

Analysis of Key Factors and Characteristics of Maritime Transportation Users of the Dharma Rucitra VII SHIP Maumere-Surabaya Route

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ABSTRACT

East Nusa Tenggara Province has a fairly large area consisting of many small islands, one of which is Maumere City. Maumere City is a center of activity in government, trade, distribution of goods (logistics), and others. The importance of sea transportation can support the activities of people in Maumere in traveling outside the region, both within the NTT Province area, and to other provinces. One of the ships owned by PT. Dharma Lautan Utama operating in Maumere is the Dharma Rucitra VII Ship. According to the results of the study, the main factors such as price aspects, safety aspects, comfort aspects, departure schedule aspects have a significant influence on the decision of users to use the Dharma Rucitra VII Ship despite having limitations in terms of travel time speed. And for the individual characteristics of the Dharma Rucitra VII ship users are young, unmarried, highly educated but low-income individuals with more temporary or recreational travel purposes. The sea transportation mode was chosen because of its economical characteristics. These results are in line with theories of transportation and individual mobility that emphasize the importance of socio-economic variables in the formation of mode preferences. Overall, the results of this study provide an important contribution to understanding the main factors that influence users to use sea transportation in the Maumere area of Sikka Regency, and can be used as a basis for consideration for ship operators to design service strategies that are more responsive to user needs.

Keywords: factors, characteristics, mode preference, sea transportation, service.

INTRODUCTION

Transportation is the process of moving goods or people from one place to another using a means or mode of transportation. The purpose of transportation is to support human activities, as a means for distributing goods, personal travel, and other forms of mobility. As time goes by, the population of a region will continue to grow, impacting the increased use of transportation, and this is also the case in East Nusa Tenggara Province.

East Nusa Tenggara Province has a fairly large area consisting of many small islands, one of which is the city of Maumere, located on Flores Island. Maumere is one of the cities in East Nusa Tenggara. Maumere is also a center of government activity, trade, distribution of goods (logistics), and more. Therefore, sea transportation is crucial in Maumere City.

The importance of sea transportation supports the activities of residents of Maumere traveling outside the region, both within East Nusa Tenggara Province and to other provinces. In addition to moving passengers from one place to another, sea transportation also serves as a means of distributing goods and facilitating trade activities in Maumere City. The maritime transportation industry plays a crucial and irreplaceable role in supporting the national economy, particularly as a means of transportation.

PELNI-owned maritime transportation companies operating in Maumere include the KM Bukit Siguntang, KM Tidar, KM Sirimau, and KM Lambelu. The KM Bukit Siguntang operates on the Maumere-Kupang and Maumere-Nunukan routes, with a passenger capacity of 2,003. The KM Tidar operates on the Maumere-Kupang and Maumere-Kijang routes, with a passenger capacity of 2,000. The KM Sirimau serves the Maumere-Merauke and Maumere-Sorong routes, with a

passenger capacity of 1,000. The KM Lambelu serves the Maumere-Makassar route, with a passenger capacity of 2,003. These PELNI-owned vessels can only carry passengers.

One of the maritime transportation companies in Maumere that transports passengers, vehicles, and goods (logistics) is PT. Dharma Lautan Utama, Maumere branch. PT Dharma Lautan Utama operates 24 ships to serve 18 water routes in Indonesia. One of the ships owned by PT. Dharma Lautan Utama operating in Maumere is the Dharma Rucitra VII ship which transports passengers, vehicles and goods (logistics). The Dharma Rucitra VII ship serves the shipping route from Maumere to Labuan Bajo and Surabaya and vice versa. The Dharma Rucitra VII ship also facilitates trade and distribution of goods (logistics) from Surabaya as a trading center in Indonesia. This ship can carry up to 1,300 passengers, 200 small vehicles and 80 trucks. The facilities owned by this ship include special rooms for babies and mothers, medical rooms, prayer rooms, sports areas, bedrooms, air conditioning, and others. The Dharma Rucitra VII ship is one of the sea transportation that is very popular with the people of Maumere. The purpose of this research analysis of the choice of sea transportation modes for passenger transportation and expedition trucks on the Dharma Rucitra VII ship on the Maumere-Surabaya route.

Table 1. Statistical Data for the Vessel Dharma Rucitra VII on the Maumere – Surabaya Route [1]

Category		Date		
		2 Mei 2025	12 Mei	24 Mei
Passenger	Adults	242	201	222
	Children	5	4	8
	Infants	2	1	1
	Number	249	206	231

Maritime Transportation in Archipelagic Regions

The Role of Transportation in the National System

Sea transportation plays a crucial role in the national system, particularly for an archipelagic nation like Indonesia. Generally, sea transportation connects various regions, supports trade and the distribution of goods, and facilitates population movement. [2] states that the central or regional government provides services or facilities related to water transportation for remote and underdeveloped regions. The provision and operation of inter-island transportation aims to reduce disparities between small islands and encourage equitable development in these regions. This is expected to contribute significantly to the social and economic well-being of the community. Water transportation connecting one island to another can provide opportunities for trade activities, reducing the travel chain for goods, allowing them to be purchased at lower prices. Furthermore, transportation will increase accessibility and mobility, allowing island communities to easily travel for social purposes such as education, health, and other purposes. Sea transportation plays a strategic role in the development of archipelagic regions like Indonesia, particularly in provinces like East Nusa Tenggara (NTT), which comprises many small islands. This crucial role extends not only to the economic but also to the social, cultural, and political aspects. In an archipelagic region, sea transportation is not merely a means of mobility but also serves as the primary means of inter-regional connectivity. Shipping and maritime transportation must ensure safe, comfortable, affordable, and sustainable transportation services, especially in remote, underdeveloped, outermost, and border areas (3TP).

Sea Transportation Issues in East Nusa Tenggara (NTT)

East Nusa Tenggara (NTT) faces a number of significant challenges in the implementation of maritime transportation. Some of the main issues include:

1. Limited fleet and ship schedules: The number of passenger and cargo ships operating regularly remains limited. This results in insufficient travel frequency to meet community needs, especially on routes that are less commercially profitable.
2. Inadequate port conditions: Many small ports on the islands of NTT lack adequate berthing facilities, piers, or standard loading and unloading infrastructure.

3. High logistics costs: Due to limited access to maritime transportation and uneven distribution of services, the price of goods and inter-island travel costs are high, contributing to economic disparities between islands.
4. Dependence on government subsidies: Many pioneering routes rely on subsidies and the sea toll program, which has not been fully effective due to coordination issues, schedule delays, and a lack of synchronization of demand data between regions.

Selection of Transportation Mode

Mode selection is a stage in the transportation planning process that determines travel allocation or determines the number (in terms of proportion) of people and goods that will use or choose various modes of transportation available to serve a specific origin-destination point, for a specific travel purpose. Mode selection is considered the most important stage in transportation planning, but also the most difficult because it is at this stage that various obstacles/barriers are encountered in the form of difficulty and complexity in modeling the real world. This is due to the difficulty for researchers to understand the behavior of many people, especially those who use transportation services. On the other hand, in the real world, there are many forms of transportation services available in terms of geographic distance, technique, size, speed, economy, and others. All of these offer different service characteristics, thus creating problems for researchers/transportation planners in quantifying, modeling, analyzing, and identifying the various factors that influence them [3], [4].

The following are factors that influence mode selection

Traveler factors include:

1. Ownership of private transportation.
2. Ownership of a driver's license (SIM).
3. Household structure (consisting of young couples, families with children, retired, or single).
4. Household income.
5. Other factors, such as the necessity to use a particular mode of transportation due to the lack of other transportation options.

Movement factors

1. The movement has a specific purpose.
2. Time required for a single trip.
3. Distance traveled in a single trip.

Transportation mode facility factors

1. Time taken during the trip: waiting time at the bus stop, walking time, and travel time.
2. Costs incurred in using public or private transportation.
3. Parking fees for private vehicles.
4. Qualitative factors, including comfort and safety, reliability and regularity, and others [4].

City or Zone Factors: The parameters used in this factor are distance from the city center and population density.

Users' choice of transportation mode is strongly influenced by several factors related to individual needs, preferences, and socioeconomic conditions. Some of the main variables frequently used in mode choice studies are price/fare, departure schedule, comfort, safety, and travel time [5]. These factors are important attributes in transportation mode choice models, whether in the context of land, sea, or air transportation.

Price (Travel Fare)

Price or travel fare is a key determinant in transportation mode decision-making, especially for users from lower-middle economic groups. Fare is a sensitive attribute that directly influences the utility or satisfaction of transportation mode choice [6]. In regions such as East Nusa Tenggara (NTT), sea transportation costs are often the primary determinant of mode choice due to price disparities and limited income. The lower the price, the more likely that mode will be chosen, provided other factors remain constant.

Departure Schedule and Frequency

The availability of suitable schedules and sufficient departure frequency are important factors in supporting user mobility flexibility. In island regions, such as East Nusa Tenggara (NTT), departure schedules are one aspect that must be adhered to.

Comfort

Comfort encompasses physical aspects (seating, ventilation, capacity), services (toilets, food, crew service), and the travel atmosphere. Comfort is a subjective element, but it significantly influences user satisfaction and loyalty to a particular mode of transportation [7].

Safety

Safety encompasses both physical safety (from accidents or technical disruptions) and protection from crime or criminal activity during the journey. Sea transportation carries its own risks, making safety a primary consideration in mode selection. Perceived risk can influence user behavior in choosing a mode. In areas with limited shipping infrastructure, such as East Nusa Tenggara (NTT), safety assurance is a key factor in increasing public trust in sea transportation [8].

Travel Time

Travel time is the length of time required to complete a trip from the point of origin to the destination. Modes with faster travel times are usually preferred, especially for business travelers or those with urgent matters.

Utility Theory

Utility Theory is an important foundation in analyzing transportation mode selection, including sea transportation. This theory is used to explain and predict user decisions (individuals or companies) in choosing a mode of transportation based on the benefits they obtain from each alternative.

In the context of maritime transportation, utility is a measure of the preference or level of satisfaction a user experiences when choosing a particular mode of transportation. Utility theory assumes that users will choose the mode of transportation that provides the highest utility among the available options.

Utility means the satisfaction values of travelers (users) in using alternative modes of transportation which are influenced and related to variables that have a strong relationship with traveler behavior. The form of the relationship can be seen through the following utility function [6].

$$U = f(V_1, V_2, V_3, \dots, V_n) \quad (1)$$

Description:

- U : Traveler satisfaction rating using a mode of transportation
- V₁ to V_n : Variables considered to influence satisfaction ratings using a particular mode of transportation
- F : Mathematical functional relationship

The relationship between transportation mode attributes and user satisfaction is very close. Attributes such as cost, travel time, comfort, safety, and availability of modes influence users' perceptions of their travel experience. Improving the quality of these attributes tends to increase user satisfaction, while decreasing quality can lead to dissatisfaction. People's behavior in choosing a mode of transportation is influenced by various factors, including personal characteristics, trip characteristics, mode characteristics, and environmental factors. Transportation mode choice is a complex decision, in which individuals consider various aspects to achieve their travel goals effectively and efficiently.

Mode Choice Models

Mode choice models aim to determine the proportion of people who will use each mode. This process is carried out with the aim of calibrating the mode choice model in the base year by identifying the independent variables (attributes) that influence mode choice. After the calibration process, the model can be used to predict future mode choice using the values of independent variables (attributes). Furthermore, modeling mode choice is very difficult, even if only two modes are used (public or private). This is because many factors are difficult to quantify, such as comfort, safety, reliability, or the availability of cars when needed. With more than two modes (e.g., bus, public transportation, motorcycle, train), the modeling process becomes even more difficult. For freight transport, the choice is usually between train and truck. Mode choice also considers movements using more than one mode during a trip (multimodal). This type of movement is very common in Indonesia due to its geography, which consists of many islands, resulting in a relatively high percentage of multimodal movement. Therefore, it can be said that modeling mode choice is the weakest and most difficult part of the four stages of the transportation planning model [4].

Multiple Linear Regression Model

Multiple linear regression analysis is used by researchers to predict the condition (rise or fall) of a dependent variable when two or more independent variables, acting as predictors, are manipulated (increased or decreased in value). Multiple linear regression analysis is an analytical tool for forecasting the influence of two or more independent variables on a dependent variable to determine whether or not there is a functional relationship between two or more independent variables and one dependent variable [9].

The independent variables in this study are: Price (X1), Schedule (X2), Security (X3), Convenience (X4) and Time Speed (X5). The dependent variable is User Decision (Y). The regression equation for the four predictors (variables) [9].

$$Y = a + b_1.X_1 + b_2.X_2 + b_3.X_3 + e \quad (2)$$

Description:

Y	= User Decision
a	= Constant
b ₁ ,b ₂ ,b ₃	= Regression coefficients of independent variables
X ₁	= Price
X ₂	= Schedule
X ₃	= Safety
X ₄	= Comfort
X ₅	= Time Speed
e	= Interfering variable

RESEARCH METHODS

Research Type and Approach

This study used quantitative research. Quantitative research is research that analyzes data quantitatively/statistically, with the aim of testing predetermined hypotheses and then interpreting the results of the analysis to draw conclusions [9].

The research method used was descriptive quantitative. Descriptive methods are used to describe the characteristics of Dharma-Rucitra sea transportation users. Quantitative methods are used to examine the factors influencing their choice of this sea transportation mode.

Research Location and Time

The survey was conducted at the Maumere Branch of PT. Dharma Lautan Utama and users of the Dharma Rucitra VII vessel. The survey was conducted from May to June 2025 in Maumere City.

Thought Framework

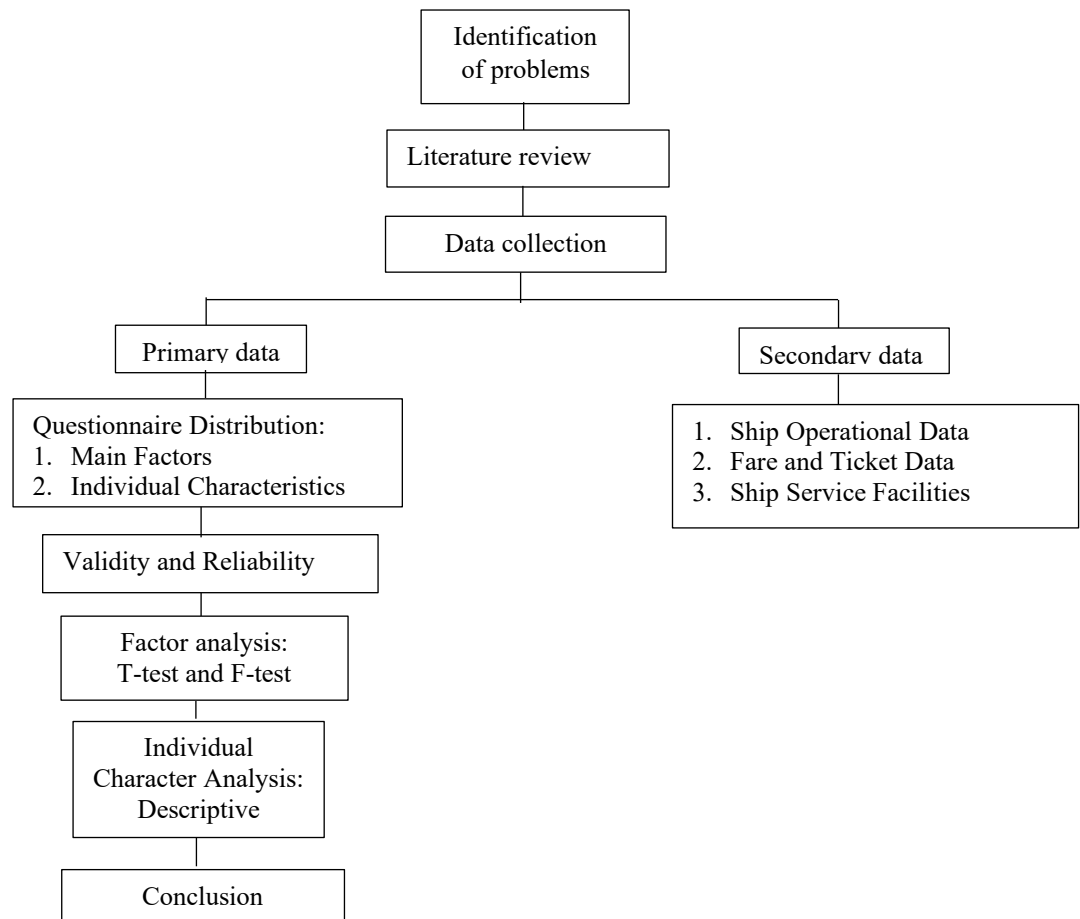


Figure 1. Research flowchart

Sample

A sampling technique is a method or method used to select a specific number of individuals, objects, or elements from a population to serve as samples in a study. This sample aims to represent the population as a whole so that researchers can conduct analysis without having to examine the entire population. The sampling technique used is simple random sampling. This technique involves randomly drawing samples from the population. Simple random sampling is calculated using the Slovin formula.

Where:

N = Number of samples studied
 N = Number of population studied
 E = Level of accuracy

The number of samples in this study uses the Slovin formula. The number of samples in this study is:

$$n = \frac{N}{1+(N.e^2)} \quad (3)$$

Description:

N = Total population of the Dharma Rucitra VII ship on May 2, 2025

e = Accuracy level/margin of error 5% (0.05)

$$n = \frac{N}{1+(N.e^2)}$$

$$= \frac{249}{1+(249 \cdot 0.05^2)}$$

$$= 153,468 \rightarrow 154 \text{ sample}$$

The sample size based on the calculation above was 153,468, rounded up to 154 people. The sample size used in this study was 154 respondents.

The following are the individual characteristics and travel attribute variables:

Table 2. Variables (Individual Characteristics)

No	Individual Characteristic Variable	Symbol
1	Age	X1
2	Travel Frequency	X2
3	Travel Purpose	X3
4	Travel Companions	X4
5	Number of Family Members in the Household	X5
6	Daily Activities	X6
7	Occupation Type	X7
8	Marital Status	X8
9	Highest Education Level	X9
10	Income	X10

Table 3. Variables (Travel Attributes)

No	Travel Attributes	Kisaran (Maumere-Surabaya)
1	Cost (travel cost)	- Adults: IDR 530,000 - Children: IDR 405,000 - Infants: IDR 70,000
2	Time (Total Travel Time)	51 – 53hours
3	Frequency (number of trips)	Once a week (number of trips may vary depending on ship policy)
4	Departure (Departure Schedule)	6:00 PM WITA
5	Service (Comfort Level)	TV, AC, Toilet, Café, Place of Worship, Lounge
6	Safety (Safety Level)	Small Boat, Life Jackets, and Fire Extinguishers

RESULTS AND DISCUSSION

Respondent Overview

Respondents in this study were passengers who had used the Dharma Rucitra VII sea transportation service. Based on the number of 249 passengers on the Dharma Rucitra VII on May 2, 2025, the sample size for this study was 154 respondents.

The Slovin formula was used to determine the sample size. The sample size in this study is:

Where:

N = Total population of the Dharma Rucitra VII on May 2, 2025

e = Accuracy level/margin of error 5% (0.05)

$$n = \frac{N}{1+(N \cdot e^2)}$$

$$= \frac{249}{1+(249 \cdot 0.05^2)}$$

$$= 153,468 \rightarrow 154 \text{ sample}$$

The sample size based on the calculation above is 153,468, rounded to 154. The sample size used in this study was 154 respondents.

Validity and Reliability Testing

A validity test examines the validity and validity of a questionnaire or a measuring instrument in measuring what it is supposed to measure. Meanwhile, a reliability test examines the extent to which the measuring instrument is reliable, that is, it produces consistent results when used repeatedly. The validity and reliability tests in this study used SPSS software and involved 154 respondents.

The validity and reliability tests in this study are as follows.

Table 4. Validity Test Results

Statement	r = count	r = table	P (sig.)	Description
X1	0,817	0,159	<0,001	Valid
X2	0,808	0,159	<0,001	Valid
X3	0,846	0,159	<0,001	Valid
X4	0,846	0,159	<0,001	Valid
X5	0,834	0,159	<0,001	Valid

Valid Conditions:

1. R count > R table
2. Sig < 0,05

Table 5. Reliability Test Results

Number of Statements	Cronbach's Alpha	Terms	Description
5	0,884	0,6	Reliable

Reliability Requirements:

Results of Analysis of Mode Selection Factors

T-Test

This T-test is a two-way hypothesis test (the direction of the hypothesis is unclear), meaning that variable x influences variable Y.

If the T-value is positive, then:

1. If the calculated t-value < t-table and if the probability (significance) > 0.05 (α), then H0 is accepted, meaning the independent variable does not significantly influence the dependent variable partially (individually).
2. If the calculated t-value > t-table and if the probability (significance) < 0.05 (α), then H0 is rejected, meaning the independent variable significantly influences the dependent variable partially (individually).

If the T-value is negative, then:

1. If the calculated t-value < - t-table, it means the independent variable significantly influences the dependent variable partially (individually).
2. If the calculated t-value is greater than the table t-value, it means that the independent variable does not significantly influence the dependent variable partially (individually).

The results of the t-test in this study using SPSS are as follows:

Table 6. T-Test Results

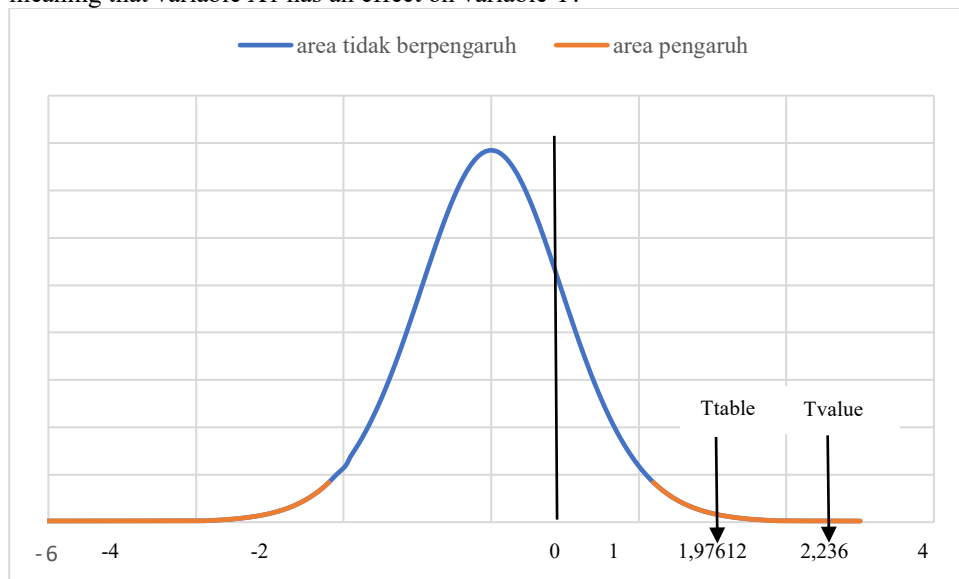
Coefficients ^a					
Model	Unstandardized Coefficients			Standardized Coefficients	Sig.
	B	Std. Error		Beta	
1 (Constant)	.267	.094			
				2.834	.005

X1	.060	.027	.202	2.236	.027
X2	.111	.022	.430	5.010	<.001
X3	.101	.028	.345	3.613	<.001
X4	-.109	.035	-.331	-3.125	.002
X5	.004	.034	.013	.126	.900

a. Dependent Variable: Y

a. Price Variable (X1)

1. Based on the data above, the sig value of X1 is <0.05 ($0.027 < 0.05$), so H_0 is rejected, meaning that variable X1 has a significant effect on variable Y.
2. Based on the data above, the calculated t value is $2.236 > 1.97612$ t table, so H_0 is rejected, meaning that variable X1 has an effect on variable Y.



3.

Figure 2. Graph of t-test values (price)

a. Schedule Variable (X2)

1. Based on the data above, the sig. value of X2 is <0.05 ($0.001 < 0.05$), so H_0 is rejected, meaning that variable X2 has a significant effect on variable Y.
2. Based on the data above, the calculated t-value is $5.010 > 1.97612$ t-table, so H_0 is rejected, meaning that variable X2 has an effect on variable Y.

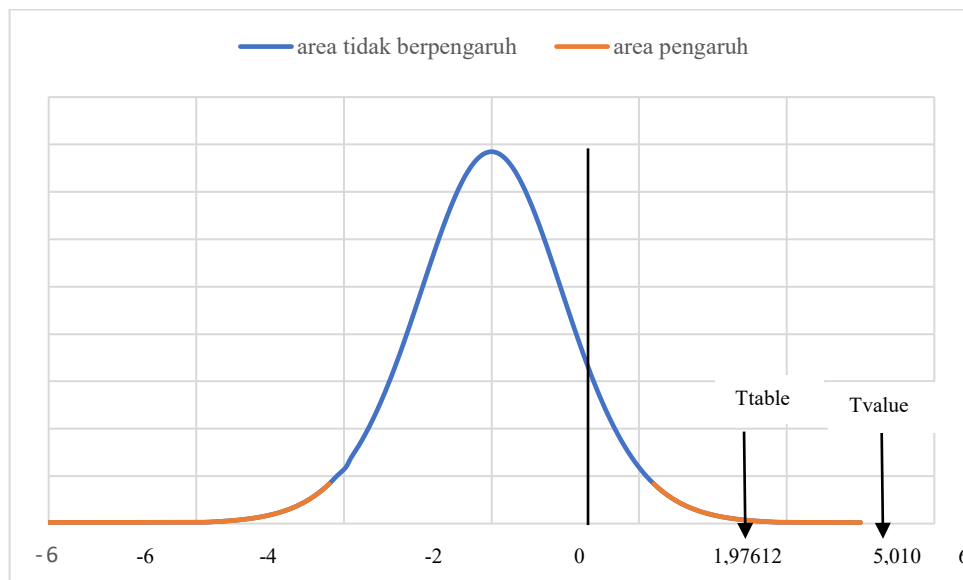


Figure 2. Graph of t-test values (price)

a. Schedule Variable (X2)

1. Based on the data above, the sig. value of X2 is <0.05 ($0.001 < 0.05$), so H_0 is rejected, meaning that variable X2 has a significant effect on variable Y.
2. Based on the data above, the calculated t-value is $5.010 > 1.97612$ t-table, so H_0 is rejected, meaning that variable X2 has an effect on variable Y.

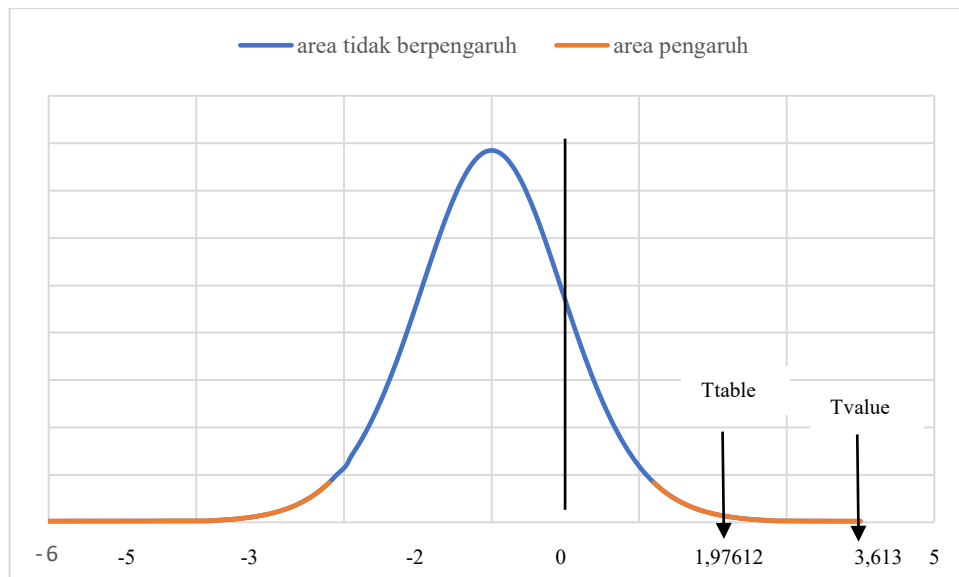


Figure 4. Graph of t-test values (comfort)

b. Safety Variable (X4)

1. Based on the data above, the sig. value of X4 is <0.05 ($0.002 < 0.05$), so H_0 is rejected, meaning that variable X4 has a significant effect on variable Y.
2. Based on the data above, the calculated t-value is $-3.125 < -1.97612$ t-table, so H_0 is rejected, meaning that variable X4 has an effect on variable Y.

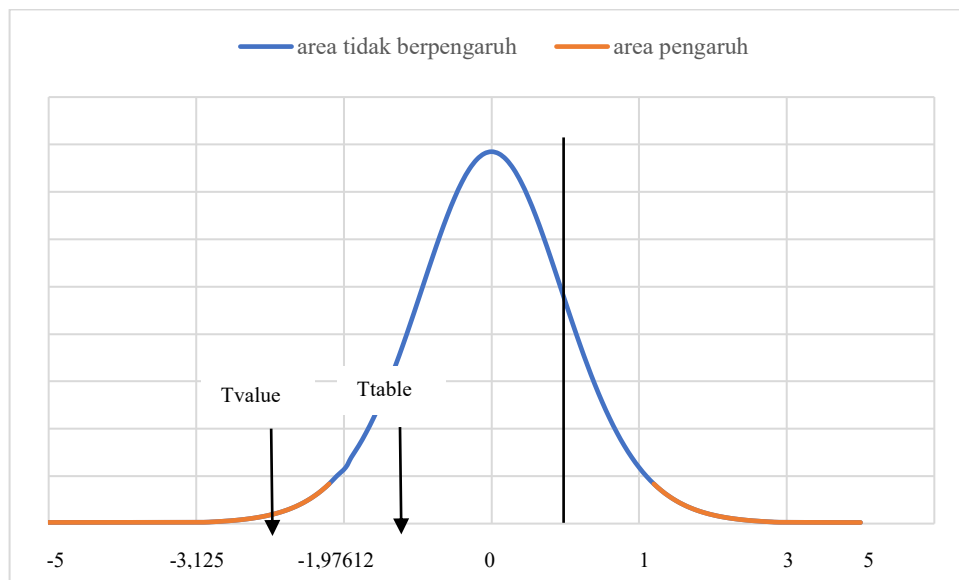


Figure 5. t-test value graph (security)

b. Speed-Time Variable (X5)

1. Based on the data above, the sig. value of $X5 > 0.05$ ($0.900 > 0.05$), so H_0 is accepted, meaning that variable X5 has no effect on variable Y.
2. Based on the data above, the calculated t-value is $0.126 < 1.97612$ t-table, so H_0 is accepted, meaning that variable X5 has no effect on variable Y.

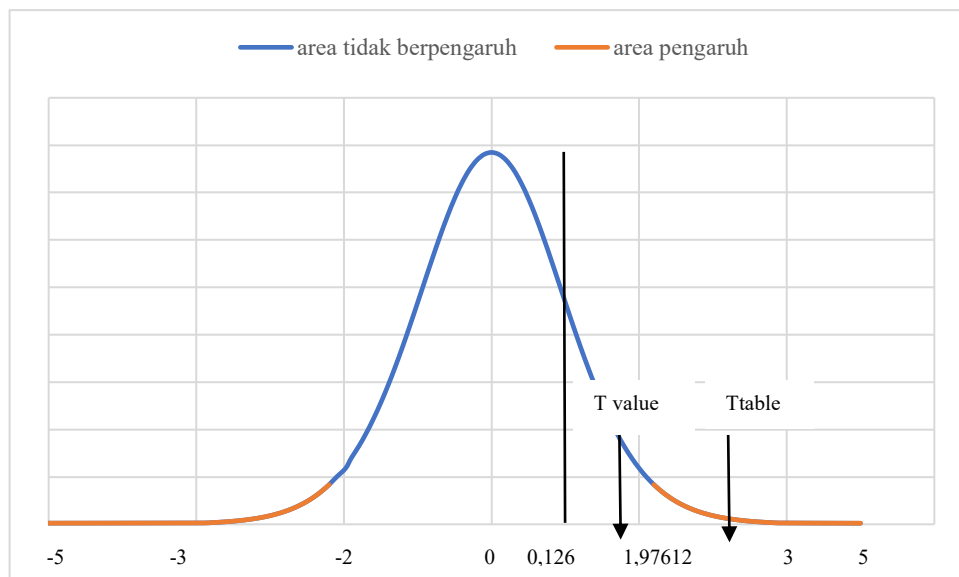


Figure 6. Graph of t-test values (time velocity)

F Test

1. If the calculated F value $< F$ table and if the probability (significance) $> 0.05(\alpha)$, then H_0 is accepted, meaning that the independent variables simultaneously or jointly do not significantly influence the dependent variable.
2. If the calculated F value $> F$ table and if the probability (significance) is less than $0.05(\alpha)$, then H_0 is rejected, meaning that the independent variables simultaneously significantly influence the dependent variable.

Table 7. F Test Results

		ANOVA ^a				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.147	5	1.229	22.337	<.001 ^b
	Residual	8.201	149	.055		
	Total	14.348	154			

a. Dependent Variable: Y

b. Predictors: (Constant), X5, X2, X1, X3, X4

Based on the presentation point of the F distribution, the F table = 2.28

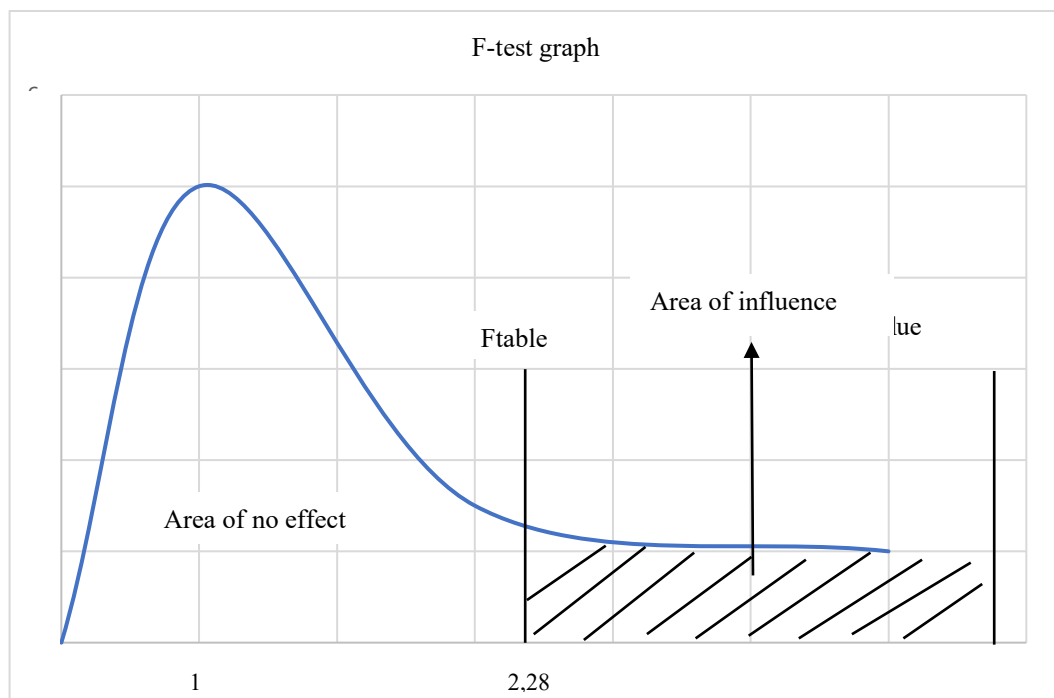


Figure 7. F-Test Graph

1. Based on the data above, the sig. value for the variables price, schedule, comfort, safety, and speed is 0.001, or less than the α value ($0.001 < 0.05$). Therefore, H_0 is rejected, meaning that the variables price, schedule, comfort, safety, and speed jointly influence the influencing factor variable.
2. Based on the data above, the calculated f-value is $22.337 > 2.28$ f-table, so H_0 is rejected, meaning that the variables price, schedule, comfort, safety, and speed influence the decision variable (Y).

From the analysis using SPSS, the following results can be obtained:

Based on the data analysis results from the T-Test in this study, it is shown that partially the variables price (X1), departure schedule (X2), comfort (X3), and safety (X4) have a significant influence on users' decisions to use the Dharma Rucitra VII ship as a mode of sea transportation. This is shown through the significance value of each variable which is smaller than the significance limit of 0.05, which is 0.027 for price, <0.001 for schedule, <0.001 for comfort, and 0.002 for safety. A significance value smaller than 0.05 indicates that the null hypothesis (H_0) is rejected, meaning there is a significant influence between variable X on variable Y. And the calculated t value of each variable is greater than the t table of 1.97612, which is 2.236 for price, 5.010 for schedule, 3.613 for comfort, -3.125 for safety. A calculated t value greater than the t table indicates that the hypothesis H_0 is rejected, meaning there is an influence between variable X on variable Y. Thus, it can be

concluded that the four variables individually provide a meaningful contribution in influencing user preferences in using sea transportation modes.

1. On the other hand, the speed of time variable (X5) shows a significance value of 0.900, which is greater than the specified significance value (0.05). Therefore, H_0 is accepted, meaning that the X5 variable (speed of time) does not have a significant effect on the Y variable (user decision). And the calculated t value of the X5 variable is smaller than the t table, namely $0.126 < 1.97612$, so H_0 is accepted, meaning that the X5 variable does not affect the Y variable. This finding indicates that in the context of using the Dharma Rucitra VII Ship service, the aspect of travel time speed is not a top priority for users.
2. The results of the F test show that all X variables (price, schedule, comfort, safety, and speed of time) together have a significant effect on the Y variable. This is indicated by a significance value of <0.001 which is smaller than 0.05, so the null hypothesis is rejected and the calculated F value of $22.337 > 2.28$ f table. This strengthens the conclusion that overall, the combination of independent variables studied has a real contribution to the decision to choose the mode of transportation by users of the Dharma Rucitra VII Ship service.

Table 8. Values of Variable Coefficients in the Multiple Linear Regression Equation

Model		Coefficients ^a		t	Sig.
		Unstandardized Coefficients	Standardized Coefficients		
	B	Std. Error	Beta		
1	(Constant)	.267	.094	2.834	.005
	X1	.060	.027	2.236	.027
	X2	.111	.022	5.010	<.001
	X3	.101	.028	3.613	<.001
	X4	-.109	.035	-3.125	.002
	X5	.004	.034	.013	.900

a. Dependent Variable: Y

Multiple Linear Regression Test Results:

$$Y = a + bX_1 + cX_2 + \dots + nX_n$$

$$Y = 0.267 + 0.060X_1 + 0.111X_2 + 0.101 - 0.109 + 0.004$$

Description:

1. A positive constant value indicates a positive influence of the independent variable.
2. 0.060 (X1) is the regression coefficient of variable X1 on Y, meaning that if variable X1 increases by one unit, Y will increase by 0.060 or 6%.
3. 0.111 (X2) is the regression coefficient of variable X2 on Y, meaning that if variable X2 increases by one unit, Y will increase by 0.111 or 11.10%.
4. 0.101 (X3) is the regression coefficient of variable X3 on Y, meaning that if variable X3 increases by one unit, Y will increase by 0.101 or 10.10%.
5. -0.109 (X4) is the negative direction of the regression coefficient of variable X4 on Y, meaning that if we increase the value of X4, the value of Y will decrease by 0.109 or 10.90%.
6. 0.004 (X5) is the regression coefficient of variable X5 on Y, meaning that if variable X3 increases by one unit, Y will decrease by 0.109 or 10.90%. If X5 increases by one unit, Y will increase by 0.004 or 0.40%.

The findings of this study align with previous studies that emphasize the importance of price, schedule, comfort, and safety in determining user preferences for maritime transportation modes [10], [11]. Affordable prices and convenient service are two dominant factors influencing user choice in inter-island maritime transportation in Indonesia [12], [13]. Regular sailing schedules and guaranteed ship safety significantly influence user trust in maritime transportation services. However, different results were found for the speed-time variable in this study, which was not significant, indicating that in the context of the Dharma Rucitra VII ship, users prioritized price, comfort, and safety over travel speed [14-18]. This could be due to the more flexible nature of

maritime travel, or due to users' perception that all ships have relatively similar travel times. Overall, the results of this study provide an important contribution to understanding the main factors influencing the choice of maritime transportation modes in the study area and can be used as a basis for consideration by ship operators in designing service strategies that are more responsive to user needs. Results of the Analysis of Individual User Characteristics

The research results revealed a total age distribution of 154 respondents on the Maumere-Surabaya route, based on age, travel frequency, trip purpose, number of family members, occupation, highest level of education, income, travel companions, and marital status. This is shown in Figures 7 to 15 below.

Usia
154 jawaban

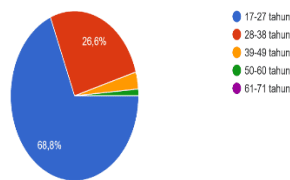


Figure 7. Age Diagram

Frekuensi Perjalanan
154 jawaban

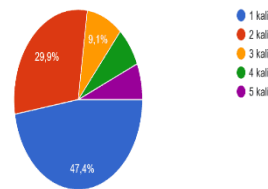


Figure 8. Travel Frequency Diagram

Maksud/Tujuan Perjalanan
154 jawaban

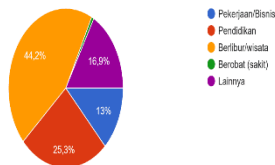


Figure 9. Travel Purpose Diagram

Jumlah anggota keluarga dalam satu rumah
154 jawaban

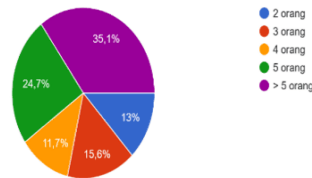


Figure 10. Family Member Number Diagram

Jenis Pekerjaan
154 jawaban

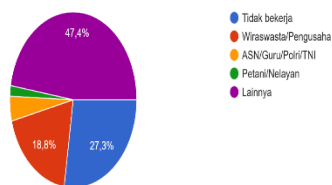


Figure 11. Job Type Diagram

Pendidikan terakhir
154 jawaban

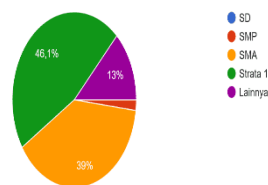


Figure 12. Last Education Diagram

Pendapatan
154 jawaban

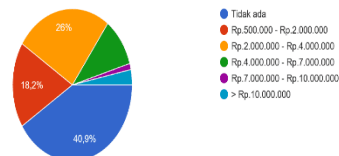


Figure 13. Income Diagram

Rekan Seperjalanan
154 jawaban

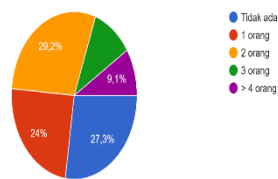


Figure 14. Travel Companion Diagram

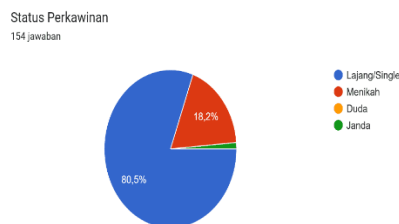


Figure 15. Marital Status Diagram

Based on the results of a survey of 154 respondents using sea transportation on the Maumere-Surabaya route, a comprehensive picture of the socio-demographic characteristics that influence their travel patterns and preferences was obtained. These characteristics reflect the social, economic, and mobility dynamics of ship users, which in turn are closely related to basic theories in transportation and travel behavior studies.

1. Demographically, the majority of respondents were in the young age range, namely 17–27 years (68.8%). This indicates that the younger generation dominates sea transportation users on this route. This age group tends to have a greater tolerance for relatively long travel times, as is common with sea travel.
2. Regarding trip frequency, 47.7% of respondents made only one trip. This indicates that most users are incidental or temporary travelers, rather than regular travelers. Within the framework of travel behavior theory, this low frequency indicates that decisions to use sea transportation are not entirely routine, but rather depend on specific, occasional needs, such as vacations, education, or family activities.
3. The primary motivation for travel is reflected in the data, which shows that 44.2% of respondents traveled for tourism or leisure, followed by education (25.3%) and work (13%). This underscores that sea transportation remains a primary alternative for budget-conscious travel needs.
3. Furthermore, analysis of family size indicates that 35.1% of respondents come from households with more than five members. This suggests that sea transportation is a rational choice for large households, as collective costs tend to be lower than other modes of travel, such as air travel.
4. The data also indicates that respondents' occupations were dominated by "other" (47.4%) and "unemployed" (27.3%), which in this context likely refers to students, college students, or informal workers. This information is supported by respondents' educational status, with 46.1% holding a bachelor's degree and 39% high school graduates. Furthermore, the majority of respondents (80.5%) were single. The combination of these three variables indicates that sea transportation is more frequently used by individuals with low incomes and mobility activities related to education or job search, rather than by established households.
5. In terms of income, the majority of respondents (40.9%) had no income, while 18.2% earned less than Rp 2,000,000. This finding underscores the role of sea transportation as an accessible transportation alternative for low-income groups. Therefore, the relatively low cost of ferry tickets is a key factor in the choice of this mode by those with limited incomes.
6. Meanwhile, 29.2% of respondents traveled with two people, and 27.3% had no travel companions. This reflects that sea transportation is used for both individual and group travel, with a tendency toward smaller groups, which aligns with the flexible nature of recreational or educational travel.
7. The predominance of singles (80.5%) indicates that the primary users of sea transportation are individuals with greater mobility freedom than those who are married or have family members. In studies of travel behavior, marital status is often associated with more limited mobility patterns due to household responsibilities.
1. Overall, these findings indicate that the primary users of sea vessels on the Maumere–Surabaya route are young, unmarried, highly educated individuals with low incomes, with travel purposes that are more temporary or recreational. Sea transportation is chosen for its economical characteristics, despite its limitations in speed. These results align with theories of

transportation and individual mobility that emphasize the importance of socioeconomic variables in shaping mode preferences.

The first objective is to identify the main factors influencing users of the Dharma Rucitra 7.

1. Based on the analysis above, the factors influencing users of the Dharma Rucitra 7 are price, comfort, safety, and departure schedule, which significantly influence users' decisions to use the Dharma Rucitra VII sea transportation mode. These four factors contribute significantly to influencing user preferences for sea transportation.
2. Speed and travel time do not significantly influence user decisions. This finding indicates that, in the context of Dharma Rucitra VII users, speed and travel time are not a top priority.
3. Overall, the results of this study provide an important contribution to understanding the main factors influencing users' use of sea transportation in the Maumere area of Sikka Regency and can serve as a basis for ship operators to design service strategies that are more responsive to user needs.

The second objective is the characteristics of individual users.

According to the analysis above, the characteristics of individual users of the Dharma Rucitra VII are young, unmarried, highly educated but low-income individuals with travel purposes that are more temporary or recreational. Sea transportation is chosen due to its economical characteristics, despite its limitations in speed. This finding aligns with theories of transportation and individual mobility, which emphasize the importance of socio-economic variables in shaping mode preferences.

The third objective provides applicable recommendations for PT Dharma Lautan Utama regarding service quality

Based on the main factors and user characteristics, the management of the Dharma Rucitra VII must be able to:

1. Optimize more targeted services. This optimization encompasses various aspects, starting with speed, which, according to the analysis of the main factors, is not a primary factor for users to use this sea mode. Ship management needs to evaluate and optimize shipping routes, for example, by implementing a direct route system and routinely maintaining the ship's engine to ensure the ship remains in prime condition and avoids problems or delays during travel.
2. Due to the "other" occupation of passengers (students, pupils) with "no" income and a maximum of five dependents in a family, the ship needs to set more varied and competitive ticket prices in accordance with passengers' economic capabilities.
3. In accordance with the age characteristics of passengers, who are at least 50-60 years old, who are susceptible to relatively long travel times compared to younger passengers who tend to have a greater tolerance, the ship needs to provide direct routes without stopovers or transit points. Improve comfort facilities specifically for the elderly, for example, by providing access to food that can be served directly or delivered to them. Provide special rooms for the elderly with closer toilet access than economy class facilities.
4. The Dharma Rucitra VII ship can use these findings as a basis for designing a more responsive, efficient, and passenger-oriented service strategy. Ultimately, service optimization is expected to increase user satisfaction, strengthen the competitiveness of maritime transportation, and support the long-term sustainability of ship operations.

CONCLUSION

Based on the research results, the main factors such as price aspects, security aspects, comfort aspects, departure schedule aspects have a significant influence on user decisions to use the Dharma Rucitra VII Ship even though it has limitations in terms of travel time speed. This is shown through the significant value of each variable which is smaller than the significant limit of 0.05, namely price (0.027), schedule (<0.001), comfort (<0.001), security (0.002) and speed of time (0.900). The individual characteristics of Dharma Rucitra VII ship users are young individuals (68.80%), travel frequency 1 time (47%), purpose of vacation/tourism (44.20%), number of family members > 5 (35.10%), other types of work (47.40%), Last education is bachelor's degree (46.10%), no income

(40.90%), 2 fellow travelers (29.20%), single marital status (80.50%). The sea transportation mode was chosen because of its economical characteristics. These results align with theories of transportation and individual mobility that emphasize the importance of socioeconomic variables in shaping mode preferences. The results of this study provide an important contribution to understanding the main factors influencing users of sea transportation in the Maumere area of Sikka Regency, and can serve as a basis for consideration for ship operators in designing service strategies that are more responsive to user needs.

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