

To cite this article: Lelita Fitriani, Prasadja Ricardianto, Abdul Ghafar, Lis Lesmini and Erni Pratiwi Perwitasari (2023). THE AVAILABILITY OF TRUCK FLEET AND CARGO DELIVERY: THE EMPIRICAL EVIDENCES OF EXPORT AND IMPORT ACTIVITIES IN INDONESIA, International Journal of Research in Commerce and Management Studies (IJRCMS) 5 (6): 57-72 Article No. 237 Sub Id 445

THE AVAILABILITY OF TRUCK FLEET AND CARGO DELIVERY: THE EMPIRICAL EVIDENCES OF EXPORT AND IMPORT ACTIVITIES IN INDONESIA

Lelita Fitriani¹, Prasadja Ricardianto^{2*}, Abdul Ghafar³, Lis Lesmini⁴ and Erni Pratiwi Perwitasari⁵

²Postgraduate Program, Institute of Transportation and Logistics Trisakti, Indonesia

^{1,3,4,5}Faculty of Management and Business, Institute of Transportation and Logistics Trisakti, Indonesia

DOI: <https://doi.org/10.38193/IJRCMS.2023.5605>

ABSTRACT

The main obstacle in this research was the limited number of truck fleet for carrying the volume of cargo needed by the customers of PT Kamadjaja Logistics. The existing number of truck fleet owned by the Company still could not meet the customers' demand or need for the cargo delivery process, especially in export and import activities. The number of available truck fleet was not balanced with customers' demand, causing late delivery and the Company was not productive in the cargo delivery process. The aim of this research was to analyze the direct and indirect influences of the use of truck fleet and cargo delivery on the export and import activities mediated by the availability of fleet in PT Kamadjaja Logistics. The technique of data analysis used path analysis, hypothesis test through t test and f test. The population in this research was the employees of Trucking Division in PT Kamadjaja Logistics with the sample numbering 44 persons. The result of this research was that the fleet availability could mediate the direct and indirect influences of the use of truck fleet and cargo delivery on the export and import activities and that the availability of truck fleet also contributed directly to the export and import activities in PT Kamadjaja Logistics.

KEYWORDS: export and import activities, truck fleet, fleet availability, cargo delivery services

1. INTRODUCTION

The importance of trucking service in the field of logistics is that it much facilitates business players and people in the process of cargo delivery to many areas, especially the cargo in big amount and must be immediately delivered. Therefore, many freight forwarding service companies emerge, especially in Indonesia's big cities that makes people have more choices to determine which freight forwarding service company has better services. One of them is PT Kamadjaja Logistics. In service business, a customer will feel satisfied if the company is able to fulfil their need and demand in accordance with the loading capacity for the cargo to be carried using truck fleet. The availability of truck fleet for

cargo delivery service is very important for fulfilling customers' demand in carrying cargo from a place to the destination. An adequate number of truck fleet for cargo delivery can smoothen export and import activities and increase the company's productivity.

As a company in freight forwarding business, PT Kamadjaja Logistics has problems or obstacles in cargo delivery process, that is mainly limited number of truck fleet for carrying the volume of cargo as needed by customers. Truck fleet is needed for picking up the cargo from the cargo providing companies to be carried to the port or from the port to the destination companies. The number of truck fleet of PT Kamadjaja Logistics is as many as 11 special trucks for International Freight Forwarding. In fact, this number still cannot fulfil customers' demand or need for cargo delivery process. Thus, the quantity or availability of truck fleet is not balanced with customers' demand which causes late delivery and the Company becomes not productive in the cargo delivery process. Therefore, to meet the cargo volume or customer demand, the Company should add the number of truck fleet by building cooperation or work relationship with the truck service providing company agar to prevent the lateness during the cargo delivery process.

Some previous researches explain the activities related to the variables being studied. For example, the availability of fleet that fulfills customer demand will improve and ease the cargo delivery process; the age of vehicles, maintenance, and risk of damage contribute to the condition and readiness of the trucks (Yuniarti et al., 2018). Concerning the loading and unloading activities of container in the terminal, fleet availability affects significantly the loading and unloading activities where if there is a container piling, the Company will be charged a cost of pick-up in the terminal (Dewi & Widyadana, 2022). The result of research by Matamoros & Dimitrakopoulos, (2016), explains that the availability of fleet affects significantly the smoothness of production process and the achievement of production target. The availability of truck fleet affects significantly the real-time monitoring of condition and will be able to improve the punctuality of operational process (Alla et al., 2020). Silitonga, (2022), in his study, mentions that there is still poor cooperation between the parties involved in the trucking operation so that the fleet is not maximally used. Instead, the fleet is prioritized for external activities. In another research at Cikarang Dry Port, in order to fulfill all the demands, trucks in high quantities should be rented with an addendum of subcontract if the demand exceeds the capacity (Utami & Rahmiati, 2015). In addition, the result of research by Syafriyansyah, (2022), explains that the trucking procedure from container terminal is very influential on the departure of truck fleet. The aim of this research is to analyze the use of fleet and the cargo delivery that contribute both directly in partial and indirectly simultaneously to export and import activities through the availability of truck fleet.

2. LITERATURE REVIEW DAN HYPOTHESIS

Export and Import Activities

Purwito & Indriani, (2015) explain that the import logistic process involves such activities as shipping arrangement, transportation, document handling, customs clearance, temporary storage, and cargo delivery to the final destinations. Indonesia imports consumer goods, raw materials, and auxiliary materials as well as capital materials (Mandasari et al., 2021). Theoretically, according to (Sutedi, 2014), some of the aims of export and import activities is to increase the Company profit through market expansion and to obtain a better selling price as well as to be accustomed to compete in international markets so as to be skilled in a tough market competition. In conclusion, export and import activities have an important role in facilitating international trade. While mediated by the availability of fleet, export and import activities also need adequate fleet to support these activities to achieve the success and smoothness of international trade.

The Use of Fleet

Trucking is providing vehicles, including the use of big truck to carry cargo from exporter's warehouse to the port or airport and vice versa (Dameria & Nursyanti, 2022). Trucking service according to Christopher, (2016) is a transportation mode using trucks for the cargo delivery process from the vendor to customer. Trucking service can include the truck operation carried out by the Company itself or by involving a contract with the third party or vendor. In conclusion, the well-managed use of truck fleet can optimize the fleet. Mediated by the availability of fleet in the adequate number which is ready for use, the Company can improve its operational efficiency.

Cargo Delivery

According to Lo, (2022) the process of cargo delivery must pay attention to the plan of vehicle route arrangement. A plan of optimal vehicle route arrangement is very important in order that the cargo being sent will arrive on time at the destination and the selection of packaging quality is also very important to protect the cargo during the delivery process. In general, to perform export and import activities the exporters and importers are helped by transportation service business with the goal to facilitate the distribution (Dwiatmoko, 2018). In addition, the obstructed cargo delivery process to the destination is generally caused by natural factors which are not conducive for delivery process. Without a good delivery process, an item of goods is difficult to be found and will not be found in the market (Siregar & Ayu, 2019). A planned cargo delivery will help the Company improve the efficiency of its operation. In conclusion, efficient, on time, and safe cargo delivery are important factors in the operational activities to optimize the delivery process and the availability of adequate fleet can smoothen the cargo delivery process.

Fleet Availability

Theoretically, according to Bowersox et al., (2020) availability is the ability of a product or an item to be available in a adequate number and can be accessed when needed in the supply chain. Availability is the measurement showing how far a product or item can be obtained on time (Chopra & Meindl, 2015). Whereas according to Bowersox et al., (2020) and Christopher, (2022) fleet is a group of vehicles owned and operated by a company to support the activities of transportation and cargo distribution. Truck fleet is the company asset which becomes input and will be processed or used to result in something or output.

In conclusion, adequate fleet availability for customer demand is a key factor to succeed and smoothen process and operational activities conducted.

The Development of Research Hypothesis

The Use and Availability of Fleet

All logistic activities are conducted to achieve the main goal, namely to ensure the availability and that the delivery arrives at the destination on time. In the process, logistic activities have a certain standard of performance that must be achieved. The availability of fleet that fulfills the demand will improve and ease the distribution process. If the fleet is not available, then the distribution process will not exist, and if there is no distribution process, then the fleet is not used (Yuniarti et al., 2018). Based on this research, a hypothesis is developed as follows:

H1: The use of fleet contributes to the availability of fleet.

Cargo Delivery and Fleet Availability

Based on the research carried out by Siregar & Ayu, (2019), cargo delivery can be influenced by the activity while waiting for the availability of fleet. All distribution processes, mainly cargo delivery, will be obstructed if the fleet is not adequately available. Sarinah & Rezki, (2016) state that the quantity of cargo to be delivered also contributes to the number of fleet available in the distribution activity. Based on this research, a hypothesis is developed as follows:

H2: Cargo delivery contributes to the availability of fleet.

The Use of Fleet and Export and Import Activities

The research by Dwiatmoko, (2018), states that distribution infrastructure and network have a role in supporting the smooth transaction of transferring ownership among consumers, logistic actors and logistic service providers. In the implementation of export and import activities, according to Nurohman et al., (2022), the use of truck fleet in delivery during the activity of *Rubber Tyred Gantry* at the port may cause the cycle of external truck automatically counted in the system will be longer. Based on this research, a hypothesis is developed as follows:

H3: The use of fleet contributes to export and import activities.

Cargo Delivery and Export and Import Activities

The process of cargo delivery to overseas according to Mandasari et al., (2021) still faces many obstacles such as limited time and exporter's minimum knowledge about logistic matters. Rizaldi et al., (2021) explain that cargo delivery must be conducted quickly, appropriately, and accurately to support the service quality for the customers who run export and import business. Based on this research, a hypothesis is developed as follows:

H4: Cargo delivery contributes to export and import activities.

The Availability of Truck Fleet and Export and Import Activities

Febriana & Hartanto, (2021), in their research explain that the low availability of transport truck fleet becomes an obstacle in the cargo delivery to importer's warehouse and trucking company. Loading and unloading activities are obstructed due to the lateness of truck fleet. The lateness of truck fleet, according to Ridwan & Faridhatin, (2022), occurs because the cargo owner company has limited number of truck fleet. So, if the lateness of loading and unloading it will cause a piling and the activity becomes not maximal. Based on this research, a hypothesis is developed as follows:

H5: The availability of truck fleet contributes to export and import activities.

The Use of Fleet and Export and Import Activities through the Availability of Fleet

In the export and import activities, truck fleet is used to carry the logistic from the origin place to the destination. These activities can run optimally and maximally if truck fleet is available in accordance with the quantity of cargo to be carried (Febriana & Hartanto, 2021). The company should fulfill the need for truck fleet by procuring new fleet. Based on this research, a hypothesis is developed as follows:

H6: The use of truck fleet contributes to export and import activities mediated by the availability of truck fleet.

Cargo Delivery and Export and Import Activities through the Availability of Fleet

In a research conducted by Dewi & Widyadana, (2022), congestion occurs in the export and import cargo delivery because of container piling during loading and unloading activities. This is because the number of incoming truck fleet does not equal the number of containers to be carried. Based on this research, a hypothesis is developed as follows:

H7: Cargo Delivery contributes to Export and Import Activities mediated by the Availability of truck fleet.

Conceptual Framework

Based on the variables of this research, the use of truck fleet and cargo delivery contribute to export and import activities. Therefore, the underlying conceptual model and research hypotheses will be developed (Figure 1).

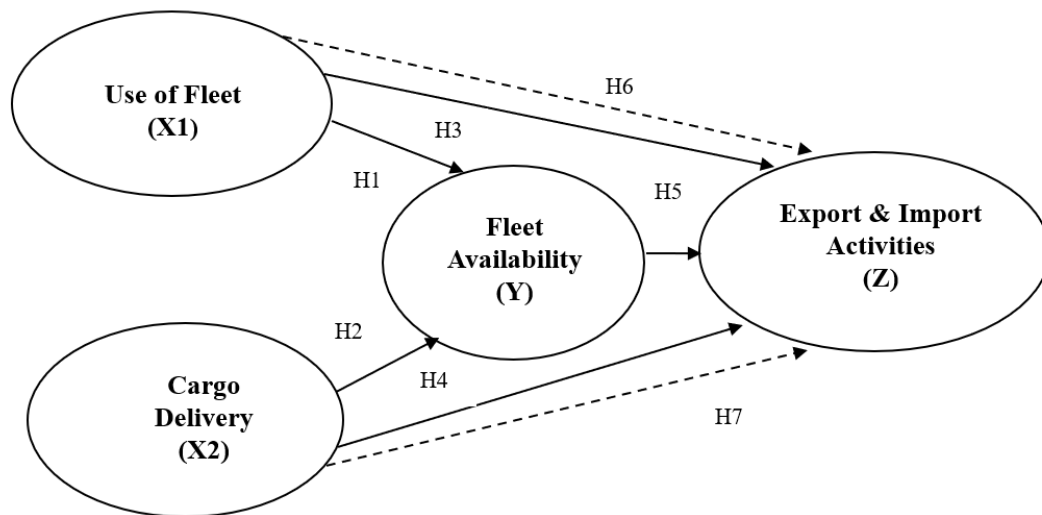


Figure 1: Conceptual Model

Research Hypothesis

- H.1 The use of fleet contributes directly to the availability of fleet.
- H.2 Cargo delivery contributes directly to the availability of fleet.
- H.3 The use of fleet contributes directly to export and import activities.
- H.4 Cargo delivery contributes directly to export and import activities.
- H.5 Fleet availability contributes directly to export and import activities.
- H.6 The use of fleet contributes indirectly to export and import activities through the fleet availability as mediating variable.
- H.7 Cargo delivery contributes indirectly to export and import activities through the fleet availability as mediating variable.

3. RESEARCH METHODS

This research uses path analysis model due to the existence of an influential mediation between the independent variables and the dependent variable. There are three variables in this research, namely truck service as independent variable, the availability of fleet as mediating variable and export and import activities as dependent variable. Based on the research, because the population is less than 100 respondents, so the researchers take 100% of the population as many as 44 respondents. To determine the number of samples in this research, the researchers use saturated sampling technique, then the

samples are determined as many as 44 people. The use of fleet involves processing and utilizing fleet of vehicles to meet the need for company's operation and customers by using five variable dimensions of the use of truck fleet: (1) Care and Maintenance Management, (2) Fleet Scheduling, (3) Route and Distance, (4) Availability and Capacity, (5) Fleet Performance Management (Coyle et al., 2016). There are three dimensions in the variable of cargo delivery, namely: (1) Reliability of Delivery, (2) Efficiency of Delivery, (3) Security and Sustainability (Coyle et al., 2016). In this research, fleet availability refers to how far truck fleet is available and can be used in the process of operational activities. In this research, the total score of measurement is obtained from the questionnaire on these variables by using five variable dimensions, namely: (1) Fleet Condition, (2) Number of Fleet, (3) Cooperation, (4) Balance, and (5) Availability. Dependent variable is the variable which is influenced or which becomes the effect of the existence of independent variable. In this research, the dependent variable is Export and Import Activities. According to (Coyle et al., 2016), there are three variable dimensions that can become benchmarks of export and import activities, namely: (1) Order fulfilment, (2) Compliance with regulations and requirements, and (3) Transportation. Phasing through validity test, reliability test, and coefficient of determination, followed by initial hypothesis test, and partial test (t test), simultaneous test (F test), and the use of path analysis.

4. RESULTS AND DISCUSSION

Results of Validity and Reliability Tests

The Validity test of the Use of Fleet concludes that the statement items in the variable of the use of truck fleet consist of 10 statement items stated as valid, because the value of $r_{statistics} >$ the value of r_{table} (0.297). The lowest value of the use of fleet has the value of $R_{statistics}$ 0.363 and the highest value is at the value of $R_{statistics}$ 0.760. So, the statement item can become a measurement tool for the variable to be studied. The Validity test of Cargo Delivery concludes that the statement item in variable of X2 (cargo delivery) consists of six statement items stated as valid, because the value of $r_{statistics} >$ the value of r_{table} (0.297). The lowest value of cargo delivery is at the value of $R_{statistics}$ 0.713 and the highest value is at the value of $R_{statistics}$ 0.813. So, the statement item can become a measurement tool for the variable to be studied. The Validity test of the Availability of Truck Fleet concludes that the statement item of the availability of armada which consists of 10 statement items are stated as valid because the value of $r_{statistics} >$ the value of r_{table} (0.312). The lowest value of fleet availability at the value of $R_{statistics}$ 0.681 and the highest at the value of $R_{statistics}$ 0.830. Therefore, this statement item can become a measurement for the variable to be studied. The Validity Test of Export and Import activities concludes that the statement items in the variable of export and import activities which consist of six statement items are stated as valid because the value of $r_{statistics} >$ the value of r_{table} (0,297). The lowest value in the Export and Import Activities is at the value of $R_{statistics}$ 0.580 and the highest value is at the value of $R_{statistics}$ 0.756. Therefore, the statement item can become a measurement for the variable to be studied. Whereas in the reliability test, based on analysis, it indicates that the variables of the use of

truck fleet, cargo delivery, the availability of truck fleet and export and import activities totally have a coefficient value of $\alpha > 0.70$, so it can be concluded that the measuring-variable indicator from the questionnaire results in reliable data and can be used to process the data to the next step.

Results of t Test (Partial) and F Test (Simultaneous)

The variable of the use of fleet obtains the value of $t_{\text{statistics}} 3.897 > t_{\text{table}} 2.019$ and the value of significance $0.000 < 0.05$, so it can be concluded that H1 is accepted. Thus, the variable of the use of fleet contributes to the availability of fleet. The variable of cargo delivery obtains the value of $t_{\text{statistics}} 6.587 > t_{\text{table}} 2.019$, so it can be concluded that H2 is accepted. It means the variable of cargo delivery contributes to the availability of fleet. Based on the result of F test, the value of $F_{\text{statistics}}$ is obtained as $70.960 > F_{\text{table}} 3.22$, meaning that simultaneously there is a significant influence. So, it can be concluded that the variables of the use of fleet and cargo delivery simultaneously contribute to the variable of fleet availability (Y).

Result of Hypothesis Test of Equation II

t Test (Partial) and F Test (Simultaneous)

The variable of the use of fleet obtains the value of $t_{\text{statistics}} -2.272 < t_{\text{table}} 2.019$, so it can be concluded that H3 is accepted, meaning that the variable of the use of fleet contributes in a negative way to the export and import activities. The variable of cargo delivery obtains the value of $t_{\text{statistics}} -6.383 > t_{\text{table}} 2.019$, so it can be concluded that H4 is accepted, meaning that the variable of cargo delivery contributes to the export and import activities. Meanwhile, the variable of fleet availability obtains the value of $t_{\text{statistics}} 4.498 > t_{\text{table}} 2.019$, so it can be concluded that H5 is accepted, meaning that the variable of fleet availability contributes to the export and import activities. Whereas based on the analysis, the value of $F_{\text{statistics}}$ is $21.745 > F_{\text{table}} 3.22$ meaning that simultaneously there is a significant influence. Thus, it can be concluded that the variables of the uses of fleet, cargo delivery, and fleet availability contribute simultaneously to the variable of export and import activities.

Result of Path Analysis

Direct Correlation Analysis of Equation I

The correlation between the use of fleet and the availability of fleet has the regression value as big as 0.362 at the significance $0.000 < 0.05$. So, the use of fleet contributes directly and positively to the availability of fleet. The correlation between cargo delivery and the availability of fleet has the regression value as big as 0.613. So, cargo delivery contributes directly and positively to the availability of fleet. The correlation between the use of fleet and export and import activities has the regression value as big as -0.321 at the significance $0.029 < 0.05$. So, cargo delivery contributes directly and negatively to export and import activities. The correlation between cargo delivery and export and import activities has the regression value as big as -0.990 at the significance $0.000 < 0.05$.

So, cargo delivery contributes directly and negatively to export and import activities. The correlation between the fleet availability and export and import activities has the regression value as big as 0.728 at the significance $0.000 < 0.05$. So, the fleet availability contributes directly and positively to export and import activities.

Indirect Correlation

The Use of Fleet and Export and Import Activities through the Availability of Fleet

Based on the analysis, it is known that the indirect contribution of the use of fleet is 0.263. whereas its direct contribution is -0.321. So, it can be concluded that the indirect contribution (0.263) > direct contribution (-0.321). This indicates that the use of fleet contributes indirectly to export and import activities through the fleet availability as mediating variable.

Cargo Delivery and Export and Import Activities through Fleet Availability

Based on the analysis, it is known that the indirect contribution of cargo delivery is 0.446. whereas its direct contribution is -0.990. So, it can be concluded that the indirect contribution (0.446) > direct contribution (-0.990). This indicates that cargo delivery contributes indirectly to export and import activities through the fleet availability as mediating variable.

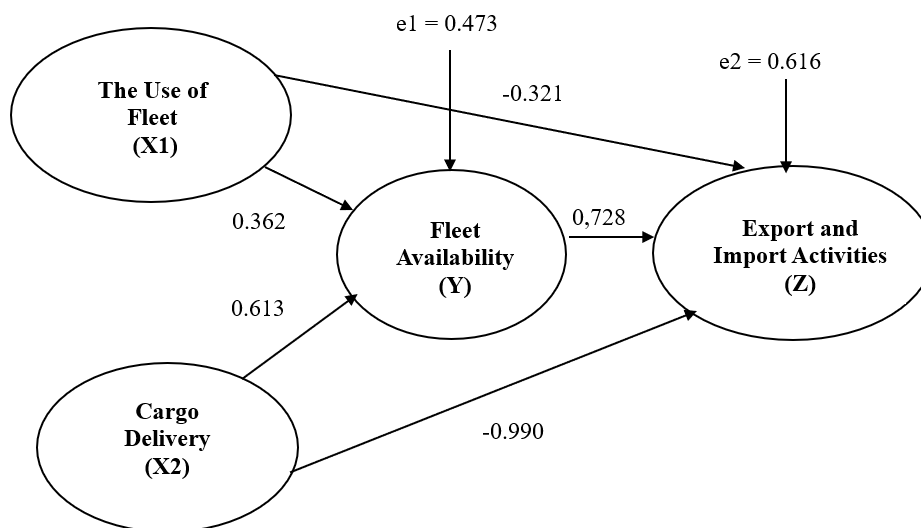


Figure 2: Results of Path Analysis

DISCUSSION

H1: The Use of Fleet and Fleet Availability

Based on the t test, the correlation between the use of fleet and fleet availability obtains the value of $t_{statistics} 3.897 > t_{table} 2.019$, so it can be concluded that H1 is accepted, meaning that the use of fleet

contributes positively to the fleet availability. This result indicates that the use of fleet can explain its contribution to the fleet availability. Fleet is an important facility to support the success of development especially in the economic activities. Therefore, the use of fleet must be measurable and clearly planned so that maintenance can be planned and implemented as scheduled, thus the fleet stay available and operates in a good condition. Fleet availability that fulfills the demand will improve and make easier the distribution process, so that H1 is accepted.

The result of this research is also in line with the study conducted by Yuniarti et al., (2018), where if the fleet is not available, then the distribution process will not exist and if there is no distribution process then the fleet will not be used. In addition, the scheduled use of fleet influences significantly the fleet availability in minimizing the total travel time and increasing the number of vehicles (Homayouni & Tang, 2013). This research also supports the result of analysis made by Alla et al., (2020), that monitoring the fleet condition makes easier the scheduling of the necessary use of fleet for a specific time. In general, this research is still in line with several previous researches related to the study of transportation using truck fleet (Alfian & Yomo, 2023; Putri & Martini, 2022; Siemawijaya, 2022). Thus, based on some theories and those previous researches, the use of fleet directly and partially gives positive and significant contribution to the fleet availability.

H2: Cargo Delivery and Fleet Availability

The result of partial t test indicates that cargo delivery obtains the value of $t_{\text{statistics}} 6.587 > t_{\text{table}} 2.019$, so it can be concluded that H2 is accepted, meaning that the variable of cargo delivery contributes positively to the fleet availability. Cargo delivery contributes positively and significantly to the fleet availability in PT Kamadjaja Logistics. It means a well-planned cargo delivery will help make easier the fleet availability, so that this hypothesis is accepted. This indicates that the bigger the amount of cargo delivery orders the bigger the availability of fleet, so that H3 is accepted.

The result of this research is in line with the studies conducted by Amanda & Rini, (2020), Yuniarti et al., (2018) and Sarinah & Rezki, (2016) mentioning the existence of correlation between the availability of truck fleet and the smoothness of cargo delivery. The result of this research supports the opinion of Siregar & Ayu, (2019), and Chen et al., (2019) that all the distribution processes, mainly cargo delivery, will be obstructed if adequate fleet is not available. According to the analysis made by Chen et al., (2019), if the company faces a shortage of container carriers, it is better for the company to us trains to balance the time so as to overcome the shortage of container carriers most effectively. The result of this research is in line with the studies conducted by Siregar & Ayu, (2019) and Nurdin & Pradana, (2015), stating that cargo delivery influences significantly the fleet availability; all the cargo delivery processes will be obstructed if the fleet number is not adequate. Thus, based on some theories and those previous researches, cargo delivery directly and partially gives positive and

significant contribution to the fleet availability in PT Kamadjaja Logistics.

H3: The Use of Fleet and Export and Import Activities

Based on the partial t test, the use of fleet obtains the value of $t_{\text{statistics}} -2.272 < t_{\text{table}} 2.019$, so it can be concluded that H3 is accepted, meaning that the variable of the use of fleet contributes negatively to the export and import activities. It means, the increasing use of fleet will decrease the export and import activities in PT Kamadjaja Logistics. The use of fleet is a transportation instrument that has an important role to facilitate the movement of goods and services, both domestic and overseas, which is the core of export and import activities. If the fleet faces operational problems such as technical problems, then there will be a delay. This delay may cause the loss of consumer trust which in turn can decrease the export and import activities, thus H3 is accepted.

This research supports the analysis made by Nurohman et al., (2022), that the use of truck fleet during the delivery time should wait for *Rubber Tyred Gantry* at the port which is serving the activity of container unloading and may cause the external truck rotation which is automatically counted in the system will be longer. However, the result of this research is different from previous studies which state that the management of truck vendor has a positive impact on the implementation of export cargo delivery (Dwisa et al., 2019). So, based on some theories and these previous researches, the variable of the use of fleet directly and partially gives a negative contribution to the export and import activities in PT Kamadjaja Logistics.

H4: Cargo Delivery and Export and Import Activities

The result of partial t test indicates that cargo delivery obtains the value of $t_{\text{statistics}} -6.383 < t_{\text{table}} 2.019$, so it can be concluded that H4 is accepted, meaning that the variable of cargo delivery contributes negatively to the export and import activities. It means, the increasing cargo delivery will decrease the export and import activities in PT Kamadjaja Logistics. Fleet is an important facility to support the success of operational activities. It is because the volume of using fleet increases in PT Kamadjaja Logistics, making the use of fleet contribute positively to the availability of truck fleet. If the cargo delivery process faces problems such as damage of packaging or loss of goods, it can decrease the exporter or importer trust. This can obstruct the export and import activities, thus H4 is accepted.

This research supports the opinion of Yudastoro, (2023), that in another side, import provides access to various products and technologies which are not available locally, fulfilling consumer's demand and encouraging the expansion of local industry, encouraging healthy competition. Thus, based on some theories and previous researches, the variable of cargo delivery directly and partially gives a negative contribution to the export and import activities in PT Kamadjaja Logistics.

H5: Fleet Availability and Export and Import Activities

The result of t test indicates that fleet availability obtains the value of $t_{\text{statistics}} 4.498 > t_{\text{table}} 2.019$, so it can be concluded that H5 is accepted, meaning that the variable of fleet availability contributes positively to the export and import activities. It means, if the fleet is adequately available it will accelerate the export and import activities and on the contrary if the fleet is not adequately available it will obstruct the export and import activities. Adequate fleet in cargo delivery and guaranteed security can play important roles in supporting the smoothness and success of international trade, thus H5 is accepted.

The result of this research supports the study conducted by Febriana & Hartanto, (2021), explaining that the availability of fleet influences significantly the cargo import services, the company needs to add relations with truck fleet service providers or add the number of owned trucks to fulfill the demand. *This research is in line with the theory of Chumaida et al., (2023), that trucking can increase export commodities. Thus, based on some theories and previous researches, fleet availability directly and partially contributes significantly to the export and import activities in PT Kamadjaja Logistics.*

H6: The Use of Fleet and Export and Import Activities through Fleet Availability

The path analysis shows that the indirect influence of the use of fleet on the export and import activities through the fleet availability obtains the contribution value 0.263 whereas its direct contribution is -0.321. So, it can be concluded that the indirect contribution (0.263) > direct contribution (-0,321). This indicates that the use of fleet contributes indirectly to the export and import activities mediated by the fleet availability. Fleet availability can become a mediator or mediate the indirect influence of the use of fleet on the export and import activities in PT Kamadjaja Logistics. This indicates that fleet availability can optimize the use of fleet so that it can improve the export and import activities. Thus, H6 is accepted. Based on that explanation, the existence of fleet availability variable can mediate the contribution of the use of fleet to the export and import activities. The use of appropriate and adequate fleet will support international trade, which in turn contributes to the national economic growth.

The result of this research is in line with the previous one conducted by Febriana & Hartanto, (2021) which states that the use of fleet contributes to the export and import activities the fleet availability as mediating variable. Therefore, based on some theories and previous researches, the use of fleet indirectly and simultaneously contributes to the export and import activities mediated by the fleet availability in PT Kamadjaja Logistics.

H7: Cargo Delivery and Export Import Activities through Fleet Availability

The result of path analysis shows that the indirect influence of cargo delivery on the export and import activities obtains a contribution value of 0.446 whereas its direct contribution to the export and import

activities is -0.990. So, it can be concluded that the indirect contribution (0.446) > direct contribution (-0.990). This indicates that cargo delivery contributes indirectly to the export and import activities mediated by the fleet availability. Fleet availability can become a mediator or mediate the indirect influence of cargo delivery on the export and import activities in PT Kamadjaja Logistics. This means, if the fleet availability is adequate, able to respond cargo delivery order quickly, then it will increase the export and import activities. Thus, H7 is accepted. Based on this explanation, the existence of fleet availability variable can mediate the contribution of cargo delivery to the export and import activities. Adequate fleet availability will also help PT Kamadjaja Logistics become more competitive in the international market.

The result of this research is in line with the result of previous research conducted by Dewi & Widyadana, (2022) stating that cargo delivery contributes to the export and import activities through fleet availability as mediating variable. So, based on some theories and those previous researches, cargo delivery indirectly and simultaneously contributes to the export and import activities mediated by the fleet availability in PT Kamadjaja Logistics.

Based on the analysis and discussion of the four variables, the availability of truck fleet, use of truck fleet, cargo delivery, and export and import activities are simultaneously not found the previous researches, mainly with the combination of 16 dimensions of all the variables. So, this research can be stated as a new research or *novelty*.

5. CONCLUSION AND RECOMMENDATION

The result of this research is that directly and partially the variables of truck fleet availability and cargo delivery give a positive and significant contribution to the use of fleet in PT Kamadjaja Logistics. However, the variables of truck fleet availability and cargo delivery directly and partially give a negative contribution to the export and import activities in PT Kamadjaja Logistics. The result of this research states that the variable of fleet availability can become a mediator and give an indirect contribution of the use of fleet and cargo delivery to the export and import activities in PT Kamadjaja Logistics.

Some recommendations can be given to the Company. For example, the supervisor must enhance their active and continuous monitoring, including periodically check the vehicle position, monitor the progress of journey, and know the possibility of delay so that there is no obstacle for the next schedule. Early checking of each vehicle before starting to operate must be tightened, and all the vehicles do periodic technical check in accordance with prevailing standard security and operation. The Company should make clear plans based on number cargo delivery plans as expected. The supervisor should understand well the characteristics of the cargo that will be exported and imported. Some modes of

transport may be more efficient to face the far distance, whereas the other transportation modes are much more suitable for local or regional.

REFERENCES

- Alfian, A., & Yomo, S. A. (2023). Kajian Angkut Panen Tandan Buah Segar (TBS) dari Tempat Pengumpulan Hasil (TPH) menuju Pabrik Kelapa Sawit menggunakan Armada Dump Truck dan Truck Biasa. *Agrotechnology, Agribusiness, Forestry, and Technology: Jurnal Mahasiswa Instiper (AGROFORETECH)*, 1(3), 2024-2027.
- Alla, H. R., Hall, R., & Apel, D. B. (2020). Performance evaluation of near real-time condition monitoring in haul trucks. *International Journal of Mining Science and Technology*, 30(6), 909-915.
- Amanda, M. L., & Rini, M. W. (2020). Penentuan Prioritas Vendor Jasa Trucking Dengan Metode Analytical Hierarchy Process Pada Perusahaan Shipping Logistic. *Prosiding Seminar Nasional Manajemen Industri Dan Rantai Pasok*, (Vol. 1, No. 1, pp. 176-184).
- Bowersox, D. J., Closs, D. J., Cooper, M. B., & Bowersox, J. C. (2020). *Supply Chain Logistics Management* (5th editio). McGraw-Hill, New York. Bradford.
- Chen, D., Zhang, Y., Gao, L., & Thompson, R. G. (2019). Optimizing multimodal transportation routes considering container use. *Sustainability (Switzerland)*, 11(19).
- Chopra, S., & Meindl, P. (2015). *Supply Chain Management: Strategy, Planning, and Operation* ((8th ed.)). Pearson Education.
- Christopher, M. (2016). *Logistics & Supply Chain Management* (Fifth Eds.). Pearson UK: FT Financial Times.
- Christopher, M. (2022). *Logistics and Supply Chain Management: Creating Value-Adding Networks*. Pearson UK.
- Chumaida, Z. V., Ariadi, B. S., & Sabrie, H. Y. (2023). *Peran Perusahaan Freight Forwarding dan Trucking dalam Meningkatkan Ekspor Ikan di Indonesia*. Zifatama Jawa.
- Coyle, J. J., Bardi, E. J., & Novack, R. A. (2016). *Transportation: A Global Supply Chain Perspective*. Canada: Cengage Learning.
- Dameria, T. E., & Nursyanti, Y. (2022). Penentuan Penyedia Jasa Trucking di PT Yicheng Logistics Dengan Menggunakan Metode SAW (Simple Additive Weighting). *Jurnal Teknologi Dan Manajemen Industri Terapan*, 1(3), 210-222.
- Dewi, P. A., & Widyadana, I. G. A. (2022). Standarisasi Jumlah Armada Trucking Haulage Berdasarkan Jumlah Bongkar Muat pada PT. X. *Jurnal Titra*, 10(1).
- Dwiatmoko, H. (2018). Peran perkeretaapian dalam menunjang sistem logistik nasional. *Jurnal Transportasi*, 18(2), 87-96.
- Dwisa, C. B. P., Alfendra, R., & Irhamna, N. (2019). Manajemen Vendor Trucking Dalam Pengiriman Barang Ekspor. *Jurnal Manajemen Bisnis Transportasi Dan Logistik*, 5(3), 331-338.

- Febriana, N. F., & Hartanto, C. F. B. (2021). Optimalisasi Pelayanan Impor Barang Selama Pandemi Covid-19 di PT. Biru Pratama Logistindo Line Semarang. *Prosiding Seminar Nasional*.
- Homayouni, S. M., & Tang, S. H. (2013). Multi objective optimization of coordinated scheduling of cranes and vehicles at container terminals. *Mathematical Problems in Engineering*, 2013.
- Lo, S.-C. (2022). A Particle Swarm Optimization Approach to Solve the Vehicle Routing Problem with Cross-Docking and Carbon Emissions Reduction in Logistics Management. *Logistics*, 6(3), 62.
- Mandasari, P. S., Juliani, R. D., & Pitria, S. (2021). Peranan freight forwarding PT. cargo plaza Indah Semarang dalam kegiatan ekspor impor barang. *Majalah Ilmiah Inspiratif*, 6(12).
- Matamoros, M. E. V., & Dimitrakopoulos, R. (2016). Stochastic short-term mine production schedule accounting for fleet allocation, operational considerations and blending restrictions. *European Journal of Operational Research*, 255(3), 911-921.
- Nurdin, D., & Pradana, B. (2015). Kesiapan Armada Truk Siap Operasi Terhadap Jumlah Unit Barang. *Jurnal Manajemen Bisnis Transportasi Dan Logistik*, 1(3), 552-572.
- Nurohman, E. A., Khoiruman, M. A., & Satriyo, G. (2022). Optimalisasi Truck Round Time (TRT) Pada Kegiatan Import/Delivery di PT. Terminal Petikemas Surabaya. *Jurnal Kemaritiman Dan Transportasi*, 4(1), 7-16.
- Purwito, A., & Indriani. (2015). *Ekspor, Impor, Sistem Harmonisasi, Nilai Pabean dan Pajak dalam Kepabeanan (Satu)*. Jakarta: Mitra Wacana Media.
- Putri, S. M. D., & Martini, S. (2022). Pengaruh Sistem Manajemen Armada Terhadap Efisiensi Aktivitas Truk Angkutan Batu Bara di Kalimantan Selatan. *Jurnal Transportasi*, 22(2), 163-170.
- Ridwan, R., & Faridhatin, S. (2022). Analisis Optimalisasi Bongkar Muat Kayu Log di Dermaga Peldam Ttanjung Emas. *Proceeding of National Seminar on Maritime and Interdisciplinary Studies*, (Vol. 1, No. 1, pp. 47-56).
- Rizaldi, R., Baihaqie, A. D., & Sutrisno, S. (2021). Rancang Bangun Sistem Pengolahan Data Ekspor dan Impor PT Gardatama Logistik Berbasis Java. *Jurnal Riset Dan Aplikasi Mahasiswa Informatika (JRAMI)*, 2(1), 105-112.
- Sarinah, S., & Rezki, R. M. E. M. (2016). Pencapaian Pendistribusian Barang Melalui Jumlah Armada dan Ritase. *Jurnal Manajemen Bisnis Transportasi Dan Logistik*, 2(3), 477-495.
- Siemawijaya, C. F. (2022). Pengembangan Aplikasi Trucking Haulage untuk Meningkatkan Produktivitas Pengangkutan Bongkar Kontainer di PT. X Surabaya. *Jurnal Titra*, 10(2).
- Silitonga, R. J. (2022). Optimalisasi Kegiatan Trucking di PT. Jasa Prima Logistik Bulog. *LOGISTIK*, 15(2), 120-134.
- Siregar, M. T., & Ayu, N. W. (2019). Lean distribution untuk minimasi keterlambatan pengiriman produk susu. *Jurnal Manajemen Transportasi & Logistik (JMTRANSLOG)*, 5(3), 261-272.
- Sutedi, A. (2014). *Hukum Ekspor Impor*. Jakarta: Penebar Swadaya Group.
- Syafriyansyah, S. (2022). Prosedur Trucking Dari Terminal Peti Kemas Depo Container PT. Pelindo



II Palembang Ke Gudang Tanjung Api-Api Oleh PT. Berkah Naira Lines Palembang. *Jurnal Maritim Bina Bahari*, 3(1), 81-89.

Utami, D. P. S., & Rahmiati, F. (2015). The Aggregate Planning For Trucking Operation in Cikarang Dry Port. *The Asian Journal of Technology Management*, 8(1), 10-21.

Yudastoro, F. D. (2023). Improving the Regional Economy with Integrated Activities Import Export, Warehousing, Integration Transport Systems, and Logistic Distribution: Perspective Review. *Formosa Journal of Sustainable Research*, 2(6), 1355–1364.

Yuniarti, R., Azlia, W., & Fitriana, U. (2018). Analisis Kelayakan Investasi Penambahan Truk Pada Distributor Semen Dengan Metode AHP dan TOPSIS. *Jurnal Ilmiah Teknik Industri*, 17(1). <https://doi.org/10.23917/jiti.v17i1.4231>