

MARITIME EVENT RISK MANAGEMENT AND LOCAL ENTREPRENEURIAL RESILIENCE: EVIDENCE FROM THE SEA EAGLE BOAT RACE

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Abstract

This study examines the implementation of risk management in the Batam International Sea Eagle Boat Race 2025 and its impact on local entrepreneurial resilience in Belakang padang, Batam. As a maritime sport tourism event involving international participants and large numbers of visitors, effective risk management is essential to ensure event safety, operational continuity, and economic benefits for local communities. This research employed a qualitative case study approach using interviews, observations, documentation, and literature review. Data were analyzed based on the ISO 31000:2018 framework, covering communication and consultation, risk identification, risk analysis, risk treatment, and monitoring and review processes. The findings indicate that risk management implementation was generally effective, particularly in stakeholder coordination, risk identification, and mitigation measures. Major risks identified included participant safety, visitor congestion, and limited SME bazaar space; however, these risks were successfully managed, allowing the event to proceed safely and without significant incidents. The study further reveals that effective risk management contributed to creating a secure business environment, which enhanced SME preparedness, adaptive capacity, and entrepreneurial resilience. These findings suggest that risk management plays a strategic role in ensuring successful maritime event operations, also in supporting sustainable tourism development and strengthening local economic resilience through community-based entrepreneurship.

Keywords: Entrepreneurial Resilience, Event Tourism, ISO 31000:2018, Maritime Event, Risk Management

INTRODUCTION

Event-based tourism development (event tourism) has become one of the most widely adopted strategies by local governments to enhance destination attractiveness while simultaneously stimulating local economic growth. Through the organization of tourism events, a region not only benefits from increased tourist arrivals but also gains opportunities to promote its local cultural identity, strengthen destination branding, and generate economic activities that directly engage local communities. In the context of archipelagic regions, maritime sport-based events (sport tourism) hold considerable potential, as they capitalize on maritime resources as distinctive and competitive tourism attractions (Sadzali, 2026).

Batam City is one of the regions with significant potential for the development of maritime tourism. In addition to being recognized as an industrial and international trade hub, Batam also possesses hinterland areas rich in maritime culture and coastal community activities. One such area is Belakang padang District. As a region with a long-standing maritime heritage, Belakang padang offers substantial potential for development as a cultural and marine sport tourism destination. This potential was reflected in the organization of the Batam International Sea Eagle Boat Race 2025, which was held from 28 to 30 November 2025.

The Batam International Sea Eagle Boat Race 2025 is a traditional boat racing competition involving participants from Indonesia, Malaysia, and Singapore. After being dormant for more than a decade, the event was successfully revived and attracted thousands of visitors over its three-day duration. In addition to serving as a sporting competition and a platform for preserving maritime cultural heritage, the event also featured various supporting activities, including SME bazaars, cultural performances, and the promotion of local tourism destinations. The presence of participants and visitors from different regions created economic opportunities for local communities, particularly micro and small business owners who actively participated throughout the event.

On the other hand, the organization of maritime events involves a relatively high level of complexity, as such events take place in aquatic environments and require the involvement of multiple stakeholders (Noviana et al., 2025). Various risks, including participant safety, weather conditions, visitor congestion, security disturbances, and operational challenges, may affect the success of the event. If these risks are not properly managed, their impacts may extend beyond the organizers to local communities and business actors who benefit economically from the event. Therefore, the implementation of risk management becomes a critical factor in ensuring the successful delivery of maritime events.

Previous studies have demonstrated that risk management is a crucial component in the successful organization of tourism events and maritime tourism activities (Saragih & Syam, 2026). However, most existing research has primarily focused on safety issues, destination management, or the general economic impacts of tourism events. Studies that specifically examine the relationship between risk management implementation in maritime events and local entrepreneurial preparedness and resilience remain limited, particularly within the context of archipelagic regions and marine tourism destinations in Indonesia. Yet, a safe, orderly, and conducive business environment is one of the key factors influencing the ability of local entrepreneurs to capitalize on economic opportunities generated through event activities.

Based on these considerations, this study aims to analyze the implementation of risk management in the Batam International Sea Eagle Boat Race 2025, identify the key risks that emerged during the event, and examine their impact on local entrepreneurial preparedness and resilience, particularly among SMEs in Belakang Padang District. This research is expected to contribute to the growing body of knowledge on maritime event risk management while also providing practical insights for local governments and event organizers in developing safe, sustainable, and economically beneficial marine sport tourism events that generate broader benefits for local communities.

LITERATURE REVIEW

Risk Management in Event Organization

Risk management is a systematic process used to identify, analyze, and control various risks that may affect the achievement of an event's objectives. In the context of event organization, risk management plays a crucial role in ensuring that activities are conducted safely, efficiently, and in accordance with established plans. Potential risks may arise from various factors, including participant safety, environmental conditions, security concerns, and operational issues. Environmental degradation can also be considered a form of risk associated with tourism-related activities (Lubis et al., 2025).

ISO 31000:2018 defines risk management as coordinated activities designed to direct and control an organization with regard to risk. The standard emphasizes the importance of communication and consultation, risk identification, risk analysis, risk evaluation, risk treatment, as well as monitoring and review. In the context of maritime events, the implementation of risk management becomes particularly important because such activities are conducted in aquatic environments characterized by higher levels of uncertainty than land-based events. Research by (A. Sari et al., 2024) indicates that effective risk management can enhance safety, protect destination reputation, and contribute to the successful delivery of events. Therefore, the implementation of risk management is a key factor in supporting the sustainability and long-term success of maritime tourism events.

Event Tourism and Sport Tourism

Event tourism refers to tourism activities that utilize events or special occasions as the primary attraction to draw visitors to a destination. Events serve not only as a form of entertainment but also as a means of enhancing destination image, promoting local culture, and generating economic benefits for surrounding communities. According to (Zakaria & Hasby, 2025), event tourism plays a strategic role in destination development by creating unique visitor experiences and increasing tourist arrivals. Consequently, event-based tourism has become an important tool for strengthening destination competitiveness and fostering sustainable tourism growth.

One of the fastest-growing forms of event tourism is sport tourism, which involves tourism activities associated with sporting events and recreational sports. The Batam International Sea Eagle Boat Race 2025 represents a form of maritime sport tourism that combines traditional boat racing competitions with tourism promotion and local community empowerment. Through this event, sports function not only as a competitive activity but also as a platform for destination marketing and a catalyst for local economic development. Community participation and empowerment generated through such events can contribute significantly to regional economic growth and improve the livelihoods of local residents (Silitonga et al., 2025).

Local Entrepreneurial Resilience

Entrepreneurial resilience refers to the ability of business owners to adapt, survive, and capitalize on opportunities amid changing circumstances and uncertain environments. This concept is particularly important for small and medium-sized enterprises (SMEs), as they often operate with limited resources while facing rapidly evolving market conditions. According to (Awotunde, 2025), entrepreneurial resilience is not only associated with the capacity to withstand pressures and challenges but also with the ability to recover, adapt, and grow by leveraging emerging opportunities.

In the context of tourism events, entrepreneurial resilience can be reflected in the ability of business owners to prepare their products, enhance service capacity, and take advantage of increased visitor arrivals to expand their market reach. Entrepreneurs with a high level of resilience are generally better prepared to respond to rising demand, adjust production capacity, and develop business strategies that align with the market dynamics created during an event. Consequently, the successful organization of tourism events can provide SMEs with opportunities to strengthen business preparedness while enhancing their long-term sustainability and resilience.

METHOD

This study employed a qualitative approach using a case study method to gain an in-depth understanding of the implementation of risk management in the Batam International Sea Eagle Boat Race 2025 and its impact on local entrepreneurial preparedness in Belakang Padang District, Batam City. A qualitative approach was selected because the study sought to explore the risk management process, identify risks that emerged during the event, and understand the experiences and perceptions of stakeholders involved in the event. The research was conducted in Belakang Padang District, Batam City, Riau Islands Province, which served as the venue for the Batam International Sea Eagle Boat Race 2025 held from 28 to 30 November 2025. The study focused on the implementation of maritime event risk management based on ISO 31000:2018 and its implications for Micro, Small, and Medium Enterprises (MSMEs) participating in the event. Data were collected through interviews, observations, documentation, and literature review. Purposive sampling was employed to select informants who possessed relevant knowledge and experience regarding the event. The informants included event organizers, representatives of local government agencies, supporting authorities, and MSME operators involved in the event. Observations were conducted to directly examine event operations, security arrangements, visitor activities, and the participation of MSMEs throughout the event. Documentary data were obtained from event reports, media publications, photographs, and other supporting documents relevant to the study.

Data were analyzed using a descriptive qualitative approach based on the ISO 31000:2018 risk management framework, which includes communication and consultation, establishing the context, risk identification, risk analysis, risk evaluation, risk treatment, monitoring, and review. Identified risks were subsequently mapped using a risk register and a risk matrix to determine risk priorities based on their probability of occurrence and potential impact. Furthermore, interview data were analyzed through data reduction, data display, and conclusion drawing to examine the influence of risk management implementation on local entrepreneurial preparedness and resilience. To enhance data validity, this study employed source and method triangulation by comparing information obtained from interviews, observations, documentation, and multiple informants. Through this approach, the research aimed to provide a comprehensive understanding of maritime event risk management implementation and its contribution to strengthening local entrepreneurship in the context of the Batam International Sea Eagle Boat Race 2025.

RESULTS AND DISCUSSION

Implementation of Risk Management in the Batam International Sea Eagle Boat Race 2025

The Batam International Sea Eagle Boat Race 2025 was an international maritime sporting event held from 28 to 30 November 2025 in the Elang-Elang Waters of Belakang Padang District, Batam City. The event attracted participants from Indonesia, Malaysia, and Singapore and successfully drew thousands of visitors over its three-day duration. In addition to the traditional boat racing competition, the event featured SME bazaars, cultural performances, and various supporting activities that actively involved local communities.

As a maritime event conducted in an aquatic environment and involving multiple stakeholders, the Sea Eagle Boat Race presented a variety of potential risks that required effective management. Based on interviews, field observations, and documentary evidence, the implementation of risk management in this event was analyzed using the ISO 31000:2018 framework, which encompasses communication and consultation, establishing the context, risk identification, risk analysis, risk treatment, monitoring, and review.

The findings indicate that communication and coordination among stakeholders were effectively implemented throughout the event. The Batam City Department of Culture and Tourism, as the primary organizer, collaborated closely with various institutions, including the Bareleng Regional Police, Belakangpadang Sector Police, Municipal Public Order Agency (Satpol PP), Department of Transportation, district government officials, and local communities. The involvement of these stakeholders reflects a well-established communication and consultation process that contributed significantly to minimizing potential disruptions and ensuring the smooth execution of the event. From the perspective of risk identification, the organizing committee anticipated several major risks that could arise during the event, including adverse weather conditions, participant safety issues, visitor congestion, security disturbances, and operational challenges within the SME bazaar area. As part of its mitigation strategy, the organizers provided life jackets, patrol boats, medical posts, and deployed security personnel at various strategic locations throughout the event venue.

However, interview findings revealed that risk monitoring and evaluation activities were conducted in a relatively informal manner and were not formally documented. This indicates that while risk management principles were applied in practice, they had not yet been fully integrated into a structured and documented risk management system as recommended by ISO 31000:2018. Nevertheless, the absence of significant incidents throughout the event suggests that the mitigation measures implemented were effective in supporting the smooth execution of the event. These findings are consistent with (Wardana & Mujahidin, 2026), who argue that the success of tourism events is strongly influenced by the organizers' ability to manage safety, security, and operational risks in an integrated manner. Furthermore, (F. N. Sari & Harindahyani, 2019) emphasize that communication and consultation are fundamental components of the risk management process, as they provide the basis for coordination among stakeholders involved in an activity. In the context of the Sea Eagle Boat Race, effective inter-agency coordination emerged as one of the key factors contributing to the successful implementation of the event without major disruptions.

Overall, the implementation of risk management in the Batam International Sea Eagle Boat Race 2025 can be considered relatively effective, particularly in terms of communication, risk identification, and risk treatment. However, the monitoring and review components still require further strengthening to ensure that future events can be managed in a more systematic, structured, and sustainable manner.

Table 1. Risk Management Implementation Based on ISO 31000:2018 in the Batam International Sea Eagle Boat Race 2025

ISO 31000:2018 Process	Implementation in the Sea Eagle Boat Race 2025	Evaluation
Communication and Consultation	Coordination among organizers, local government, security authorities, and local communities	Good
Establishing the Context	Defining the event objectives as sport tourism and a driver of local economic development	Good
Risk Identification	Identification of weather, safety, security, and operational risks	Good
Risk Analysis and Evaluation	Risk assessment conducted based on organizers' experience and field conditions	Fairly Good
Risk Treatment	Provision of life jackets, patrol boats, medical posts, and security personnel	Good
Monitoring and Review	Supervision conducted during the event, but not formally documented	Needs Improvement

Resource: Researcher, 2026

As shown in Table 1, most stages of the risk management process were implemented by the event organizers. Communication and consultation emerged as the most prominent component, as they involved extensive collaboration among government agencies, security authorities, and local communities in supporting the event. In contrast, monitoring and review remained the weakest component, as these activities were not conducted systematically or formally documented. This finding suggests that the successful implementation of the Sea Eagle Boat Race 2025 relied more heavily on practical experience, field-level coordination, and stakeholder support than on a formally established and documented risk management system.

Maritime Event Risk Analysis

As a maritime sporting event involving participants from different regions and countries, the Batam International Sea Eagle Boat Race 2025 was exposed to various risks that could potentially affect the success of the

event. These risks were not limited to participant safety during the competition but also included operational issues, security concerns, visitor comfort, and the economic activities of local communities involved in the event. Therefore, risk identification and analysis were essential to assess the organizers' preparedness in managing uncertainties that emerged throughout the event (Sukmana & Prasetya, 2025).

Based on interviews, field observations, and event documentation, the identified risks were compiled into a risk register as an initial step to map risk sources, potential impacts, and mitigation measures implemented by the organizers. The development of the risk register provided a structured framework for understanding the nature of risks associated with the event and evaluating the effectiveness of existing risk management practices.

Table 2. Risk Register of the Batam International Sea Eagle Boat Race 2025

No.	Risk	Cause	Potential Impact	Mitigation Measures
1	Adverse Weather Conditions	Heavy rain and strong winds	Event delay or cancellation	Weather monitoring
2	High Waves	Unstable sea conditions	Threats to participant safety	Monitoring of the race area
3	Participant Accidents	Boat collisions or technical errors	Injuries to participants	Life jackets and patrol boats
4	Visitor Congestion	Large number of spectators	Reduced mobility and comfort	Crowd control and area management
5	Security Disturbances	Large public gatherings	Public order disruption	Joint security deployment
6	Communication Barriers with Foreign Visitors	Language differences	Less effective service delivery by SMEs	Direct communication and assistance
7	Limited SME Bazaar Space	Restricted marketplace area	Visitor concentration in specific areas	Bazaar layout arrangement

Resource: Researcher, 2026

Based on Table 2, the identified risks can be categorized into three main groups: safety risks, operational risks, and service-related risks. Safety risks include adverse weather conditions, high waves, and participant accidents, all of which have the potential to disrupt the competition and threaten participant well-being. Operational risks encompass visitor congestion, security disturbances, and limited SME bazaar space, which may affect visitor comfort and the overall effectiveness of event operations. Meanwhile, communication barriers with foreign visitors are classified as service-related risks, as they directly influence the quality of interactions between local business operators and international tourists.

The identification results indicate that the organizers had a comprehensive understanding of the major risks that could arise during the event. This finding is consistent with the principles of ISO 31000:2018, which recognize risk identification as a critical initial stage in the risk management process. Furthermore, the existence of mitigation measures for each identified risk demonstrates that the organizers adopted proactive strategies to minimize the likelihood of disruptions throughout the event. Following the identification stage, the next step involved assessing the probability of occurrence and potential impact of each risk. The assessment was conducted using a five-point scale to determine risk priorities and establish appropriate mitigation strategies. This approach enabled the researchers to classify risks according to their severity and identify which risks required greater attention during the event management process.

Table 3. Risk Assessment Matrix of the Batam International Sea Eagle Boat Race 2025

No.	Risk	Probability	Impact	Risk Score
1	Adverse Weather Conditions	2	4	8
2	High Waves	2	5	10
3	Participant Accidents	3	5	15
4	Visitor Congestion	4	3	12
5	Security Disturbances	2	4	8
6	Communication Barriers with Foreign Visitors	3	2	6
7	Limited SME Bazaar Space	4	3	12

Risk Level Classification:

- 1–5 = Low Risk

- 6–10 = Moderate Risk
- 11–25 = High Risk

Resource: Researcher, 2026

According to Table 3, participant accidents received the highest risk score of 15 and were classified as a high-risk category. This high score indicates that participant safety is the most critical aspect of the Sea Eagle Boat Race. Given that the event takes place in open waters and involves intensive physical activity, any accident has the potential to result in significant consequences for both participants and event organizers. Therefore, ensuring participant safety remains a top priority in the management of maritime sporting events.

In addition, visitor congestion and limited SME bazaar space were also categorized as high-risk factors, each receiving a risk score of 12. These findings suggest that while the event successfully attracted a large number of visitors and generated positive economic impacts for local communities, it also created challenges related to space management and visitor mobility. Interviews with SME operators revealed that the high volume of visitors led to congestion in several areas, particularly within the bazaar zone where available space was limited. This situation highlights the need for improved spatial planning and visitor flow management in future events.

Meanwhile, adverse weather conditions, high waves, security disturbances, and communication barriers with foreign visitors were classified as moderate risks. Although these risks received lower scores than the high-priority risks, they still require careful attention, as they may affect visitor satisfaction, operational efficiency, and the overall quality of event delivery if not properly managed. Consequently, continuous monitoring and preventive measures remain essential to ensure the successful implementation of future maritime tourism events.

To provide a clearer representation of risk priorities, the results of the risk assessment were subsequently visualized using a risk heat map. This visualization enables a more intuitive understanding of the relative significance of each identified risk by illustrating their positions based on probability and impact levels. As a result, the risk heat map serves as an effective tool for prioritizing mitigation efforts and supporting decision-making in the management of maritime events.

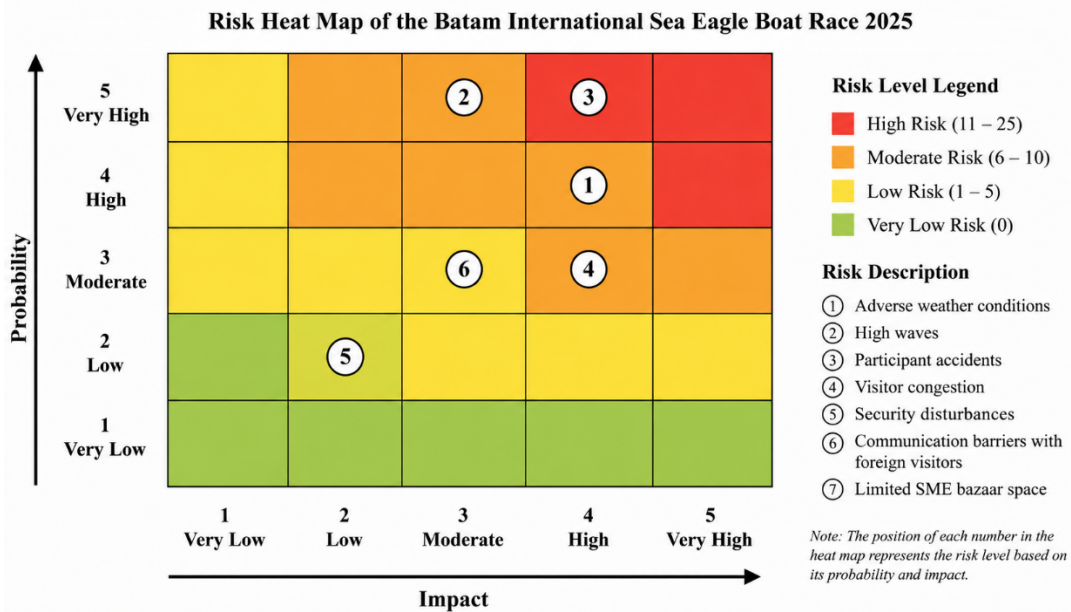


Image 1. Risk Heat Map of the Batam International Sea Eagle Boat Race 2025

Resource: Researcher, 2026

As illustrated in Figure 1, participant accidents occupy the highest-priority position due to their combination of substantial impact and relatively significant probability of occurrence. This risk represents the primary concern, as participant safety is a critical determinant of the success of any maritime sporting event. To mitigate this risk, the organizers provided life jackets, patrol boats, medical posts, and medical personnel throughout the event. The absence of reported accidents during the competition indicates that these mitigation measures were effective in ensuring participant safety and supporting the smooth execution of the event.

This finding is consistent with the study by (Rahman & Suryawan, 2025), which identified safety as the primary risk in maritime tourism activities due to its direct influence on participant security and event continuity. Therefore, the implementation of an adequate risk mitigation system is essential for ensuring the successful organization of maritime-based events.

In addition to participant safety risks, the risk heat map also indicates that visitor congestion and limited SME bazaar space fall within the high-risk category. These findings suggest that the greater the attractiveness of an event, the greater the demand for adequate facilities and effective public space management. The increasing number of visitors creates opportunities for local economic growth while simultaneously placing pressure on existing infrastructure and visitor services. This observation supports the argument of (Trisnayoni, 2025), who noted that the success of event tourism is often accompanied by an increased need for supporting infrastructure and facilities to maintain visitor comfort and overall event quality.

On the other hand, adverse weather conditions and high waves were classified as moderate risks. Although both risks could potentially have significant consequences if they occurred, weather conditions during the Sea Eagle Boat Race 2025 were generally favorable, characterized by clear skies and stable water conditions. This finding is consistent with the study by (Wijianto et al., 2024), which highlighted that safety factors and environmental conditions significantly influence the success of water-based sporting activities and overall visitor satisfaction.

Overall, the results of the analysis indicate that most of the identified risks were effectively controlled through strong inter-agency coordination, the provision of safety facilities, and the support of security personnel throughout the event. The absence of major incidents during the Sea Eagle Boat Race 2025 demonstrates that the implementation of risk management contributed positively to the successful execution of the event. Nevertheless, improvements in bazaar area capacity, visitor crowd management, and the strengthening of risk monitoring systems should be prioritized in future events to further optimize the economic and tourism benefits generated by the event.

Impact of Risk Management Implementation on SME Preparedness and Resilience

One of the primary objectives of the Batam International Sea Eagle Boat Race 2025 was to generate economic benefits for local communities through increased tourism activities and the involvement of Micro, Small, and Medium Enterprises (MSMEs). Based on interviews and field observations, the implementation of risk management throughout the event not only contributed to its smooth execution but also created a safe and supportive business environment for MSMEs to conduct their commercial activities.

Security and public order during the event emerged as important factors influencing the operational comfort of local business operators. The involvement of security personnel, the Municipal Public Order Agency (Satpol PP), the Department of Transportation, event organizers, and local community members successfully created a stable environment throughout the event. This favorable situation provided MSME operators with the confidence to prepare additional product inventories, expand sales activities, and serve visitors without concerns regarding security threats or operational disruptions.

Table 4. Impacts of the Sea Eagle Boat Race on Local SMEs

Aspect	Research Findings
Number of Visitors	Increased during the event
Sales Activity	Increased compared to normal days
Dominant Business Type	Food and beverage businesses
SME Perception	Positive response toward the event
Main Challenges	Limited bazaar space and language barriers with foreign visitors
SME Expectations	The event should be held regularly on a larger scale

Resource: Researcher, 2026

As shown in Table 4, the Sea Eagle Boat Race generated positive impacts on local economic activities. Most MSME operators reported a noticeable increase in the number of customers during the event compared to normal business conditions. Food and beverage products sold in the bazaar area provided by the organizers were among the most popular items purchased by visitors. Furthermore, the influx of visitors created additional economic opportunities for marine transportation providers, accommodation operators, and other supporting businesses in the Belakangpadang area. Interview findings revealed that all MSME informants expressed positive perceptions regarding the organization of the Sea Eagle Boat Race. Business operators described the event as orderly, safe, and well-organized. They also acknowledged that the presence of security personnel and the support provided by the organizing committee created a sense of comfort and confidence in conducting their business activities throughout the event. These findings suggest that effective risk management not only serves to protect participants and visitors but also provides indirect benefits to local entrepreneurs by fostering a secure and conducive business environment.

This finding is consistent with the argument of (Bahri & Aprilianti, 2025), who assert that the success of an event tourism initiative should not be measured solely by the number of visitors it attracts but also by the economic benefits experienced by local communities. The better an event is managed, the greater the opportunities for local residents to gain economic advantages from the activities generated during the event (Insanaputra, 2024). In addition to its economic benefits, this study also identified evidence of improved preparedness and adaptive capacity among MSME operators in responding to market opportunities created by the event (Lubis et al., 2024). Prior to the event, most business operators undertook various preparations, including increasing inventory levels, extending operating hours, and developing service strategies to accommodate the anticipated rise in visitor numbers. These actions demonstrate a proactive approach to opportunity utilization and reflect the growing entrepreneurial resilience of local businesses participating in the event.

Table 5. Indicators of SME Preparedness and Entrepreneurial Resilience

Indicator	Research Findings
Product Stock Preparation	SMEs increased inventory before the event
Service Readiness	SMEs adjusted service capacity to accommodate increased demand
Adaptive Capacity	SMEs adapted their operations to event conditions
Opportunity Utilization	SMEs leveraged visitor influx to increase sales
Response to Future Events	Strong support for future event continuity

Resource: Researcher, 2026

Based on Table 5, it can be observed that MSME operators demonstrated a relatively high level of preparedness in responding to the increased economic activity generated during the event. Product inventory preparation and service capacity adjustments were the most common forms of adaptation undertaken by business operators. These findings indicate that MSMEs were not merely passive beneficiaries of the event but were also capable of actively responding to emerging opportunities through independently developed business strategies. Such capabilities reflect the characteristics of entrepreneurial resilience, which refers to the ability of individuals or business owners to adapt and capitalize on opportunities in changing circumstances (Astuti et al., 2024). In the context of this study, the Sea Eagle Boat Race created a dynamic economic environment that encouraged entrepreneurs to enhance their preparedness, flexibility, and responsiveness in managing their businesses.

Nevertheless, several challenges were identified during the event. Limited bazaar space was among the most frequently reported concerns by MSME operators. The large number of visitors resulted in congestion in certain bazaar areas, restricting visitor mobility and reducing overall convenience. In addition, some business operators experienced difficulties communicating with foreign tourists due to language barriers. Despite these challenges, such constraints did not diminish the overall positive perception of the event among local communities and participating entrepreneurs. These findings are consistent with the study by (Harahap et al., 2026), which emphasizes that adaptive capacity is a critical factor in the sustainability of small businesses. Entrepreneurs who are able to adjust to changing market conditions are more likely to sustain and expand their business operations. In the case of the Sea Eagle Boat Race 2025, the increase in visitor numbers became an opportunity that MSMEs successfully leveraged to expand business activities and enhance their income.

Overall, the findings demonstrate that effective risk management contributed to the creation of a safe and conducive business environment, thereby supporting the enhancement of local entrepreneurial preparedness and resilience. This study reinforces the argument that successful risk management in maritime events extends beyond ensuring safety and operational continuity; it also contributes meaningfully to local economic development by strengthening the capacity and resilience of MSMEs within the host community (Ros Yoewawinata & Auliya, 2025).

Implications for Sustainable Maritime Event Development

The findings of this study indicate that the implementation of risk management in the Batam International Sea Eagle Boat Race 2025 served not only as a mechanism for controlling event-related risks but also as a means of creating a safe and conducive business environment for local communities. These findings suggest a strong relationship between the quality of risk management practices and the ability of local entrepreneurs to capitalize on economic opportunities generated during the event. Based on interviews, observations, and data analysis, the effectiveness of risk management in the Sea Eagle Boat Race was reflected in the absence of significant incidents throughout the event. This condition fostered a sense of security among participants, visitors, and business operators, enabling all activities to proceed smoothly and efficiently. A stable and well-organized environment also increased public confidence and encouraged community participation in the economic activities generated by the event.

The findings further demonstrate that the implementation of risk management provides benefits beyond operational effectiveness and event continuity. Effective risk management also contributes to strengthening local economic capacity by creating conditions that support entrepreneurial activities and business growth. In other words, successful risk management can serve as an enabling factor for enhancing local entrepreneurial preparedness and resilience. To illustrate this relationship, the present study develops a conceptual framework based on the empirical findings, as presented in Figure 2.



Image 2. Conceptual Framework of Maritime Event Risk Management and Local Entrepreneurial Resilience
Resource: Researcher, 2026

As illustrated in Figure 2, the implementation of risk management through stakeholder communication and coordination, risk identification, and the application of various mitigation measures contributed to the establishment of effective risk control mechanisms. These risk control efforts resulted in a stable event environment characterized by safety, orderliness, and minimal operational disruptions (Arsyadona et al., 2025). The stability achieved during the event subsequently fostered trust among local communities and business operators. This trust encouraged MSMEs to undertake various business preparations, including increasing product inventories, expanding service capacity, and taking advantage of market opportunities generated throughout the event. At this stage, it becomes evident that the implementation of risk management indirectly contributed to enhancing the business preparedness of local entrepreneurs.

Furthermore, strong business preparedness served as the foundation for the development of entrepreneurial resilience. Business operators who were able to adapt to increased demand and changing market conditions demonstrated a greater capacity to sustain and expand their enterprises. This finding supports the perspective of (Emrizal & Primadona, 2023), who argue that entrepreneurial resilience refers to the ability to survive, adapt, and grow in dynamic and uncertain environments. From a destination development perspective, the findings also indicate that effective risk management and increased community participation can strengthen the competitiveness of Batam's maritime tourism sector. The higher the quality of event organization, the greater the potential to attract tourists, participants, and investors to future editions of the event (Fikri, 2025). In the long term, this condition can generate broader economic benefits through increased tourism activities, the growth of MSMEs, and the creation of new business opportunities for local communities. The findings of this study extend previous research, which has generally examined safety issues and the economic impacts of events as separate areas of inquiry. This study demonstrates that risk management and local entrepreneurship are interconnected and mutually reinforcing within the context of maritime event development. Therefore, successful risk management should not only be viewed as an indicator of operational effectiveness but also as a strategic instrument for promoting community-based economic

development. Overall, this study provides evidence that effective risk management implementation can enhance event stability, strengthen business confidence, improve MSME preparedness, and ultimately foster local entrepreneurial resilience. The conceptual framework developed in this research offers a valuable contribution to the literature and may serve as a reference for the sustainable development of maritime events in other regions with characteristics similar to those of Belakangpadang District, Batam City.

CONCLUSION

This study demonstrates that the implementation of risk management in the Batam International Sea Eagle Boat Race 2025 was generally effective and aligned with the principles of ISO 31000:2018, particularly in terms of stakeholder communication and coordination, risk identification, and the application of risk mitigation measures. The main risks identified included participant safety, visitor congestion, and limited SME bazaar space; however, these risks were successfully managed, enabling the event to proceed safely, orderly, and without significant incidents. The findings further reveal that effective risk management contributed to the creation of a conducive business environment for MSMEs, as reflected in increased economic activity, enhanced business preparedness, and the adaptive capacity of entrepreneurs to capitalize on opportunities generated during the event. Therefore, risk management implementation not only supported the successful organization of the maritime event but also played an important role in strengthening local entrepreneurial preparedness and resilience as part of sustainable maritime tourism development.

Future research is encouraged to further explore maritime event risk management using mixed-methods or quantitative approaches in order to measure more objectively and comprehensively the relationships among risk management implementation, event success, and entrepreneurial resilience. In addition, future studies may broaden the scope of respondents by involving tourists, event participants, local communities, and other stakeholders to obtain more diverse perspectives. The application of more advanced risk analysis techniques, such as Failure Mode and Effect Analysis (FMEA), the Analytical Hierarchy Process (AHP), or other quantitative models, may also be considered to produce more accurate risk assessments. Furthermore, comparative studies across maritime events in Indonesia and other Southeast Asian countries are recommended to develop more effective and sustainable models of risk management and local entrepreneurial empowerment.

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