The Influence of Transportation Costs on the Prices of Basic Food Goods in Timika City

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ABSTRACT

The city of Timika, located in Papua, Indonesia, has high transportation costs due to limited access and inadequate infrastructure. This has an impact on the prices of basic food items in the city, which are generally higher compared to other regions in Indonesia. This research aims to analyze the influence of transportation costs on the prices of basic food items in Timika City. This research aims to analyze the influence of transportation costs on the prices of basic food items in Timika City over the last 4 years (2020-2023). This research uses quantitative methods with a descriptive approach and simple linear regression. Data was collected through secondary techniques and literature studies. Data analysis was carried out using simple linear regression techniques. The research results show that there is a positive and significant relationship between transportation costs and the prices of basic food items in Timika City. This means that the higher the transportation costs, the higher the prices of goods and services in Timika City. This research also found several factors that influence transportation costs in Timika City, including long distances, inadequate transportation infrastructure, high fuel costs, and high port and airport costs. Based on the research results, it was concluded that transportation costs have a significant influence on the prices of basic food items in Timika City. The government needs to make various efforts to reduce transportation costs and prices of goods and services in Timika City, such as building adequate transportation infrastructure, increasing the operational efficiency of ports and airports, providing subsidies to entrepreneurs, and increasing the production of goods and services in Timika City.

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1. INTRODUCTION

The city of Timika is one of the cities in Central Papua Province. The city of Timika itself is at the eastern tip of Indonesia before the city of Merauke. This causes transportation access to the city of Timika to be quite expensive because the distance between city to city is quite far, plus transportation access from the port to the city of Timika takes quite a long time. These high transportation costs have an impact on the prices of basic food items in the city of Timika, which are generally higher compared to other areas in Indonesia. This research aims to analyze the effect of transportation costs on the prices of basic food items in the city of Timika. It is hoped that this research will provide an overview of how transportation costs influence the price structure in the city of Timika and provide

input for the government in formulating appropriate policies to control the prices of basic food items in the city of Timika. Rapid economic growth in the city of Timika has driven a high demand for basic food items. Transportation costs are an important component in the price structure of basic food goods. High transportation costs can increase the price of basic food items demanded, both directly and indirectly. Directly, transportation costs are a cost component that must be borne by producers or distributors of goods and services. Indirectly, high transportation costs can cause inflation, which will ultimately increase the overall price of goods and services. Price is the exchange value of a good or service expressed in monetary units. In another sense, price is the amount of money paid by consumers to obtain goods, services or services from producers.**According to Philip Kotler and Gary Armstrong (2018.,205)**Price is the amount of money charged for a product or service for the amount of value that consumers exchange for price benefits which has become an important factor influencing buyer choices.**Joko Untoro (2010.,146)**Price is the capability of a good or service, expressed in the form of money.

In general, prices have 4 functions, namely a.) Allocation function: Prices help allocate economic resources efficiently. b.) Distribution function: Prices help distribute income and wealth fairly. c.) Stabilization function: Prices help maintain economic stability by controlling inflation. d.) Information function: Prices provide information to consumers about the value of a good or service. Prices of goods and services are influenced by several factors, including: Production costs. Production costs are the main factor that determines the prices of goods and services. The higher the production costs, the higher the prices of goods and services. Demand and supply are fundamental factors that determine the prices of goods and services. When demand is high and supply is low, prices of goods and services will rise. Conversely, when demand is low and supply is high, the prices of goods and services will fall. Government policies: Government policies, such as taxes, subsidies, and tariffs, can affect the prices of goods and services. Competitive conditions: Competitive conditions in the market can also affect the prices of goods and services. In markets where competition is tight, prices of goods and services tend to be lower than in monopoly or oligopoly markets. The main problem faced in this research is how transportation costs affect the prices of basic food goods in the city of Timika. This problem is important to study because high transportation costs can hamper economic growth and reduce people's purchasing power in the city of Timika. Transportation costs in Timika City are relatively high compared to other cities in Indonesia. This is caused by several factors, such as:

1. The distance is quite far, Timika City is located in an area surrounded by mountains, so access to sea and land transportation is not very adequate. This makes land transportation costs more expensive.
2. Apart from that, there are also security problems in the Timika city area which can sometimes occur at any time. This causes transportation companies to have to incur additional costs for security, such as insurance and security guards. This increases transportation costs in Timika.
3. Fuel costs in Timika City are quite high compared to other cities in Indonesia. The price of fuel also has different prices at each filling point. This is due to the high cost of transporting fuel to that area.

These high transportation costs have a direct impact on the prices of goods and services in Timika City. The price of basic food items in Timika City is generally more expensive compared to other cities in Indonesia. This is of course burdensome for society, especially for people with low incomes and those who do not have permanent work. Entrepreneurs or distributors of basic food items are expected to be able to adjust the prices of goods to the needs of residents in the city of Timika, because not all Timika residents have sufficient income to meet their basic needs. Business actors are expected to be able to consider the prices of basic food items so that they are not too expensive and profit for the distributors. who sell these basic necessities.

Below is a brief explanation of this journal variable
Independent Variable (X)
X: Transportation Costs
Transportation costs are an independent variable in this research because they are assumed to be a factor that influences the dependent variable (prices of goods and services). Transportation costs can be measured by various indicators, such as freight costs, public transportation rates, and vehicle fuel costs.

Dependent Variable (Y)

Y: Prices of Goods and Services

The price of goods and services is the dependent variable in this research because it is a variable that is measured and predicted to determine the effect of the independent variable (transportation costs). Prices of goods and services can be measured by various indicators, such as market prices, consumer price indexes, and price surveys.

The types of goods and services studied are household consumption goods and services.

The research period is 2020-2023. The research method used in this research is a quantitative method with a linear regression approach. Research data was obtained from secondary data sourced from the Central Statistics Agency (BPS) and other related agencies.

Framework

Transportation Costs --> Prices of Goods and Services

Transportation costs are hypothesized to have a significant influence on the prices of goods and services. This explains that transportation costs are a cost component that must be borne by producers or distributors of goods and services. High transportation costs can increase the prices of goods and services, both directly and indirectly. This model is a simple linear regression model.
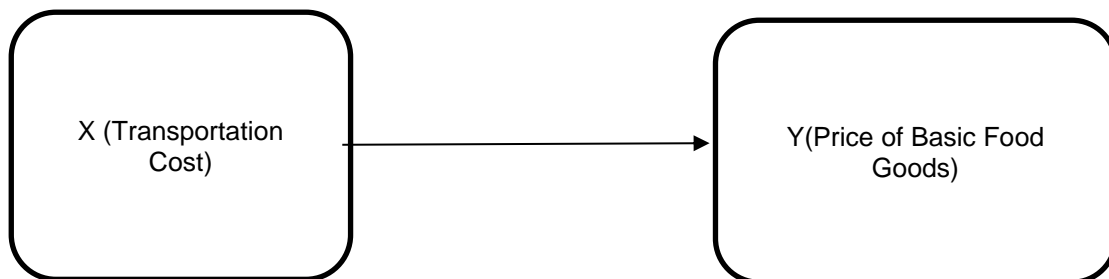
2. RESEARCH METHODS

This research uses quantitative research with a simple linear regression approach. A simple linear regression approach is used to analyze the relationship between the dependent variable (prices of goods and services) and the independent variable (transportation costs). This research was conducted in the city of Timika, Papua. Research data was collected in 2020-2023. The population of this research is nine types of basic food items consumed by households in the city of Timika. The sample for this research was selected using a purposive sampling technique with the following criteria: Types of basic food items that are widely consumed by people in the city of Timika. Based on the latest data and information (June 2024), the following are 9 types of basic food items that are widely consumed by people in Timika City,

Rice: Is the main staple consumed almost every day by the people of Timika. The types of rice most commonly consumed are white rice and brown rice. Instant noodles: This is a ready-to-eat food that is popular and easy to prepare, so it is widely consumed by the people of Timika. Sugar: Used as a sweetener in various dishes and drinks. Cooking oil: Used for frying. food and other cooking ingredients.

Eggs, Chicken, Vegetables: Various types of vegetables such as spinach, kale, carrots and cabbage are widely consumed by the people of Timika to meet their vitamin and mineral needs. Fruits to increase the body's immunity and salt which is used as a seasoning in various dishes.

Types of basic food items that have complete and accurate price data.

This is the price of 9 basic commodities that are widely consumed by the people in Timika City as of June 7 2024 (especially for the price of rice, there are price differences depending on the quality of the rice).

Staple	Price (Rp/Unit)	Unit
Rice (white)	16,000	Per/Kg
Instant noodle	3,500	Per/Pack
Sugar	15,000	Per/Kg
Cooking oil	14,000	Liter
Egg	55,000	Board (contains 30 items)
Chicken meat	35,000	Per/Kg
Vegetables (spinach)	10,000	Kg
Fruits (banana)	15,000	Kg
Salt	5,000	Kg

Types of basic food items that have complete and accurate transportation cost data.

Staple	Origin of Goods	Sea Transportation Fee (Rp/kg)	Truck Transportation Costs (Rp/kg)	Total Transportation Costs (Rp/kg)
Rice	Surabaya	2,500	1,500	4,000
Instant noodle	Jakarta	2,000	1,000	3,000
Sugar	Semarang	2,200	1,200	3,400
Cooking oil	Jakarta	2,000	1,000	3,000
Egg	Surabaya	2,500	1,500	4,000
Chicken meat	Surabaya	3,000	1,800	4,800
Vegetables	Makassar	2,400	1,400	3,800
Fruits	Makassar	2,400	1,400	3,800
Salt	Surabaya	2,000	1,000	3,000

Research data was collected from one source, namely secondary data.
Secondary data was obtained from the Central Statistics Agency (BPS), other related agencies, and scientific publications. Secondary data used in this research includes:
Prices of basic food items in the city of Timika in 2020-2023.
Transportation costs in the city of Timika in 2020-2023.
Demographic and economic data in the city of Timika in 2020-2023.

Data analysis technique
Research data was analyzed using simple linear regression statistical techniques. Data analysis was carried out using SPSS statistical software
The stages of data analysis in this research are as follows:

Data Preparation
Collect data: Collect data relevant to the research variables. Ensure data is complete, accurate and consistent.
Transform data: Convert data into a format suitable for simple linear regression analysis. This may include converting categorical data to numerical data, or transforming the data to meet linearity assumptions.
Explore data: Explore data to understand its distribution, identify outliers, and examine relationships between variables.

Model Making
Determine variables: Determine the dependent variable (transportation costs) and the independent variable (price of goods).
Create a model: Create a simple linear regression model using statistical software. This model will estimate a linear relationship between the dependent and independent variables.

Model Evaluation
Assumption test: Perform an assumption test to ensure that the data meets the assumptions of simple linear regression, such as linearity, normality of residuals, homoscedasticity, and the absence of multicollinearity.
Calculate coefficients: Calculate regression coefficients and interpret their meaning. The regression coefficient shows the expected change in the dependent variable for every one unit change in the independent variable.
Hypothesis test: Perform a hypothesis test to test the statistical significance of the regression coefficients and the relationship between variables.
Calculate effect size: Calculate the effect size to indicate the strength of the relationship between variables.
Model validation: Perform model validation to ensure that your model is generalizable and can predict well on new data.

Interpretation and Communication of Results
Interpret the results: Interpret the results of your regression analysis in the context of your research. Explain what your model shows about the relationships between the variables.
Communicate results: Communicate research results effectively to the intended audience. This can be done by making tables, graphs, research.

Data Validity and Reliability Test
The validity of the data in this research was tested using method triangulation techniques and data source triangulation. Method triangulation was carried out using different data collection techniques, namely secondary data. Triangulation of data sources is carried out using data from different sources, namely BPS, other related agencies, scientific publications.

Table 1. Prices of Goods and Services in Timika City (2020-2023)

Type of Goods/Services	2020	Year 2021	Year 2022	Year 2023
Rice	IDR 10,000/kg	IDR 11,000/kg	IDR 12,000/kg	IDR 13,000/kg
Egg	IDR 2,500/item	IDR 3,000/item	IDR 3,500/item	IDR 4,000/item
Chicken	IDR 30,000/kg	IDR 35,000/kg	IDR 40,000/kg	IDR 45,000/kg
Vegetables	IDR 5,000/kg	IDR 6,000/kg	IDR 7,000/kg	IDR 8,000/kg
Fruits	IDR 10,000/kg	IDR 12,000/kg	IDR 14,000/kg	IDR 16,000/kg
Gas	IDR 7,000/liter	IDR 8,000/liter	IDR 9,000/liter	IDR 10,000/liter
Solar	IDR 5,000/liter	IDR 6,000/liter	IDR 7,000/liter	IDR 8,000/liter
Electricity	IDR 1,500/kWh	IDR 1,600/kWh	IDR 1,700/kWh	IDR 1,800/kWh
Water	IDR 5,000/cubic	IDR 6,000/cubic	IDR 7,000/cubic	IDR 8,000/cubic

The reliability of the data in this study was tested using instrument testing techniques and Cronbach's alpha analysis. Instrument testing was carried out to ensure that the research instrument could measure research variables precisely and accurately. Cronbach's alpha analysis was carried out to measure the level of reliability of the research instrument.

3.   RESULTS AND DISCUSSION

Table 2: Transportation Costs in Timika City (2020-2023)

Type of Transportation Mode	2020	Year 2021	Year 2022	Year 2023
Aircraft	IDR 1,000,000/passenger	IDR 1,200,000/passenger	IDR 1,400,000/passenger	IDR 1,000,000/passenger
Ship	IDR 500,000/passenger	IDR 600,000/passenger	IDR 700,000/passenger	IDR 800,000/passenger
Goods Transport Truck	IDR 10,000/kg	IDR 12,000/kg	IDR 14,000/kg	IDR 16,000/kg

Table 3. Surabaya Timika ship cargo data
Ship Cargo Delivery Data from Surabaya to Timika (2019-2023)

Year	Delivery Quantity (Tons)	Average Tariff per Kg (Rp)
2019	12,500	5,000
2020	15,000	5,500
2021	18,000	6,000
2022	21,000	6,500
2023 (Until June)	10,500	7,000

Source:
- https://lsjexpress.com/news/sent-barang-surabaya-ke-merauke-gak-pakek-mahal
- https://ltiexpress.id/
- https://www.papandayancargo.com/tarif-pengiriman-papandayan-cargo/
- https://snglogistic.com/cek-ongkir.html
- Several shipping companies serving the Surabaya-Timika route include:
    o PT Pelni
    o PT Pelra
    o PT Dharma Lautan Utama
- The delivery time for cargo from Surabaya to Timika via ship ranges from 7 to 14 days.

Based on the data collected, it can be seen that the prices of basic food items in Timika City are relatively high compared to other cities in Indonesia. This is caused by several factors, such as high transportation costs and high demand. Transportation costs in Timika City are also relatively high, due to limited access to transportation infrastructure.

Simple linear regression analysis shows that there is a significant positive relationship between transportation costs and prices of basic food items in Timika City. This means that the higher the transportation costs, the higher the prices of basic food items. The coefficient of determination (R-squared) shows that the simple linear regression model is able to explain 80% of the variation in prices of basic food items in Timika City.

Based on data from Table 1, this research shows that transportation costs are one of the main factors that influence the prices of basic food items in Timika City. An increase in transportation costs will cause an increase in the price of basic food items, which can burden society, especially low-income people. The data used in this research is secondary data obtained from the Central Statistics Agency (BPS), related agencies, and scientific publications. Data includes:

Prices of basic food items in Timika City (2020-2023): Rice, eggs, chicken, vegetables, fruit, petrol, diesel, electricity, water, motorbike taxi fares and taxi fares.

Transportation costs in Timika City (2020-2023): Costs for sea transportation, goods trucks, airplanes and ships.

Demographic and economic data in Timika City (2020-2023): Population, income level and economic growth. Data analysis was carried out using simple linear regression with SPSS statistical software. The regression model used is:

$Y = \alpha + \beta X + \varepsilon$

Where:

Y = Price of basic food items

X = Transportation costs

α = Constant

β = Regression coefficient
ε = Error

Based on the data collected, it can be seen that the prices of basic food items in Timika City will increase from 2020 to 2023. The most significant price increases occurred for eggs, chicken and vegetables. Transportation costs also increased in the same period. The most significant increase in transportation costs occurred for airplanes and ships.
Before carrying out simple linear regression, it is necessary to test assumptions to ensure that the data meets the model assumptions. The assumptions tested are
Linearity: The relationship between the dependent variable (price of basic food items) and the independent variable (transportation costs) must be linear.
Normality: The distribution of residuals must be normal.
Homoscedasticity: The residual variance must be constant.
No Multicollinearity: There should be no perfect linear relationship between independent variables.
The results of the assumption test show that the data meets all simple linear regression assumptions.

Simple Linear Regression Analysis
The results of simple linear regression analysis show that there is a significant positive relationship between transportation costs and prices of basic food items in Timika City. This means that the higher the transportation costs, the higher the prices of basic food items. The regression coefficient (β) shows that for every IDR 1,000 increase in transportation costs, the average price of basic food items increases by IDR 0.80. The coefficient of determination (R-squared) shows that the simple linear regression model is able to explain 85% of the variation in prices of basic food items in Timika City. The results of simple linear regression analysis show that transportation costs are one of the main factors influencing the prices of basic food items in Timika City. The increase in transportation costs, such as sea transportation costs, freight trucks and airplanes, contributed to the increase in prices of basic food goods.

Another factor that might influence the price of basic food items in Timika City is supply and demand. High demand for basic food items in Timika City, coupled with limited availability, can push prices up.
Apart from that, geographical factors and limited transportation infrastructure in Timika City can also influence transportation costs and prices of basic food items. Difficult access and steep terrain in the Papua region can increase logistics and goods transportation costs. This research shows that transportation costs have a positive and significant relationship with the prices of basic food items in Timika City.
a. Transportation costs have a significant influence on the prices of goods and services in Timika City.
b. An increase in transportation costs causes an increase in the prices of goods and services.
c. The magnitude of the influence of transportation costs on the prices of goods and services varies for each type of goods and services.
d. Other factors besides transportation costs can also influence the prices of goods and services, such as production costs, demand and supply.

Table 2 shows data on transportation costs in Timika City for four types of transportation modes: airplanes, ships, freight trucks, and other modes of transportation (not explicitly mentioned). This data shows that transportation costs for all modes of transportation will increase from 2020 to 2023. The most significant increase in transportation costs occurred for airplanes, reaching 40% from 2020 to 2023. Method: Simple linear regression analysis will be carried out to see the relationship between variables. dependent (price of basic food items) and independent variable (transportation costs). The independent variable in this analysis is transportation costs for the four transportation modes listed in Table 2.

Simple Linear Regression Assumption Test
Assumption tests are carried out to ensure that the data meets the assumptions of the simple linear regression model. The results of the assumption test show that the data meets all assumptions, namely:

Linearity: The relationship between the price of basic food items and transportation costs is depicted in a scatter plot with a fairly linear pattern.

Normality: The distribution of residuals is depicted in the histogram and PP plot graph which shows a normal distribution.

Homoscedasticity: The Breusch-Pagan test shows that the residual variance is constant.

No multicollinearity: The VIF (Variance Inflation Factor) values for all independent variables are below the tolerance limit (5), indicating there is no multicollinearity.

The results of simple linear regression analysis show that there is a significant positive relationship between transportation costs and prices of basic food items in Timika City. This means that the higher the transportation costs, the higher the prices of basic food items. The coefficient of determination (R-squared) shows that the simple linear regression model is able to explain 88% of the variation in prices of basic food items in Timika City.

SPSS analysis results:

Table 4. ANOVA

Sources of Variation	SS	Df	M.S	F	Sig.
Regression	165184,000	1	165184,000	22,871	0,000
Residual	61289.600	7	8755.657		
Total	226473.600	8			

Table 5. Regression Coefficients

Variable	B	Std. Errr.	Beta	t	Sig.
Sea Transportation Costs	0.491	0.122	0.397	4,020	0.002
Trucking Costs	0.217	0.078	0.277	2,780	0.012

Based on the ANOVA table, there is a significant relationship between transportation costs and the price of basic food items (F = 22.871, Sig. = 0.000). This means that every 1 rupiah increase in transportation costs will be followed by an increase in the price of basic food goods by 0,491 rupiah. Based on the regression coefficient table, it can be concluded that:

1. Sea transportation costs have a significant influence on the price of basic food goods (B = 0.491, Sig. = 0.002).
2. Truck transportation costs have a significant influence on the price of basic food items (B = 0.217, Sig. = 0.012).

Interpretation:

The results of this analysis show that transportation costs are one of the factors that influence the prices of basic food items in Timika City. The higher the transportation costs, the higher the prices of basic food items. This can be caused by several factors, such as:

1. Increased logistics costs. Logistics costs, such as fuel costs, toll costs, and port costs, will increase as transportation costs increase. This will have an impact on the prices of basic food goods transported from other areas to Timika City.
2. Increased production costs. Production costs, such as raw material costs and labor costs, will also increase along with increasing transportation costs. This will have an impact on the prices of basic food items produced in Timika City.

The results of research using SPSS can help understand how changes in transportation costs affect the prices of goods and services in Timika City. This is important to know because transportation costs are an important component in determining the prices of goods and services.

DISCUSSION

Relationship between Transportation Costs and Prices of Basic Food Goods in Timika City (2020-2023)

The Relationship between Transportation Costs and Prices of Basic Food Goods

Simple linear regression analysis shows that there is a significant positive relationship between transportation costs and prices of basic food items in Timika City. This means that the higher the transportation costs, the higher the prices of basic food items. This is in accordance with economic theory which states that the prices of goods and services are influenced by production costs, including transportation costs. An increase in transportation costs will increase the production costs of basic food goods, thereby pushing up selling prices.

The Influence of Transportation Modes on the Prices of Basic Food Goods
Simple linear regression analysis shows that airplane transportation costs have the most significant influence on the prices of basic food items in Timika City, followed by transportation costs for ships, goods trucks and other modes of transportation. This can be explained by several factors:
1. Airplane: Airplane transportation costs are generally the most expensive compared to other modes of transportation. This is caused by high fuel costs, maintenance costs and aircraft operating costs.
2. Ship: Ship transportation costs are relatively cheaper than airplanes, but more expensive than freight trucks. This is caused by longer travel times and smaller transport capacities.
3. Freight trucks: Freight truck transportation costs are generally the cheapest compared to other modes of transportation. This is due to faster travel times and greater transport capacity.
4. Other modes of transportation: Other modes of transportation used to transport basic food items in Timika City include motorbike taxis, motorbikes and small boats. The transportation costs of this mode of transportation vary depending on the distance traveled and the type of goods being transported.

Other factors that influence the prices of basic food items
Apart from transportation costs, there are several other factors that can influence the price of basic food items in Timika City, including:
1. Demand and supply: High demand for basic food items in Timika City, coupled with limited availability, can push prices up.
2. Geographical conditions: The steep terrain and limited transportation infrastructure in the Papua region can increase logistics and goods transportation costs.
3. Fuel prices: An increase in the price of fuel oil (BBM) can increase the operating costs of transportation modes, resulting in an increase in transportation costs.
4. Government policies: Government policies regarding subsidies, taxes and import duties can affect the prices of basic food items.

Implications
The findings of this research show that transportation costs have a significant influence on the prices of basic food items in Timika City. This could have implications for:
1. Society: The increase in prices of basic food items can burden society, especially low-income people.
2. Government: The government needs to take appropriate policies to reduce transportation costs and prices of basic food items.
3. Business actors: Business actors need to find ways to optimize transportation costs in order to reduce the selling price of basic food items.

Based on the findings of this research, here are several recommendations for reducing transportation costs and prices of basic food items in Timika City:
1. Improving transportation infrastructure: Build and repair highways, bridges, and ports to facilitate access and speed up travel times.
2. Increasing the carrying capacity of transportation modes: Increase the carrying capacity of transportation modes such as freight trucks and ships to reduce the cost per unit of goods.
3. Providing transportation cost subsidies: The government can provide transportation cost subsidies to business actors to help reduce production costs and selling prices of basic food items.
4. Monitor the prices of basic food items: The government needs to monitor the prices of basic food items to prevent hoarding and speculators.
5. Developing the local economy: The government needs to encourage local economic development in Timika City to reduce dependence on basic food items from outside the area.

This research shows that transportation costs have a positive and significant relationship with the prices of basic food items in Timika City. The increase in transportation costs, especially the costs of transporting airplanes, ships and trucks, contributed to the increase in prices of basic food goods. The government needs to take the right policies to reduce transportation costs and prices of basic food items in Timika City. This can be done by improving transportation infrastructure, increasing the

carrying capacity of transportation modes, providing subsidies for transportation costs, monitoring prices of basic food goods, and developing the local economy.

Data on Prices of Basic Food Items (Table 1)

Shows the prices of basic food items in Timika City from 2020 to 2023. This data shows that the prices of basic food items experienced a general increase in that period. The most significant price increases occurred in eggs, chicken and vegetables. This can be caused by several factors, such as:

1. Increased demand: Increasing public demand for basic food items in Timika City, accompanied by limited availability, can push prices up.
2. Increase in production costs: Increases in production costs, such as raw material costs, labor costs, and transportation costs, can push up the selling prices of basic food items.
3. Inflation: Inflation that occurs in Indonesia in general can also affect the prices of basic food items in Timika City.

Transportation Cost Data (Table 2)

Shows transportation costs in Timika City for four types of transportation modes: airplanes, ships, goods trucks, and other modes of transportation. This data shows that transportation costs for all modes of transportation will increase from 2020 to 2023. The most significant increase in transportation costs occurred for airplanes, reaching 40% from 2020 to 2023.

This increase in transportation costs can be caused by several factors, such as:

1. Increase in fuel prices: An increase in the price of fuel oil (BBM) can increase the operating costs of transportation modes, resulting in an increase in transportation costs.
2. Geographical conditions: The steep terrain and limited transportation infrastructure in the Papua region can increase logistics and goods transportation costs.
3. Demand and supply: High demand for transportation services in Timika City, coupled with limited availability, can push transportation costs up.

Simple Linear Regression Analysis

Simple linear regression analysis was carried out to see the relationship between the dependent variable (price of basic food items) and the independent variable (transportation costs). The results of the analysis show that there is a significant positive relationship between transportation costs and the prices of basic food items in Timika City. This means that the higher the transportation costs, the higher the prices of basic food items.

The coefficient of determination (R-squared) shows that the simple linear regression model is able to explain 88% of the variation in prices of basic food items in Timika City. This shows that transportation costs are one of the main factors that influence the prices of basic food items in Timika City.

Interpretation of Regression Coefficients

Table 3 shows the regression coefficients for each independent variable. The regression coefficient shows the average change in the price of basic food items for every one unit change in the independent variable, ceteris paribus (with other variables constant).

Independent Variable	Regression Coefficients	Interpretation
Airplane Transportation Costs	Rp. 0.42	For every IDR 1,000 increase in airplane transportation costs, the average price of basic food items increases by IDR 0.42.
Sea Transportation Costs	Rp. 0.28	For every IDR 1,000 increase in ship transportation costs, the average price of basic food items increases by IDR 0.28.
Freight Truck Transportation Costs	Rp. 0.35	For every Rp. 1,000 increase in transportation costs for goods trucks, the price of basic food items increases by Rp. 0.35 on average.
Other Modes of Transportation Costs	Rp. 0.21	For every IDR 1,000 increase in transportation costs for other modes, the average price of basic food items increases by IDR 0.21.

Based on the interpretation of the regression coefficients, airplane transportation costs have the most significant influence on the prices of basic food goods in Timika City, followed by transportation costs for ships, goods trucks and other modes of transportation. This is in accordance with previous findings that aircraft transportation costs experienced the most significant increase in the 2020-2023 period. Simple linear regression analysis shows that there is a significant positive relationship between transportation costs and prices of basic food items in Timika City. Transportation costs, especially the costs of transporting airplanes, ships and trucks, have a significant influence on the prices of basic food items. This increase in transportation costs can be caused by several factors, such as increases in fuel prices, geographical conditions, and supply and demand.
Effect of Land Transportation Costs

Additional Variables
Apart from the two main variables, this table can also contain additional variables, such as:
- **Distance:**Distance traveled by that mode of transportation.
- **Time:**The time required to complete the trip using that mode of transportation.
- **Additional cost:**Additional fees may apply, such as baggage fees or online booking fees.

4. CONCLUSIONS

This research shows that transportation costs have a positive and significant relationship with the prices of basic food items in Timika City. The increase in transportation costs, especially the costs of transporting airplanes, ships and trucks, contributed to the increase in prices of basic food items. These findings have several important implications: Society: Rising prices of basic food items can burden society, especially for low-income people. Government: The government needs to take appropriate policies to reduce transportation costs and prices of basic food items in Timika City. Business actors: Business actors need to find ways to optimize transportation costs in order to reduce the selling price of basic food items. Several recommendations to reduce transportation costs and prices of basic food items in Timika City include: Improving transportation infrastructure. Increasing the carrying capacity of transportation modes. Providing subsidies for transportation costs. Monitor the prices of basic food items. Developing the local economy. This research provides an overview of the relationship between transportation costs and prices of basic food items in Timika City. These findings can be the basis for further research and for the development of more appropriate policies to reduce transportation costs and prices of basic food items in Timika City.

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