

Analysis of Land Price Value In Tenayan Raya District as An Urban Service Center

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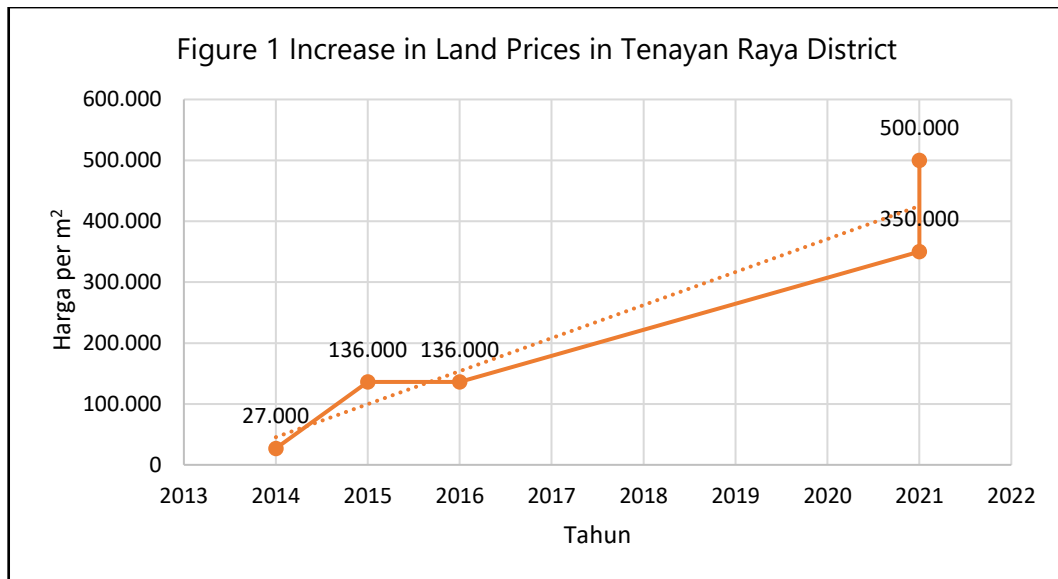
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ABSTRACT: The phenomenon of rising land prices around the government office area in Pekanbaru City has become a significant concern due to its consistent increase since the development of these offices. This research aims to analyze the factors influencing these escalating land prices, providing insights into the underlying determinants. Employing the hedonic pricing method, the study examines how internal and external characteristics of land contribute to its value. The findings reveal that several factors significantly affect land prices, including proximity to the main road, distance to the city center, and accessibility to healthcare facilities. Additionally, community occupational characteristics, such as private employees, entrepreneurs, traders, and civil servants, also play a crucial role in shaping land prices. These results highlight the interplay between accessibility, occupational factors, and infrastructure development in determining land value. The study concludes that understanding these factors is essential for policymakers and urban planners to manage land use and development effectively, ensuring sustainable urban growth and equitable access to land resources.

Keywords: land price increase, office development.

INTRODUCTION

The city of Pekanbaru moved the location of government offices from the city center to Tenayan Raya District with a distance of ± 15 km. The initiation of the relocation of the Pekanbaru City government office and the construction process has started around 2014. Limited land and workspace for civil servants so that it also requires the expansion of office buildings. This triggered the transfer of functions from the old office located in Sukajadi District to a Public Service Mall (MPP) even though the mayor, deputy mayor and regional secretary can still have an office there (Zamora & Setiawan, 2022). The location selection is determined in Tenayan Raya District, which based on the 2014-2034 Pekanbaru RTRW, the Tenayan area is a development area IV developed for residential areas, commercial areas, office and city government areas, tourism areas, and agricultural areas (Kumala, 2018). Based on these rules, of course, the location of the new Pekanbaru City government office is in accordance with the 2020-2040 Pekanbaru City RTRW in Regional Regulation No. 7 of 2020 which is also adjusted to the Riau provincial RTRW and the National RTRW. The source of funding for the relocation of this office comes from the Regional Expenditure Revenue Budget (APBD) which is carried out in stages.



Source : Zamora and Setiawan, 2022

A development will convert land from its previous function. The change in the price of land purchased by the government for the construction of an office that was formerly an oil palm plantation was Rp. 27,000 per m² in 2014, in 2015-2016 it increased to Rp. 136,000 per m². It increased again in 2021 to a price range of Rp. 350,000,- per m² to Rp. 500,000,- per m² (Zamora & Setiawan, 2022). The urban development process is also influenced by changes in land prices from time to time (Colavitti & Serra, 2023). With the increase in land prices which represents development in terms of changes in land use. The relocation of the Pekanbaru City government office to Tenayan Raya District, where there are still many land excision conditions that have not yet been built, has indications to trigger the development of a new city core. In addition, if you look at the settlement or housing that has emerged, based on data issued in the Developer Group Information System (SiKumbang) developed by the Ministry of Public Workers and Public Housing (PUPR) and the People's Housing Savings Management Agency (BP Tapera) in 2020-2024, there are the number of housing development companies in Tenayan Raya District, although the number is still fluctuating, the change is not too significant.

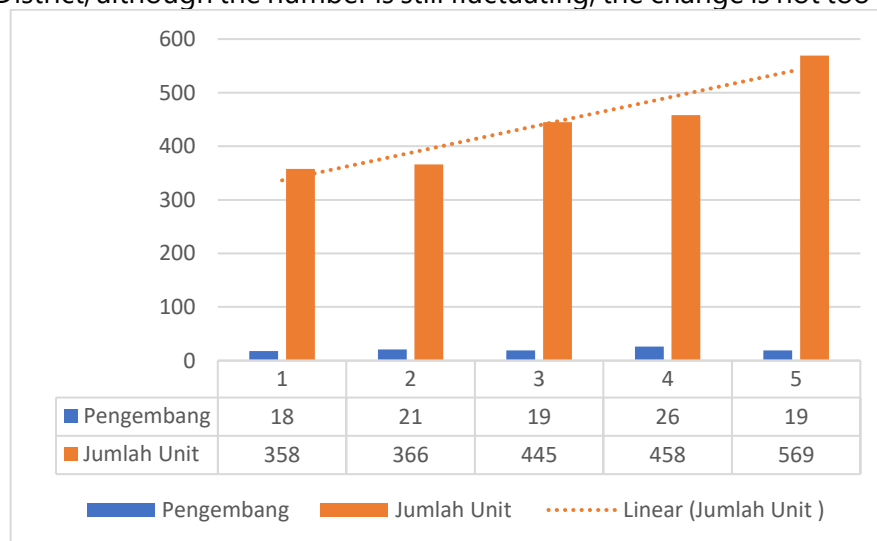


Figure 2 Number of Housing Development Companies and Number of Units Built in Tenayan Raya District 2020-2024

Source : SiKumbang, 2024 (has been reprocessed)

This indicates that the supply for houses is increasing, which is likely because the increase in land prices will be in line with house prices. It is also indirectly increasing the interest of home buyers and increasing the number of people who want to live in the sub-district. One of the impacts of office construction in the Tenayan Raya District area as the formation of a new city core is that there is an increase in land prices, in fact, it still causes perceptions that are contrary to the fact of increasing land prices. One of them is the statement of Dr. Mardianto Manan, MT., IAP, a spatial planning observer and lecturer in the *Pancasila Youth Focus Group Discussion* in 2020 entitled "Is It True that the Pekanbaru City Government Office Development Multiyear Project in Tenayan Raya". Based on research on the construction of toll roads as access will increase land development and land prices (Masykuroh & Rudiarto, 2016; Rahadian & Bawono, 2023), while research on the location of corner houses is not the main reason for the selection of land that will have an impact on the price of the land (Juliana & Riyanto, 2022). However, until now, to the best of researchers' knowledge, there has been no research that looks at the factor of increasing land prices as an impact on the construction of government offices. In fact, the construction of this office is certainly in line with the emergence of social and economic facilities that will be a factor in the increase in land prices and changes in land use that illustrate efforts to develop an equitable area. For this reason, it is necessary to look at the factors that affect the increase in land prices.

Theoretical Overview

Determining Factors of Land Prices

Physical factors: concerned with the physical factors and structures offered from the property or the surrounding environment. Internal influence mechanisms for land prices that drive residential property prices include topographic factors, construction levels and accessibility development (Wang, Wang, & Wang, 2018). The quality of the property as well as the structure in the property area (Sutianingsih, 2020), this will indicate that the better the physical quality of a property, the higher the price.

1. Distance: distance has a positive and significant influence on property value, the access offered by distance will provide an offer that the closer the access or distance, the more the property value will increase (Sigit, 2018). The distance in this can be reached with the existence of road infrastructure. The construction of roads for suburban areas is an effort to get people out of poverty by improving connectivity between their regions (Aggarwal, 2018).
2. Environment: the proximity between the property and the facilities in the area or area. The more diverse the quality of the environment in the property area, the higher the price will be (Rahma, SBM, & Nugroho, 2010). This is in line with access to health, education, and recreational facilities having a significant impact on the price of houses as property (Ouyang, Cai, Yu, & Li, 2022). Furthermore, according to Yuan, et al. (2018) that proximity to medical centers seems to be relevant in predicting regional variations in land prices. Related to good quality educational facilities can lead to an increase in property prices (Chan & Hu, 2003). Accessibility to various urban facilities significantly affects house prices, for example access to educational, health and recreational facilities (Shin, Newman, & Park, 2024). In developing countries, the importance of accessibility to public services and facilities in the real estate market is due to real infrastructure disparities (Marinković, Džunić, & Marjanović, 2024).

According to Setiawan (2006) other motivations for appraisers or consumers to purchase a property depend on:

1. The emotional consumer motives in question are:

- a) Pride due to personal appearance
 - b) In order to avoid dangerous situations regarding security aspects
 - c) Appraisers want to be different from others
2. The rational consumer motives in question are:
- a) Ease and efficiency in use
 - b) Durable
 - c) Can help increase income
 - d) Economical use
 - e) Generosity of purchase price

Although the consumer motives mentioned above can apply to all consumer groups, in general, the lower the status of consumers, the smaller the emotional consumer motives will be (Sumarauw, 2015).

Hedonic Pricing Method

According to Yeh (2004) the hedonic method is used to estimate the price value of facilities for different groups. Furthermore, Yeh (2004) explained that the main use of the hedonic price method is to identify price factors based on the premise that prices are determined both by the internal and external characteristics of goods and services that create value for their owners. Hedonic techniques are techniques designed to measure the level of desire of a product. The importance of service facilities related to hedonistic pricing reveals that there are several value generators that come from ecosystems, such as traffic connectivity, water and air quality, proximity to education valleys, health or city centers and major business centers (Wu, Ren, Hu, & Du, 2019).

Planning

Based on Law No. 25 of 2004, planning is the process of determining the right future action through the order of choice by taking into account the available resources. Regional development planning itself is a process to determine future policies, through a sequence of choices involving various stakeholder elements, in order to utilize and allocate existing resources within a certain period of time in the region (Permendagri 86/2017). Urban planning is a process that is applied as a way to regulate the dynamics of human actions in cities with the aim of establishing guidelines that regulate spatial housing through typical patterns of use, community mobility, distribution of goods and services and green spaces in the area in order to provide uniformity in the distribution of burdens and benefits generated by infrastructure development.

Demand and Supply Theory

Demand Theory

Demand or demand is the desire of buyers or consumers, in this case, the public to buy an item that they want and can afford to buy at a certain price and time. In line with this, Mankiw (2012) said that demand is the number of goods purchased by someone who is able and willing to pay the baranf at a certain price level within a certain time span

Supply Theory

The quantity of many goods offered from each good and service that the seller is able to sell is called offer or supply. In line with this statement, offer is the number of goods that will be offered by the seller in a certain market, at a certain price level and at a certain period of time. In the context of property market analysis, bidding will refer to the production and availability of the property product itself (Appraisal Institute, 2013).

Curve equilibrium

Balance occurs when the number of goods that buyers want and are able to buy is exactly the same as the number of items that sellers are able to sell (Mankiw, 2018). The price of equilibrium is also called the market-clearing price because at this price point the seller has sold everything they are selling and the seller can buy the barang they want. In the context of housing, rising prices not only pose a risk to price stability, but also contribute to the deepening of wealth and conses income inequality (Bernanke & Gertler, 2001; Wind, Dewilde, & Doling, 2020). In addition to the dynamics of demand and supply in the context of developing countries, the availability of infrastructure and its quality will affect property prices.

The urgency of this research lies in the rapid urban development in Tenayan Raya District following the relocation of Pekanbaru City government offices. The significant increase in land prices highlights the need for a deeper understanding of the factors driving this change to guide sustainable urban planning and equitable land use. Addressing these challenges is critical for managing urban sprawl, ensuring balanced economic growth, and mitigating social inequalities caused by rising land values.

Although land price dynamics have been extensively studied, there is limited research that specifically examines the impact of government office relocation on land prices in the context of emerging urban cores like Tenayan Raya. Existing studies often focus on general infrastructure development or large-scale projects without delving into localized factors such as accessibility, socio-economic variables, and community occupational characteristics. This gap underscores the need for targeted research to explore these nuances in the Indonesian context.

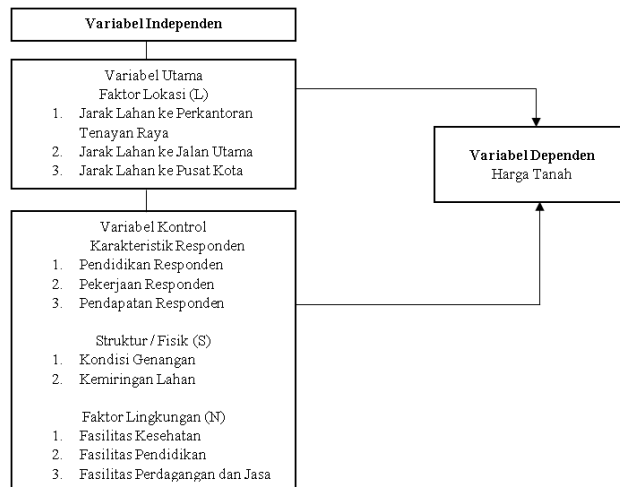
The novelty of this study lies in its application of the hedonic pricing method to analyze land price determinants in a newly emerging urban center. By incorporating variables such as distance to main roads, city centers, and healthcare facilities, as well as community occupational characteristics, this research provides a unique perspective on how government infrastructure projects influence land value. It also bridges theoretical frameworks with practical insights, offering a localized approach to urban economic analysis.

The primary objective of this research is to identify and analyze the factors influencing land price increases in Tenayan Raya District, focusing on the impact of government office relocation and related infrastructure developments. The findings aim to benefit policymakers by offering actionable insights for urban planning and land management, ensuring equitable development. For academics, the study contributes to advancing methodologies in land price analysis, while for local communities, it highlights the socio-economic implications of rising land values, promoting informed decision-making for future investments and developments.

RESEARCH METHODOLOGY

Estimation of the price of land value as property can be done by including attributes and characteristics both directly and indirectly related using *the Hedonic Price Method* (HPM) (Lancaster, 1976). This method is also widely used to model land value. This method models land prices using regression analysis and statistical theory as the basis for interpreting variations in land value samples, in the sense of the relationship between land value variation and land characteristics. Land valuation using Hedonic theory is an assessment method with a market data approach. There are 4 main factors that play a role in the land value model in Tenayan Raya District which consist of structural/physical factors (S), namely inundation conditions and land slopes; environmental factors (N) namely health facilities, educational facilities and trade and service facilities; location factor (L) is the distance of land to Tenayan

Raya offices, the distance of land to the main road and the distance of land to the city center; and the characteristics of the respondents which include the education of the respondents, the work of the respondents and the work of the respondents.



Sumber: Olahan Peneliti, 2024

Figure 2 Research Variables
Source : Researcher Processing, 2024

RESULT AND DISCUSSION

The following are the results of OLS regression by going through 4 stages in each model with one variable added so that it is summarized in the following table:

Variables	Model 1	Model 2	Model 3	Model 4
Office Distance	0.0167652 (0.194198)	0.0197 (0.0189875)	0.0216012 (0.0191813)	-0.040775 (0.0255981)
Main Road Distance	-0.0932184*** (0.278413)	-0.0898*** (0.0282067)	-0.0947*** (0.0289212)	-0.0994934*** (0.0294551)
Distance from City Centre	-0.0155259 (0.0166699)	-0.0059 (0.0163849)	-0.0044 (0.0165453)	-0.0623814** (0.0275511)
JUNIOR		-0.0257738 (0.1353746)	-0.028971 (0.1394114)	-0.0207062 (0.1268475)
SMA		-0.1213828 (0.1421199)	-0.13103 (0.1472767)	-0.1393344 (0.1346552)
S1		-0.0571428 (0.17781999)	-0.04509 (0.18555054)	-0.1473967 (0.1717244)
Laborer		0.1313166 (0.0817383)	0.1366182 (0.0823712)	0.1249183 (0.0745317)
Private		0.3159551*** (0.0817383)	0.3264*** (0.0891844)	0.2792296*** (0.0811908)
Self employed		0.1983092** (0.09542)	0.1987** (0.095937)	0.1877024** (0.0866745)
Merchant		0.3059291*** (0.094594)	0.3045*** (0.0956118)	0.2011809** (0.0887513)
Civil servants		0.2884923** (0.1346541)	0.2831** (0.135479)	0.3044918** (0.1228303)
Income		-0.0526994 (0.0780152)	-0.046011 (0.0793942)	0.0062006 (0.0733299)
Inundation Conditions			-0.025012 (0.071509)	-0.0768097 (0.0680443)

Land Slope			0.0392521 (0.057286)	-0.0146417 (0.0543444)
Distance Health				0.1215229*** (0.0446795)
Distance Education				-0.0179785 (0.0462819)
Distance of Trade in Services				0.010271 (0.0307314)
Cons	13.35748*** (0.2346879)	13.8766*** (1.11929)	13.7354*** (1.129045)	13.70428*** (1.117734)
Number of Observation	100	100	100	100
R Squared	0.2062=	0.3525	0.3605	0.5006

Robust standart errors in parentheses *** p<0.01, ** p<0.05

Source : Researcher, 2024

Tenayan Raya District was chosen as the location for development because it is a sub-district that has an area of 1141.4 km². This sub-district was also chosen because not many of its areas have been built, so it will have great potential to be developed into a new city core. Especially Bencah Lesung Village which is the location where the office was built, although it is not the village with the widest area, but in this village many areas still function as oil palm plantations or land that has not been built. and its surroundings (Colavitti and Serra, 2023).

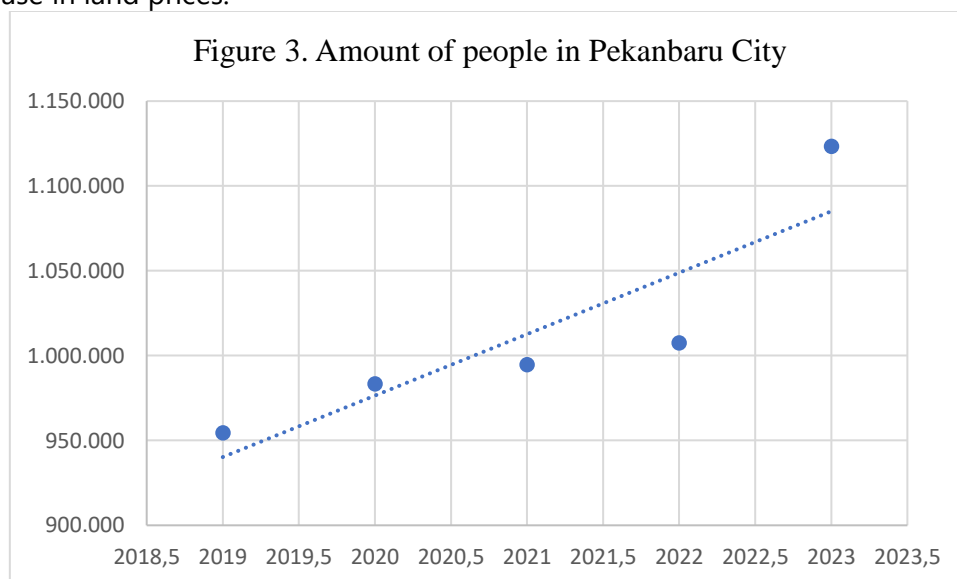
The construction of Pekanbaru City government offices will form a new city core, where land use will develop in accordance with functional land use and economic benefits will be the basis for calculation (Harris and Ullman, 1945). In accordance with the situation around the Pekanbaru City government office, that the government office which is the core of the new city will affect the difference in the facilities needed for certain activities and form a pattern based on its land use. The *hedonic pricing* method is used to estimate the price value of facilities for different groups (Yeh, 2004).

Land is characterized as immovable property that can be transferred from one person to another depending on the fulfillment of certain property rights, so that even if there are temporal changes and developments on the land, including buildings and roads, the land will remain in place (Matamanda, Kohima and Bandauko, 2024). Land prices can be the basis for seeing potential changes in land use (Sasono & Susetyo, 2018). The relocation of offices turns out to have an impact on increasing land prices for the community, there are 3 classes of land prices, namely below Rp. 300,000 per m², between Rp. 300,000 – Rp. 500,000 per m², and between Rp. 500,000 – Rp. 700,000 per m². The most expensive price is between Rp. 500,000 – Rp. 700,000 per m² which is located on an arterial road and closer to the city center, this is due to the ease of accessibility and the topography that is flat and located on an arterial road makes it closer to existing facilities and infrastructure. This is in accordance with the results of the analysis that the variable of land distance to the main road has a significant effect on land prices, because the highest land price is located near the main road located around or close to Jl. Lintas Sumatra.

This is also explained in the rational consumer motivation according to Setiawan (2006) that the selection of property near the main road and the city center because it has ease of use efficiency and can help additional income. In addition to this, the existence of this office development illustrates the conversion of land into other functions that make the value of

urban land influenced by the use given by public decision-makers through regulations planning, regardless of market trends that can limit the supply of land for certain uses, leading to an increase in land value (Colavitti & Serra, 2023). The urban land market functions through the complex interaction of informal processes involving stakeholders such as government agencies, private developers, landowners, financial institutions, and the community in the city (Bhanye, Matamanda, Kohima, & Bandauko, 2024). So it is important to look at various variables based on the opinions or opinions of the local community. The relationship between location factors, namely the distance of land to the main road and the distance of land to the city center, can be explained such as the closer the place to socio-economic facilities, the higher the land price. The development of road infrastructure for areas other than the city center is an effort for people to get out of poverty by increasing connectivity between their regions (Aggarwal, 2018). Land functions in the city center area are more diverse, creating a high demand for land and causing a shortage of land (Bhanye et al., 2024), so that land prices in the city center and towards the city center become more expensive. While the lowest class is the price below Rp. 300,000 per m² which is plantation land, brick industry and unused land that is also found around government offices. Regarding the fact that land is a capital, the fact that the increase in the number of housing units built from 2020 to 2024 in Tenayan Raya District illustrates the increasing supply for houses in line with the increase in land prices. But unfortunately, even though there is an increase in the number of housing units built in Tenayan Raya District, there is no data on the number of house sales in Tenayan Raya District.

Seeing the trend of increasing the population in Pekanbaru City which is increasing from 2019 to 2024, the need for housing will also increase. The number of people used is the population of Pekanbaru City as a whole because a new core city development will also be felt by the impact of its development not only by the people of Tenayan Raya District but also by the people of Pekanbaru City. With the increase in the number of city residents and the increase in the number of housing units built by housing developers in Tenayan Raya District, it indirectly captures the demand for houses in Tenayan Raya District. In line with this, the increase in the number of urban residents causes the need for housing to increase, affecting the increase in land prices.



Source: Pekanbaru City in 2020-2024 Figures (Reprocessed)

in line with the construction of government offices, the surrounding area is a trade and industrial area according to the spatial pattern map of Pekanbaru City 2020-2040. It was

explained by Snyder, Kilgore, Hudson and Donnay (2006) that the characteristics of the community as buyers also describe a significant and positive influence on land prices such as education level, income level and employment and wealth, but in this study only the work of the community or in this context the respondents of this study are the respondents.

That some of these types of jobs can continue to increase in this area apart from the existing facilities providing comfort they will also look for a place that they feel provides security. It is explained that the type of work will be in line with the fact that they choose a property, how the personal appearance and security are needed based on the emotional motives of consumers (Setiawan, 2006). This also explains the results of the regression analysis that the respondents' education on land prices is not significant because what is more motivating emotional motives in the selection of land properties is the work of the respondents. Meanwhile, in the third regression with inundation conditions and land slope, there was no significant effect on the results.

There is a correlation between the location of the land and other facilities because the land has the value of proximity to facilities such as health, education, transportation and other facilities (Ridell, 2004). In this sub-district, there are several health facilities, namely 6 units of Polyclinics/Medical Centers, 3 units of health centers, 3 inpatient health centers, and 10 pharmacies (Tenayan Raya Dalam Angka District, 2023), but there are no hospitals yet. In fact, the uneven development in Tenayan Raya District can be seen in the limited availability of existing health facilities. This is in line with the results of regression analysis that the closer the distance of land to the desired or adequate health facility, the higher the land price will increase. The importance of proximity and convenience in the accessibility of health facilities for the community refers to Article 28H and Article 34 paragraph (3) of the 1945 Law which states that every citizen has the right to receive health services and the state is obliged to provide them, so the government needs to develop an equitable area.

Related to the variable of land distance to health facilities has a significant influence on land prices which is also related to the lack of hospitals in Tenayan Raya District, so that people/consumers have to go to the city center to get these facilities. Seeing from the lack of health facilities, this encourages that there is a significance between health facilities and land prices. This is included in the aspect of comfort chosen by consumers how close to various social and economic facilities and good accessibility to achieve these facilities or attributes. The importance of proximity to health facilities was explained by Yuan (2018) that proximity to health facilities is relevant to predicting property prices. As for educational facilities, it can be said that they are very complete and there are school zoning regulations that make it unnecessary for people to send their children to the city center. Although there is no fixed market in this sub-district, trade dominated by grocery stores already exists near the arterial road.

CONCLUSION

The relocation of government offices to Tenayan District, as the core of Pekanbaru's new city, aims to expand community services, triggering a consistent rise in land prices since development began. Key factors influencing land prices in this area include the distance of land to main roads, city centers, and health facilities, as well as respondents' occupations, such as private employees, self-employed individuals, traders, and civil servants. Accessibility and connectivity play crucial roles, with proximity to main roads offering convenience and socio-economic benefits. The lack of hospitals in the district highlights the significance of health facility access in driving land prices. Additionally, the spatial pattern of Pekanbaru's office area,

designated as an industrial and service trade hub, aligns with community occupational trends that impact land values. Respondents' property choices reflect emotional motives, such as personal status, security, and convenience, alongside rational factors like proximity to essential facilities. Conversely, variables like the distance to government offices, respondents' education and income, land slope, inundation conditions, and proximity to education and trade services showed no significant influence on land prices. This is attributed to factors such as unbuilt land near offices, the prevalence of local educational facilities with zoning regulations, and the dominance of grocery stores over formal trade markets. While the study successfully explains 50% of the variance in land prices, limitations include the absence of precise demand and supply data for housing and the lack of detailed spatial planning consistency in the area's development. These gaps underscore the need for further research to provide a comprehensive analysis of Tenayan District's land price dynamics.

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