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RESEARCH ARTICLE

Traditional Shipping Service: Crew and Passengers' Understanding of Safety and Security Implementation (Cased Study: Maccini Baji Port, Pangkep Regency)

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ABSTRACT

The safety and security of traditional shipping (Pelra) are imperative and must be pursued by all stakeholders, including the Government, industry players, entrepreneurs, and service users (passengers), particularly the ship's crews who provide traditional shipping services. However, achieving these goals remains challenging. Traditional shipping still struggles to reach zero accident status, including in Pangkajene and Islands Regency (Pangkep); an area encompassing 115 islands, 73 of which are inhabited, and 42 uninhabited. Ensuring the safety of traditional shipping is crucial for sea transportation services. This study aims 1) to analyze the level of understanding among the crew and passengers in term of shipping safety and security and 2) to provide recommendations for enhancing the implementation of safety and security policies for Jolloro traditional shipping services. The data for this study were obtained through surveys and direct interviews conducted at Maccini Baji Port, Pangkep Regency. The analysis techniques employed include descriptive statistics and descriptive qualitative analysis based on Likert scale measurements. The results of the analysis show that 1) the crew's level of understanding has an average score of 2.13, indicating that, generally, the crew of the traditional Jolloro passenger carriers at Maccini Baji Port does not fully comprehend the safety and security policies for traditional shipping. The level of understanding among service users is even lower, with an average score of 1.79, indicating a general lack of awareness of these policies among traditional Jolloro passengers at Maccini Baji Port. 2) Based on the results, some actions are needed i.e. broader policy socialization and more effective policy enforcement efforts, including the implementation of crew development programs and the development of the traditional Jolloro passenger transport fleet.

INTRODUCTION

Pangkajene and Islands (Pangkep) Regency have a population of 651,512 people [1]. Pangkep has an area structure consisting of 2 (two) main parts, namely land area and water area. The land area of Pangkep Regency is 898.29 km^2 and the archipelago has a sea area of 11,464.44 km^2, with 115 islands, 73 inhabited and 42 uninhabited [2].

In general, the islands range in size from 3 hectares to 48 hectares. Many of the islands have not been developed according to their potential, so that the area is left behind when compared to other areas that have high accessibility. To support development and economic development in remote areas and connect to developed areas, a safe and capable transportation is needed to accommodate all these islands [2].

Looking at the condition of traditional shipping sea transportation (Pelra) for crossings on various islands in the Pangkep region, the safety and security aspects of shipping need serious attention and are the responsibility of all parties involved in shipping practices [3, 4, 5].

Shipping safety includes accident prevention efforts and is a major factor in the smooth flow of shipping in sea transportation. Shipping safety is defined as a state of fulfillment of safety and security requirements concerning transportation in waters and ports. Based on [6] concerning shipping, article 116 Paragraph (1), "Shipping safety and security includes safety and security of transportation in waters, ports, and protection of the maritime environment".

However, until now there are still many recorded ship accidents due to the disregard for passenger and goods capacity, the availability of safety equipment on board, to the issue of placing goods that do not take into account the ship's weight point and stable arm force and weather factors [7]. Evidence shows that the factors that are very dominant for safety on ships and prevention of ship accidents are: (1) human resources, (2) the construction of the ship itself, and (3) ship maintenance routines that must be carried out in accordance with applicable procedures and regulations [8]. On the other hand, the government has made various efforts to realize shipping safety, both through regulations and coaching activities, training, socialization and providing pioneer transportation facilities that connect these remote areas with other areas in increasing the accessibility of their communities [9].

According to the results of observations made, efforts to optimize the implementation of regulations in the shipping sector carried out by the central government and local governments (provincial and district governments) of Pangkep Regency are quite good. One indication is the implementation of shipping safety training through a community empowerment program in collaboration with the Makassar Polytechnic of Shipping Science in organizing Basic Safety Training (BST) training for free to the community in the islands of Pangkep Regency in 3 (three) batches with a total of 600 participants carried out in the 2017 and 2018 fiscal years. In addition, the Central Government has also donated 2 (two) units of representative people's shipping vessels in 2018 and 2019 to support the traditional shipping transportation system in Pangkep Regency. However, it cannot be denied that incidents of accidents at sea still occur frequently due to inadequate ship safety. From the investigation report of the National Transportation Safety Committee (NTSC) there are several factors that cause sea transportation accidents, namely: 1) Excess passengers, 2) Weather conditions, 3) Terrain / track, 4) Ship conditions, 5) Ship captain expertise [10]. Of the several factors that cause ship accidents, the human factor is the main factor [11, 12].

Based on the data and information obtained, there were several accident incidents from 2018 to 2022 due to the lack of implementation of safety and security management of traditional shipping, namely:

1. The incident of the Village Ambulance ship that sank in Pangkep waters in 2018 and claimed up to 9 (nine) lives, based on the results of the investigation occurred due to bad weather, excess passengers, and limited shipping safety equipment [10].

2. Ship sinking due to overloading of the Cahaya Pulau Ship in Liukang Kalmas waters, Liukang Kalmas District, Pangkep Regency. The ship was reported to have sunk on Thursday, July 18, 2019, at around 05:15 a.m. [13].

3. Two boats with 12 passengers were involved in a sea accident in a river in Pangkep Regency, South Sulawesi on Saturday (2/4/22). As a result, 3 passengers were rushed to Batara Siang Pangkep Hospital, 8 passengers were rushed to Jagong Pangkep Community Health Center for treatment and one was declared missing and is now being searched by joint personnel [14].

4. The sinking of KM Ladang Pertiwi carrying at least 43 passengers sank in the waters of Liukang Kalmas Island, Pangkep. It is suspected that it was overloaded and did not carry enough fuel oil (BBM) when sailing to Pamantauang Island, Pangkep Regency (Pangkep) on Thursday

(5/28/2022). The exact number of passengers is unknown, and 17 passengers were found safe [15].

Based on information from the Pangkep Regency Transportation Office, currently the sea transportation modes operating in the Pangkep are approximately 6,090 units, dominated by traditional ships of GT 7 and below or known as Jolloro. The number of traditional shipping vessels served at Macini Baji Port is recorded at around 28 units of Jolloro ships. In addition, the condition of the waters of Pangkep is known for its extreme weather and is very risky for traditional vessels of this kind to go to sea. According to data released by the BMKG Paotere-Makassar Maritime Meteorological Station, in certain months or times the wave height can reach 3 meters with wind speeds of up to 25 knots. According to the weather reference for shipping safety released by BMKG, wind speeds of 10-25 knots and or wave heights of 2.0-3.0 meters will be very dangerous for traditional ships or people's shipping vessels to travel. Weather conditions that are safe for people's shipping are wind speeds of 7-10 knots and or wave heights of 0.5-1.0 meters.

Geographically, UPP Macini Baji is located within the Makassar Strait, where weather conditions in the waters around Maccini Baji Port are known to be quite extreme, particularly during certain months such as January to April, August, and December [16]. These conditions make the area highly susceptible to ship accidents. To enhance shipping safety, the Directorate General of Sea Transportation has implemented various policies aimed at preventing ship accidents. These include issuing directives to improve safety supervision for passenger ships and communicating maritime weather conditions through warnings and telegrams regarding bad weather readiness at sea [17].

However, accidents involving traditional ships due to bad weather, as well as other factors like human error, continue to occur. This highlights the critical role of human resources in upholding transportation service standards, which includes: 1) the role of regulators as policymakers, stimulators, and facilitators, 2) the role of crossing service providers as policy implementers, organizers, and operators, and 3) the role of the crew as policy executors [18]. Based on this context, the purpose of this study is to analyze the level of understanding among crew members and service users regarding the implementation of safety and security policies in people's shipping services.

LITERATURE REVIEW

Essentially, understanding is one form of learning outcome. This understanding is formed as a result of the learning process. Understanding comes from the root word understand which means to understand. According to the Big Indonesian Dictionary, understanding means the process of understanding or understanding [19]. Based on Bloom's taxonomy, understanding is concerned with the essence of something, which is a form of understanding or understanding that causes a person to know what is being communicated, and can use the material or ideas that are being communicated without having to connect it with the material [20].

Then, the elements of change related to implementation, as noted by [21], include: Policies that deviate from their original purpose can significantly affect implementation, and the numbers of organizational changes will also impact implementation.

[2] Indicates that the quantity and quality of safety equipment have not yet met safety standards. However, overall, the crew's service performance is quite good, though there is still room for improvement to ensure maximum service to all users, particularly regarding safety equipment. Recommendations for service improvements, both at the port and on the ship, have been made. These recommendations aim to align with the applicable regulations outlined in PM 37 of 2015.

[22] analyzed the level of ship accidents, the causes of ship accidents, HR capabilities, and performance improvement strategies. The results showed that it is necessary to take strategic steps including increasing the ability of human resources to build ships, encouraging an increase

in shipbuilding standards, encouraging the improvement of ship classification standards, and encouraging mastery capabilities.

Pioneer transportation route R-44 is inefficient, where the passenger load factor for the Liukang Tangaya - Maccini Baji route is more than 100% and the cargo load is below 6%. Influential variables are the small number of goods loads and passenger loads that exceed transportation capacity. The realized frequency is 34.61% of the planned. This is due to transportation damage and poor weather conditions. The proposed development strategy is to improve the quality of passenger services on board and at the port, intensify socialization related to information on ship departure schedules both printed media and government-owned websites in order to attract more cargo, replace the fleet of ships with a larger passenger capacity and a smaller cargo capacity, and increase the number of shipping frequencies so that there is no accumulation of passengers [23].

[24] shows that pelra ship safety development strategies can be carried out by using existing strengths and opportunities by supervising the pelra ship construction process based on existing designs, conducting supervision during loading and obeying the weather information provided whether it is safe to sail or not. The problems faced by Pelra related to safety aspects include a lack of understanding of safety by the ship and a lack of socialization regarding safety and applicable rules. Therefore, it is necessary to socialize safety rules to ship owners, pelra companies and pelra crew.

[25] showed that the gross tonnage of the ship, wind speed, ocean current speed, offshore distance, and day/night conditions have a significant effect on the possibility of different accident rates. Specifically, wind speed, offshore distance, and ocean current speed have a negative impact on minor and general accidents, while they have a positive impact on major and severe accidents. Gross tonnage and day/night have a positive impact on minor and general accidents but a negative impact on major and severe accidents.

In the application of safety and security policies to traditional shipping services, there are several definitions that can describe the ideal conditions for the application of safety and security policies to people's shipping services. According to [6] on traditional shipping sea transportation is a people's business that is traditional in nature and has its own characteristics to carry out transportation in waters using sailing ships, motorized sailing ships, and or simple Indonesian-flagged motorboats of a certain size.

According to the [26] regarding instructions for traditional passenger-carrying vessels, these vessels are defined as those that are traditionally built or do not adhere to conventional design rules. Additionally, a measurement certificate is issued for traditional passenger-carrying vessels with a Gross Tonnage (GT) of at least 7, provided they have a capacity of 12 passengers.

RESEARCH METHODOLOGY

The research was conducted at Maccini Baji Port, Pundata Baji Village, Labbakang District, Pangkep Regency, South Sulawesi Province. Geographically UPP Macini Baji is located at the coordinates 4°46'29.2″ N-S, 119°29'32.6″ East (Figure 1).

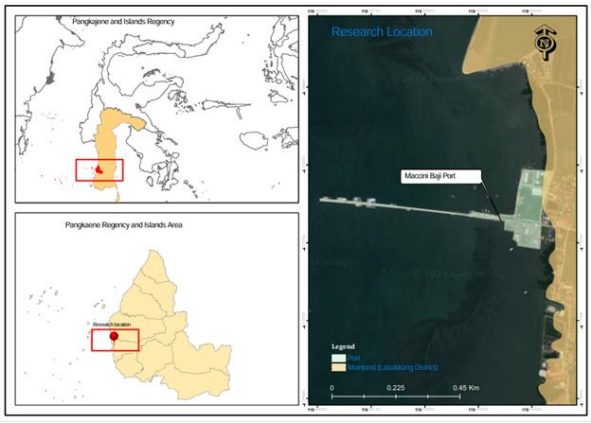

Fig. 1. Location Map of Maccini Baji UPP (Source: UPP Maccini Baji).

The authority of UPP Class II Maccini Baji includes an area on the mainland (Biringkassi) and 11 (eleven) on the small islands (Sabutung Island, Balang Lompo, Dewakang Lompo, Longkoitang, Sapuka, Sailus, Doang-doangang Caddi, Kalukalukuang, Pamantauan, Balobaloang, and Kapoposang Bali) spread over 5 (five) districts (Labakkang, Liukang Tupabbiring, Liukang Tupabbiring Utara, Kalukuang Masalima and Liukang Tangaya) with a water area of 11. 464.44 km^2 based on Bakosurtanal analysis and is an international shipping lane/Indonesian archipelago sea lane (ALKI)-II [27].

In this study, the level of understanding of the crews and service users of the traditional Jolloro (Figure 2) passenger carrier on the safety aspects of people's shipping services was analyzed so that obstacles and shortcomings in the understanding of the crew and service users in implementing safety and security policies for traditional shipping services could be obtained.

Fig. 2. Traditional Ship Jolloro.

Three indicators of the level of understanding of the crew and two indicators of the level of understanding of passengers are determined based on [6] concerning the instructions for traditional passenger-carrying vessels, such as:

1. Crew understanding of operations and safety equipment.

According to [26] concerning the instructions for traditional passenger carrying vessels that the provisions for the operation of traditional passenger carrying vessels include:

a. Must have a SIUPER (Traditional Shipping Transportation Business License).

b. Sailing in accordance with the route (ship operation plan) determined from a designated port and not entering the waters of another country.

c. Visibility that is not less than 2 (two) nautical miles and pay attention to weather

information from BMKG.

d. No sailing at night.

e. Sailing at a maximum speed of 10 (ten) knots.

Before the departure of the ship, the crew is required to carry out a demonstration of the use of safety equipment and instructions for evacuation routes and the location of fire extinguishers.

Furthermore, Chapter VI Article 13 states that every traditional passenger-carrying vessel must have safety equipment and be in good condition which includes:

a. Anchor and its attachments at least 1 (one) piece.

b. At least 1 (one) pull rope and 2 (two) mooring ropes.

c. Navigation lights consist of:

1) 1 (one) white color mast light.

2) 1 red left hull light and 1 green right hull light.

3) 1 (one) white stern light.

d. Flashlights and white light lanterns that can be used at any time (emergency lite) at least 1 (one).

e. Safety equipment as follows:

1) Magnetic guide equipped with at least 1 (one) illumination.

2) Adult helper suit 125% (one hundred twenty-five percent) of the permitted sailors.

3) Children's helper suit 10% (ten percent) of the permitted passengers and must be used during the voyage.

4) A rigid life raft with a capacity of 105% (one hundred and five percent) of the permitted voyagers.

5) 1 (one) unit of life preserver equipped with a 20 (twenty) meter lifeline on each side of the hull with a distance of 15 (fifteen) meters on each passenger deck.

6) 1 (one) ship's flute.

7) 1 (one) unit of binoculars.

8) Distress signal device (mirror and flashlight).

9) 2 (two) smoke signal units.

10) 2 (two) red hand flares.

11) 2 (two) parachute signals.

12) Radar signal reflector.

13) Light fire extinguisher (APAR) with dry chemical powder type with a capacity of 4.5 kg

for every 20 (twenty) square meters of accommodation at least 2 (two) units and 1 (one) unit in the machining room.

14) 1 (one) unit of radio telecommunication device (VHF radio standard marine).

15) Sea map according to the area of operation.

16) 2 (two) pieces of black balls (for visual cues in an emergency).

17) Portable loudspeaker.

18) Flag of the Republic of Indonesia.

2. Crew understanding of ship capacity limits.

Regarding passenger capacity, [26] states that traditional passenger-carrying vessels with a gross tonnage (GT) of at least 7 must have a certificate to carry 12 passengers.

3. Crew understanding of shipping routes.

Regarding shipping routes, based on [26] concerning shipping, the people's shipping sea transportation fleet can be operated domestically and cross-border, both with fixed and regular routes and non-permanent and irregular routes.

To obtain data on the level of understanding of the crew and passengers about the application of safety and security policies to Jolloro traditional shipping services at Maccini Baji Port, using a closed questionnaire using a Likert scale.

Each question in the questionnaire was made based on [26] concerning instructions for traditional passenger-carrying vessels.

2.1 Population and Sample

The population in this study includes all parties involved in the implementation of safety and security policies on traditional shipping services, both as subjects and objects, who have rights, duties, roles, and authorities as regulators, operators, or service users in accordance with applicable laws and regulations at Maccini Baji Port. Sampling in this study was conducted using a purposive sampling technique. Purposive sampling is a method used when the researcher has already identified individuals who meet specific characteristics relevant to the research [28]. Each participant was deliberately selected because they could serve as informants, providing information and representing the broader population. Based on these criteria, the number of sample populations that meet the research requirements is presented in Table 1.

Table 1. Sample, and Research Population.

No.	Respondent categories	Number of population	Number of Sampel	Number of Questionnaire Questions	Number of Interview Questions	Checklist (sheet)
1	Head of Office	1	1	-	10	-
2	Marine Transportation Traffic and Services Officer UPP Macini Baji	5	5	-	7	-
3	Port Facility and Equipment Supervisor	1	1	-	1	1
4	Kesyahbandaran Officer	5	5	-	10	-
5	Sea Transportation Traffic Officer of the Pangkajene and Islands Regency Transportation Office.	8	8	-	7	-
6	Ship's crew (skipper or crew)	28	28	19	10	2
7	Passengers	~	56	10	10	-

No.	Respondent categories	Number of population	Number of Sampel	Number of Questionnaire Questions	Number of Interview Questions	Checklist (sheet)
Total			**104**			

2.2 Data Collection Technique

Data collection is done by conducting a survey method in the form of a questionnaire with closed questions to respondents who have been determined. The measurement scale uses a Likert scale. According to [29], [30], the Likert scale is used to measure attitudes, opinions, and perceptions of individuals or groups about social phenomena. These social phenomena are called research variables that have been specifically determined by the researcher.

The low level of shipping safety can be caused by weak human resource management in terms of education, competence, working conditions, working hours and process management [17]. Thus, the category of respondents was determined based on age, education level, and occupation. Categories based on age are grouped based on age <25 years, 25-45 years, and >45 years. Meanwhile, the category of respondents based on education level is grouped based on the education level of Elementary School, Junior High School, Senior High School, undergraduate degree (S1)/Diploma IV (DIV), and graduate degree (S2).

2.3 Data Analysis Technique

This study uses the determination of statistical descriptive and quantitative descriptive analysis results based on the results of respondents' answers with a Likert scale which are converted into an assessment of the level of understanding of the crew and service users regarding the application of safety and security policies to people's shipping services at UPP Maccini Baji, namely, do not understand, understand less, understand enough, understand very well, (Table 2), then each assessment has a score value ranging from 1, 2, 3, and 4 (Table 3).

Table 2. Conversion of Answers into Ratings.

Alternative answer	Assessment
Very Poor	Very Poor Understanding
Poor	Poor Understanding
Good	Good Understanding
Very Good	Very Good Understanding

Table 3. Likert scale score.

Assessment Results	Score Value
Very Poor Understanding	1
Poor Understanding	2
Good Understanding	3
Very Good Understanding	4

The assessment interval is determined by:

$$\text{Assessment interval} = \frac{\text{Max score value - Min score value}}{\text{Class}} \quad (1)$$

Where:

Maximum score value = 4

Minimum score value = 1

Class = 4

$$\text{Assessment interval} = \frac{4 - 1}{4} = 0.75 \quad (2)$$

Based on the calculation of the assessment interval above, the assessment criteria can be determined with the scale range as in Table 4.

Table 4. Rating Scale Range

Scale Range	Assessment criteria
1.00 - ≤ 1.75	Very Poor Understanding
1.75 - ≤ 2.50	Poor Understanding
2.50 - ≤ 3.25	Good Understanding
3.25 - ≤ 4.00	Very Good Understanding

Source: Analysis results, 2023.

The answer to each question is graded based on the intensity of understanding, ranging from very poor, poor, good, very good. 'These responses are then converted into assessments of the application of the regulations, categorized as 'very poor understanding,' 'poor understanding,' 'good understanding,' and 'Very good understanding'.

The scores from the questionnaire responses regarding the understanding of the crew (Captain and crews) and service users (passengers) of the Jolloro ship were calculated by averaging the answers from each respondent and dividing by the number of respondents. Based on the assessment criteria table, this calculation yields an evaluation of the implementation of safety and security policies for Jolloro public shipping services at Maccini Baji Port. Meanwhile, interview responses provide a qualitative descriptive explanation of the level of understanding among the ship's crew (Captain and crews) and service users (passengers) regarding these safety and security policies.

Additionally, this research employs a case study method to gain an in-depth understanding of the case under study [31], with a focus on the implementation of safety and security policies for Jolloro public shipping services at UPP Maccini Baji.

3. RESULTS AND DISCUSSION

The respondent categories in this study were determined based on the age and education level of the crew and passengers of the traditional Jolloro passenger ship, as shown in Figures 3 and 4. The majority of both the crew and passengers were aged between 25 and 45 years.

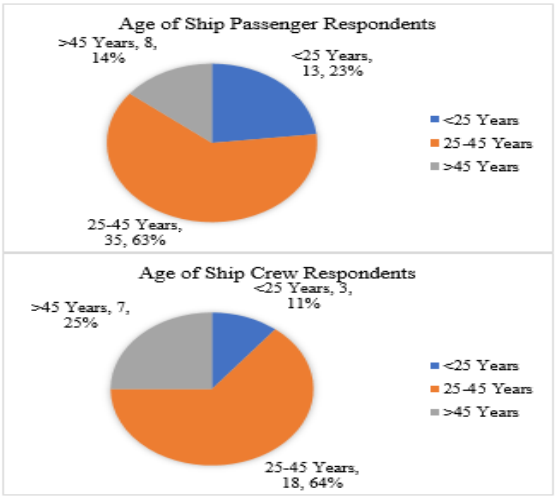

Fig. 3. Categories of Jolloro Ship Crew and Passenger Respondents based on Age.

Regarding the education level of the respondents, the majority of the ship's crew was elementary school (SD) graduates. On the other hand, most of the passengers had a high school (or equivalent) education.

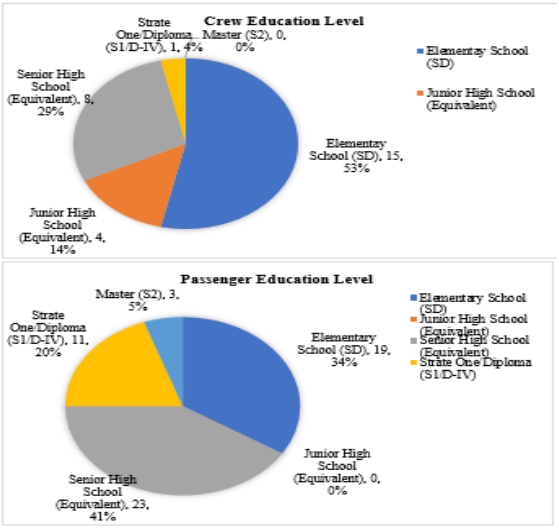

Fig. 4. Categories of Jolloro Ship Crew and Passenger Respondents based on Education Level

3.1 Level of Understanding of Ship's Crew

The results of the analysis of the level of understanding of ship crews regarding the implementation of safety and security policies for Jolloro public shipping services at Maccini Baji Port can be seen in Table 5.

Table 5. Level of Understanding of Ship Crew

No.	Variable Level of Understanding of Ship Crew	Assessment Indicators	Score	Average Score	Description
1	Crew understanding of operational policies and safety equipment	Certification obligations	2.08	1.95	Poor Understanding
		Visibility of 2 (two) nautical miles and BMKG weather information.	1.81		

No.	Variable Level of Understanding of Ship Crew	Assessment Indicators	Score	Average Score	Description
		Prohibition of sailing at night	1.74		
		Maximum speed 10 (ten) knots	1.60		
		Demonstration of the proper use of safety equipment, along with instructions on evacuation routes and the locations of fire extinguishers	2.81		
		Reports on arrival and departure of ships.	1.32		
		Certificate of expertise and crew development skills (such as Basic Safety Training (BST), and others).	1.76		
		Certificates of expertise and ship development skills (such as training in the manufacture or construction of traditional ships and training in the maintenance and repair of traditional ships).	1.28		
		Completeness, condition and position of safety equipment in accordance with applicable regulations.	2.52		
		Use of life jackets.	2.73		
		Standard Operating Procedures (SOP) for work on ships.	1.65		
		Vessel inspection and repair.	2.51		
		Grouping of shipping safety and security equipment according to needs and number of passengers.	2.53		
		Ship diary	1.14		
		Equipment records to comply with the laws and regulations of the Republic of Indonesia	1.77		
2	The crew's understanding of the ship's capacity limits.	Size and capacity limits for traditional passenger-carrying vessels.	2.56	2.54	Good Understanding
		Classification of traditional passenger-carrying ships based on type, size and purpose of the ship.	2.52		
3	The crew's understanding of the shipping route.	Suitability of route (ship operation plan).	2.08	1.94	Poor Understanding
		The flow and routes of traditional transport vessels are in accordance with the [32] concerning the determination of crossings for Pangkajene and Islands Regencies.	1.80		
Average				**2.14**	**Poor Understanding**

Source: Analysis results, 2023.

Table 5 shows that the average score for the crew's understanding of safety aspects related to public shipping services at Maccini Baji Port is 2.14. This indicates that, in general, the crew of traditional Jolloro passenger ships at Maccini Baji Port has a limited understanding of safety and security policies for public shipping. The findings include:

The crew's understanding of operational policies and safety equipment has a score of 1.95, indicating a lack of comprehension regarding these critical safety aspects.

The crew's understanding of the ship's capacity limits has a score of 2.54, suggesting a moderate familiarity with the vessel's capacity constraints.

The crew's understanding of shipping routes has an average score of 1.94, showing insufficient knowledge of the shipping routes.

Based on data and information obtained from informants consisting of the Head of the UPP Maccini Baji Office, the UPP Maccini Baji Sea Transport Traffic and Services Officer, the Maccini Baji Port Facility and Port Equipment Supervisor, the Harbormaster Officer of the UPP Maccini Baji, and the Sea Transport Traffic Officer from the Pangkep Regency Transportation Service, there is a lack of understanding by ship crews regarding aspects of traditional shipping safety and security policies because there are still many obstacles to implementing traditional shipping safety and security policies for traditional ships carrying Jolloro passengers at Maccini Baji Port, such as:

Traditional Jolloro passenger ships generally lack of SIUPER and traditional passenger shipcertifications because they do not meet the requirements and classification criteria for traditional passenger vessels based on their type and designation.

Meeting the safety and navigation equipment requirements is challenging due to the high cost, which ship owners find prohibitive.

Most ship crews have not undergone training or obtained certifications related to maritime navigation, such as the SKK 60 Mile training or Seaman's Book.

The number of trips and operational hours of traditional Jolloro passenger ships are still adjusted according to the needs and requests of service users, leading to frequent violations of the prohibition against sailing at night.

Most ship crews lack formal education and training in maritime fields.

Ship crews often neglect and fail to prioritize the implementation of public shipping safety and security policies.

There are no records of arrivals or departures of traditional Jolloro passenger vessels at UPP Maccini Baji.

Most ship crews lack certifications related to public shipping safety, such as Basic Safety Training (BST) certificates.

None of the crew members have participated in or obtained certifications in traditional shipbuilding, construction, or maintenance and repair training.

The safety equipment on traditional Jolloro passenger ships is incomplete, generally in poor condition, non-compliant with applicable requirements, and often not easily accessible in case of potential danger.

Ship inspections and repairs conducted by the Jolloro crew are substandard, being self-taught and not meeting applicable standards.

There are no standard operating procedures (SOPs) for work on the ship.

The Jolloro lacks a ship's logbook.

The requirement to wear life jackets while operating or sailing is only observed during bad weather, as local beliefs hold that wearing a life jacket or other safety equipment in good weather

may cause a ship accident.

The size and passenger capacity of the Jolloro ship do not meet the applicable requirements and regulations.

There are numerous discrepancies between the designated shipping routes as outlined in the Regent of Pangkep Regency [32] and the operational routes of traditional Jolloro passenger ships recorded at Maccini Baji Port.

Additional evidence of the crew's insufficient understanding of safety and security policies for public shipping services can be observed in the application and implementation of the SOPs for issuing Pas Kecil at UPP Maccini Baji, as well as in the compliance of the safety equipment on board the traditional Jolloro passenger carrier with applicable regulations.

The implementation of safety and security policies for public shipping services is guided by the SOPs for issuing Pas Kecil at UPP Maccini Baji. This is reflected in the application data for issuing e-Pas Kecil (see Figure 5) and the assessment and experience of the harbormaster at UPP Maccini Baji. Additionally, the adherence to safety and security policies is evaluated based on the compliance of safety equipment on traditional Jolloro passenger-carrying ships with applicable regulations. This is illustrated by the data on passenger numbers and safety equipment on Jolloro ships (see Table 6).

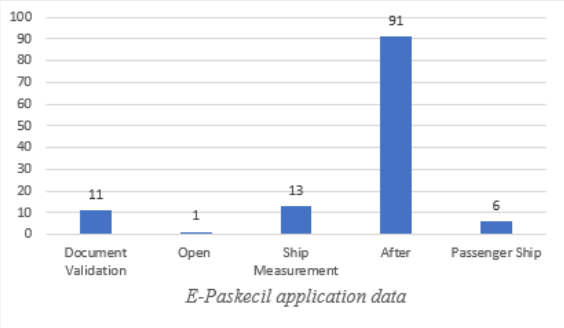

Fig. 5. Application for e-pasminimal issuance at UPP Maccini Baji in September 2022 - September 2023

Descriptions:

1) 11 document validations means there are 11 entry applications that need to be verified by officers.

2) 1 open means 1 application is being disposed of by the leadership.

3) 13 ship measurements means 13 applications have passed verification and need to be measured.

4) 91 completed means 91 applications have been completed and the Small Pass has been issued.

5) 6 canceled means 6 applications were cancelled.

6) 16 revisions mean that 16 verification results of the application need to be revised.

Figure 4 displays data on applications for the issuance of e-paskecil at UPP Maccini Baji recorded from September 2022 to September 2023. It shows that, aside from the understanding level of the ship's crew, the understanding of applicants—whether ships owners or their authorized

representatives—regarding the procedures and requirements for issuing e-paskecil remains suboptimal. This is evident from the 13 applications that passed verification, compared to 6 applications that were canceled due to the applicants' failure to meet the specified ship safety and security requirements, and 16 applications that required corrections after verification. This reflects a lack of knowledge and understanding among Jolloro ship crews and ship owners regarding safety and security policies for public shipping services at UPP Maccini Baji. Therefore, increasing outreach efforts concerning safety and security for traditional Jolloro passenger vessel owners and crews at UPP Maccini Baji is recommended.

These findings align with the results of interviews with 5 respondents, all of whom were harbormaster officers at Maccini Baji Port. The officers generally affirmed that the issuance of paskecil followed the applicable SOPs. However, this process is not optimal due to several obstacles, including:

Completeness of required documents or files.

Expansive working area (archipelago).

Technical requirements and documents that the applicant considers complicated, strict, and lengthy.

The applicant's level of knowledge and understanding regarding the requirements and procedures for applying for the issuance of a e-paskecil.

E-paskecil applications are mostly processed through third parties (agents).

Lack of awareness about shipping safety and security.

Based on [26] concerning instructions for traditional passenger-carrying ships, the safety equipment on ships consists of:

1) Adult life jackets are 125% (one hundred twenty-five percent) of the permitted sailors.

2) Children's life jackets are permitted for 10% (ten percent) of passengers and must be worn during the cruise.

3) Rigid life rafts with a capacity of 105% (one hundred and five percent) of the permitted sailors.

4) 1 (one) unit of lifebuoy equipped with a lifeline of 20 (twenty) meters on each side of the ship's hull with a distance of 15 (fifteen) meters on each passenger deck

However, regarding the number of passengers and safety equipment on Jolloro ships owned by respondents (crew members), Table 6 shows that the safety equipment available on traditional Jolloro passenger-carrying ships at Maccini Baji Port does not comply with applicable regulations due to several factors, such as:

This revision improves clarity by specifying that the ships are “owned by respondents” and removes redundant parentheses around “Table 6.

The number of life jackets available does not meet the permitted number of passengers or sailors.

The ship lacks a rigid life raft with a capacity of 105% of the permitted number of sailors.

Most ships do not have a life buoy unit equipped with 20-meter lifelines on each side of the hull, with a distance of 15 meters on each passenger deck.

Other safety equipment, such as corks and jerry cans, does not meet the requirements of applicable regulations.

Table 6. Number of passengers and safety equipment on Jolloro ships at Maccini Baji Port.

No.	GT Ship	Number of Passengers	Safety Equipment Name					Quality/Condition		
			Cork	Jerry cans	Life Jacket	RingBouy	SB	B	KB	TB
1	6	15	4	30	0	0	0	34	0	0
2	4	5	0	5	1	0	0	1	5	0
3	4	20-50	1	0	20	0	0	21	0	0
4	2	13	0	0	5	0	0	3	2	0
5	2	13	0	0	2	0	0	2	0	0
6	2	13	0	0	6	0	0	6	0	0
7	2	13	1	0	0	0	0	1	0	0
8	2	13	0	0	0	0	0	0	0	0
9	3	6	1	0	3	0	0	0	4	0
10	2	10	0	0	5	0	0	3	2	0
11	1	8	0	0	0	1	0	1	0	0
12	2	10	0	0	10	0	0	0	10	0
13	2	10	0	0	3	0	0	0	3	0
14	6	20	0	0	6	0	0	6	0	0
15	5	10	3	0	3	0	0	6	0	0
16	4	15	3	15	20	4	0	42	0	0
17	4	13	1	5	3	0	0	9	0	0
18	6	20	0	0	0	0	0	0	0	0
19	6	30	1	20	9	0	0	30	0	0
20	6	30	1	20	7	2	0	30	0	0
21	6	7	1	2	2	0	0	4	1	0
22	4	15	0	0	5	0	0	5	0	0
23	4	30	1	3	0	0	3	1	0	0
24	4	30	0	1	0	0	0	1	0	0
25	2	10	1	0	0	0	0	1	0	0
26	3	7	1	5	2	0	0	0	2	0

No.	GT Ship	Number of Passengers	Safety Equipment Name					Quality/Condition		
			Cork	Jerry cans	Life Jacket	RingBouy	SB	B	KB	TB
27	2	6	1	4	3	0	0	1	2	0
28	1	7	1	3	3	0	0	0	3	0

Source: Analysis results, 2023.

Descriptions:

SB : Very good

B : Good

KB : Poor

TB : Very poor

3.2 Passenger Understanding Level

The results of the questionnaire assessing passenger understanding of the safety and security policies for Jolloro public shipping services at Maccini Baji Port are presented in Table 7.

Table 7. Passenger Understanding Level

No.	Variable Level of Understanding of Ship Crew	Assessment Indicators	Score	Average Score	Description
1	Service users' understanding of operational policies and safety equipment.	Certification obligations.	1.52	1.80	Poor Understanding
		Shipping safety and security	1.76		
		Certificate of shipping safety and security expertise and skills.	1.78		
		Demonstration of the use of safety equipment and instructions on evacuation routes and the location of fire extinguishers.	1.58		
		Safety equipment	1.76		
		Use of life jackets.	1.78		
		Prohibition of sailing at night for traditional passenger-carrying ships (Jolloro).	1.72		
		Prohibition of sailing during bad weather.	2.64		
		Records and reports on the identity of crew members and passengers	1.70		
2	Service users' understanding of ship capacity limits.	Limits on the number and capacity of passengers	1.78	1.78	Poor Understanding
Average				**1.79**	**Poor Understanding**

Source: Analysis results, 2023.

Table 7 indicates that the average understanding of service users regarding the safety aspects of public shipping services at Maccini Baji Port is 1.79. This suggests that, overall; users of the traditional Jolloro passenger ships at Maccini Baji Port do not understand the safety and security policies. The details are as follows:

Understanding of Operational Policies and Safety Equipment: With a score of 1.80, this indicates that users of traditional Jolloro passenger vessels at Maccini Baji Port do not understand the operational policies and safety equipment of these vessels.

Understanding of Ship Capacity Limits: With a score of 1.78, this shows that users of traditional Jolloro passenger vessels at Maccini Baji Port do not understand the ship capacity limits.

Based on the data and information obtained, there is a lack of understanding by users of traditional Jolloro passenger ship services at Maccini Baji Port regarding aspects of traditional shipping safety and security policies because there are still many obstacles found in implementing traditional shipping safety and security policies, such as:

The educational and occupational backgrounds of most service users are not related to public shipping safety and security (shipping sector).

Only 16 out of 56 respondents (28%) have attended BST training.

Service users (passengers) never receive demonstrations on the use of safety equipment, nor are they given instructions on evacuation routes and the location of fire extinguishers before the ship's departure by the Jolloro crew.

Local wisdom suggests that using a life jacket or other safety equipment in good weather may actually pose a risk to safety and security while sailing, potentially leading to ship accidents.

Forty-eight out of 56 service users (86%) have sailed at night using the traditional Jolloro passenger ship.

All 56 service users (100%) stated that they were never asked for identification for recording or reporting purposes when using Jolloro boat services.

The excess load on traditional Jolloro passenger ships is partly due to local customs, where passengers with the same background, origin, and destination (such as groups or families) prefer not to be separated and insist on traveling together, even if it means overloading the ship.

The determination of service rates on each route does not comply with the [33], concerning economy class ferry transportation rates across Pangkajene and Islands Regency crossings. Instead, transportation rates are often based on the number of passengers: the more service users the ship carries, the lower the costs or tariffs each passenger pays, and vice versa. This practice contributes to the overloading of ships.

This indicates that the implementation of public shipping safety and security policies at Maccini Baji Port is not yet optimal due to the insufficient level of understanding among ship crews and passengers, necessitating more appropriate methods. Moreover, it highlights the importance of crew members' understanding, expertise, and skills [34]. Accidents involving public shipping vessels in Pangkajene and Islands Regency are primarily caused by four factors: the ship itself, environmental conditions, human error, and management issues related to ship type, gross tonnage, wind speed, and operational errors [35], [25].

Therefore, a program for empowering public shipping sea transportation, aligned with [36] concerning the empowerment of public shipping sea transportation, is necessary for traditional vessels carrying Jolloro passengers at Maccini Baji Port, such as;

1. Implementation of the crew development program for traditional Jolloro passenger transport vessels, including:

a) Basic Safety Training (BST).

b) SKK 60 Mill Training and issuance of Seaman's Books.

c) Enhancement of managerial and financial skills.

d) Improvement in the ability to develop information systems for the sea shipping business.

2. Implementation of the ship fleet development program for ship owners and crew of traditional Jolloro passenger transport vessels in the UPP Maccini Maji work area, including:

a) Training on developing prototype designs and understanding ship classification rules for traditional shipping vessels.

b) Training on building a fleet of traditional shipping vessels.

c) Training on the maintenance and upkeep of traditional shipping vessels.

Increase the distribution and intensity of socialization programs related to the implementation of safety and security policies for the crew of traditional Jolloro passenger ships in the working area of Maccini Baji Port.

Establish a safety equipment station at the wooden pier of Maccini Baji Port, where life jackets and other safety equipment can be borrowed free of charge by all crew members and passengers of traditional Jolloro passenger ships, in accordance with applicable regulations.

Enforce safety and security policies for public shipping services at Maccini Baji Port through administrative sanctions or fines, providing a deterrent effect.

Increase the number of harbormaster officers or other qualified personnel who possess the necessary competencies, rights, and authority regarding the safety and security of public shipping. These officers should be positioned at easily accessible points for island communities within the UPP Maccini Baji working area to address difficulties in processing certifications or safety documents, particularly for traditional Jolloro passenger ships.

Enhance coordination, cooperation, and collaboration between agencies within the Maccini Baji Port area, particularly the UPP Maccini Baji, the Harbormaster, and the Pangkajene and Islands Regency Sea Transportation Service, to effectively implement safety and security policies for Jolloro passenger shipping services.

4. CONCLUSION AND RECOMMENDATION

The analysis of the level of understanding among the crew and passengers of public shipping services regarding safety aspects at Maccini Baji Port reveals that the ship crews have an average score of 2.13. This score indicates that, in general, the crew members of traditional Jolloro passenger ships at Maccini Baji Port lack an adequate understanding of public shipping safety and security policies. Meanwhile, the level of understanding among service users (passengers) has an average score of 1.79, suggesting that, in general, passengers of traditional Jolloro ships at Maccini Baji Port are not familiar with these safety and security policies.

Therefore, there is a need for broader policy outreach and more effective policy enforcement efforts for ship crews. This could include implementing crew development programs and initiatives to enhance the safety standards of the traditional Jolloro passenger transport fleet.

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