The Contribution of Transportation Infrastructure to Economic Activity, Particularly Land Values (Case Study of the Kijing Mempawah International Port in West Kalimantan)

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Port infrastructure development is one of the factors that can influence changes of land value in the surrounding area. Land value in a region can increase or decrease. Increasing of land value can encourage both economic growth and government revenue in a region. Decreasing of land value is determined by external factors such as air pollution and noise level increase which can be harmful to the society. Therefore, it is necessary to identify changes of land value for spatial planning in a region. The purpose of this study is to investigate the effect of the construction of Kijing Port to improve logistics connectivity on land value in the surrounding area. The location of this study is Kijing Port, Mempawah Regency, West Kalimantan Province. The data collection method used in this study was to collect secondary data obtained from the Mempawah Regency Tax and Retribution Management Agency and the Mempawah Regency Public Works and Spatial Planning Agency, as well as the official website of the Mempawah Regency Government. The analysis method used in this study was the Hedonic Pricing Model using Multiple Linear Regression (OLS) and Difference in Difference Analysis. The results of this study indicate that port infrastructure development has a significant effect on land values in the surrounding area. Within 2 km and 5 km buffer zone around the port, the independent variables that affect land values include distance to the nearest hospital, distance to the nearest government agency, distance to the nearest tourist destination, distance to the nearest terminal, and distance to the nearest national road. The conclusion of this study is port infrastructure development has a significant effect on land values in the surrounding area during the construction phase start from 2015 to 2022 and during the operational phase start from 2023 to 2025.

Keyword: *Land Value, Buffer, Hedonic Pricing Model, Difference ini Difference Analysis*

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1. INTRODUCTION

The development of cities due to high population growth determined an increasing of procurement need, improvement, and transportation infrastructure maintenance, both in terms of quality and quantity. One of them is port infrastructure development can support urban development in the surrounding area of the port and generate economic benefits (Z. Song et al., 2019). These economic benefits, along with the development of the port transportation sector, will have an impact on land values in the surrounding area (Tamin, 2000).

Transportation is a medium to facilitate the efficient movement of goods and passengers from one location to another (Rodrigue, 2024). There are two perspectives for understanding the nature of transportation: the spatial perspective and the social perspective, both of them are included the impact of new transportation development (Preston & Rajé, 2007). The spatial perspective emphasizes the nature of accessibility as the ease of use of land and transportation systems that enable individuals to achieve activities or goals (Hensher et al., 2012), while the social perspective emphasizes that transportation triggers the redistribution of social spatial capital throughout the affected areas, thereby encouraging changes in social behavior, such as housing relocation, inflow and outflow of capital investment, which have an impact on the housing sector evolution (Duan et al., 2020).

Transportation infrastructure is crucial for international trade continuity (Brancaccio et al., 2024) and it is considered as a key factor in facilitating development and economic growth (Banerjee et al., 2020). Transportation infrastructure such as ports are important hubs between sea and land, and port development can drive land growth (Yan et al., 2021). In general, ports can be described as places where two domains meet, that is land-based traffic and maritime traffic, and in recent years, ports have developed into transportation hubs that connect transportation infrastructure such as railways, highways, and airports (Y. Song & Wang, 2019). Transportation infrastructure investment has become a key policy tool for economic growth and a pillar of urban and regional development strategies in many countries. This investment has also become a significant planning tool for addressing various urban and regional issues and developing the spatial economy (Lee, 2020). Transportation infrastructure investment can have a significant but varied impact on regional development (Rosik & Wójcik, 2023).

Previous studies have shown that the impact of seaports on the regional economy in South Korea has a significant effect on the surrounding areas (Park & Seo, 2016). Furthermore, other studies have shown that ports have a positive impact on economic growth in Lisbon and cities surrounding the port (Afiatno & Joyoutomo, 2024), and that development of Pekalongan Regency Onshore Port has had a positive impact on economic opportunities in the surrounding area, as well as changes in land ownership (Insani & Rudiarto, 2024). In addition to the positive impacts, ports also have negative impacts due to their proximity to ports and train stations on land prices and property rents, and there are positive impacts from proximity to airports (Efthymiou & Antoniou, 2014).

Indonesia is the largest archipelago country in the world with enormous maritime potential. With more than 17,000 islands and 54,716 km of coastline, Indonesia's maritime sector plays an important role in supporting the national economy (Sibali &

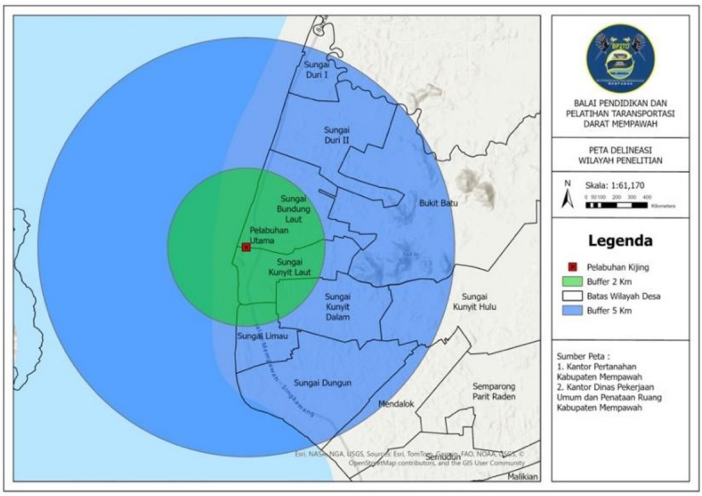
Jainuddin, 2024). Mempawah Regency in West Kalimantan Province is one of the regencies located between the cities of Pontianak and Singkawang, where all government and economic activities are centered. This affects various aspects, one of which is transportation. Mempawah Regency continues to experience developments in transportation infrastructure, such as Kijing Port, which is in line with Presidential Regulation No. 43 of 2017 concerning the Acceleration of the Development and Operation of Kijing Port Terminal in Mempawah Regency, West Kalimantan Province. The development of Kijing Port is aimed at improving connectivity, supporting maritime infrastructure, and developing the West Kalimantan region. The construction of Kijing Port, which spans 200 hectares, has resulted in significant land changes from residential areas, agricultural land, plantations, and tourism (Rahmayati, F., Tampubolon, B., & Cristanto, 2023), and has potential to increase land value.

Based on the reason above, research on the impact of port infrastructure development is an important step in the development and connectivity of a region. Research on the impact of port infrastructure development on land value has been conducted extensively in developing countries in Indonesia. However, no specific research has been conducted in the Kijing Port area in Mempawah Regency, West Kalimantan Province. Therefore, this study attempts to investigate the effect of Kijing Port development on improving logistics connectivity on land value in the surrounding area.

2. METHODOLOGY

2.1 Data and Data Collection Methods

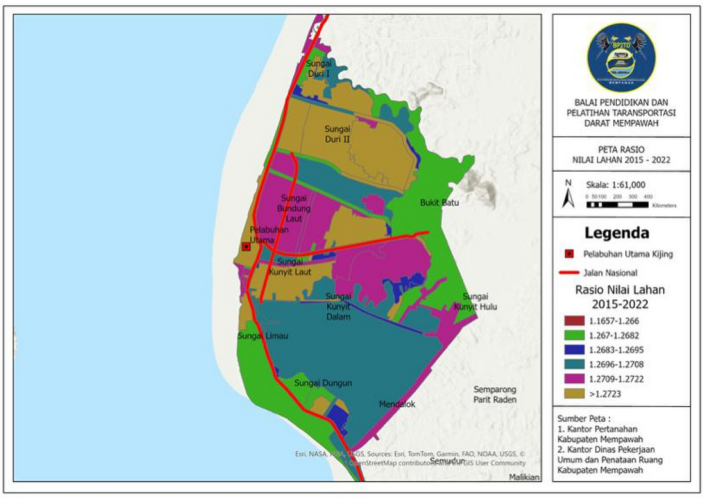
This study was conducted using a quantitative approach, in line with the research questions. This study was conducted at Kijing Port in Mempawah Regency, West Kalimantan Province. The research area covers one subdistrict, that is Sungai Kunyit Subdistrict, which consists of several villages, those are Sungai Duri I Village, Sungai Duri II Village, Sungai Bundung Laut Village, Sungai Kunyit Laut Village, Sungai Kunyit Dalam Village, Sungai Limau Village, Sungai Dungun Village, Sungai Kunyit Hulu Village, Mendalok Village, and Bukit Batu Village. The research area buffer was divided into two, those are a 2 km buffer consist of Sungai Bundung Laut Village, Sungai Kunyit Laut Village, Sungai Kunyit Dalam Village, and Sungai Limau Village, and a 5 km buffer consist of the addition of a 2 km buffer and several villages, including Sungai Duri I Village, Sungai Duri II Village, Bukit Batu Village, Sungai Kunyit Hulu Village, Sungai Dungun Village, and Mendalok Village. This study uses a 2 km research area buffer based on Samalo (2022) research to see the broader impact of the new infrastructure development. Then, a 5 km research area buffer based on research conducted by Normalitasari (2024) to see the significant influence of the transportation infrastructure existence on land prices in the surrounding area. This following is an overview of the research area delineation.



Source: Mempawah District Land Office and Mempawah District Public Works and Spatial Planning Office

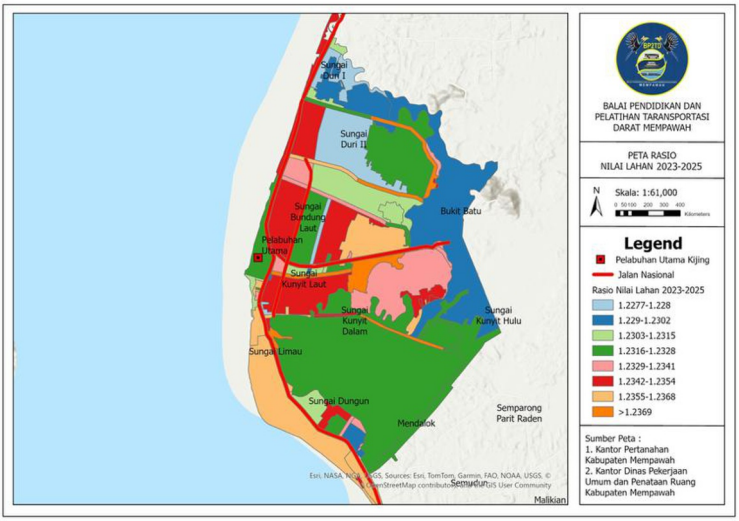
Figure 1. Map of Research Area Delineation

Basic data obtained from the Mempawah District Land Office provides a basic overview of land values around Kijing Port in Mempawah District, West Kalimantan Province, within a 2 km and 5 km radius. The following is a map of land value ratios for 2015-2022 (Development Phase) and 2023-2025 (Operational Phase).



Source: Mempawah District Land Office

Figure 2. Land Value Ratio Map 2015-2022



Source: Mempawah District Land Office

Figure 3. Land Value Ratio Map 2023-2025

The data collection technique used in this study was to collect secondary data sourced from Mempawah District Land Office, Mempawah District Public Works and Spatial Planning Office, and the official website of Mempawah District government, then the researcher processed using ArcGIS and Stata applications. In this study, there are dependent and independent variables used by the researcher that are adjusted to the characteristics of the research area delineation and data availability considerations. These following are the dependent and independent variables used in this study.

Table 1. Variables related to the study

No	Variable	Symbol	Unit	Operational Definition	Year	Form of Data Acquisition	Data Sources	Data Processing Techniques
Dependent Variable (Y)								
1	Land Value Zone	Y	Rupiah/M^2 Ln (Y)	ZNT/M^2 at each centroid point of a zone	2015 - 2025	GIS-Polygon	Mempawah Regency Tax and Retribution Management Agency	The ZNT value is transformed into the form of Ln (Y) to stabilize the data variance
Independent Variable (X)								
2	Zone Area	X_1	M^2	Land area in each zone	2025	GIS-Polygon	Mempawah Regency Tax and Retribution Management Agency	ArcGIS
3	Population Density	X_2	Soul/KM^2	Population density per village	2025	GIS-Polygon	Mempawah Regency Central Statistics Agency	ArcGIS
4	Multiple hazards	X_3	1=Vulnerable area, 0=Not vulnerable	Study areas affected by multiple hazards or not affected by multiple hazards	2025	GIS-Point	Mempawah Regency Public Works and Spatial Planning Agency	Transformation to Binary Numbers (Dummy Variables)
5	Distance to the nearest hospital	X_4	Meter	Distance to the nearest hospital from each centroid point of a zone	2025	GIS-Point	Mempawah Regency Public Works and Spatial Planning Agency	Near Analysis ArcGIS
6	Distance to the nearest health center	X_5	Meter	Distance to the nearest health center from each centroid point of a zone	2025	GIS-Point	Mempawah Regency Public Works and Spatial Planning Agency	Near Analysis ArcGIS
7	Distance to the nearest market	X_6	Meter	Distance to the nearest market from each centroid point of a zone	2025	GIS-Point	Mempawah Regency Public Works and Spatial Planning Agency	Near Analysis ArcGIS
8	Distance to the nearest government office	X_7	Meter	Distance to the nearest government agency from each centroid point of a zone	2025	GIS-Point	Mempawah Regency Public Works and Spatial Planning Agency	Near Analysis ArcGIS
9	Distance to the nearest tourist destination	X_8	Meter	Distance to the nearest tourist destination from each centroid point of a zone	2025	GIS-Point	Mempawah Regency Public Works and Spatial Planning Agency	Near Analysis ArcGIS
10	Distance to the nearest terminal	X_9	Meter	Distance to the nearest terminal from each centroid point of a zone	2025	GIS-Point	Mempawah Regency Public Works and Spatial Planning Agency	Near Analysis ArcGIS
11	Distance to the nearest elementary, junior high, and high schools (Educational Facilities)	X_{10}	Meter	Distance to the nearest elementary school, junior high school, and high school from each centroid point of a zone	2025	GIS-Point	Mempawah Regency Public Works and Spatial Planning Agency	Near Analysis ArcGIS
12	Distance to the nearest national road	X_{11}	Meter	Distance to the nearest national road from each centroid point of a zone	2025	GIS-Polygon	Mempawah Regency Public Works and Spatial Planning Agency	Near Analysis ArcGIS

Source: Author's analysis, 2025

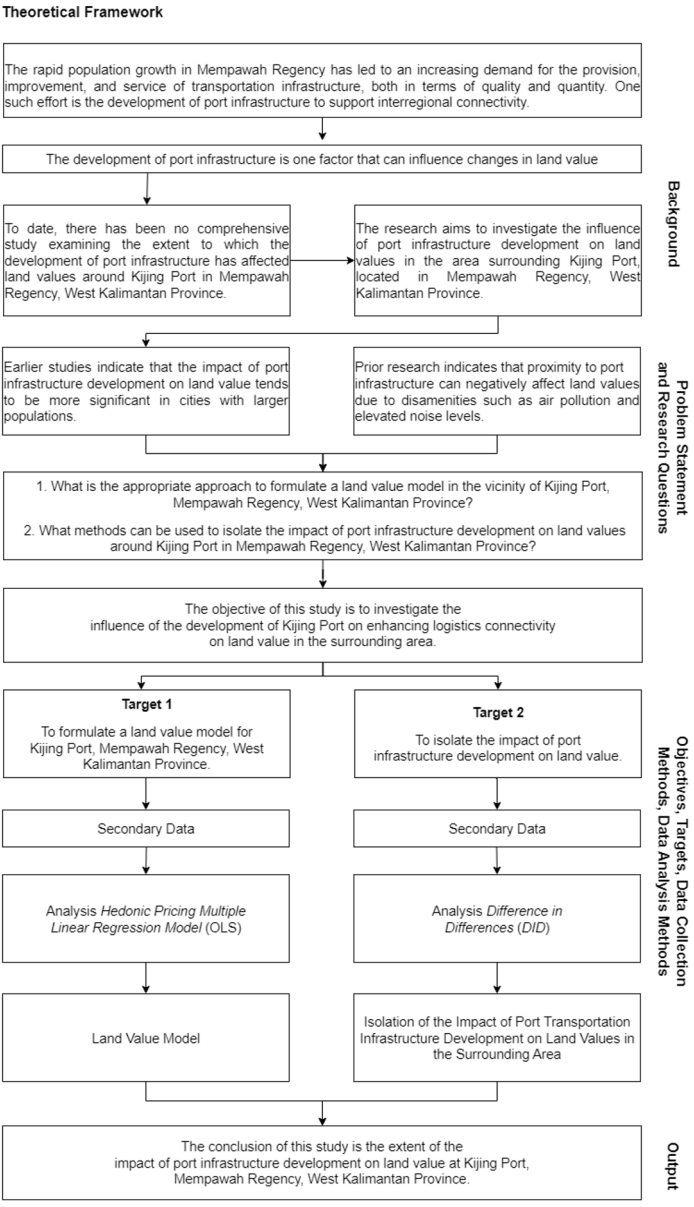
2.2 Data Analysis Methods

The main analysis used in this study is Hedonic Pricing Model Analysis using Multiple Linear Regression (Ordinary Least Squares) to answer the first objective, which is to formulate a land value model in Kijing Port, Mempawah Regency, West Kalimantan Province, and Difference in Difference analysis to answer the second objective, which is to isolate the impact of port infrastructure development on land value.

The Hedonic Pricing Model analysis using Multiple Linear Regression (OLS) was developed by Rosen (1974) to determine the factors that can significantly affect land value due to new infrastructure development such as airports, terminals, stations, and ports. In the hedonic model, the value paid for an item can be described using Multiple Linear Regression (OLS) analysis. Regression analysis is a statistical technique in the form of a mathematical equation that can calculate the relationship between a dependent variable and one or more independent variables. In this case, the dependent variable is land value and the independent variables are factors that affect land value, which are determined based on a literature review or sources from previous studies relevant to this study. The output of the Hedonic Pricing Model analysis using Multiple Linear Regression (OLS) is a land value model equation using Stata software and has met the requirements of normality, heteroscedasticity, and multicollinearity tests.

Difference in Difference Analysis (DID) is a statistical method used in scientific research to assess the impact of a policy or intervention on a specific population or group. This method is very popular in various fields, including economics, sociology, public health, and transportation. Basically, this method compares changes in the response variable in a group affected by a policy or intervention with a control group not affected by the policy or intervention in two different time periods, that is before and after the implementation of the policy or intervention.

Overall, the steps or stages in this research are represented through the following research framework.



Source: Author's Synthesis, 2025

Figure 4. Research Framework

3. DISCUSSION

First Objective: To formulate a land value model in Kijing Port, Mempawah Regency, West Kalimantan Province, using the Hedonic Pricing Model of Multiple Linear Regression (OLS).

Based on data obtained from secondary surveys conducted by Mempawah District Land Office, Mempawah District Public Works and Spatial Planning Office, and the official website of Mempawah District government, the secondary data was processed using Multiple Linear Regression analysis with OLS estimation using Stata software. The land value hedonic model consists of two models, those are land value hedonic model for 2015-2022 (Development Phase) and land value hedonic model for 2023-2025 (Operational Phase). The following table shows the findings from the Multiple Linear Regression (OLS) Hedonic Pricing Model analysis.

Table 2. Land Value Model Results with a 2 Km Buffer and a 5 Km Buffer

No	Variable Name	Notation	OLS Coefficient with 2 Km Buffer	OLS Coefficient with 5 Km Buffer
The years 2015–2022				
1	Land Value	Y	-	-
2	Constants	β_0	25,05	30,03
3	Distance to the nearest hospital	X_4	0,07	0,002
4	Distance to the nearest government office	X_7	-0,0096	-0,007
5	Distance to the nearest tourist destination	X_8	0,0069	0.001
6	Distance to the nearest terminal	X_9	-0,08	-0,003
7	Distance to the nearest national road	X_{11}	0.034	0.064
The years 2023-2025				
1	Land Value	Y	-	-
2	Constants	β_0	11,77	14,35
3	Distance to the nearest hospital	X_4	0,271	0,002
4	Distance to the nearest government office	X_7	-0,0025	-0.001
5	Distance to the nearest tourist destination	X_8	0,0001	0,0002
6	Distance to the nearest terminal	X_9	-0,2743	-0,002
7	Distance to the nearest national road	X_{11}	0.054	0.014

Sumber: Analisis Penulis, 2025

Interpretation of the Multiple Linear Regression Hedonic Model OLS Land Value 2015-2022 (Development Phase) with a 2 Km Buffer with each independent variable that is significant to land value, including:

a. Distance to the nearest hospital (X_4)
Based on the analysis result using Stata software, it shows that the independent variable of distance to the nearest hospital has a significant effect towards land value. The coefficient value of distance to the nearest hospital shows a positive connection. This positive connection means that every addition a unit of distance to the nearest hospital can be able to develop the land value about 7%.

b. Distance to the nearest government office (X_7)
Based on the analysis result using Stata software, it shows that the independent variable of distance to the nearest government office has a significant effect on land value. The coefficient value of distance to the nearest government office shows a negative connection. This negative connection means that every addition a unit of distance to the nearest government office, the percentage of land value will decrease by 0.96%.

c. Distance to the nearest tourist destination (X_8)
Based on the analysis result using Stata software, it shows that the independent variable of distance to the nearest tourist destination has a significant effect on land value. The coefficient value of distance to the nearest tourist destination shows a positive connection. This positive connection means that every addition a unit of distance to the nearest tourist destination will enhance the land value about 0.69%.

d. Distance to the nearest terminal (X_9)
Based on the analysis result using Stata software, it shows that the independent variable of distance to the nearest terminal has a significant effect on land value. The coefficient value of distance to the nearest terminal shows a negative connection. This negative connection means that every addition a unit of distance to the nearest terminal will cut the land value about 0.8%.

e. Distance to the nearest national road (X_{11})
Based on the analysis result using Stata software, it shows that the independent variable of distance to the nearest national road has a significant effect on land value. The coefficient value of distance to the nearest national road shows a positive connection. This positive connection means that every addition a unit of distance to the nearest national road, the percentage of land value will increase by 3.4%.

Interpretation of the Multiple Linear Regression Hedonic Model OLS Land Value 2015-2022 (Development Phase) with a 5 Km Buffer with each independent variable that is significant to land value, including:

a. Distance to the nearest hospital (X_4)
Based on the analysis result using Stata software, it shows that the independent variable of distance to the nearest hospital has a significant effect on land value. The coefficient value of distance to the nearest hospital shows a positive relation. This positive relation means that every addition a unit of distance to the nearest hospital will increase land value about 0.2%.

b. Distance to the nearest government office (X_7)
Based on the analysis result using Stata software, it shows that the independent variable of distance to the nearest government office has a significant effect on land value. The coefficient value of distance to the nearest government office shows a negative relation. This negative relation means that every addition a unit of distance to the nearest government office, the land value percentage will decrease by 0.7%.

c. Distance to the nearest tourist destination (X_8)
Based on the analysis result using Stata software, it shows that the independent variable of distance to the nearest tourist destination has a significant effect on land value. The coefficient value of distance to the nearest tourist destination shows a positive connection. This positive connection means that every addition a unit of distance to the nearest tourist destination, the land value percentage will increase by 0.1%.

d. Distance to the nearest terminal (X_9)
Based on the analysis result using Stata software, it shows that the independent variable of distance to the nearest terminal has a significant effect on land value. The coefficient value of distance to the nearest terminal shows a negative connection. This negative connection means that for every addition a unit of distance to the nearest terminal will cut the land value about 0.3%.

e. Distance to the nearest national road (X_{11})
Based on the analysis result using Stata software, it shows that the independent variable of distance to the nearest national road has a significant effect on land value. The coefficient value of distance to the nearest national road shows a positive relation. This positive relation means that for every addition a unit of distance to the nearest national road will enhance the land value about 6.4%.

Interpretation of the Multiple Linear Regression Hedonic Model OLS Land Value 2023-2025 (Operational Phase) with a 2 Km Buffer with each independent variable that is significant to land value, including :

a. Distance to the nearest hospital (X_4)
Based on the analysis result using Stata software, it shows that the independent variable of distance to the nearest hospital has a significant effect on land value. The coefficient value of distance to the nearest hospital shows a positive connection. This positive connection means that for every addition a unit of distance to the nearest hospital will enhance the land value about by 27%.

b. Distance to the nearest government office (X_7)
Based on the analysis result using Stata software, it shows that the independent variable of distance to the nearest government office has a significant effect on land value. The coefficient value of distance to the nearest government office shows a negative connection. This negative connection means that for every addition a unit of distance to the nearest government agency, the land value percentage will decrease by 0.25%.

c. Distance to the nearest tourist destination (X_8)
Based on the analysis result using Stata software, it shows that the independent variable of distance to the nearest tourist destination has a significant effect on land value. The coefficient value of distance to the nearest tourist destination shows a positive connection. This positive connection means that for every addition a unit of distance to the nearest tourist destination, the land value percentage will increase by 0.01%.

d. Distance to the nearest terminal (X_9)
Based on the analysis result using Stata software, it shows that the independent variable of distance to the nearest terminal has a significant effect on land value. The coefficient value of distance to the nearest terminal shows a negative connection. This negative connection means that for every addition a unit of distance to the nearest terminal will cut the land value about 27%.

e. Distance to the nearest national road (X_{11})
Based on the analysis result using Stata software, it shows that the independent variable of distance to the nearest national road has a significant effect on land value. The coefficient value of distance to the nearest national road shows a positive connection. This positive connection means that every addition a unit of distance to the nearest national road will enhance the land value about 5.4%.

Interpretation of the Multiple Linear Regression Hedonic Model OLS Land Value 2023-2025 (Operational Phase) with a 5 Km Buffer with each independent variable that is significant to land value, including:

a. Distance to the nearest hospital (X_4)
Based on the analysis result using Stata software, it shows that the independent variable of distance to the nearest hospital has a significant effect on land value. The coefficient value of distance to the nearest hospital shows a positive relation. This positive relation means that for every addition a unit of distance to the nearest hospital will enhance the land value about 0.2%.

b. Distance to the nearest government office (X_7)
Based on the analysis result using Stata software, it shows that the independent variable of distance to the nearest government office has a significant effect on land value. The coefficient value of distance to the nearest government office shows a negative relation. This negative relation means that for every addition a unit of distance to the nearest government agency will decrease the land value about 0.1%.

c. Distance to the nearest tourist destination (X_8)
Based on the analysis result using Stata software, it shows that the independent variable of distance to the nearest tourist destination has a significant effect on land value. The coefficient value of distance to the nearest tourist destination shows a positive relation. This positive relation means that for every addition a unit of distance to the nearest tourist destination will increase the land value about 0.02%.

d. Distance to the nearest terminal (X_9)
Based on the analysis result using Stata software, it shows that the independent variable of distance to the nearest terminal has a significant effect on land value. The coefficient value of distance to the nearest terminal shows a negative relation. This negative relation means that for every addition a unit of distance to the nearest terminal will decrease the land value about 0.2%.

e. Distance to the nearest national road (X_{11})
Based on the analysis result using Stata software, it shows that the independent variable of distance to the nearest national road has a significant effect on land value. The coefficient value of distance to the nearest national road shows a positive relation. This positive relation means that for every addition a unit of distance to the nearest national road will enhance the land value about 1.4%.

Based on the results above, further discussion is needed regarding these findings, including:

a. Distance to the nearest hospital (X_4)
In the hedonic analysis of multiple linear regression, it was found that the independent variable of distance to the nearest hospital for the 2 km and 5 km buffer zones in the study area in 2015-2022 (Development Phase) and 2023-2025 (Operational Phase) showed a positive relation. It means that the further the distance from the hospital, the higher the land value will be, and the closer it is, the lower the land value will be. It occurs due to external effects of noise caused by ambulance traffic and hospital visitors activities. This is the same as Chinese culture which explains that the distance to the hospital is related to death, disease and bad luck (J. Li & Huang, 2020). However, this is in contrast to research conducted by Geng et al (2015) on the influence of new infrastructure on spatial variations in housing prices based on the hedonic model in China, which states that ease of access to hospitals in emergency situations.

b. Distance to the nearest government office (X_7)
In the hedonic analysis of multiple linear regression, it explains that the independent variable of distance to the nearest government agency for the 2 km and 5 km buffer zones in the research area in 2015-2022 (Development Phase) and 2023-2025 (Operational Phase) showed a negative relation. It means that the closer the distance from the government offices, the higher the land value will be, and the further it is, the lower the land value will be. It occurs because it provides convenience to the workers and is clarified by the accessibility theory that the closer to the center of

administrative activities increases the spatial attractiveness of an area, as well as encourages an increase in land values in the surrounding area.

c. Distance to the nearest tourist destination (X_8)

In the hedonic analysis of multiple linear regression, it was found that the independent variable of distance to the nearest tourist destination for the 2 km and 5 km buffer zones in the study area in 2015-2022 (Development Phase) and 2023-2025 (Operational Phase) showed a positive relation. It means that the further away from a tourist destination, the more expensive the land becomes, and the closer it is, the cheaper it becomes. This occurs due to external effects around tourist areas, such as congestion, noise, high activity levels, and environmental degradation.

d. Distance to the nearest terminal (X_9)

In the hedonic analysis of multiple linear regression, it was found that the independent variable of distance to the nearest terminal for the 2 km and 5 km buffer zones in the study area in 2015-2022 (Development Phase) and 2023-2025 (Operational Phase) showed a negative relation. It means that the closer to the terminal, the higher the land value, and the further from the terminal, the cheaper the land value. This occurs because the existence of terminals plays an important role in improving regional accessibility. In addition, terminals also function as sub-centers of economic activity, causing the surrounding areas to experience an increase in land value. This is in contrast to the research conducted by Z. Song et al (2019) on public transportation accessibility and the increase in land value due to new transportation infrastructure in London, which found a positive relation between the nearest bus terminal and land value.

e. Distance to the nearest national road (X_{11})

In the hedonic analysis of multiple linear regression, it was found that the independent variable of distance to the nearest national road for the 2 km and 5 km buffer zones in the study area in 2015-2022 (Development Phase) and 2023-2025 (Operational Phase) showed a positive relation. It means that the further away from the national road, the higher the land value, and the closer it is, the cheaper the land value. This occurs due to the negative external effects of the national road, which has high traffic intensity, noise, and pollution that reduce environmental comfort.

Second Objective: Isolating the impact of port infrastructure development on land values using Difference in Difference Analysis

This study aims to see the impact of port infrastructure development on land values. Researchers used DID analysis. DID analysis requires group data consisting of two groups, the treatment group and the control group. The existing data in this study consisted of 85 zones. The treatment and control groups were divided based on the distance from the centroid of each zone to the main port of Kijing. The treatment group consisted of 26 zones within a 2 km radius of the main port of Kijing, and the control group consisted of 59 zones within a 5 km radius of the main port of Kijing. The following are the results of the DID analysis.

Table 3. DID Analysis Results

No	Period	Standar Error	P Value	Description
Scenario 1 (Without Using Independent Variables)				
1	Before (2015-2022)	0,107	0	Significant to Land Value
2	After (2023-2025)	0,175	0	Significant to Land Value
Scenario 2 (Using Independent Variables)				
1	Before (2015-2022)	0,132	0	Significant to Land Value
2	After (2023-2025)	0,165	0	Significant to Land Value

Source: Author's analysis, 2025

Based on the table above, for the first and second scenarios, there are significant differences before the intervention (2015-2022) and after the intervention (2023-2025). For p-values less than 0,05 and the result is zero, meaning the increase of land value is assumed to be due to the port infrastructure development. These research findings are in line with several previous studies that new infrastructure can experience rapid growth in many cities and regions and is a major investment at the local, regional, and national levels. Previous research conducted by Enyinna & Iyenemiibiminakakulu (2021) found that new infrastructure development will open up locked-up land for new development and subsequently increase consistent city growth and development. Research conducted by Danielis & Gregori (2013) found that ports are economic catalysts for the regions they serve, where the agglomeration of services and activities generates economic benefits and social wealth. Research conducted by Lee (2020) shows that transportation infrastructure has an impact on boosting productivity, employment center growth, and land value. Research conducted by W. Li et al (2023) shows that port connectivity has a significant impact on the value of surrounding land using the Difference in Differences method.

4. CONCLUSION

The first finding is that researchers formulated a land value model using a hedonic pricing model of multiple linear regression OLS for 2015-2022 (Development Phase) and 2023-2025 (Operational Phase) for a 2 km buffer zone and a 5 km buffer zone around the research area. The independent variables that significantly influenced land value were Distance to the Nearest Hospital (X_4), which had a positive relationship with land value, Distance to the Nearest Government Agency (X_7), which has a negative relationship with land value, Distance to the Nearest Tourist Destination (X_8), which has a positive relationship with land value, Distance to the Nearest Terminal (X_9),

which has a negative relationship with land value, and Distance to the Nearest National Road (X_{11}), which has a positive relationship with land value.

The findings above show that the infrastructure development at Kijing Port in Mempawah Regency, West Kalimantan Province, has a significant impact on land values in the surrounding area. Therefore, this study's findings can provide academic benefit by adding the wealth of academic literature and studies in the transportation field, as well as providing practical benefits that can be used as a reference for designing effective and efficient policies in infrastructure development and urban spatial planning, considering the impact on land value, so that it can be determined whether the same infrastructure development is necessary in different areas. Furthermore, the suggestion for further research is to explore the buffer zone of the research area so that the results are representative towards the findings and to conduct a direct survey, which collecting primary data through interviews with the society to understand their preferences and perceptions of Kijing Port Development in Mempawah Regency, West Kalimantan Province.

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