

Crowd Control Analysis in Organizing The 2024 Religious Celebration Festival: A Qualitative Approach

Allana Leonardus¹, Ayu Asriyani², Hilary Quenella Moeis³, Mirza Balqis Salwa Salmira⁴, Jessica Ignatia Tambunan⁵

^{1,2,3,4,5}Program Studi S1 Pariwisata, Universitas Prasetya Mulya
e-mail: ¹allanaleonardus@gmail.com

ABSTRACT

One of the largest religious celebration festivals in Indonesia, attracting tens of thousands of visitors both domestically and internationally, involves complex event management. Therefore, the event is required to have a comprehensive risk management strategy to ensure safety, security, and smooth operation. This research aims to examine and analyze crowd control during the religious celebration festival in 2024. The method used by the researchers is a qualitative approach, collecting data through in-depth interviews and participatory observation. The data processed comes from sources who are event organizers involved in crowd management. Furthermore, data analysis is conducted using thematic analysis methods to identify risk categories and the mitigation strategies applied. This research shows that the highest level of risk at the religious celebration festival is crowd control. Therefore, the mitigation policies implemented by the event organizers include contingency planning, training and simulations for security personnel, backup plans for weather changes, and collaboration with various related parties. It is hoped that this research can provide insights for religious event organizers in managing and facing risks in similar events in the future.

Keywords:

Risk Management; Crowd Control; Festival; Event Management; Visitor Safety; Security

A. INTRODUCTION

opportunities for all participants to gain a deeper understanding of religious activities that serve to strengthen the faith among adherents of a particular religion (Thirugnanasambantham, K., et al.). Religions view celebrations as part of the ceremonies that are obligatory or highly recommended for their followers to perform (Munshi, 2022). The Religious Festival is a magnet for tourists to visit a destination (Alkautsar, et. al, 2024).

In general, the primary concern of public authorities is regarding security and safety, including crowd management (Rutherford Silvers and O'Toole, 2021). Failures in managing a venue during an event are not uncommon, often caused by participants' poor behavior, leading to incidents and accidents involving people (Still et al., 2020). Additionally, the most frequent cause of incidents in gatherings is overcrowding (Haase et al., 2019). The number and severity of crowd-related incidents at high-density public events have significantly increased over the past decade (Haase et al., 2019). There are risks that arise as a result of holding an event, even if it is covered by the media. This incident had a negative impact on the visitors, the impact and media exposure damaged the positive image of the event name and venue (Carter and Moital, 2018). These include the Kanjuruhan tragedy (BBC News, 2022), itaewon crowd surge (Voice Of America, 2023). astroworld crowd crush tragedy (Los Angeles Times, 2023).

Effective crowd management planning can prevent overcrowding risk (Haghani, et al, 2023).

Less crowding, wasted time, and individual safety can be achieved with proper crowd management (Miyano, 2023). Coordinated action is needed by developing strategies and approaches that are methodical and effective so that we can manage crowds so it is hoped that through this planning both visitors, staff and performers will avoid negative impacts such as physical injuries, psychological trauma and even economic (Haghani, et al, 2023).

The Religious Celebration Festival 2024 analyzed by the researchers involves tens of thousands of visitors from various cities and countries. This year, the festival recorded over 20,000 attendees. This number demonstrates the high level of interest and participation from the community in this celebration. Such high density can lead to risks such as uncontrolled crowds, stampedes, and potential safety incidents. Therefore, this study will analyze how the organizers planned the crowd management before the day of the event and implementation of that plan at the 2024 Religious Celebration Festival. This analysis uses Emergency Response Preparedness theory which has four step risk management to give the specific detail in every planning step. Therefore, this study contributes to the literature on religious festival management and risk management.

1. Crowd Control

A crowd can be characterized as a temporary gathering of a large number of people in a space that allows direct contact, spontaneously reacting to the same thing. The same stimuli in the same or identical

way. Key characteristics of a crowd, such as size, anonymity, sense of belonging, power, and perceived impunity, significantly affect its dynamics. These factors can reduce the sense of responsibility for socially condemned actions, which are often antisocial and illegal. Under intense excitement, crowd participants can lose rationality and respect for the law and unite in collective action when they perceive a threat to shared values (Kosiński, 1987). Lack of organization, weak norms, attraction, and emotional contagion in crowds contribute to destructive behavior, including demoralization and brutalization (Sołoma, 1991). People in crowds exhibit behaviors that are different from other contexts, becoming bolder, taking risks that they would avoid individually, leading to a lack of inhibition, such as pushing, vandalism, and rioting in the streets.

2. Emergency Response Preparedness (ERP)

As defined by Wahle (1993), an emergency is any unplanned event that has the potential to result in significant loss of life or injury to workers or the surrounding community. This can also be interpreted as an event that has the potential to hinder a business or operational activity, cause physical or environmental damage, and result in financial losses and reputational harm. To mitigate these risks, it is essential to have a robust emergency preparedness or Emergency Response Preparedness (ERP) plan in place. The term "emergency preparedness" is defined as the process of anticipating and addressing potential threats in order to minimize their negative impact on health, individual safety, and surrounding infrastructure (Gillespie & Colignon, 1993). According to Phillips and Landahl (2020), the most common types of mitigation planning include the mitigation, preparedness, response, and recovery stages.

a. Mitigation

Mitigation planning is most effectively conducted prior to the occurrence of an event with the objective of minimizing the potential impact on the surrounding environment. Mitigation planning typically commences with the identification and assessment of hazards, followed by an examination of the hazards in a given area and an estimation of the frequency with which such hazards may manifest.

b. Preparedness

The preparedness stage is a planning phase that encompasses a range of activities, including the creation of plans and the conduct of training exercises on the procedures that must be implemented in the event of an emergency. These exercises may take the form of workshops or conferences, tabletop or full-scale field exercises, and other formats. Experts play a vital role in getting ready for emergencies. They help spread

the word about potential threats and give people important warnings when things go wrong. It's crucial that these experts share clear and timely information so everyone knows what to do to stay safe.

c. Response

In the ideal scenario, an effective risk mitigation and preparedness plan will facilitate a more efficient and less disruptive response stage. As outlined by Julia Rutherford Silvers (2008), When disaster strikes, it takes a team effort from different emergency crews to handle the situation. Firefighters, police, paramedics, and other first responders work together according to a pre-planned strategy. It's really important that everyone knows who's in charge and can communicate clearly. This way, they can quickly help people in the area who need assistance.

d. Recovery

"Recovery" means fixing the problems caused by something that already happened. The recovery process includes the process of psychological and emotional trauma, as well as the administrative, financial, promoting the event and getting things back on track after it ends.

3. Hazard Identification Risk Assessment & Risk Control (HIRARC)

These days, businesses of all sizes rely on a process called HIRARC to stay safe and successful. This process, which involves identifying potential problems, assessing their likelihood and severity, and then creating prevention plans, is essential for effective risk management (Ahmad et al., 2016). As Wong et al. (2021) highlight, the first step is to identify potential hazards that could harm workers or the community. Once identified, businesses evaluate the potential impact of these hazards and develop strategies to control or minimize risks.

a. Hazard Identification

A hazard is anything that could potentially cause harm, such as injuries, illnesses, or environmental damage (Wong et al., 2021). To identify these potential dangers, businesses must carefully scrutinize every job and workspace. This involves a thorough examination to uncover any hidden risks that might exist.

b. Risk Assessment

Risk Assessment is a tool used to analyze and evaluate potential hazards (Majid et al., 1997). To figure out how big a risk is, we need to understand how bad things could get if something happens (severity) and how likely it is to happen (likelihood) according to Ahmad et al. (2021). This is part of a process called risk assessment. By carefully examining our work, we can identify dangerous situations, tasks, or areas. We then map

out these risks to see where the biggest problems might be. This information helps us decide what to do to keep people safe. Risk Assessment can be calculated using the following formula: Risk (R) = Likelihood (L) x Severity (S).

LIKELIHOOD OF HAZARDS	SEVERITY OF HAZARDS				
	INSIGNIFICANT (1)	MINOR (2)	MODE RATE (3)	MAJOR (4)	FATAL (5)
RARE (1)	1	2	3	4	5
UNLIKELY (2)	2	4	6	8	10
POSSIBLE (3)	3	6	9	12	15
LIKELY (4)	4	8	12	16	20
ALMOST CERTAIN (5)	5	10	15	20	25

Figure 1: Risk Assessment Matrix Level

RISK LEVEL	
1 to 2	LOW
3 to 6	MEDIUM
7 to 12	HIGH
More than 12	EXTREME

Figure 2: Indication of Risk Level

The purpose of hazard identification and risk assessment in this study is to examine critical operations that have the potential to pose significant risks to the health and safety of event employees and to identify hazards associated with specific equipment, whether from energy sources, working conditions, or activities performed (Ahmad et al., 2021). Subsequently, the risk level is determined for each hazard to establish the necessary corrective actions, whether to minimize the risk or eliminate the hazard.

c. Risk Control

Risk control is the act of eliminating or disabling hazards in such a way that they do not pose a risk to workers (Ahmad et al., 2021). According to Venturini (2011), there are four common characteristics of risk identified according to the actions taken to protect an event from exposure to emerging risks, namely:

CONTROL MEASURES	LEVEL
Control measures exceeding industry standards and the best practices. Loss potential is considered significantly reduced	Excellent 3.1 - 4.0
Control measures that are consistent with industry standards and best practices. Loss potential is considered to be average	Good 2.1 - 3.0
Control measures that approach industry standards and best practices, however deficiencies exist. Loss potential is considered somewhat increased	Fair 1.1 - 2.0
A control measure has major deficiencies and does not approach industry standards and best practices. Loss potential is considered to be significantly increased.	Poor 0 - 1.0

Figure 3: Risk Control

B. RESEARCH METHOD

Artikel harus ditulis pada kertas ukuran A4. This study employs a case study methodology to investigate risk management in the organization of

the 2024 Religious Celebration Festival. To fully understand how to manage risks at a big religious festival, we decided to study a specific example. By doing this, we hoped to gather lots of information about what works and what doesn't. We watched the festival closely, talked to people in charge of crowd control, and looked up as much as we could about past events.

C. RESULTS AND DISCUSSION

Analysis of the data indicates that crowd control is the primary risk factor. Given the substantial attendance figures, often reaching tens of thousands from diverse geographic locations, religious festivals present unique challenges. The high density of participants increases the likelihood of uncontrolled crowd behavior, physical injury, and safety incidents. Furthermore, the heterogeneous nature of the attendees, including language and cultural differences, complicates communication and crowd management efforts. Based on the Hazard Identification Risk Assessment & Risk Control (HIRARC) Theoretical frameworks, particularly those focused on risk assessment, consistently identify crowd control as the most significant hazard follows:

Category: Safety & Security	Risk Assess. No.:1	01-B										Risk Score
		Likelihood					Severity					
Ref	Key hazards associated with the above task/activity.	Almost Certain	Likely	Possible	Unlikely	Rare	Fatal	Major	Moderate	Minor	Insignificant	Likelihood x Severity
		5	4	3	2	1	5	4	3	2	1	
1. Crowd Crash			x				x					20
2. Fire Incident			x			x						15
3. Weather Change			x				x					12
4. Bomb Threat and Terrorism				x			x					8
5. Natural Disaster					x	x						5
6. Crimes			x						x			4
7. Traffic Density			x							x		2
Risk Assessment Scores:		9.42 (High Risk)										

Figure 4: Risk Assessment Analysis

This study aims to figure out how organizers put together their Emergency Response Preparedness (ERP) plans.

1. Mitigation

The 2024 Religious Celebration Festival Committee conducted several mitigations in order to prevent adverse risks to the event and increase the comfort of visitors. The ways to do this are as follows: 1) Each ticket category will be equipped with a coloured wristband that can light up in dark conditions. The colors that appear on each wristband correspond to the ticket category owned so that this can make it easier to direct visitors according to their section. 2) The event organizers have uploaded a floor plan of the event location via the event's official Instagram account. This is intended as a guide for visitors to find out important locations such as entrances, exits, toilets and others at the event location. The upload of a clear venue plan is also a form of mitigation for the evacuation process in the event of an emergency to avoid uncontrolled crowds. 3) The ticket exchange time and open gate schedule have been released on Instagram social media and

supported by several other national media outlets. The release of the ticket exchange and open gate schedule is intended to facilitate the management of the flow of participants' arrival and to enhance the committee's capacity to organize logistics, including the placement of security officers, the preparation of facilities, and the arrangement of parking areas. This also affects all operational aspects of the 2024 Religious Celebration Festival, ensuring its smooth operation. 4) The committee has been divided into zones, with each zone being overseen by a different committee member. At the 2024 Religious Celebration Festival, there were 12 people.

2. Preparedness

The committee has taken preparatory measures to ensure the smooth running of the event by differentiating entrance areas for each ticket category to enhance efficiency and avoid long queues. Furthermore, they have separated the area for participants of the lantern flying event from non-participating spectators using iron fences. Within the event venue, unused seating aisles have been repurposed into additional pathways to facilitate entry and exit, as well as ease access for participants seeking seating. The Religious Celebration Festival also implements a single-entry system, allowing guests to enter only once; re-entry is not permitted to manage guest numbers and ensure event security. Additionally, separate entry and exit points are established to prevent confusion and streamline access. These preparedness efforts include organized distribution of lanterns directly to participants to prevent scrambling and ensure all participants receive lanterns. Special tents are provided for bhante or bhikkhu to rest comfortably.

3. Response

The event organizers employed a swift crowd response strategy, with 25 organizers per zone deployed across 12 different zones. This approach was designed to reduce the crowd by directing participants to the back area first, thus avoiding the buildup at the main gate and waiting area. Additionally, event participants were directed by the committee to proceed to the gate area according to their ticket category. To prevent disruption to those already seated, the entry process was conducted in a sequential manner. To facilitate a seamless operation, the "Unoccupied" LED indicator will assist attendees in locating available spaces, with additional personnel stationed at the entrance and exit.

Furthermore, the event is being secured by 866 joint personnel, including the National Police, the Indonesian Military (TNI), the Indonesian Civil Police (Satpol PP), the Central Java Police Brimob Unit, the Kodim 0705/Magelang, and

firefighters. The police are responsible for regulating traffic flow and closing roads in order to facilitate the smooth running of the parade. Road closures were implemented at 12:00 WIB in several lanes, namely the Elo three intersection, Cabeen three intersection, and Karet three intersection.

4. Recovery

Following the conclusion of the 2024 Religious Celebration Festival, the organizers facilitated the orderly and safe departure of participants and spectators from the event area. This initiative was undertaken with a view to ensuring the safety and well-being of all those present. It also sought to reduce the risk of incidents such as panic, uncontrolled crowds and accidents. Furthermore, this stage was implemented with the objective of avoiding mass accumulation, which could potentially lead to dangerous situations.

D. CONCLUSION

The 2024 Religious Celebration Festival has the highest risk of crowd control. This must also be a concern because there are tens of thousands of visitors to this event. Therefore, the role of the organizer in risk management is very important starting from mitigation (differentiating ticket categories, releasing information, and dividing the person in charge), preparedness (managing the flow of participants, a one-time entry system, and property distribution), response (handling the buildup at the gate in, utilizing LEDs as instructions, supervision of security officers), and recovery (managing the flow of participants out).

E. SUGGESTIONS

Although crowd control is the risk with the highest assessment score, there are other risks such as fire that have the same category as crowd control with high severity and likelihood. Therefore, It is expected that further research can choose to focus on other risk assessment elements that have high scores such as fire.

F. REFERENCES

Abbott, J., & Geddie, M. (2000). Event and venue management: Minimizing liability through effective crowd management techniques. *Event Management*, 6(4), 259–270. <https://doi.org/10.3727/152599500108751417>

Ahmad, A. C., Zin, I. N. M., Othman, M. K., & Muhamad, N. H. (2016). Hazard Identification, Risk Assessment and Risk Control (HIRARC) accidents at power plants. *MATEC Web of Conferences*, 66,

00105.ttps://doi.org/10.1051/matecconf/20166600105 h

Alkautsar, W., Isnaeni, N., Lubis, P. (2024) Analisis Potensi Wisata Religi Dan Budaya Di Kota Jambi. *Jurnal Ilmiah Ekonomi Dan Manajemen*, 2(2). <https://doi.org/10.61722/jiem.v2i2.1033>

Anggitasari, P., & Sulaksmono, M. (2012). PENILAIAN EMERGENCY RESPONSE PREPAREDNESS UNTUK PROTEKSI LEDAKAN PADA AREA PELEBURAN BESI PADA PT. "X" (Berdasarkan Internasional Sefety Rating System). *Journal of Occupational Safety and Health*, Vol. 3, No. 1 Jan-Jun 2014:71-81. <https://media.neliti.com/media/publications/3808-ID-penilaian-emergency-response-preparedness-untuk-proteksi-ledakan-pada-area-peleburan.pdf>

BBC News (2022) Satu tahun Tragedi Kanjuruhan - 'Jalan berliku meraih keadilan' bagi penyintas dan keluarga korban. <https://www.bbc.com/indonesia/articles/c6p4wwldw3eo>

Carter, H. and Moital, M. (2018), "A taxonomy of event participants based on risk and security perceptions", *Journal of Hospitality and Tourism Insights*, Vol. 1 No. 4, pp. 325-339. <https://doi.org/10.1108/JHTI-11-2017-0016>

Construction Industry Development Board "CIS 25: 2018 - Construction Activities Risk Assessment (CARA) using Hazard Identification, Risk Analysis and Risk Control (HIRARC)," CIDB, 2019 pp. 3-9. <https://www.cidb.gov.my/sites/default/files/2020-04/CIS-2%20-2018.pdf>

Gillespie, D. F., & Colignon, R. A. (1993). Structural change in disaster preparedness networks. *International Journal of Mass Emergencies and Disasters/International Journal of Mass Emergencies & Disasters*, 11(2), 143–162. <https://doi.org/10.1177/028072709301100201>

Haase, K., Kasper, M., Koch, M. and Müller, S. (2019), "A pilgrim scheduling approach to increase safety during the Hajj", *Operations Research*, Vol. 67 No. 2, pp. 376-406

Los Angeles Times (2023), Travis Scott says 'I always think about' Astroworld deaths, two years after tragedy. <https://www.latimes.com/entertainment-arts/music/story/2023-11-15/travis-scott-astroworld-tragedy-always-think-two-years>

Majid, M. and McCaffer, R. (1997). Assessment of Work Performance of Maintenance Contractors in Saudi Arabia. *J. Manage. Eng.*, 13(5), pp.91-91.

Milad Haghani, Matt Coughlan, Ben Crabb, Anton Dierickx, Claudio Feliciani, Roderick van Gelder, Paul Geoerg, Nazli Hocaoglu, Steve Laws, Ruggiero Lovreglio, Zoe Miles, Alexandre Nicolas, William J. O'Toole, Syan Schaap, Travis Semmens, Zahra Shahhoseini, Ramon Spaaij, Andrew Tatrai, John Webster, Alan Wilson (2023), A roadmap for the future of crowd safety research and practice: Introducing the Swiss Cheese Model of Crowd Safety and the imperative of a Vision Zero target. *Safety Science*. 168(106292) <https://doi.org/10.1016/j.ssci.2023.106292>.

Miyano, S., (2024) Using Virtual Reality to Study the Effectiveness of Crowd Control Medium and Information. *Journal of Disaster Research*. 19(2). <https://doi.org/10.20965/jdr.2024.p0293>

Munshi, A. (2022) The Importance of Religious Festivals to Promote Cultural Heritage in Turkey and India. *AL-ADABIYA Jurnal Kebudayaan dan Keagamaan* 17(1):41-50

Reid, S., & Ritchie, B. (2011). Risk Management: event managers' attitudes, beliefs, and perceived constraints. *Event Management*, 15(4), 329–341. <https://doi.org/10.3727/152599511x1317567672252>

Risk management for meetings and events. (n.d.). ScienceDirect. <https://www.sciencedirect.com/book/9780750680578/risk-management-for-meetings-and-events#book-info>

Rutherford Silvers, J. and O'Toole, W. (2021), *Risk Management for Events*, Event Management Series, 2nd ed., Oxon Routledge, Ed, Abingdon.

Still, K., Papalex, M., Fan, Y. and Bamford, D. (2020), "Place crowd safety, crowd science? Case studies and application", *Journal of Place Management and Development*, Vol. 13 No. 4, pp. 385-407.

Thirugnanasambantham, K., Rajasekharan, P.K., Patwardhan, V., Raghavendra, G. and Rao, S. (2023), "Determinants of visitors' festival satisfaction and subjective well-being: tracing the roles of place attachment and satisfaction", *International Journal of Event and Festival Management*, Vol. 14 No. 4, pp. 441-459. <https://doi.org/10.1108/IJEFM-07-2022-0061>

Utomo, D. T., Kurniawan, B., & Ekawati, E. (2021, January 6). ANALISIS EMERGENCY RESPONSE PREPAREDNESS PADA KESELAMATAN SELURUH PENGHUNI KEBUN BINATANG x. Utomo | Jurnal Kesehatan Masyarakat. <https://ejournal3.undip.ac.id/index.php/jkm/article/view/28548/24980>

Voice of America (2023), A Year After South Korea's Itaewon Tragedy, Families Still Wait for Answers. <https://www.voanews.com/a/a-year-after-itaewon-tragedy-families-still-wait-for-answers/7317442.html>