

# The profile of traditional shipping business in Tanjung Emas Port of Semarang and stakeholders' perspective on its service performance

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**Abstract.** The implementation of marine toll has driven traditional shipping business to transform. The research aimed to map the shipping route, to identify the type of logistic, and to understand stakeholders' perspective concerning the performance of traditional shipping business in Tanjung Emas Port of Semarang. The research was carried out in August 2020 through a field survey. The focus of the research was to obtain information concerning the shipping destination, the cargo load, and stakeholders' perspective regarding traditional shipping's service performance in Tanjung Emas Port of Semarang. Data collection was carried out through interview using questionnaires. As the result, Kalimantan and Sulawesi are the destinations of traditional ship's voyage. Each ship has multiple destination. The voyage to Kalimantan was dominant, including the area of Pontianak, Ketapang, Sukamara (respectively 77.8% of the ships), and Kumai (66.7% of the ships). The cargo handled by traditional shipping includes 23 kind of goods, but only four are dominating, including groceries (88.9% of the ships), fodder and peddler (77.8% respectively of the ships), and fertilizer (66.7% of the ships). Stakeholders suggested that service performance of traditional shipping activities in Tanjung Emas Port of Semarang is satisfactory regardless the groups.

**Key Words:** cargo, destination, Kalimantan, perception, satisfaction.

**Introduction.** Traditional shipping is a shipping business that has been existed in Indonesia for centuries (Syafriil 2018), and became one of the most important sectors that connect Indonesia territories (Rinardi & Rochwulaningsih 2020). However, the traditional shipping business needs a transformation in order to face the modernization in shipping industry. Incapability of traditional shipping business to compete the modern shipping vessels had driven it to extinction. Nowadays, due to the significant reduction of its vessels, only a few of traditional ships could be found operating in ports.

Traditional ships are broadly used in water transportation both inter-island and intra-island such as lake, river, strait (Susanto 2020). Therefore, it is frequently found in the archipelagic areas or the areas with large streams.

Traditional shipping is a business performed by society independently using traditional vessels i.e., wooden ships, generally run by family (Syafriil 2018). Traditional ship generally has small cargo capacity, that is only up to 500 GT (Lazuardy et al 2018). Traditional ships also include vessels especially boats with the size of  $\leq 7$  GT made of wood or fiberglass that are generally unsupervised by the government (Susanto 2020). The small sized vessels are generally used in local area such as inter-coast area or small streams. Therefore, the economics of its operation need to be considered.

Traditional shipping business exists in every region in Indonesia. However, there are differences in the factual application. Traditional shipping in the western Indonesia is mainly operated to provide shipping service, while in the eastern Indonesia it is mainly owned by merchants and is operated to carry their own goods (Hidayat 2019).

Java Sea has been the backbone of traditional shipping activities (Rinardi & Rochwulaningsih 2020). Traditional ships generally sail from the eastern Indonesia regions to the western regions and vice versa through Java Sea, carrying goods to trade, and stopping by at ports existed along their way. This is due to the strategic position of Java Sea as the center of ship traffic that connects the eastern to western and southern to northern area of Indonesia regions.

The existence of traditional shipping remains important, especially in the eastern regions of Indonesia. Many traditional sailors came from the eastern Indonesia regions such as Bugis, Makassar, Madura, Buton, and Mandar (Rinardi & Rochwulaningsih 2020).

Traditional shipping has plenty roles, especially in an archipelagic country like Indonesia. Traditional shipping plays dominant role in the distribution of logistic, especially to the hinterland or remote areas (Malisan & Puriningsih 2015). In archipelagic regions such as the eastern Indonesia regions, water transportation plays important role in maintaining interconnectivity of the regions. The regions consist of many islands, and many communities inhabit small islands, leaving them no choice of transportation but using the boats/ships. While in some other regions, insufficient land infrastructure gave the opportunity to water transportation as an alternative. Especially in the regions with large streams such as Kalimantan and Sumatera.

The role of traditional shipping in Indonesia cannot be neglected. Indonesia has plenty of small islands that can only be accessed by traditional shipping (Malisan & Puriningsih 2015). Therefore, as an archipelagic country, Indonesia needs the support of marine transportation mode massively. Inter-island transportation is needed to connect coastal areas, to distribute goods as well as person (Wahyono et al 2016).

Since 2014, traditional shipping business had been empowered to support the marine toll program that is the part of Nawacita program proposed by President Joko Widodo (Sholeh 2018). Therefore, traditional shipping business is kept sustainable. However, it implied that traditional shipping business require transformation in order to improve its compatibility to other shipping vessels.

Revitalization of traditional shipping is an integrated part of marine toll development (Sahid et al 2019). Marine toll is government's program purposed to eliminate the price disparity of goods due to the high distribution cost (Andilas & Yanggana 2017). The realization of marine toll program has placed traditional shipping business as medium to distribute goods to islands that are lack of infrastructure (Ralahalu & Jinca 2013; Triantoro & Nurcahyo 2016).

Tanjung Emas port of Semarang is one of the ports that was appointed as feeder port. Therefore, it acts as the point where marine toll vessels and traditional shipping vessels interconnect. Tanjung Emas Port is located in Semarang, Central, Java, Indonesia, and serves as feeder port to two hub ports, including Tanjung Perak, Surabaya, East Java, and Tanjung Priok, Jakarta (Hidayat 2019). By acting as the feeder port, Tanjung Emas Port of Semarang needs to revitalize its function as provider of traditional shipping activity. In the other hand, traditional shipping business needs to take the opportunity to maximize its potential as a service provider of logistic distribution.

Transformation of traditional shipping business would always occur due to the change of market preference. For example, traditional shipping business trend that changed from logistic carrier to passenger carrier in the 20th century (Malisan & Puriningsih 2015). As the world rapidly changes, integration of traditional shipping to another industry is the key to maintain its business sustainability. Therefore, transformation of traditional shipping to adapt to the recent development trends becomes important (Ge et al 2018).

Traditional shipping business is characterized by its high dependence to the consumer. Generally, shipping destination and schedule are determined by cargo owner's request (Ardhi et al 2018). Therefore, traditional shipping represents flexibility to the customers. Unfortunately, the flexibility also represents uncertainty that grew into a problem, causing it to collapse due to customers' changing preference.

During the past century, traditional shipping activity had been decreased. Many factors became the drivers of its reduction, mainly caused by its low competitiveness

(Hidayat 2019). Slow cruising speed and low cargo capacity caused its incapability to compete the modern ships. However, traditional shipping has its own importance in the logistic distribution. Traditional shipping vessels can reach out to the small and medium rivers that cannot be reached by general ships (Ardhi et al 2018).

In order to survive the changing business environment, traditional shipping business needs to adapt to the recent trend of customers' preference. Therefore, traditional shipping business needs to provide reliable service performance. Thus, knowing the typical of traditional shipping activities as well as its service performance becomes essential.

The objectives of the research are to map the shipping route, to identify the type of logistic, and to understand stakeholders' perspective concerning the performance of traditional shipping business in Tanjung Emas Port of Semarang.

## Material and Method

**Description of the study sites.** The research was carried out from January to February 2020 in Tanjung Emas Port of Semarang, Central Java, Indonesia. Tanjung Emas Port of Semarang was determined as one of feeder ports in the marine toll program since 2015. The port is in the middle of two hub ports, Tanjung Priok Port in Jakarta and Tanjung Perak Port in East Java (Figure 1).

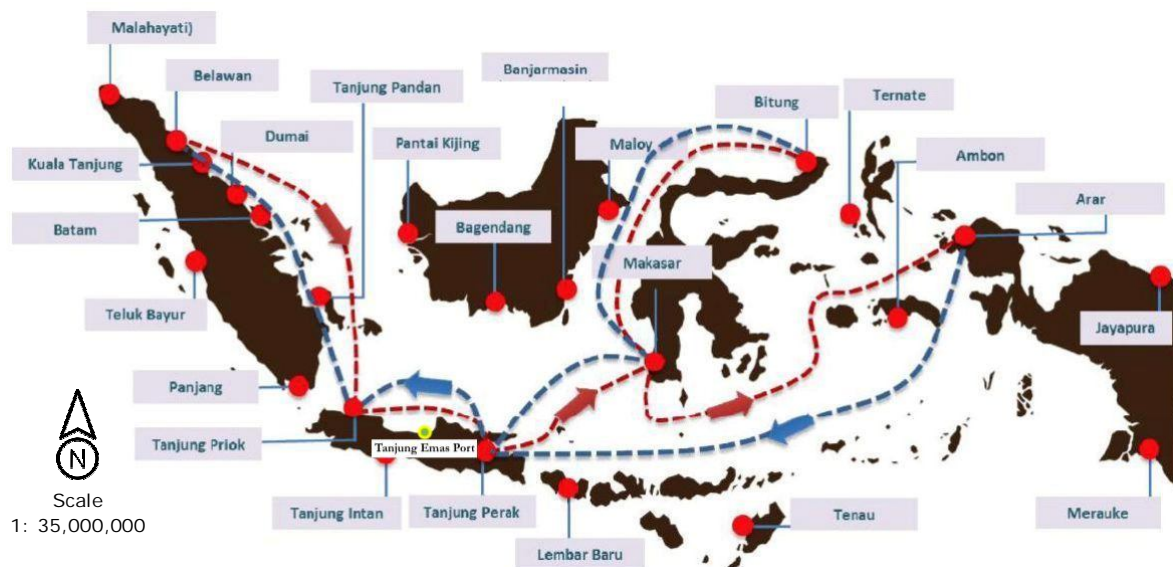


Figure 1. Location of Tanjung Emas Port of Semarang.

The research was focused on profiling the traditional shipping business in Tanjung Emas Port of Semarang and to investigate stakeholders' perception of its service performance. The profile included the shipping routes and the type of cargo shipped with traditional vessels. Stakeholders' involved in the research included officials, academics, and practitioners. Officials included the officers of harbormasters and Indonesia National Shipping Company (PT. Pelni). Academics included the lecturers from Marine Merchant Polytechnic, while practitioners included the ship owners, company managers, and traditional shipping association officers.

**Data collection.** Data collection of traditional shipping business profile was carried out through field survey, while sampling was carried out through accidental sampling. Therefore, the ships met during the study period were considered as samples. The information concerning the shipping route and ships' cargo was obtained through interview with the ships' crew. Stakeholder's perception was collected through a structured interview. Questionnaire was used to collect stakeholders' perspective regarding the service performance of traditional shipping business. As many as six

indicators were used to identify stakeholders' perspective concerning traditional shipping service performance. Stakeholders' perspective of traditional shipping service performance was measured using satisfactory index, with five ordinal scale. The categories used were: unsatisfactory (1), fairly unsatisfactory (2), slightly satisfactory (3), fairly satisfactory (4), and satisfactory (5).

**Data analysis.** Data analysis was carried out through descriptive statistics. Descriptive analysis included the frequency distribution of shipping routes and cargo. Stakeholders' perspective of satisfaction was presented in perception index that shows average score of each indicator. The indices were then categorized into four satisfaction rates, including unsatisfactory (index 1-2), fairly unsatisfactory (> 2-3), fairly satisfactory (> 3-4), and satisfactory (> 4-5).

## Results

**Shipping routes.** During the field survey, as many as nine ships were met. According to the obtained data, there were 18 shipping destinations identified from the traditional shipping business in Tanjung Emas Port of Semarang. There were four most dominant destinations of traditional shipping activities, including to Pontianak, Ketapang, Sukamara, and Kumai. The result also showed that most ships had more than one shipping destinations. Table 1 shows the frequency distribution of traditional shipping routes from Tanjung Emas Port of Semarang.

Table 1  
Destinations of traditional shipping activities in Tanjung Emas Port of Semarang

No.	Shipping destination	Frequency	Proportion (%)
1.	Pontianak	7	77.8
2.	Ketapang	7	77.8
3.	Sukamara	7	77.8
4.	Kumai	6	66.7
5.	Pemangkat	3	33.3
6.	Banjarmasin	3	33.3
7.	Sampit	3	33.3
8.	Makassar	1	11.1
9.	Amurang	1	11.1
10.	Sangir	1	11.1
11.	Maccini Baji	1	11.1
12.	Kalukalukuang Island	1	11.1
13.	Dewakang Lompo Island	1	11.1
14.	Balobaloang Island	1	11.1
15.	Sapuka Island	1	11.1
16.	Sailus Island	1	11.1
17.	Tampaang Island	1	11.1
18.	Badas Island	1	11.1

Table 1 shows that the destination of traditional shipping cruise could be categorized into two main areas, including Kalimantan (Borneo) and Sulawesi (Celebes) areas. However, ships that cruise to the Kalimantan area were more than the Sulawesi area. Seven out of nine ships met during data collection had Kalimantan as cruise destination. Thus, only two had the destination to Sulawesi. However, the number of destination ports was more in the Sulawesi area than the Kalimantan area due to its geography as archipelagic area. The cruise destination of traditional ships in Tanjung Emas Port of Semarang is shown in Figure 2.

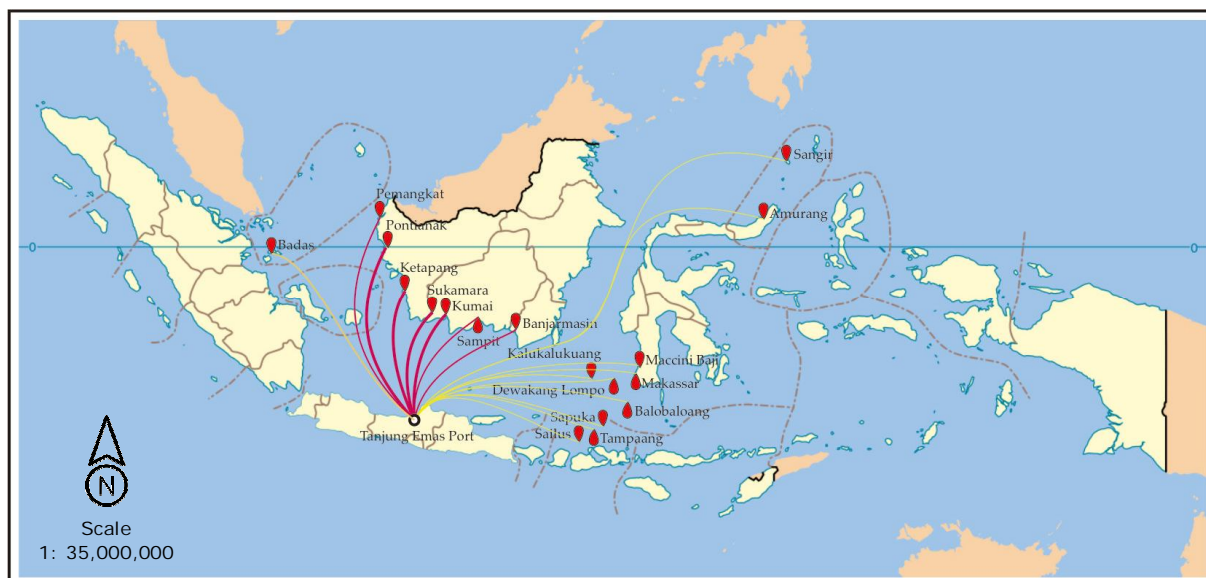


Figure 2. Shipping routes of traditional shipping business in Tanjung Emas Port of Semarang.

Identification on the cargo loading showed there were 23 kind of goods transported through traditional shipping. Among the most dominant consignments were groceries (accounted for 88.89%), fodder, peddler (account for 77.78% respectively), and fertilizer (account for 66.67%). Some other goods that are transported from Tanjung Emas Port through traditional shipping were household goods, soybean, cement, salted fish, vehicles, coconuts, mineral water, iron, oilcake, LPG, etc. that accounted only 11.1-22.2%.

**Service performance.** Survey on stakeholders' perspective showed that traditional shipping service in Tanjung Emas Port of Semarang had a good performance. The survey involved 13 respondents from officials, 15 respondents from academics, and 9 respondents from practitioners such as ship owners, company managers, and traditional shipping association. The result showed the high satisfaction of three groups of stakeholders. Detailed stakeholders' perspective regarding traditional shipping service performance is presented in Table 2.

Table 2

Stakeholders' perspective index toward service performance of traditional shipping in Tanjung Emas Port of Semarang

No.	Indicators	Stakeholder group		
		Officials	Academics	Practitioners
1.	Cargo capacity	3.85	3.27	2.67
2.	Time precision	3.54	3.07	2.89
3.	Cargo safety	3.46	3.20	3.78
4.	Shipping speed	3.54	3.67	3.67
5.	Consumers' satisfaction	3.54	3.40	3.67
6.	Waiting time	3.46	3.13	3.56
	Overall	3.56	3.29	3.37

Category: 1-2 = unsatisfactory; > 2-3 = fairly unsatisfactory; > 3-4 = fairly satisfactory; > 4-5 = satisfactory.

Table 2 shows that officials and academics had high satisfactory at all indicators of the traditional shipping service in Tanjung Emas Port of Semarang. Difference of perspective was found in practitioners' fair satisfaction regarding cargo capacity and time precision of cargo delivery, compared to two other groups that suggested a satisfactory performance.

**Discussion.** Tanjung Emas Port of Semarang is one of the central of logistic distribution in Central Java. Tanjung Emas Port serves various voyage scales, from local to international (Firdaus et al 2013). Therefore, traditional shipping has been the part of shipping activity existed in Tanjung Emas Port of Semarang. However, due to the implementation of marine toll program, traditional shipping business in Tanjung Emas Port of Semarang needs a transformation to grasp the opportunity to revitalize its function.

The marine toll program is purposed to develop interconnectivity of Indonesia regions and to strengthen the logistic system. Traditional shipping has a main role as a medium of logistic distribution to the hinterlands or small islands (Malisan & Puriningsih 2015; Hidayat 2019). However, the role of traditional shipping business in Tanjung Emas Port of Semarang is more likely to support logistic distribution to the other island, especially Kalimantan. It was expressed from information concerning the shipping destination. Unfortunately, during the research authors did not collect information concerning their loads when they return from the destination. Thus, it is hard to tell whether Tanjung Emas Port is their voyage destination or their voyage base. This information is important since return load is a factor that determines the operational cost of shipping service (Natalia & Agus 2016).

According to the result, there were two ships that shipping destination included Makassar areas that supposed to have its own loop (Lazuardy et al 2018). Voyaging outside the loop may increase the operational cost due to its far cruising route. The arrangement hub and feeder ports were expected to improve the effectiveness and efficiency of shipping activity (Natalia & Agus 2016). Thus, logistic distribution can be accelerated and profitability can be increased.

Referring to the shipping destination of traditional ships in Tanjung Emas Port of Semarang, without a regulatory support, there is a high chance that the routes would be overtaken by modern ships. Shyu & Ding (2016) suggested that increased trade activity will cause the crowds in the traditional shipping routes, causing disturbance and threat the sustainability of smaller vessels. This is the risk that the marine toll program will bring out in the future. Therefore, traditional shipping sector needs to be prepared for the scenario.

Traditional shipping activities do not have exact cruise schedule. The variation of shipping destination in traditional shipping business is generally due to the request of cargo owner (Ardhi et al 2018). Uncertainty of cruise schedule and destination became one of the obstacles in the traditional shipping business. Therefore, there needs to be an implementation of advanced management practice to improve the service performance of traditional shipping business (Ardhi et al 2018).

Cargo manifest is an important aspect that needs attention. According to the result, traditional ships in Tanjung Emas Port of Semarang generally carry groceries, fodder, peddler, and fertilizer. According to Hidayat (2019), traditional ships from Java Island generally carry groceries, cement, fertilizer, and general cargo to Sumatera and Kalimantan, and carry timber, crops, forestry products, and mining products when they return.

Referring to the result of the research, traditional shipping business in Tanjung Emas Port of Semarang has successfully given a good impression to the stakeholders. All the stakeholders were satisfied with the service performance of traditional shipping. Different perception concerning the cargo capacity and time precision suggested by practitioners showed that they were not satisfied enough to their own performance. This could be due to the availability of potential loads they could ship. Having larger cargo capacity as well as faster shipping speed should be able to increase their benefit. Generally, traditional ship has long waiting time due to unavailability of cargo (Ardhi et al 2018). Moreover, the dwelling time and ship's speed are among the factors that cause the inefficiency of traditional shipping business, because they increase the operational cost (Lazuardy et al 2018).

Currently, the capacity of marine toll vessels is still low (Andilas & Yanggana 2017). Therefore, there is a high chance of it to increase its capacity. However, increasing shipping capacity through improvement of vessel size may lead to longer

cruise cycle. Thus, increasing ships' intensity is the possible option. More intensity means that logistic distribution is done more frequently, and reduces the possibility of scarcity that would cause disruption of price. This would be a challenge for traditional shipping business development in Tanjung Emas Port of Semarang.

There would be a need of capacity improvement on logistic distribution. Therefore, further improvements are needed in face future challenges (Ge et al 2018). Referring to the current consent of Indonesia development, traditional shipping business must be able to grasp the opportunity to firmly carry out transformation. However, since traditional ships have limited cargo capacity, there need to be an improvement of its number. Thus, it can be a chance to revive and revitalize traditional shipping business in Tanjung Emas Port of Semarang. However, when it comes to a crowd population, there need a more advanced management. Therefore, the related stakeholders need to build a management strategy that integrates traditional shipping business as a part of logistic distribution system to match the marine toll vessels. Susanto (2020) suggested the application of information and communication technology in the handling of cargo manifest management to support the traditional shipping business.

**Conclusions.** The traditional shipping business in Tanjung Emas Port of Semarang has satisfactory service performance according to all stakeholders group. There were two shipping destinations identified, including the Kalimantan area and Sulawesi area. Dominant voyage destinations were including Pontianak, Ketapang, Sukamara and Kumai in the Kalimantan Island. Traditional shipping activity handles various kind of cargo, including groceries, fodder, peddler, and fertilizer as the most dominant commodities.

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