DINASTI INTERNATIONAL JOURNAL OF ECONOMICS, FINANCE AND ACCOUNTING (DIJEFA)
E-ISSN : 2721-303X
P-ISSN : 2721-3021
https://dinastipub.org/DIJEFA dinasti.info@gmail.com +62 811 7404 455

DOI: https://doi.org/10.38035/dijefa.v5i4
Received: 01 August 2024, **Revised:** 08 August 2024, **Publish:** 03 September 2024

Influence of Assist Tug Ship Operation Time and Service Rates Pandu-Delay Against The Performance of PT. Delta Mandiri Batam Shipping

Deta Awanda[1], April Gunawan Malau[2*], Widianti Lestari [3]
[1]Jakarta Maritime College of Science, Jakarta, Indonesia,
[2]Jakarta Maritime College of Science, Jakarta, Indonesia, aprilgunawan22@gmail.com.
[3]Jakarta Maritime College of Science, Jakarta, Indonesia,

[*]Corresponding Author: aprilgunawan22@gmail.com.

Abstract: Guiding is part of the navigation or support function in the safety of ship navigation which is caused by the unique characteristics of the port. Quantitative research is a type of research that uses numbers in processing data to produce structured information. Characteristics of quantitative research using the SPSS application, aims to obtain data that describes the characteristics of objects, events or situations (Sekaran & Bougie, 2016:43). Based on partial hypothesis testing, it is known that the assist tug variable has a positive and significant effect on PT performance. Delta Mandiri Batam. This is proven by 0.002 0.05 and a tcount value of 2,343 ttable 1,697. Tug Assist Contribution to Performance 0.305. So it can be concluded that the first hypothesis in this research is accepted. This shows that the more reliable and accurate the quality of service provided by employees during the assist tug process at PT. Delta Mandiri Batam means there will be no quality of service rates for tug-guide services and performance. The influence of assist tug ship operating time has been proven to have a positive and significant effect on performance at the company PT Pelayaran Delta Mandiri Batam, with a regression coefficient of 0.027 and a t-value of 2.343, t -table 1,697.

Keyword: Tug Assist, Tug Driver Service Rates, Performance

INTRODUCTION

Guiding is part of the navigation or support function in the safety of ship navigation which is caused by the unique characteristics of the port. Guiding is a guide's activity in assisting, providing advice and information to the captain about the conditions of ports, waters and local shipping lanes which are important so that navigation can be carried out safely, orderly and smoothly for the safety of the ship and the environment.

The tug is carried out using a special ship, namely a tugboat or what is called a tugboat. Tugboats are the work of pushing, escorting, guarding, towing or towing vessels that are

moving, to moor to remove from moorings docks, breasting dolphins, buoys and other vessels.

Table 1. Productivity of Ship Operating Time and Delay Rates

NO	Month	Number of ships	Operating Time	Total Rates
1.	August 2021	1	1 hour	Rp. 1,131,655
2.	September 2021	0	0	0
3.	October 2021	0	0	0
4.	November 2021	0	0	0.
5.	December 2021	1	2 hours	Rp. 2,263,310
6.	January 2022	2	2 hours	Rp. 2,943,605
7.	February 2022	3	3 hours	Rp. 5,887,210
8.	March 2022	1	1 hour	Rp. 1,811,950
9.	April 2022	4	4 hours	Rp. 6,567,505
10.	May 2022	1	2 hours	Rp. 2,263,310
11.	June 2022	3	3 hours	Rp. 5,887,210
12.	July 2022	2	2 hours	Rp. 2,943,605
13.	August 2022	3	3 hours	Rp. 5,887,210

Source: PT. Delta Mandiri Batam Sailing 2021 – 2022

From the table above, you can see the comparison of ship operating times versus tug rates. The longer the tugboat operates, the higher the tugboat service rates will be. This can be detrimental because the costs will exceed the costs that were planned before the ship's arrival.

Identification Of Problems

By paying attention to the description and background and completeness data obtained, the author identifies the existing problems as follows:

1. The influence of assist tug ship operating time on the performance of PT. Independent Delta Cruises
2. Lack of checking and maintenance on assist tug machines by scouting companies.
3. The influence of guide - tug service rates on the performance of PT. Independent Delta Cruises.
4. Lack of tugboat availability
5. The influence of assist tug ship operating time and pilot tug service rates together on the performance of PT. Independent Delta Cruises
6. Lack of communication between PT operational staff. Delta Mandiri shipping for tug boat/guide crew.

Aims And Benefits Of Research

1. Research purposes
   In accordance with the problem formulationabove, the author can take the research objectives as follows:
   a. To find out and analyze the effect of assist tug operating time on the performance of PT. Independent Delta Cruises.
   b. To find out and analyze the influence of guide - tug service rates on the performance of PT. Independent Delta Cruises.
   c. To find out and analyze the influence of assist tug ship operating time and tug pilot service rates together on the performance of PT. Independent Delta Cruises

2. Benefits of research

This research is expected to provide benefits, namely as follows:

a. Theoretical Benefits

It is hoped that this research can provide theoretical benefits, at least it can be useful as a thought contribution for the author while studying at the Jakarta College of Maritime Science (STIP) and field practice at PT. Delta Mandiri Shipping in the field of maritime and shipping.

b. Practical Benefits

1) As additional information and knowledge to be used as reference material for subsequent research so that it can produce better and more accurate research.
2) As material to complete the treasury of books in the library
3) It is hoped that it can be useful as reading material to increase the knowledge of cadets and cadets in particular and society in general.
4) As evaluation material in an effort to improve guiding services.

METHOD

Data Description

a. Effect of Assist Tug Ship Operation Time

Understanding Assist Tug Ship Operation Time According to experts;

According to (Ivan Mahendra: 2022) influence is a person's response to something that causes behavior to change, whether behavior changes in a positive direction or behavior changes in a negative direction. An influence can change a person's behavior, character and beliefs about something. Usually the influence comes from two directions, meaning that there is an object that influences and there is an object that is influenced.

b. Guide Service Fees - Delay

Understanding Guide - Tug Service Fees According to experts;

According to (Eko Hariyadi Budiyanto: 2007) in a book on port business management, in Indonesia the tariff for tugboat users to help pilots is calculated based on the size of the ship being towed (GRT) and the length of time the tugboat is used, while the size of the PK and tugboat does not affect the size of the tugboat. small fees charged to the ship. The duration of use of a tugboat is calculated from the time the tugboat departs from the base until it returns to the base.

c. Performance Understanding Performance According to experts;

Performance in an organization has different work standards depending on company policy. The factors that influence performance are developed from various perspectives. According to Prawirosento in Sutrisno (2016:9).

Research Time

The author determines the time of the research when carrying out Land Practice at the PT Company. Delta Mandiri Batam Sailing Starting from 16 August 2021 to 14 August 2022.

Research Place

The place where this research was carried out was at PT. Independent Delta Cruises.

Approach Method

According to Sinambela (2020) quantitative research is a type of research that uses numbers in processing data to produce structured information. Quantitative research characteristics aim to obtain data that describes the characteristics of objects, events or situations (Sekaran & Bougie, 2016:43).

Data Collection Techniques

In discussing and researching a problem, data is needed that is related to the problem to be discussed, then compiled and analyzed so that a clearer picture can be obtained to make it easier for the writer to solve the problem. The data collection techniques that the author uses are obtained through:

1. Observation

   Observation is a data collection technique through direct observation of all activities in the field through real work practices carried out for approximately 12 months at PT. Independent Delta Cruises. This technique refers to the operating time of assist tug vessels and the service rates for tug-guiding services on the performance of PT. Independent Delta Cruises.

2. Questionnaire (Questionnaire)

   In this research, the author used a research instrument, namely a questionnaire. According to Sugiyono (2019:199). A questionnaire is a data collection technique that is carried out by giving a set of questions or written statements to respondents to answer. This questionnaire was prepared using a Likert scale, which is a measurement scale used to measure the attitudes, opinions and perceptions of a person or group of people regarding social phenomena. The answer to each item using a Likert scale has a gradient from very positive to very negative. For quantitative analysis purposes, the answer can be given a score like the following table:

Table 1. Likert Scale Table

Answer Choices	Abbreviation	Value Weight
Strongly agree	SS	5
Agree	S	4
Neutral	N	3
Don't agree	T.S	2
Very not	STS	1

Source: Sugiyono (2015: 107)

Research Subjects

According to Sugiyono (2019:126) population is a generalized area consisting of objects/subjects that have certain quantities and characteristics that are determined by researchers to be studied and then conclusions drawn. In this case, the author uses the consumer population of PT. Delta Mandiri cruises as many as 33 people.

According to Handayani (2020), sampling technique or what is usually called sampling is the process of selecting a number of elements from a population researched to be used as a sample, and understand the various traits or characteristics of the subjects being sampled, so that generalizations can be made from elements of the population. This research uses probability sampling techniques sampling, namely simple random sampling. The meaning of simple random sampling, namely a research technique of selecting randomly. In this case, the population taken by the author in preparing this thesis or research is regarding the quality and influence of the operating time of the Assist tug ship and the tariff for tug-guide services on the performance of PT. Delta Mandiri shipping is targeted at consumers and customers.

According to (Noor: 2016) the sample size in research is determined using the Slovin formula as follows:

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

n = Number of samples
e = Error rate
N = Number of population

(note: generally used 1% or 0.01, 5% or 0.05 and 10% or 0.1) So for this research, the sample size is based on calculations using the Slovin formula, namely:

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

$$n = \frac{33}{1 + 33\ (0{,}05)^2}$$

$$n = \frac{33}{1 + (33 \times 0{,}0025)}$$

$$n = \frac{33}{1 + 0{,}0825}$$

$$n = \frac{33}{1{,}0825}$$

n= 30.48 rounded to 30 respondents

Based on calculations using this formula, the sample obtained was 30 respondents. Researchers used a 5% (0.05) error rate due to the large population and time constraints

RESULTS AND DISCUSSION

Validity Test

According to Widi R (2011), a validity test is a test that has the function of seeing whether a measuring instrument can be said to be valid or invalid. The measuring tool is in the form of questions contained in a questionnaire. A questionnaire can be said to be valid if a question in the questionnaire can reveal something that is measured in the questionnaire. The validity test in this research was used to test the validity of the questionnaire. The criterion for the validity test is if the calculated r value is greater than the table r value. The R table in this study is 0.05 because the number of respondents is 33 customers or n = 33. The validity test criteria are: If, when rcount > rtable, the questionnaire is declared valid
When Rcount< Rtable, the questionnaire is declared invalid

The validity test will test each variable that will be used inthis research. The following are the results of the validity test of the assist tug ship operating time variables and the tug-guide service rates on performance with a sample of 33 respondents.

a. Service quality variables*Assist Tug*(X1)

Table 2. Assist Tug Variable Test Results (X1)

No. Items	r count	r table	Information
1	0.906	0.05	Valid
2	0.868	0.05	Valid
3	0.873	0.05	Valid
4	0.870	0.05	Valid
5	0.733	0.05	Valid
6	0.790	0.05	Valid
7	0.847	0.05	Valid
8	0.893	0.05	Valid
9	0.867	0.05	Valid

(Source: SPSS results data processed by the author in 2023)

b. Promotion VariablesTug Driver Services Service Rates (X2)

Table 3. Test Results for Tug Guide Service Tariff Variables (X2)

No. Items	r count	r table	Information
1	0.772	0.05	Valid
2	0.860	0.05	Valid
3	0.798	0.05	Valid
4	0.918	0.05	Valid
5	0.837	0.05	Valid
6	0.907	0.05	Valid
7	0.912	0.05	Valid
8	0.926	0.05	Valid

(Source: SPSS results data processed by the author in 2023)

c. Service user satisfaction variable Performance (Y)

Table 4. Performance Variable Test Results (Y)

No. Items	r count	r table	Information
1	0.924	0.05	Valid
2	0.933	0.05	Valid
3	0.931	0.05	Valid
4	0.924	0.05	Valid
5	0.907	0.05	Valid
6	0.906	0.05	Valid
7	0.868	0.05	Valid
8	0.870	0.05	Valid
9	0.893	0.05	Valid
10	0.856	0.05	Valid
11	0.733	0.05	Valid
12	0.790	0.05	Valid
13	0.847	0.05	Valid
14	0.918	0.05	Valid

(Source: SPSS results data processed by the author in 2023)

Based on the table above, it can be seen from the results of the validity test of all variable question instruments. It can be seen that all statements are valid because they have a calculated r value > r table 0.05

Data Analysis

a. Correlation Test

Tabele 5. Correlation Results*Assist Tug*(X1) And Guide - Delay Services (X2) Performance (Y)

Model Summary

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.607a	,368	,322	2,153	,368	7,873	2	27	,002

a. Predictors: (Constant), Guide Service Rates - Tug, Assist Tug

(Source: SPSS results data processed by the author in 2023)

Based on the table above, the F Change significance value is 0.002 <0.05, meaning there is a correlation/relationship, with a closeness level of 0.368. So it can be concluded that there is a positive correlation/relationship between variable X1 (Assist Tug) and variable

b. Multiple Linear Regression Analysis

The regression equation model that can be written in the form of a regression equation is as follows:

Y = 19.842 + 0.6491 + 0.474 X2

This equation means:

1) The constant value a = 19.842 which means that if the independent variable is ignored or in other words if there are no variables inThe influence of assist tug ship operating time and tug pilot service rates on the performance of PT. Delta Mandiri Batamwould be worth 19,842
2) Coefficient value b1 = 0.649 which means that every one-unit change inassist tug ship operating time and tug pilot service rates on the performance of PT. Delta Mandiri Batamwould be worth 0.649 and move in the same direction.
3) Coefficient value b2 = 0.452 which means that every one-unit change inassist tug ship operating time and tug pilot service rates on the performance of PT. Delta Mandiri Batamwould be worth 0.474 and move in the same direction

DISCUSSION

1. Based on partial hypothesis testing, it is known that the variable*assist tug* positive and significant effect onperformance of PT. Delta Mandiri Batam.This is proven by 0.002 < 0.05 and a tcount value of 2,343 > ttable 1,697. Tug Assist Contribution to Performance 0.305. So it can be concluded that the first hypothesis in this research is accepted. This shows that the more reliable and accurate the quality of service provided by employees during the assist tug processPT. Delta Mandiri Batamthen there will be no qualityrates for tug-of-war servicesand performance.
2. Based on partial hypothesis testing, it is known that the guide-tug service fee variable has a positive and significant effect on performance at PT. Delta Mandiri Batam. This is proven by the tcount value of 1,736 > ttable 1.697 and with a significance value of 0.02 < 0.05. The contribution of tug-guide services to performance is 0.460. So it can be concluded that the second hypothesis in this research is accepted. This shows that the way the guide-tug service is less than optimal is a method implemented by the company that is not in accordance with consumer wishes. More attention must be paid to avoid consumer dissatisfaction. Companies must pay more attention to the activities of tug-guide services.
3. Based on simultaneous hypothesis testing, it is known that the influence variable ofoperating times for assist tug vessels and rates for tug-guiding servicespositive and significant effecton the performance of PT. Delta Mandiri Batam. This is proven by the Fcount value of 7.873 > Ftable 3.320 and with a significance value of 0.002 < 0.05. Contribution*assist tug*and rates for tug-guide services together the performance is 0.368. So it can be concluded that the third hypothesis in this research is accepted. Based on the results of this research, it can be concluded that the better the cooperation and coordination with other employees with the assist tug process, the betterperformance of PT. Delta Mandiri Batam.

CONCLUSION

Based on the results of the analysis, this research can be concluded as follows:

1. Influence of assist tug ship operating timeproven to have a positive and significant effect on performance at the company PT Pelayaran Delta Mandiri Batam, with a regression coefficient of 0.027 and a t-value of 2.343, t-table 1.697. The dimension that best reflects the Assist Tug is being able to review the provisions or operating standards of the Assist Tug ship which is higher with an average value of 5 and the dimension that best reflects the performance of Coordinating the Assist Tug ship before operating to make it more effective is 4.56.
2. Fees for tug-of-war servicesproven to have a positive and significant effect on performance at the company PT Pelayaran Delta Mandiri Batam, with a regression coefficient of 0.112 and a t-value of 1.736, t-table of 1.697. The dimension that best reflects tariff costs is the calculation of costs incurred according to the services used, 4.6 and the dimension that best reflects employee performance is suitability of work results in accordance with company goals, with a value of 4.6
3. The influence of assist tug ship operating time and tug pilot service rates together have a positive and significant effect on performance at the company PT Pelayaran Delta Mandiri Batam, with a contribution (R2) of 36.8% and an F-count value of 7.873 and F- table 3,320. The variable that is more dominant in influencing tug assist time is the motivation variable with a regression coefficient value of 0.027 which is higher when compared to the tug guide service tariff variable with a regression coefficient value of 0.112.

REFERENCES

Alimuddin, IK (2021). The Effect of Work From Home on Employee Performance During the Covid 19 Pandemic, Case Study at Bank BTN. YUME: Journal of Management, 4

Andrianto, Yuda, Achmad Wicaksono, M. Ruslin Anwar. (2016). Analysis of the Performance of Ship Guiding Services on Waiting Time in

Anshori, M., & Iswati, S. (2019). Quantitative research methodology: 1st edition. Airlangga University Press.

Afandi. (2018). Welcome to Quality University Repository - Quality University Repository. http://portaluniversitasquality.ac.id

Damanik, L. (2016). Study of Construction Strength Techniques for 2 x 800 Hp Tugboats Using the Finite Element Method. Semarang: Undip University.

et al, S. (2017). Welcome to Quality University Repository - Quality University Repository. http://portaluniversitasquality.ac.id:55555/

Edy, Sutrisno, (2016), Human Resources Management, Kencana Prenada Media Group, Jakarta.

Eko Hariyadi Budiyanto, 2007, Port Business Management, APE Publishing: Jakarta.

Fahmi, Irham. 2017. Human Resources Management. Bandung: Alphabeta

Hensen, Henk, FNI, 2011, Tug Use In Port, The Nautical Institute, UK.

John Miner in Fahmi (2017:134), Financial Report Analysis. Bandung: Alphabeta

Karp, HANNAH (2007). The United States of wine. The Wall Street Journal, W1- W12.

Kotler, Philip. (2003). Marketing Management. Eleventh Edition, Engelwood Cliffs,

Like. (2017). Welcome to Quality University Repository - Quality University Repository. http://portaluniversitasquality.ac.id:55555/

Mahendra, I. (2022). Impact of Gadget Users. Cirebon

Marwansyah. (2012). Human Resource Management. Bandung: Pustaka Setia

New Jersey, Prentice_Hall, Inc