

ANALYSIS OF FACTORS AFFECTING PROPERTY LAND RENTAL VALUE FOR TELECOMMUNICATIONS TOWERS (Case Study on Property Land Rental Value for Telecommunications Towers in the Binjai City Region)

By

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Abstract: The purpose of this research is to analyze of factors affecting property land rental value for telecommunications towers, case study on property land rental value for telecommunications towers in the Binjai City Region. This research is a quantitative descriptive research. The location of the research object is in Binjai City, North Sumatra Province in 2022 which is spread over 5 sub-districts namely Binjai City, North Binjai, South Binjai, West Binjai, and East Binjai. The population in this sample is the owners of property land rental for telecommunications towers in the Binjai City Region with a total of 59 owners. The sample used in this study is saturated sampling. So that will be used as a sample in this study is the entire population, namely the owners of property land rental for telecommunications towers in the Binjai City Region as many as 59 owners. A common technique used to analyze the relationship between two or more variables is regression analysis. The results show that type of telecommunications towers has a positive and significant effect on property land rental value for telecommunications towers. Population density has a positive and significant effect on property land rental value for telecommunications towers. Road access to location has a positive and significant effect on property land rental value for telecommunications towers. Availability of electrical energy has a positive and insignificant effect on property land rental value for telecommunications towers.

INTRODUCTION

The rapid development of today's telecommunication technology systems is characterized by the very rapid development of mobile communication technology. The

acceleration of telecommunications technology systems is due to the need for users to communicate and exchange data mobile, quickly, and easily.

Indonesia's population in 2021 based on the Central Bureau of Statistics report for 2021 is 272.682 million people and the level of gross domestic product per capita is US\$3,911.7, where 67% of Indonesia's population is of productive age, so it has a high sense of technology that makes Indonesia as a very promising market for the development of the telecommunications industry. The operation of telecommunications has a strategic meaning in an effort to strengthen the unity and integrity of the nation, expedite government and economic activities, supports the creation of equitable distribution of development and its results, and enhances relations between nations.

A digital telecommunication system is composed of three main components, namely transmitting equipment, communication channels and receiving equipment. Transmitting device is a telecommunications infrastructure that facilitates wireless communication between communication devices and operator networks located in telecommunication towers/transmitting device towers. The main task of a transmitting device is to send and receive radio signals to communication devices such as landline phones, cell phones and other gadgets. Then the radio signal will be converted into a digital signal which is then sent to the other terminal as a message or data.

A telecommunications tower is a tower made of iron which generally has a length of between 40 and 75 meters with varying shapes according to geographical conditions and the targeted network coverage area. There are three types of telecommunications towers that are often found in Indonesia, namely rectangular towers, triangular towers and pole.

Determination of the location of the tower must pay attention to environmental safety, public health, and environmental aesthetics. Based on the Circular of the Director General of Spatial Planning of the Ministry of Public Works Number 06/SE/Dr/2011 dated 14 September 2011 concerning Technical Guidelines for Criteria for Location of Telecommunications Towers, there are general requirements that need to be considered in the construction of towers, namely:

1. Quality of telecommunications services. The location of the tower can guarantee the quality of telecommunications services.
2. Security, safety and health. The location of the tower does not have a negative impact on the security, safety and health of the surrounding population.
3. Environment. The location of the tower, both physically and its supporting infrastructure, does not have a negative impact on the environment.
4. Aesthetic space. The location of the tower does not interfere with the visual quality of space at the location of the tower and the surrounding area.

According to Fanning (2005), the value of a property is determined by several factors, namely physical factors, location, and law. According to Eldred (1987), property prices are influenced by demand, usability, scarcity, and transferability. Meanwhile, according to Hidayati and Budi (2013), the factors that influence the value of a property are distinguished by several factors, namely demand and supply factors, physical property factors, location and placement factors, and national factors and political factors. The construction of telecommunication towers according to Steiner and Butker (2007) is located in a location that has road access to the location, adjusting regional spatial planning,

and giving a sign containing contact information and a structural registration number as a sign that it has a permit.

The selection of a location for the construction of a tower in the middle of a settlement can cause discomfort and health problems for the surrounding population. In the construction of telecommunication towers, there are several problems that often arise, such as:

1. The telecommunication tower does not have a permit.
2. Not in accordance with the spatial plan.
3. The construction site is close to settlements.

The existence of telecommunication towers which are one of the main supporting infrastructures in the operation of telecommunications requires the availability of land and air space. So that the procurement of land for the location of telecommunications towers is very important. Procurement of land for telecommunications towers by way of leasing land or by buying land. The problem that occurs is the price of leasing or purchasing telecommunications tower land that is too expensive from the area around the telecommunication tower location development plan, the high price will have an impact on investors who should place their investments to be not interested in investing or the tower to be erected does not have a coordinate point but is moved outside the coordinate points that are still considered feasible for telecommunication towers to be built, this will have an impact on the quality of radio signals received or sent by transmitting devices to decrease.

The purpose of this research is to analyze of factors affecting property land rental value for telecommunications towers, case study on property land rental value for telecommunications towers in the Binjai City Region.

RESEARCH METHODS

This research is a quantitative descriptive research, in which the approach used in this study is based on a survey approach (Pandiangan, 2015; Pandiangan, 2018, Pandiangan et al., 2022). Survey approach is a quantitative research method used to obtain data that occurred in the past or present, about beliefs, opinions, characteristics, behavior, relationship variables, to test several hypotheses about social and psychological variables from samples taken from certain populations (Pandiangan et al., 2018; Pandiangan, 2022). By taking samples from one population and using observation and interviews as the main data collection tools and collecting data on factors related to research variables, where the research conducted is descriptive with a survey approach to find out or describe the reality of the events studied making it easier to obtain objective data in order to find out the factors that influence the rental value of telecommunication tower property land, as well as find the difference (gap) between the agreed rental values.

The location of the research object is in Binjai City, North Sumatra Province in 2022 which is spread over 5 sub-districts namely Binjai City, North Binjai, South Binjai, West Binjai, and East Binjai.

The population in this sample is the owners of property land rental for telecommunications towers in the Binjai City Region with a total of 59 owners. The sample used in this study is saturated sampling. Saturated sampling is a sampling technique when all members of the population are sampled, this is done when the population is relatively

small/less than 30 or research wants to make generalizations with very small errors (Pandiangan et al., 2021; Pandiangan, 2022). So that will be used as a sample in this study is the entire population, namely the owners of property land rental for telecommunications towers in the Binjai City Region as many as 59 owners.

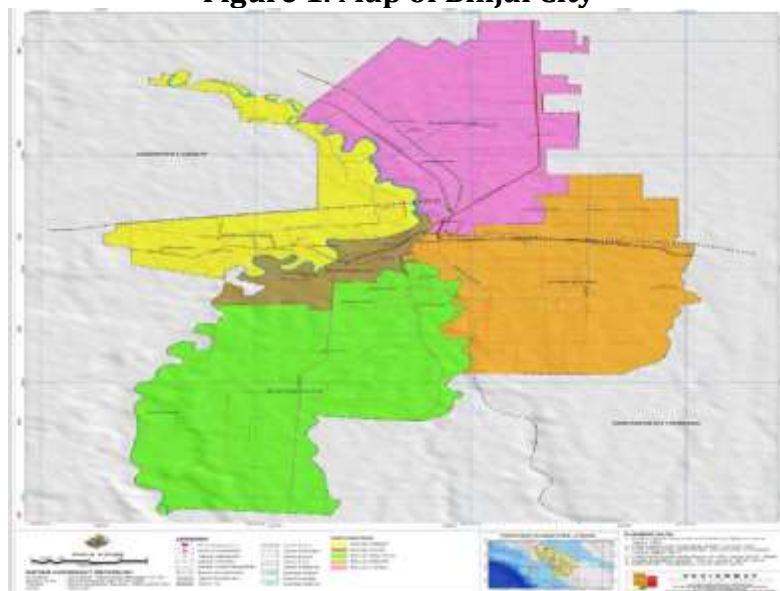
A common technique used to analyze the relationship between two or more variables is regression analysis. Regression analysis is a technique for building straight-line equations and using these equations to make estimates (Pandiangan et al., 2022; Tobing et al., 2018). While the regression equation is a mathematical equation that defines the relationship between two variables. The analytical tool used in this study is multiple linear regression analysis, namely regression analysis which explains the relationship between response variables (the dependent variable) and factors that influence more than one predictor (independent variable). Multiple linear regression is almost the same as simple linear regression, it's just that in multiple linear regression the independent variable is more than one predictor variable. The purpose of multiple linear regression analysis is to measure the intensity of the relationship between two or more variables and make predictions about the approximate value of Y over X.

RESULT

General Description

The Binjai City is a municipality in the North Sumatra Province, Indonesia, which is one of the areas in the Metropolitan City Development project covering the Medan City, Binjai City, and Deli Serdang Regency (Mebidang). Geographically, the Binjai City is directly adjacent to the Langkat Regency to the West and North, the Deli Serdang Regency to the East and South and is located ± 22 kilometers west of the Medan City which is the capital of the North Sumatra Province. The cities of the Medan and Binjai are connected by the Trans Sumatra Highway which connects the Medan City to the Banda Aceh as well as the Trans Sumatra Toll Road. Because of this, the Medan City is located in a strategic area which is the gateway to the Medan City in terms of the Nanggroe Aceh Darussalam Province.

Figure 1. Map of Binjai City



The Binjai City is divided into 5 sub-districts namely the Binjai City, North Binjai, South Binjai, West Binjai, and East Binjai which are further divided into 37 sub-districts. Each sub-district area in the Binjai City has different characteristics, such as:

1. The Binjai Kota District as a commercial area and economic center as well as a center of government.
2. The North Binjai District as an industrial area as industrial area is planned in the Cengkeh Turi Village with an area of 300 ha and an oil and natural gas exploration area in the Tandam Hilir Village area.
3. The East Binjai and South Binjai sub-districts are areas of agricultural concentration.
4. The West Binjai sub-district Livestock development area.

The dynamics of macro-economic growth in the Binjai City are in line with the economic growth of the community which has an impact on the need for telecommunications technology, so that the need for land as capital and the location for the construction of telecommunications towers to support economic activity is increasing.

Soil is a unique property and has a special character, especially its nature, and its rarity and use. This is due to the limited land area or relatively fixed land area, but human needs for land increase so that land has economic value, while land use is influenced by physical characteristics and facilities.

Regression Analysis

Table 1. Regression Analysis

Coefficients^a

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|-------|--------------------|-----------------------------|------------|---------------------------|-------|------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 38558.068 | 12818.508 | | 3.008 | .004 |
| | Jenis_Menara_Tel | 15313.282 | 5848.933 | .324 | 2.618 | .011 |
| | Kepadatan_Penduduk | 8419.976 | 2889.875 | .292 | 2.914 | .005 |
| | Akses_Jalan | 14463.628 | 3595.037 | .399 | 4.023 | .000 |
| | Energi_Listrik | 7720.269 | 6012.686 | .156 | 1.284 | .205 |

a. Dependent Variable: Nilai_Sewa

The results show that type of telecommunications towers has a positive and significant effect on property land rental value for telecommunications towers. Population density has a positive and significant effect on property land rental value for telecommunications towers. Road access to location has a positive and significant effect on property land rental value for telecommunications towers. Availability of electrical energy has a positive and insignificant effect on property land rental value for telecommunications towers.

CONCLUSION

The results show that type of telecommunications towers has a positive and significant effect on property land rental value for telecommunications towers. Population density has a positive and significant effect on property land rental value for telecommunications towers. Road access to location has a positive and significant effect on property land rental value for telecommunications towers. Availability of electrical energy

has a positive and insignificant effect on property land rental value for telecommunications towers.

Suggestions that the author can give as a researcher are as follows:

1. For the Regional Government

This research can be used as new material for academics who are going to conduct research on property land rental value for telecommunications towers, it is recommended to conduct research whose research object takes into account intangible values.

2. For Further Research

it is necessary to look again at other factors that may be the main factors in determining property land rental value for telecommunications towers.

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