Safety Awareness among the Recreational Boats Passengers at Teluk Batik.

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Abstract

This study aims to examine safety awareness among recreational boat passengers at Teluk Batik, focusing on their perceptions of safety practices while on board and throughout their trips. A survey was conducted with 100 recreational boat passengers using a structured questionnaire. The results, analyzed through multiple linear regression, reveal a significant relationship between passenger safety awareness and the implementation of individual and organizational safety practices by boat operators. Specifically, passengers exhibited a p-value of 0.00433, indicating a high level of pre-boating safety preparation. Additionally, the analysis yielded a p-value of 5.167E-05, suggesting that recreational boat operators at Teluk Batik actively adhere to safety procedures and best practices. These findings underscore the importance of passenger understanding of safety protocols and the enforcement of these measures by boat operators in enhancing overall passenger safety. This study contributes valuable insights into the effectiveness of current safety practices and highlights areas for improvement within the recreational boating sector at Teluk Batik.

Keywords: Safety awareness, recreational boating, Teluk Batik, safety practices, multiple linear regression

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Introduction

On August 28, 2023, a tragic accident occurred at Pantai Teluk Batik when a recreational boat capsized while attempting to disembark passengers. The incident involved seven tourists and two crew members, resulting in critical injuries for two individuals and causing one death. This incident highlights the risks associated with recreational boating activities and underscores the need for improved safety measures in such environments [1]–[4].

Recreational boating encompasses various activities involving watercraft utilised for leisure, such as kayaking, canoeing, sailing, and motorboating. Hence, the economic impact of recreational boating is substantial. It contributes to the tourism industry, particularly in coastal areas, where boating activities can enhance the attractiveness of a destination [5]. For instance, recreational boating generates significant expenditure on goods and services, with boat owners spending considerable amounts annually on maintenance, equipment, and related activities [6]. The economic benefits extend beyond direct spending; they also include job creation in sectors such as boat manufacturing, maintenance, and tourism services, thereby supporting local economies [6], [7]. This pursuit is a favoured recreational activity and contributes significantly to numerous communities' economies and social dynamics. Therefore, safety in recreational boating is essential for mitigating accidents and safeguarding the welfare of all passengers. Regulatory bodies, such as the International Maritime Organization (IMO), establish comprehensive international safety guidelines for passenger ships, covering emergency procedures, lifesaving equipment, and crew training[8][9]. These initiatives emphasise the need for risk management strategies that include safety regulations, signage, and enforcement of laws to enhance safety in recreational areas [10]. Therefore, factors such as lack of training and knowledge were also critical factors for unsafe boating situations and recklessness [11]. Lack of preparation, such as safety briefings, safety equipment, and alcohol, were also reasons for boating accidents [12]. At the same time, safety awareness among passengers of recreational boating is also essential. Safety awareness positively influences passengers' preventative behaviour [13], [14]. Safety awareness can prevent incorrect or non-wear of lifejackets, personal floatation devices, and alcohol consumption because these two factors are well-established risk factors for recreational boating fatalities [15].

Teluk Batik, situated near Lumut in Perak, Malaysia, represents a significant coastal destination with scenic landscapes and diverse recreational offerings. This beach attracts a substantial number of visitors annually, thereby playing a vital role in the local economy by stimulating growth in the hospitality and service sectors. Recreational activities such as boating, jet skiing, and banana boat rides enhance its attractiveness as a family-oriented destination. Hence, Teluk Batik is essential for tourism development and sustainable economic growth within the region. This study aims to evaluate the safety awareness among passengers engaged in recreational boating at Teluk Batik and examine their perceptions of safety practices aboard the boats and their overall sense of security during the trips.

Methodology

The methodology employed in this study incorporated both primary and secondary data to obtain the requisite information. The primary instrument for data collection was a questionnaire, which was meticulously developed, organised, and reviewed based on the

gathered data. 100 questionnaires were distributed to passengers of recreational boats at Teluk Batik, with responses collected through face-to-face interviews. To evaluate the apparent strength of the relationship and to assess the significant factors as the determinants of safety awareness among reactional boat passengers at Teluk Batik, multiple linear regression models were developed employing safety measures against the safety awareness variables. The general form of multiple regression model used here in which more than one independent variables is given by,

$Yn = b_0 + b_1x_1 + b_2x_2 + \ldots\ldots b_kx_k$ + e

For objective 1, the multiple regression models employed to see the relationship between three independent variables (x1 to x3) and one dependent variable Y (safety measure) is given below:

Y_1= Safety measure
b_0 = Intercept value
X_1 = Safety briefing
X_2 = Knowledge about safety equipment
X_3 = Wearing life jacket

Whereas, for objective 2, the multiple regression models employed to see the relationship between four independent variables (x1 to x4) and one dependent variable Y (Feel safe) is given below:

Y_2= Feel Safe
b_0 = Intercept value
X_1 = Safety Instruction
X_2 = Safety signage
X_3 = Equipped with safety equipment
X_4 = Safety drill

Multiple R values measure the strength of the linear relationship between multiple independent variables and a dependent variable in regression. A p-value measures the probability of observing the data or something more extreme, assuming the null hypothesis is true. Standard thresholds for significance are 0.05 and 0.01; p-values below these indicate statistical significance, suggesting strong evidence against the null hypothesis.

Results and Discussion

Safety Awareness among the Recreational Boating Passenger

The results showed there is a positive relationship (35%) between safety measure (Y) and the independent variables- safety briefing, knowledge about safety equipment and wearing a life jacket all the time onboard. Since the p-value is greater than 0.05 (0.00433) indicates that independent variables are statistically significant. The regression model yielded the following equation while regressed to the three explanatory variables against the safety measure;

$Y_1 = 2.736 + 0.071X_1 + 0.159X_2 + 0.173X_3$
The coefficient and p value for each variable are shown in Table 1 below.

Table 1. Safety awareness among reactional boat passengers at Teluk Batik.

No		Coefficient	p-value
1	Intercept	2.73	1.38E-05
2	Safety briefing	0.070	0.455
3	Knowledge about safety equipment	0.159	0.181
4	Wearing life jacket all the time	0.172	0.032

Passengers demonstrate safety awareness because they recognise the importance of a safety briefing before boarding the boat. They understand that a recreational vessel must be equipped with all necessary safety equipment, and they know that wearing a life jacket during the trip is essential for their protection.

Safety Practices for Rectional Boating at Teluk Batik.
The results showed a positive relationship (47%) between feel safe (Y) and the independent variables- safety instruction, safety signage, equipped with safety equipment and safety drill before onboadr. Since the p-value is greater than 0.05 (5.167E-05), it indicates that independent variables are statistically significant. The regression model yielded the following equation while regressed to the three explanatory variables against the safety measure;

$Y_2 = 2.018 + 0.317X_1 + 0.160X_2 + 0.063X_3 + 0.038X_4$

The coefficient and p value for each variable are shown in Table 2 below.

Table 2. Safety practice for boat passengers at Teluk Batik.

No	Model Measure	Value	p-value
1	Intercept	2.018	0.0001
2	Safety instruction	0.317	0.00069
3	Safety signage	0.160	0.06473
4	Equipped with safety equipment	0.063	0.47897
5	Safety drill	0.038	0.33394

The results indicate a significant relationship between passengers' sense of safety and the independent variables: safety instruction, safety signage, availability of safety equipment, and pre-boarding safety drills. Passengers report feeling secure when recreational boating

practices effectively incorporate these variables. The model demonstrates that these safety measures have been successfully implemented in the context of recreational boating at Teluk Batik. This underscores the importance of comprehensive safety protocols in enhancing passengers' confidence and overall safety awareness during their boating experiences.

Conclusion

In conclusion, safety awareness among passengers is critical for enhancing preventive behaviours, particularly ensuring the proper use of life jackets and personal flotation devices. Additionally, recreational boats must be fully equipped with safety measures and adhere to best practices to ensure passenger safety. Addressing misconceptions about the effectiveness of safety equipment and promoting consistent usage and proper boat safety practices is essential. By fostering a strong safety culture and ensuring boats are well-prepared, accidents and fatalities in recreational boating can be significantly reduced.

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