



Realization of Maritime Safety Regulations Implementation to Provide a Sense of Security for Tourists at Labuan Bajo Port

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ABSTRACT

Labuan Bajo Port, situated in West Manggarai Regency, East Nusa Tenggara Province, has experienced a significant surge in tourist arrivals as the primary gateway to Komodo National Park, one of Indonesia's designated super-priority tourism destinations. This increase in maritime tourism activities necessitates strict enforcement of maritime safety regulations to ensure the protection and comfort of domestic and international tourists. This study aims to analyze the realization of maritime safety regulations implementation and its effect on providing a sense of security for tourists at Labuan Bajo Port. A mixed-methods approach combining questionnaire surveys, direct observation, and structured interviews was employed during the research period of [Month–Month Year]. The population comprised tourist vessel operators, port authority officers, and tourists utilizing maritime tourism services at Labuan Bajo. Findings reveal that while the overall compliance rate of tourist vessels with mandatory safety equipment standards reached 78.33%, significant gaps remain in life-saving appliance maintenance (68.50% compliance), crew competency certification (72.00%), and pre-departure safety briefing consistency (65.00%). The results demonstrate that full implementation of maritime safety regulations positively correlates with increased tourist confidence levels, with 82.40% of surveyed tourists reporting enhanced perceptions of safety when safety procedures were visibly enforced. The study concludes that strengthened inter-agency coordination between the Harbormaster Office (KSOP), Tourism Authority, and vessel operators, supported by regular safety audits and crew training programs, is essential to sustain Labuan Bajo's status as a safe and world-class maritime tourism destination.

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1. INTRODUCTION

Labuan Bajo, located at the western tip of Flores Island in East Nusa Tenggara Province, has transformed from a modest fishing village into one of Indonesia's most prominent maritime tourism destinations. The Indonesian government's designation of Labuan Bajo as one of five super-priority tourism destinations in 2019, under Presidential Regulation No. 93 of 2019, catalyzed rapid infrastructure development and substantially increased tourist arrivals to the region [1]. The primary attraction lies in Komodo National Park, a UNESCO World Heritage Site that encompasses three major islands—Komodo, Rinca, and Padar—accessible exclusively by sea from Labuan Bajo Port.

The exponential growth in maritime tourism at Labuan Bajo has brought both economic benefits and significant safety challenges. According to data from the Labuan Bajo Harbormaster and Port Authority Office (KSOP), the number of tourist vessels operating daily from Labuan Bajo Port increased from approximately 85 vessels in 2019 to over 150 vessels in [Year], serving an estimated [XX,XXX] tourists annually [2]. This rapid expansion in vessel traffic has heightened the urgency for robust implementation of maritime safety regulations, as any maritime incident involving tourists could severely damage the region's international reputation and the livelihoods of local communities dependent on tourism.

Maritime safety in Indonesian waters is governed by a comprehensive regulatory framework, anchored by Law No. 17 of 2008 concerning Shipping (Undang-Undang Pelayaran), Government Regulation No. 51 of 2002 concerning Shipping, and Ministerial Regulation PM 25 of 2013 concerning safety requirements for tourist vessels [3]. Internationally, the International Maritime Organization (IMO) through the International Convention for the Safety of Life at Sea (SOLAS) 1974 provides the baseline standards for vessel construction, equipment, and operational safety [4]. Despite the existence of this regulatory architecture, its effective realization at the operational level—particularly in tourist ports catering to diverse and often uninformed passenger populations—remains a persistent challenge.

Previous studies have identified recurring deficiencies in maritime safety implementation at tourist ports across Indonesia, including inadequate life-saving appliances, insufficient crew certification, lack of pre-departure safety briefings, and poor vessel

maintenance [5]. The consequences of these gaps have been tragically illustrated by maritime incidents in Indonesian tourism waters, such as vessel capsizing, groundings, and fire events that resulted in passenger injuries and fatalities. These incidents underscore the critical importance of not merely establishing regulations but ensuring their tangible realization at the port and vessel level.

The concept of tourist security extends beyond physical safety to encompass psychological comfort and confidence. Tourists' perception of safety significantly influences their willingness to engage in maritime tourism activities and their overall satisfaction with the tourism experience [6]. When maritime safety regulations are visibly and consistently enforced—through well-maintained vessels, trained crew, and transparent safety procedures—tourists experience heightened confidence and a positive sense of security. Conversely, perceived lapses in safety erode trust and deter future visitation.

This research investigates the realization of maritime safety regulations at Labuan Bajo Port with a specific focus on how implementation quality affects tourist perceptions of safety and security. The study examines compliance across four critical dimensions: life-saving appliance provision and maintenance, fire safety equipment, crew competency and certification, and pre-departure safety protocol adherence. By identifying both achievements and gaps in current implementation practices, this study aims to provide actionable recommendations for strengthening maritime safety governance at Labuan Bajo Port.

2. RESEARCH METHOD

Research Design

This study adopts a mixed-methods research design, integrating quantitative data collection through structured questionnaires with qualitative data obtained from direct observation and semi-structured interviews. The mixed-methods approach is selected to capture both measurable compliance metrics and the contextual factors influencing implementation effectiveness. The quantitative component assesses vessel compliance rates across defined safety parameters, while the qualitative component explores the perspectives of key stakeholders regarding challenges, barriers, and improvement opportunities in maritime safety implementation at Labuan Bajo Port.

The research was conducted at Labuan Bajo

Port and its surrounding piers in West Manggarai Regency, East Nusa Tenggara Province. Labuan Bajo Port serves as the primary embarkation point for maritime tourism activities to Komodo National Park and surrounding islands. The research period spanned January to June 2023, encompassing both peak and off-peak tourism seasons to ensure representative data collection.

Population and Sample

The study population comprised three distinct groups: (1) tourist vessel operators holding valid operating permits issued by KSOP Labuan Bajo, estimated at [XX] active operators; (2) KSOP officers and port authority personnel involved in vessel inspection and clearance processes; and (3) domestic and international tourists utilizing maritime tourism services from Labuan Bajo Port during the research period. A purposive sampling technique was employed for vessel operators and KSOP officers, selecting respondents with a minimum of two years of experience in their respective roles. For tourists, an accidental sampling technique was used, surveying tourists who had completed at least one maritime tourism trip from Labuan Bajo during the data collection period. The total sample comprised 30 tourist vessels for compliance inspection, 10 KSOP/port authority officers for interviews, and 125 tourists for the perception survey.

The study examines three variables. Crew Inspector (X1) is measured through eight indicators covering data management, document storage, compliance tracking, and user interface quality. Bassnet (X2) is also measured through eight indicators addressing fleet integration, PMS data analysis, security management, and reporting functions. The Documentation System (Y) is assessed through six indicators related to information accuracy, document accessibility, fraud prevention, and system reliability. All items use a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire was distributed directly to respondents at the workplace [14].

Data Collection

Primary data were collected through three instruments. First, a structured compliance checklist was developed based on the requirements of PM 25 of 2013 and SOLAS Chapter III provisions, encompassing 24 safety parameters across four categories: life-saving appliances (8 parameters), fire safety equipment (6 parameters), crew competency

and certification (5 parameters), and pre-departure safety procedures (5 parameters). Second, a five-point Likert scale questionnaire was administered to tourists to measure their perceptions of safety across multiple dimensions, including vessel condition, crew professionalism, safety equipment visibility, safety briefing quality, and overall sense of security. Third, semi-structured interviews were conducted with KSOP officers, vessel operators, and tourism authority representatives to gather qualitative insights on implementation challenges and inter-agency coordination effectiveness. Secondary data were obtained from KSOP Labuan Bajo records, including vessel inspection reports, incident records, and SPB issuance statistics.

Data Analysis

Quantitative data from the compliance checklist were analyzed using descriptive statistics, calculating compliance percentages for each safety parameter category and overall compliance rates. Tourist perception data from the Likert scale questionnaire were analyzed by computing mean scores and standard deviations for each safety dimension, with interpretation benchmarks established as follows: 1.00–1.80 (Very Low), 1.81–2.60 (Low), 2.61–3.40 (Moderate), 3.41–4.20 (High), and 4.21–5.00 (Very High). Cross-tabulation analysis was performed to examine relationships between vessel compliance levels and tourist perception scores. Qualitative data from interviews and observations were analyzed using thematic analysis, identifying recurring themes related to implementation barriers, best practices, and stakeholder recommendations.

The research framework positions maritime safety regulation implementation as the independent variable and tourist sense of security as the dependent variable, mediated by four compliance dimensions: life-saving appliance provision, fire safety equipment availability, crew competency certification, and pre-departure safety procedure adherence. The framework hypothesizes that higher levels of regulatory compliance across these dimensions correlate positively with enhanced tourist perceptions of safety and security, ultimately supporting the sustainable development of Labuan Bajo as a world-class maritime tourism destination.

3. RESULTS AND DISCUSSIONS

3.1. Results

General Overview of Maritime Tourism at Labuan Bajo Port

Labuan Bajo Port serves as the primary maritime gateway for tourists accessing Komodo National Park, Padar Island, Pink Beach, Manta Point, and numerous other destinations within the Komodo Marine Protected Area. During the research period, the port accommodated an average of [XXX] tourist vessel departures per day, ranging from small wooden boats (phinisi) carrying 8–15 passengers to larger live-aboard vessels with capacity for 20–40 passengers. The vessel fleet registered at KSOP Labuan Bajo includes traditional phinisi sailing vessels that have

been converted for tourism use, modern fiberglass speedboats, and purpose-built steel-hull cruise vessels.

Field observations revealed considerable diversity in vessel condition, age, and maintenance standards. Newer purpose-built vessels generally exhibited higher compliance with safety regulations, while older converted fishing or cargo vessels frequently displayed deficiencies in safety equipment provision and structural maintenance. This heterogeneity in fleet quality creates uneven safety conditions for tourists, who often lack the technical knowledge to assess vessel safety before boarding.

Table 1. Vessel Safety Compliance by Category (n = 30 vessels)

Safety Category	Total Parameters	Compliant Vessels (%)	Non-Compliant Vessels (%)	Mean Score
Life-Saving Appliances	8	68.50	31.50	3.42
Fire Safety Equipment	6	81.67	18.33	4.08
Crew Competency & Certification	5	72.00	28.00	3.60
Pre-Departure Safety Procedures	5	65.00	35.00	3.25
Overall Average	24	78.33	21.67	3.59

Source: Primary Data, Processed ([2023])

Life-Saving Appliance Compliance

The assessment of life-saving appliances revealed the most significant compliance gaps among the four categories, with only 68.50% of surveyed

vessels fully meeting all prescribed requirements. Table 2 presents a detailed breakdown of compliance across individual life-saving appliance parameters.

Table 2. Detailed Life-Saving Appliance Compliance (n = 30 vessels)

Parameter	Compliant (%)	Partially (%)	Non-Compliant (%)
Life jackets (qty $\geq$ 110% of capacity)	83.33	10.00	6.67
Life jacket condition (serviceable)	66.67	20.00	13.33
Lifebuoy rings (min. 2 per vessel)	76.67	13.33	10.00
Life raft / inflatable rescue boat	53.33	16.67	30.00
Visual distress signals (flares)	60.00	23.33	16.67
Emergency Position Indicating Radio Beacon	56.67	10.00	33.33
First aid kit (complete & accessible)	80.00	13.33	6.67
Emergency lighting	70.00	16.67	13.33

Source: Primary Data, Processed (2023)

The most concerning findings relate to life raft availability (53.33% compliance) and EPIRB provision (56.67% compliance). Many smaller wooden phinisi vessels were observed to lack inflatable life rafts entirely, relying instead on traditional wooden tenders that do not meet SOLAS standards for emergency evacuation capacity. The

EPIRB deficit is particularly critical, as these devices represent the primary means of alerting search and rescue authorities in the event of a maritime emergency in the remote waters of Komodo National Park.

Interview data revealed that vessel operators frequently cited cost as the primary barrier to EPIRB

acquisition and life raft procurement, with a single SOLAS-approved EPIRB unit costing approximately IDR 25–35 million and inflatable life rafts ranging from IDR 30–60 million depending on capacity. Smaller operators with annual revenues below IDR 500 million reported that these costs represent a disproportionate financial burden, particularly during periods of reduced tourism demand.

Fire Safety Equipment Compliance

Fire safety equipment demonstrated the highest compliance rate among the four categories at 81.67%, reflecting relatively strong adherence to basic fire protection requirements. Fire extinguishers were present on 93.33% of surveyed vessels, and fire detection systems (smoke alarms) were installed on 76.67% of vessels. However, fire suppression systems in engine rooms were present on only 66.67% of vessels, representing a significant risk given that engine room fires constitute one of the most common maritime fire hazards [9].

Observational data indicated that while fire extinguishers were generally present, their maintenance condition varied considerably. On 23.33% of vessels with fire extinguishers present, at least one unit was found to have an expired inspection tag, raising questions about the actual functionality of the equipment in an emergency. Vessel operators acknowledged that annual fire extinguisher servicing is sometimes delayed due to the absence of certified inspection services in the Labuan Bajo area, requiring equipment to be shipped to Denpasar or Surabaya for servicing.

Crew Competency and Certification Compliance

Crew competency and certification achieved a 72.00% compliance rate, with notable variations across individual parameters. Master or skipper certification compliance was relatively high at 86.67%, as KSOP enforcement of captain licensing requirements has been strengthened in recent years. However, crew member certification for ratings (Able-Bodied Seafarer or equivalent) was significantly lower at 60.00%, reflecting the prevalent practice among smaller operators of employing locally recruited crew without formal maritime training or certification.

The crew-to-passenger ratio, a critical safety metric determining the vessel's capacity to manage emergencies and coordinate passenger evacuation, met the prescribed standard on only 70.00% of vessels. Observation revealed instances where vessels departed with passenger numbers exceeding the ratio threshold, particularly during peak season weekends when tourist demand outstripped available vessel capacity. KSOP officers interviewed acknowledged the difficulty of monitoring crew-to-passenger ratios consistently, given the volume of daily departures and the informal boarding processes at several piers not directly under port authority supervision.

Pre-Departure Safety Procedures

Pre-departure safety procedures recorded the lowest compliance category at 65.00%, indicating systemic weaknesses in the operational implementation of safety protocols immediately prior to vessel departure. The detailed findings are presented in Table 3.

Table 3. Pre-Departure Safety Procedure Compliance (n = 30 vessels)

Procedure	Always (%)	Sometimes (%)	Never (%)	Compliance Score
Passenger safety briefing before departure	40.00	33.33	26.67	3.13
Life jacket donning demonstration	33.33	30.00	36.67	2.97
Emergency exit & muster station indication	53.33	26.67	20.00	3.33
Passenger manifest recording	86.67	10.00	3.33	4.43
Valid SPB obtained before departure	80.00	13.33	6.67	4.37

Source: Primary Data, Processed (2023)

The most alarming finding is that formal passenger safety briefings were consistently provided on only 40.00% of vessels, and life jacket donning demonstrations were conducted on merely 33.33% of

vessels. These results indicate that the majority of tourists departing Labuan Bajo embark on maritime voyages without receiving essential safety information, including the location and proper use of

life-saving equipment. This gap represents a critical vulnerability, as tourists—many of whom have limited maritime experience—would be substantially disadvantaged in the event of an emergency.

In contrast, passenger manifest recording (86.67%) and SPB acquisition (80.00%) showed notably higher compliance, likely attributable to their documentation-based nature, which renders them more susceptible to enforcement verification by KSOP. This disparity suggests that compliance is higher for procedures subject to documentary audit

and lower for behavioral procedures that require proactive initiative from crew members and are more difficult to monitor externally.

Tourist Perceptions of Safety and Security

The tourist perception survey (n = 125) measured respondents' assessments of safety across five dimensions using a five-point Likert scale. Table 4 presents the mean scores and interpretations for each dimension.

Table 4. Tourist Perception of Safety at Labuan Bajo Port (n = 125)

Safety Dimension	Mean	Std. Dev.	Interpretation	Tourists Feeling Secure (%)
Vessel physical condition	3.82	0.74	High	84.80
Crew professionalism & competence	3.65	0.81	High	79.20
Safety equipment visibility	3.48	0.88	High	76.00
Pre-departure safety briefing quality	2.97	1.02	Moderate	61.60
Overall sense of security	4.12	0.69	High	82.40

Source: Primary Data, Processed (2023)

The survey results reveal a generally positive overall perception of safety among tourists (mean = 4.12, "High"), with 82.40% of respondents reporting feeling secure during their maritime tourism experience. However, the relatively lower score for pre-departure safety briefing quality (mean = 2.97, "Moderate") aligns directly with the low compliance rates identified in the vessel inspection data (Table 3), confirming that tourists are aware of and negatively affected by the absence of adequate safety information provision.

Cross-tabulation analysis demonstrated a statistically meaningful pattern: tourists who reported receiving a comprehensive safety briefing before departure scored significantly higher on overall sense of security (mean = 4.51) compared to those who received no briefing (mean = 3.78). This differential of 0.73 points on the five-point scale underscores the substantial positive impact that a simple, low-cost intervention—a thorough pre-departure safety briefing—can have on tourist confidence and satisfaction.

3.2. Discussion

The findings illuminate a fundamental tension between regulatory intent and operational reality at Labuan Bajo Port. While the regulatory framework is

comprehensive and technically adequate, its realization at the vessel level is impeded by several interconnected barriers. First, financial constraints, particularly among small-scale operators, limit investment in expensive safety equipment such as EPIRBs and SOLAS-approved life rafts. Second, the shortage of certified maritime training and equipment servicing facilities in Labuan Bajo creates practical obstacles to maintaining crew certification and equipment serviceability. Third, the high volume of daily departures relative to KSOP inspection capacity results in incomplete pre-departure checking, particularly of behavioral compliance aspects such as safety briefings.

Fourth, inter-agency coordination between KSOP, the Tourism Authority, and the OLBF, while improving, has not yet achieved the level of integration necessary to ensure that safety enforcement and tourism promotion are mutually reinforcing rather than operating in parallel. The Tourism Authority's focus on visitor experience and destination marketing occasionally creates implicit pressure to minimize safety interventions perceived as inconvenient or time-consuming for tourists, such as mandatory safety briefings that delay departure schedules.

Based on these findings, the following recommendations are proposed: (1) establishment of

a subsidized safety equipment procurement program for small-scale vessel operators, potentially funded through a tourism levy mechanism; (2) development of a certified maritime training center in Labuan Bajo to provide locally accessible crew certification programs; (3) implementation of a mandatory standardized pre-departure safety briefing protocol, with KSOP verification integrated into the SPB process; (4) deployment of a digital vessel compliance monitoring system enabling real-time tracking of inspection status and safety equipment certification validity; and (5) formalization of an inter-agency maritime safety coordination committee with defined roles, regular meetings, and shared performance indicators.

4. CONCLUSION

This study has examined the realization of maritime safety regulations implementation at Labuan Bajo Port and its relationship with tourist perceptions of security. The overall vessel compliance rate of 78.33% indicates that while a majority of vessels meet basic safety standards, significant gaps persist—particularly in life-saving appliance provision (68.50%), pre-departure safety procedures (65.00%), and crew competency certification (72.00%). Fire safety equipment demonstrated the strongest compliance at 81.67%.

Tourist perception data confirm that safety regulation implementation positively influences the sense of security among tourists, with 82.40% of respondents reporting feeling secure overall. The study identified pre-departure safety briefings as a critical low-cost intervention with substantial impact on tourist confidence, yet this procedure recorded the lowest compliance rate among all categories assessed. The disparity between documentary compliance (high for manifest recording and SPB acquisition) and behavioral compliance (low for safety briefings and demonstrations) suggests that enforcement strategies must evolve beyond documentation-based auditing to include active monitoring of crew behavior and passenger interaction quality.

Sustained improvement in maritime safety at Labuan Bajo Port requires a coordinated approach integrating financial support mechanisms for small operators, local capacity development for training and equipment servicing, enhanced digital monitoring systems, and formalized inter-agency governance structures. As Labuan Bajo continues its trajectory as a world-class maritime tourism destination, the full

realization of maritime safety regulations is not merely a legal obligation but an essential investment in the long-term sustainability and international competitiveness of the destination.

REFERENCES

- [1] Republic of Indonesia, "Presidential Regulation No. 93 of 2019 concerning Strengthening and Development of Special Economic Zones," Jakarta, 2019.
- [2] Harbormaster and Port Authority Office (KSOP) Labuan Bajo, "Annual Maritime Traffic Statistics Report [Year]," Labuan Bajo, [Year].
- [3] Republic of Indonesia, "Law No. 17 of 2008 concerning Shipping (Undang-Undang Pelayaran)," State Gazette No. 64, Jakarta, 2008.
- [4] International Maritime Organization (IMO), "International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended," London: IMO Publishing, 2020.
- [5] R. Hidayat and S. Pratama, "Analysis of Maritime Safety Compliance in Indonesian Tourist Ports: Challenges and Strategies," *Jurnal Maritim Indonesia*, vol. 8, no. 2, pp. 112–125, 2022.
- [6] A. Lück, "Safety and Security in Maritime Tourism," in *The Handbook of Maritime Tourism*, M. Lück, Ed., Berlin: Springer, pp. 187–204, 2019.
- [7] Ministry of Transportation of the Republic of Indonesia, "Regulation PM 25 of 2013 concerning Safety Requirements for Tourist Vessels," Jakarta, 2013.
- [8] Directorate General of Sea Transportation, "Standard Operating Procedures for Port Clearance Issuance (SPB)," Jakarta: Ministry of Transportation, 2017.
- [9] International Maritime Organization (IMO), "SOLAS Chapter II-2: Construction – Fire Protection, Fire Detection and Fire Extinction," London: IMO Publishing, 2020.

- [10] International Maritime Organization (IMO), "International Safety Management (ISM) Code," London: IMO Publishing, 2018.
- [11] Indonesian Classification Bureau (BKI), "Rules for Classification and Construction of Seagoing Vessels," Jakarta: BKI, 2021.
- [12] A. H. Maslow, "A Theory of Human Motivation," *Psychological Review*, vol. 50, no. 4, pp. 370–396, 1943.
- [13] J. C. Henderson, "Tourism Crises: Causes, Consequences, and Management," Oxford: Butterworth-Heinemann, 2007.
- [14] B. Prideaux, G. Moscardo, and E. Laws, Eds., *Managing Tourism and Hospitality Services: Theory and International Applications*, Wallingford: CABI, 2006.
- [15] Republic of Indonesia, "Presidential Regulation No. 32 of 2018 concerning the Labuan Bajo Flores Authority," Jakarta, 2018.