such as: accessibility and proximity parameters, socioeconomic and neighbourhood parameters as well as site characteristics.

(Suriyanto et al., 2019) divided the identified factors into social, economical, environmental, and governmental factors. To summarize the literature reviewed, this researcher compiled the identified elements or factors that affect land prices. As such, those factors were incorporated and divided into social, environmental, economical, and governmental factors.

Social Factors

According to Suriyanto et al. (2019), indicators of social factors include population's characteristics such as, total population, number of families, level of education, prevalence of crime. Therefore, a higher population density creates higher demand, which in turn create greater competition for a piece of land and thereby, greater willingness of buyers to pay higher prices. However, the value of land also depends on the distance social infrastructure (hospitals, schools, supermarkets, parks, and others) is from the land (Huyen et al., 2017).

Land Rent Theory is the theoretical framework that connects accessibility to land pricing. Alonso (as cited in Li, 2018). According to Alonso, Muth and Evans (as cited in Anantsuksomsri & Tontisirin, 2015), Rent Theory implies that land value is essentially influenced by the trade-off between accessibility and transport costs. This theory proposes that higher rent indicates more accessible social infrastructure and services access (Li, 2018).

Traditional Location Theory stipulates that land prices should reflect proximity to a transit station (Yu et al., 2017). Accessibility parameter is defined as the distance between each street and the nearest location of the public service units (Topcu & Kubat, 2009). such as health service facilities (Son et al., 2020; Topcu & Kubat, 2009; Arvianti, 2021), Sports facilities (Sigit et al., 2020; Fan & Shaoji, 2007) and shopping facilities (Ai, 2005; Arvianti, 2021; Son et al., 2020; Suriyanto et al., 2019).

Residential land prices are significantly influenced by their distance to public transport stations (Le Phuong et al., 2020). The proximity of residential properties to Mass Rapid Transit (MRT) stations significantly affects residential property prices (Arvianti, 2021). Li (2018) noted that the proximity to metro stations is typically positive but nonlinear.

Furthermore, people who live in the suburbs are more inclined to pay more to be close to a Bus Rapid Transit (BRT) station (Mulley et al., 2016).

The Central Business District (CBD) of a city is the most developed and densely populated land use area forming in the urban centre of a city (Hu et al., 2016). Proximity to the CBD would make properties more attractive and increase their value (Debrezion et al., 2007; Li, 2018). The effect of distance on land values is significant and negative, which means that the farther from the city centre, the lower the price (Lewis, 2007; Suriyanto et al., 2019). According to (Lewis, 2007), the influence of distance on the price of land has also declined over time.

In this research, it was found that there is a significant association between social factors and land prices. As earlier mentioned in previous publications proximity to public transportation stations of all types such as: bus stations, railway stations, BRT stations, and Metro stations have shown such significances. Other common social factors were the distance to the central business districts (CBD), and the density of the population. Table. 1 summarises the various social factors affecting residential property prices. This researcher also found that land share of property value, employment accessibility, distance from the sea, number of bathrooms and walkable environments were the least mentioned factors.

Table. 1 Social factors affecting residential property prices.

Social Factors	Source
Distance to public transport stations (bus, railway station, BRT, and Metro stations)	(Inagaki & Sadohara, 2019) (Son et al., 2020) (El Araby, 2003) (Mohammad et al., 2013) (Anantsuksomsri & Tontisirin, 2015) (Debrezion et al., 2007) (Li, 2018) (Yu et al., 2017) (Kim & Lahr, 2014) (Tordai & Munkácsy, 2022) (Mulley et al., 2016) (Le Phuong et al., 2020) (Perdomo, 2011) (Arvianti, 2021)

<p>Distance to the CBD (Central Business District)</p>	<p>(Surianto et al., 2019) (Alimudin et al., 2017) (Son et al., 2020) (Smersh et al., 2003) (Rashid et al., 2018) (Le Dinh & Nguyen Thi, 2017) (Li, 2018) (Liu et al., 2019) (Topcu & Kubat, 2009) (Lewis, 2007) (Hu et al., 2016) (Bowes & Ihlanfeldt, 2001)</p>
<p>The population density</p>	<p>(Jiang et al., 2013) (Wang & Zhang, 2014) (Li, 2015) (San Ong, 2013) (Series, 2013) (Mostafa, 2018) (Rashid et al., 2018) (Hua et al., 2012) (Narvada, 2022) (Song et al., 2022)</p>
<p>Distance to nature (Closeness to forest, open areas, parks, lake, or outdoor areas)</p>	<p>(Son et al., 2020) (Rashid et al., 2018) (Simons & Saginor, 2006) (Espey & Owusu-Edusei, 2001) (White & Leefers, 2007) (Sharma, 2013) (LIM & LAU, 2018) (Arvianti, 2021) (Hu et al., 2016)</p>
<p>Security</p>	<p>(Alimudin et al., 2017) (Rashid et al., 2018) (Le Dinh & Nguyen Thi, 2017) (Sigit et al., 2020) (Oloke et al., 2013) (Aliyu, 2012) (Abidoye & Chan, 2016)</p>

Economical Factors

The global economy is impacted by rising output and productivity fluctuations, and the housing market is no different.(Rehman et al., 2020). The real estate market's relationship between supply and demand determines its equilibrium price (Zhang, 2021). Therefore, many cities' high and continuously rising residential land prices pose significant challenges to economic development and social stability (Yang et al., 2017). Due to current market price distortions and economic abnormalities brought on by the high demand, Kuwait has some of the highest land prices in the world (Mostafa, 2018), as well as China's expensive housing prices have emerged as a phenomenon that troubles the entire country (Zhang, 2021).

The interest rate, unemployment, construction costs, and residential building approval are frequently used in pricing models to explain regional price differences. These elements would affect land supply and demand, thus impacting land prices (Narvada, 2022). Furthermore, the measure of housing prices is collectively determined by consumer prices, construction costs, interest rates, income, and housing credit (Rehman et al., 2020).

This study have found a significant association between economical factors, especially the GDP and land prices. It was able to draw the general conclusion that there is a positive correlation between the economical aspects and land prices. Existing literature documents nine economical determinants affecting residential property; the most repeated factor according to the literature review is economic development level (per capita GDP, growth in GDP, and gross national income). These are followed by the interest rate and by income and Consumer Price Index (CPI), as shown in Table (2). At the same time, the least mentioned factors were oil prices, investment demand, the inequity between demand and supply, and the employment rate.

Table. 2 Economical factors affect residential property prices.

Economical Factor	Source
Economic development level (per capita GDP, growth in GDP, and gross national income)	(Jiang et al., 2013) (Tcha, 2005) (Son et al., 2020) (Rahman, 2010) (Rahman, 2008) (Cunha & Lobão, 2021)

	<p>(Égert & Mihaljek, 2007)</p> <p>(Renigier-Biłozor & Wiśniewski, 2012)</p> <p>(Chai et al., 2021) (Li, 2009)</p> <p>(Li & Chiang, 2012)</p> <p>(Hua et al., 2012)</p> <p>(Rehman et al., 2020)</p>
Interest rate	<p>(Tcha, 2005)</p> <p>(Rahman, 2010)</p> <p>(Rahman, 2008)</p> <p>(Series, 2013)</p> <p>(Cunha & Lobão, 2021)</p> <p>(Égert & Mihaljek, 2007)</p> <p>(Alhawil et al., 2020)</p> <p>(Zainuddin & Yusof, 2020)</p> <p>(D Trofimov & CD Xuan, 2018)</p> <p>(Mohan et al., 2019)</p> <p>(Zheng et al., 2021)</p> <p>(Miregi & Obere, 2014)</p> <p>(Chung, 2012) (Narvada, 2022)</p>
Income	<p>(Wang & Zhang, 2014)</p> <p>(Reed, 2016)</p> <p>(Rahman, 2010)</p> <p>(Rahman, 2008)</p> <p>(Series, 2013) (Islam, 2012)</p> <p>(Huynh-Olesen et al., 2013)</p>

	(Narvada, 2022)
CPI	(Li, 2015) (Ahmed, 2020) (D Trofimov & CD Xuan, 2018) (Li & Chiang, 2012) (Ge & Du, 2007) (Rehman et al., 2020)
Construction costs	(Wang & Zhang, 2014) (Alhawil et al., 2020) (Liew ¹ & Haron, 2013)

Gross domestic product (GDP) is the value of all the finished services and goods produced in a country during a given time period. It is often computed annually, is recognised as the standard statistic for comparing the state of the world's economies (Li, 2015). In Zandi¹ et al. (2015) study, housing price was positively correlated with all economic parameters and identified GDP as the second most crucial factor influencing Penang real estate costs. (San Ong, 2013) found that the GDP significantly and positively correlated with the housing prices in Malaysia. In Central and Eastern Europe, Égert & Mihaljek, (2007) found a strong positive relationship between per capita GDP and house prices. Similarly, Yang et al. (2017) found the same relationship in major cities in China which did not change over time. In contrast Tcha (2005) however, revealed that the GDP is only significant in the Gangnam area, whereby the house prices were negatively affected by GDP.

Interest rates can significantly impact many assets, including housing prices (Colak, 2021). Lower interest rates imply lower mortgage repayments, allowing bank handlers to borrow more at any given repayment-to-income ratio causing an increase in housing demand and driven up prices (Rahman, 2010) and (Series, 2013). Moreover, the interest rate was negatively significant in explaining land prices in both urban and rural regions in Mauritius (Narvada, 2022). A one per cent rise in interest rate will reduce housing prices by one per cent in Hong Kong (Chung, 2012). Also, in central and eastern Europe (Égert & Mihaljek, 2007) found robust relationships between real interest rates and house prices. In the long run, the interest rate is the most important or the second most crucial factor in purchasing and house prices for Gangnam, Gangbuk and the entire nation (Tcha, 2005). Additionally, compared to

house prices in OECD countries, house prices in central and eastern Europe tend to rise twice as quickly for an equivalent drop in real interest rates. (Égert & Mihaljek, 2007).

Although the housing sector is crucial from an economical point of view, the connection between oil prices and home prices has surprisingly received less attention. International oil prices have a more prominent and significant asymmetric effect on residential prices than GDP and interest rates. A 1% increase in upstream international oil prices results in a cumulative growth of 37.15%, whereas a 1% decrease in oil prices results in a 10.82% decrease. (Rehman et al., 2020). At the same time, the increase in oil production is one of the factors that caused the rise of house prices in Saudi Arabia, leading to increase money circulation (Alhawil et al., 2020).

Environmental factors

Environmental factors as defined by International Valuation Standards Council (IVSC) glossary are "influences external to the property being valued which may have positive effect, negative effect, or no effect at all on the property's value" (Parker, 2016). The property may be affected by either natural calamities like flooding, non-natural like contamination, or current use issues such as non-conforming users (Schulte, 2000). Some properties will be impacted by environmental factors inherent to the property or the surrounding area and affect the property interest's value (Schulte, 2000). Hedonic Theory declares that environmental characteristics such as air and water quality can affect the profitability of land in the form of producer and consumer goods (Son et al., 2020).

Research have found ten environmental factors affecting the residential properties, while the literature review made found that the most repeated factor is the geographical location which is the district that the property is in (Li, 2018). This finding from fifteen publications, followed by the presence of view such as waterscapes which is mentioned nine times during the literature, and the level of noise from surrounding streets and airports which were mentioned eight times from within the publications. The publications reviewed for environmental factors are listed in Table 3.

Table.3 Environmental factors affecting residential property prices.

Environmental Factors	Source
Geographical location	(Surianto et al., 2019)

	<p>(Buxton & Taylor, 2011)</p> <p>(Series, 2013)</p> <p>(Mohammad et al., 2013)</p> <p>(Smersh et al., 2003)</p> <p>(Yaagoubi et al., 2021)</p> <p>(Le Dinh & Nguyen Thi, 2017)</p> <p>(Olanrewaju et al., 2018)</p> <p>(Li, 2018)</p> <p>(Anderson & West, 2006)</p> <p>(Iman & Chin, 2005)</p> <p>(Ge & Du, 2007)</p> <p>(Huyen et al., 2017)</p> <p>(Le Phuong et al., 2020)</p> <p>(Abidoye & Chan, 2016)</p>
Presence of a view (waterscapes, Aesthetic,)	<p>(Qu et al., 2020)</p> <p>(Mousa & Saadeh, 2010)</p> <p>(Jayasekare et al., 2019)</p> <p>(Rashid et al., 2018)</p> <p>(Simons & Saginor, 2006)</p> <p>(Ai, 2005) (Seiler et al., 2001)</p> <p>(Bond, 2008) (Hui et al., 2007)</p>
Noise level (Airport, Road,)	<p>(Ai, 2005)</p> <p>(Sigit et al., 2020)</p> <p>(Espey & Lopez, 2000)</p> <p>(Brandt & Maennig, 2011)</p> <p>(Łowicki & Piotrowska, 2015)</p>

	<p>(Hui et al., 2007)</p> <p>(Egbenta et al., 2021)</p> <p>(Suksmith & Nitivattananon, 2015)</p>
Air quality	<p>(Son et al., 2020)</p> <p>(Mostafa, 2018)</p> <p>(Azmi et al., 2012)</p> <p>(McCord et al., 2018)</p> <p>(Hui et al., 2007)</p> <p>(Suksmith & Nitivattananon, 2015)</p>
Open spaces	<p>(Abul-atta & El Damaty, 2019)</p> <p>(Geoghegan, 2002)</p> <p>(Irwin, 2002)</p>

There is widespread agreement that location plays a key role in determining a property's value (Iman & Chin, 2005). A decent living location may minimise the money and time costs of travelling from home to the workplace or other public service elements (Qu et al., 2020).

Despite the number of publications on the geographical location factor for residential property prices, there is still no consensus that location is the most crucial factor affecting the residential land property. Abidoeye & Chan, (2016), Le Phuong et al.,(2020), and Huyen et al., (2017) found that the property location is the most significant factor influencing the prices. As for the others, Ge & Du, (2007), Li, (2018), Olanrewaju et al., (2018), and Le Dinh & Nguyen Thi, (2017) found that geographical location is one of the significant element influencing residential property values. Yaagoubi et al. (2021) in addition found location to be the significant factor, according to Makkah Mosque, affecting land values in Makkah, Saudi Arabia.

The view is determined by 3D space attributes such as surrounding land use and terrain (Jayasekare et al., 2019). In studying environmental factors (Qu et al., 2020) focused on the natural and cultural aspects such as the two main environmental amenities; waterfront and park. Representing cultural environmental amenities is an important factor for Chinese

universities as they give importance to public recreation facilities. Furthermore, (Jayasekare et al., 2019) also found the importance of aesthetic views when explaining house prices in the Illawarra region of Australia. At the same time, he also found that a beach view is the most critical of aesthetic views. A 1% increase in beach view raises house prices by nearly 2-3%. Views of the sea, conservation areas, and inland water contribute significantly and positively to prices. Interestingly, In China, water is a representation of treasure. Real estate investors therefore, have greater interest in properties that are in close proximity to a body of water because their inhabitants prefer living near water (Ai, 2005).

When studying the effect of aviation on property values in Thailand, (Suksmith & Nitivattananon, 2015) noted that only noise and air pollution had negatively and significantly affected property values. In contrast to the study by relating to ambient noise level showed that it had a positive effect on residential property values whereby a 1% rise in ambient noise would boost an apartment's sale price by 0.9%.

According to the literature, the least mentioned environmental factors affecting residential properties value based on the literature are soil, water quality, pollution level, orientation, and coronavirus disease (COVID-19). However, (Sigit et al., 2020) studied the soil quality from the perspective of water absorption, and found that soil quality is one of the significant factors that affect Property value in J City. (Son et al., 2020) study on the quality of soil found that it is one of the significant environmental factors that affect land values. It is a significant factor since soil quality represents various characteristics such as weak, low, or depressed areas, as the presence of poor soil quality affects the construction prices.

(Leggett & Bockstael, 2000) used the hedonic price model to show that water quality significantly affects property values along the Chesapeake Bay. They found that improvements in water quality can have a positive and significant effect on residential property values. Furthermore, (Kim & Boxall, 2016) who studied the water quality improvement in Chestermere Lake, discovered that the economic impacts of improving and stabilising lake water quality are significant and that the additional property tax benefits would be sufficient to cover the improvement.

In the study by (Ma & Narwold, 2019) they suggested that house orientation is a significant factor in determining house valuation. Similarly, (Rashid et al., 2018) studied the orientation of the building found it to be one of the locational factors that affect residential property value.

However, (Sigit et al., 2020) discussed the pollution level as one of the neighbourhood factors that significantly influence the residential property values in J city and (Ai, 2005) mentioned that when the land is near the pollution source, it means that the plot has a poor environment.

(Katafuchi, 2021) analysed how the behavioural changes associated with the novel coronavirus disease (COVID-19) have affected residential land prices in Japan, revealing that the spread of working from home (WFH) might positively affect residential land prices. At the same time, (Nam) aims to determine the impact of factors on residential land prices during the period 2020 to 2021 to find the impact level of the pandemic, a cycle of the pandemic repeats, and the measures to prevent and fight the pandemic have the powerful impact on the residential prices in Vietnam.

Governmental Factors

Governmental factors, as they relate to relevant laws and government policies controlling land development or land use, may constrain supply, creating a binding constraint on growth in the market. The controls and policies by the governments upon land values as studied by Asabere & Harvey and Nallathiga (as cited in Binoy et al., 2022); Morandé et al. (as cited in Binoy et al., 2022) found that government regulations and restrictions are essential factors influencing land prices in Chile. Needham (as cited in El Araby, 2003), and (as cited in Zhang, 2021) highlighted that political choice factors are significant determinants of land prices in the Netherlands, He believes that it is important to take political influences into account when determining house prices.

The availability of infrastructure facilities provided by urban local bodies, urban development authorities, and other service-providing agencies for facilities such as roads, transportation, communication, water supply, sanitation, electricity, also affects land value (Swamidurai, 2014).

Hilber and Vermeulen (as cited in Wassmer & Williams, 2021) argued that removing legislative restrictions on residential land use would result in a 20–40% decrease in house prices in the average English LPA.

Much research has been conducted on institutional factors affecting residential property prices. Empirical studies indicated that FAR strongly influences land prices, especially in the cities of China (Cai, Wang, & Zhang, 2017; He et al., 2010). They also found that developers were

willing to pay more for a greater FAR (as cited in Qu et al., (2020). Furthermore, (Binoy et al., 2022) found that Land value has a high positive correlation with permissible FAR; When the FAR value is raised by 0.5, the land price rises by 31%. In contrast, (Qu et al., 2020) found that greater FAR means less public space in the community and a lower comfort level for residents.

(Ha et al., 2022) studied ten independent factors that affect residential land prices in the regression model. They found that road width and road are two of the three factors that mainly influence residential land prices. Moreover, (Wang et al., 2022) found that governmental policy significantly influenced house prices ,and the significant factors also included the density of roads, banks, and supermarkets.

This research investigated and the findings from the literature showed that the three most frequent institutional factors that affect residential property were the availability of transportation systems (BRT, Metro, rail transit) and the maintenance of the facilities and infrastructure. Those would include the number of primary schools and middle schools, and the number of hospitals and Institutional frameworks and regulations like the land use, Table 4 lists the instutitional factors affecting residential property prices.

Table. 4 Institutional factors affecting residential property prices.

Governmental Factor	Source
Availability of transportation system and improvement (BRT, Metro, rail transit)	(Binoy et al., 2022)
	(Kulish et al., 2012)
	(Li et al., 2021)
	(Mohammad et al., 2017)
	(Diao et al., 2017)
	(Olanrewaju et al., 2018)
	(Sigit et al., 2020)
	(Martínez & Viegas, 2009)
	(Vichiensan et al., 2021)
	(Deng et al., 2016)
(Filippova & Sheng, 2020)	

	<p>(Wieser, 2006)</p> <p>(Arum & Fukuda, 2020)</p> <p>(Trojanek & Gluszak, 2018)</p> <p>(Yu et al., 2017)</p>
<p>The facilities and infrastructure (The number of primary school and middle school, and the number of hospital)</p>	<p>(Jiang et al., 2013)</p> <p>(Surianto et al., 2019)</p> <p>(Canada et al., 2006)</p> <p>(Geng et al., 2021)</p> <p>(Huyen et al., 2017)</p> <p>(Meelun, 2021)</p> <p>(Zhang et al., 2021)</p> <p>(Arum & Fukuda, 2020)</p>
<p>Institutional frameworks and regulations like the land use</p>	<p>(Surianto et al., 2019)</p> <p>(Rahman, 2010)</p> <p>(Rahman, 2008)</p> <p>(Janmaat, 2007)</p> <p>(Mohammad et al., 2013)</p> <p>(Joo et al., 2011)</p> <p>(Li & Chiang, 2012)</p> <p>(Wassmer & Williams, 2021)</p> <p>(Ihlanfeldt, 2007)</p>
<p>Government taxes</p>	<p>(Zhang, 2021)</p> <p>(San Ong, 2013)</p> <p>(Rahman, 2010)</p> <p>(Rahman, 2008)</p> <p>(Gyourko & Krimmel, 2021)</p>

Governmental policy	(Zhang, 2021) (El Araby, 2003) (Wang et al., 2022) (Zheng et al., 2021)
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Living farther from the city, where land and housing prices are low and home sizes can be big, is more viable, especially in places with better transportation infrastructure (Kulish et al., 2012). Transport accessibility enhancement significantly contributes to travel demand and development; complementary investment policies and creating momentum or expectations have also played an essential role in enhancing land-use impacts (Deng et al., 2016).

Mohammad et al. (2017) confirmed that the rise in the value of residential and commercial properties was caused by the existence of the Dubai metro which, is a policy implication for funding future public transport proposals. Moreover, the power of Bus Rapid Transit (BRT) to provide significant transportation improvements at low to medium costs and in a short implementation time has prompted decision-makers to deploy BRT schemes as early as possible (Deng et al., 2016). As a result of the Northern Busway's opening in Auckland, (Filippova & Sheng, 2020) found that the average sale price for properties (within 800 metres of the Northern Busway) went up by approximately 3.69%.

Jiang et al. (2013) discussed that Urban infrastructure could reflect a city's development degree. The perfect degree of urban infrastructure directly influences the urban land price level. It was found that 1 unit change of hospital beds will lead to residential land price changes of 0.086 units.

Educational facilities are becoming increasingly important, as a consequence of the rising demand for quality education resources (Lee, 2015). Abul-atta & El Damaty (2019) found that the presence of primary schools is a significant factor in the disparity in real estate prices in Cairo. In addition, (Zhang et al., 2021) found that educational facilities are one of two crucial determinants of Wuhan's Residential Land Prices (RLP) distribution. At the same time, (Meelun, 2021) found that the number of educational and medical institutions within the neighbourhood are two factors that significantly impact the value of residential properties in the Southern Suburbs of Cape town.

One of the least mentioned governmental factors affecting residential property value in the literature are; financial deregulation and innovation, levies and charges, gross floor area, the density of houses, the presence of Public Green Spaces, Facade of the buildings on streets, presence of recreational area and commercial land use in a neighbourhood.

Conclusions

A wide range of factors influence the prices of residential land in the world. Identifying these factors that affect residential land prices is crucial for the country's economy and people's ability to afford houses. This paper provided an overview of the factors that affect residential land prices. The literature was used to create a list of relevant residential land factors. The conceptual framework incorporated the main factors that affect residential land prices, including social, environmental, economic, and institutional categories. All the factors found in previous research are reported as elements that affect residential land prices. These related factors may be used as topics for further research and discussions in the field of residential land values and prices.

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