



Analysis of Over Capacity Management at the Panji Malangan Mask Cultural Event

Rara Mulya Novitri ¹, Made Bambang Adnyana ²

^{1,2} Faculty of Social, Cultural, and Political Sciences, UPN Veteran East Java

E-mail: 22045010081@student.upnjatim.ac.id ¹, made.bambang.par@upnjatim.ac.id ²

Corresponding Author. Email made.bambang.par@upnjatim.ac.id

Abstract

Purpose. This study analyzes overcapacity management at the Malangan Panji Mask cultural performance, which is free and open to the public at Taman Krida Budaya Malang. The study focuses on five dimensions of *crowd management*: *crowd density*, *visitor flow*, *access control*, *safety* and *comfort*, and overall management effectiveness.

Method. This study uses a descriptive qualitative method, collecting data through observation, in-depth interviews, documentation, and field notes involving key event-organizer personnel.

Results. The results show that events repeatedly experience overcapacity conditions, with spectator numbers reaching around 2,000 to 2,500 people, while venue capacity is around 797 seats. Eliminating the registration system significantly increases public participation, but it also increases congestion, pressure on circulation, and operational risks. To respond to these conditions, the organizers implemented tactical steps such as rearranging the space, creating circulation gangways, adding tents and flooring, implementing barcode-based visitor monitoring, and adding security personnel. Although these steps help maintain the continuity of the show, crowd control still tends to be reactive rather than fully preventive.

Conclusion. This study concludes that strengthening access control, more adaptive visitor flow design, and clearer safety communication are needed to improve the quality of free cultural event management.

Keywords: *over capacity*, *crowd management*, *cultural events*, *Mask of the Banner of Malangan*, *crowd control*



© 2026 The Author(s). This article is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source.

INTRODUCTION

Indonesia has a wealth of traditional performing arts that are an important part of the region's cultural identity. One of these cultural heritages is the Malang Panji Mask, a typical performing art of Malang Regency that combines elements of dance, music, theater, and local

philosophical values. In its development, this performance not only serves as a medium for cultural preservation but also becomes a public attraction that attracts the enthusiasm of a large audience.

The increase in public interest in the Malangan Panji Mask cultural performance is evident in the event's organization at Malang Cultural Krida Park. Organizer data shows that the number of spectators at some performances exceeds the available capacity. *The venue* accommodates only about 797 seats, while on some occasions audiences can reach 2,000 to 2,500 people. This situation shows symptoms of overcapacity that can cause discomfort, mobility barriers, and visitor safety risks.

Overcapacity in free cultural events has different characteristics than in paid events. In free events, there is no strict formal restriction mechanism through *ticketing*, making visitor flow harder to predict and control. As a result, crowd management depends heavily on strategies applied in the field, especially regarding crowd density, visitor flow, *access control*, and *safety* and *comfort*.

Based on these conditions, this study aims to analyze how *overcapacity* management is applied to the cultural event of the Panji Malangan Mask. This analysis is important for understanding organizers' challenges in controlling crowds and for improving the management of free cultural events to keep them safe, comfortable, and orderly.

Research on crowd management at events has evolved from a conventional crowd control approach to more comprehensive management, including crowd density, visitor flow, access control, safety, comfort, and optimization of visitor movement. Previous studies show that measuring and modeling visitor flows is an important element of crowd management, while research on various events in Indonesia focuses more on music concerts, festivals, religious activities, and special events. In contrast, research on the Panji Malangan Mask tends to focus on its existence, preservation, history, acculturation, and internationalization. Thus, studies linking the development of traditional cultural arts and the problem of crowd management remain relatively limited.

This research gap lies in the limited study of managing overcapacity in free, open-to-the-public traditional cultural events. Unlike paid events that can use ticketing as an instrument to limit the number of visitors, free events face uncertainty about visitor numbers. This situation becomes even more complex when the venue's physical capacity is much smaller than the actual number of visitors. At the Malang Panji Mask event, the number of spectators can reach 2,000–2,500 people,

while the venue's capacity is around 797 seats. These conditions pose problems of density, circulation, access control, comfort, and safety. In addition, research that simultaneously analyzes these five dimensions in the context of traditional cultural performances remains limited.

This research develops a perspective on overcapacity management at free cultural events by integrating five dimensions of crowd management: crowd density, visitor flow, access control, safety and comfort, and management effectiveness. The study also identified a paradox between increased public participation and limited venue capacity. Eliminating registration can increase public access to cultural performances but also increase the risk of overcrowding. Based on these findings, this study offers a management direction from a reactive crowd management pattern to a preventive approach through adaptive capacity, strengthening access control, visitor flow engineering, safety communication, and evacuation readiness. Thus, this study expands the study of event management by placing the balance between public access, cultural participation, venue capacity, and visitor safety as important elements in the sustainability of cultural event implementation.

METHODS

This study uses a qualitative method with a descriptive approach. This approach was chosen because the research seeks to understand in depth the dynamics of crowd management and organizers' responses to *overcapacity* in the context of free cultural events.

The research is conducted at Taman Krida Budaya Malang, the venue for the Malang Panji Mask cultural event. Research data was obtained from primary and secondary sources. Primary data were collected through in-depth interviews with three main informants: the president director, *project officer*, event commissioner, and operational director. Data were also obtained through field observation and event documentation.

The data analysis technique was carried out in a descriptive-narrative manner by grouping the findings based on research indicators, namely *crowd density*, *visitor flow*, *access control*, *safety and comfort*, and overcapacity management efforts. The analysis aims to identify field conditions, organizer strategies, and the effectiveness of crowd control at the cultural event.

DISCUSSION

Studies on crowd management in event organizing have evolved from just crowd control to an approach that includes density measurement, visitor flow regulation, access control, safety, comfort, and optimization of visitor movements. Research by Centorrino et al. (2021), for example, places visitor flow measurement and modeling as an important part of optimizing crowd management. The development of crowd management theory also shows the increasing attention to risk-based approaches and systematic crowd management. Nishinari et al. (2024) emphasized that crowd management development includes both theoretical and applied aspects, especially in dealing with the complexity of mass movements.

In the context of events, previous research in Indonesia has mostly discussed crowd control at concerts, festivals, and religious activities. Leonardus et al.'s (2024) research examined crowd control at religious festivals with a qualitative approach, while Priambodo (2025) discussed crowd control in Jimea art performances. Purwantari's research (2024) highlights audience satisfaction with crowd-control security at music concerts. Meanwhile, Rihi et al. (2025) discussed the operational aspects of crowd control at the concert at ICE BSD City. The literature shows that crowd management is increasingly understood as an important component in the success and safety of event management.

In contrast, studies on the Panji Malangan Mask have focused more on its existence, history, cultural acculturation, preservation, and internationalization of the arts. Research on the existence of the Malangan Mask and its internationalization strategy shows that the performing arts have strong cultural value and attraction for the community.

Thus, state-of-the-art research sits at the intersection of crowd management, event management, and cultural arts preservation, especially how the increasing attractiveness of cultural events can create capacity and visitor safety challenges.

Based on the literature used in the article, several research gaps remain.

First, the event context gap.

Existing crowd management research focuses more on music concerts, public festivals, religious activities, museums, and special events. Studies on overcapacity in traditional cultural arts performances that are free and open to the public are still limited. In fact, free events differ from paid events because they lack a ticketing mechanism as an instrument to limit the number of

visitors. This article shows that discontinuing the registration system increased the number of spectators from about 1,500 to 2,000–2,500 people, while the venue's capacity was only about 797 seats.

Second, the gap between cultural participation and visitor safety.

Studies of Malangan Masks generally emphasize the existence and preservation of culture, while studies of crowd management treat safety as a technical event issue. Little research integrates the community's high participation in traditional arts with the consequences of crowd density, visitor flow, access control, safety, and comfort in a single analytical framework.

Third, the gap between reactive and preventive measures.

The literature and practice of event management have known various crowd control mechanisms, but the case of the Malangan Panji Mask shows a tendency for organizers to intervene after overcrowding occurs. Various measures such as rearranging the space, making gangways, adding flooring and tents, and adding security officers have been carried out, but the access control system is not yet fully preventive.

Fourth, the gap in free cultural events with limited venue capacity.

No study has explained how organizers can balance inclusive public access with the physical capacity limits of venues. This is important because visitor restrictions can reduce community participation, while openness without restrictions can increase safety risks.

Fifth, the gap in integrating the five dimensions of crowd management.

This study looked not only at the number of spectators, but also at crowd density, visitor flow, access control, safety and comfort, and management effectiveness. This integrative approach provides space to understand overcapacity not only as a matter of spectator numbers, but as a multidimensional problem in event management.

The results show that the main problem at the Panji Malangan Mask event is high *crowd density*. The public's enthusiasm for free cultural performances led to an surge in spectators, especially after the registration system was discontinued. According to organizers' informants, the number of visitors increased from about 1,500 to around 2,000 to 2,500, far above the venue's capacity of about 797 seats. This condition indicates that the event is experiencing real physical space pressure.

In terms of visitor flow, the organizers have implemented spatial arrangements to separate the stage, backstage, and audience areas. About 30 percent of the space is allocated for the needs of the stage and crew, while 70 percent is used for the audience area and circulation path. The organizers also made *the gangway* a walking corridor so audience mobility does not interfere with other audience members' comfort or hinder player movement. This step is helpful in reducing mass buildup, although it has not completely eliminated bottlenecks in certain areas.

In the *access control dimension*, the study found that the access control mechanism has not been optimal. The registration system was used to limit the number of spectators, but the policy was discontinued because it was considered to reduce participation and the performance atmosphere. After registration was eliminated, organizers rely more on visual monitoring, satisfaction survey barcodes at the entrance, and the placement of security officers at strategic points. This strategy helps monitor the surge in visitors, but it is not yet a truly preventive access control system.

The *safety and comfort* aspect shows that the organizers have tried to maintain safety and comfort by adding tents, flooring, carpeting, and rearranging spectator areas. Spectators are directed to several points, such as the right side, back, and stairs, so that the density is not concentrated in one area. However, *overcapacity can still reduce personal space and increase risk in an emergency*. Therefore, safety induction, clearer evacuation routes, and more effective field communication are critical.

Overall, this study shows that management of overcapacity at the Panji Malangan Mask cultural event has been carried out through various tactical measures, but it remains predominantly reactive. *Crowd management* is not entirely based on strict capacity planning and consistent access control. Thus, organizers need to develop a more preventive management system through adaptive capacity limits, visitor-flow engineering, and safety education for the audience.

The main novelty of this research lies in developing an understanding of overcapacity management in traditional cultural arts events that are free and open to the public, from a crowd-management perspective.

The novelty of the research can be formulated in four aspects:

Aspects	Previous Research	Research Novelty
Objects	Concerts, festivals, religious activities, museums	Cultural Event Mask Banner Malangan
Event characters	Many are ticketing/registration or commercial events	The event is free and open, so the number of visitors is difficult to predict
Focus	Crowd control and security in general	Management of overcapacity and its consequences for density, current, access, security, and comfort
Management approach	Crowd control as an operational measure	Analysis of the shift from reactive crowd management to preventive crowd management

The most powerful novelty is the discovery of a paradox between increased public participation and limited venue capacity. Eliminating registration increased public access and participation but also created pressure on physical capacity, circulation, comfort, and safety. These findings show that the success of cultural events is not measured only by the number of visitors, but also by organizers' ability to balance public accessibility, cultural participation, venue capacity, and visitor safety.

In addition, the research offers a practical proposition: the management of free cultural events needs to shift from a "respond after overcrowding occurs" pattern to "prevent and manage overcrowding before critical density is reached." This can be done through adaptive capacity, access control, visitor flow design, safety communication, and evacuation readiness. The article's conclusion also points to the need for a more preventive crowd management model.

CONCLUSION

The management of *overcapacity* at the Panji Malangan Mask cultural event shows that the high public participation in the free performance creates serious challenges for the organizers. The surge in spectators that exceeds the venue's carrying capacity raises the problem of crowd density, circulation pressure, limited access control, and potential disruptions to visitors' safety and comfort. The organizers have taken various handling measures, such as rearranging the space, creating *gangways*, monitoring barcodes, and adding security personnel. However, the management is still reactive, so it is not enough to prevent *overcapacity* optimally. Therefore, a more preventive crowd management model is needed, especially through capacity restrictions,

strengthening access controls, structuring visitor flows, and delivering safety information more systematically

BIBLIOGRAPHY

- Ahmad, M., & Wilkins, S. (2025). Purposive sampling in qualitative research: a framework for the entire journey. *Quality and Quantity*, 59(2), 1461–1479. <https://doi.org/10.1007/s11135-024-02022-5>
- Allana Leonardus, Ayu Asriyani, Hilary Quenella Moeis, Mirza Balqis Salwa Salmira, & Jessica Ignatia Tambunan. (2024). Crowd Control Analysis in Organizing The 2024 Religious Celebration Festival: A Qualitative Approach. *TOBA: Journal of Tourism, Hospitality and Destination*, 3(3), 109–113. <https://doi.org/10.55123/toba.v3i3.4105>
- Ananta Putra, P., & Ayu Wulan, D. (2025). The Art of Masks: An Acculturation of Javanese-Chinese Culture. *Journal of Scientific Scholars*, 4(3).
- Centorrino, P., Corbetta, A., Cristiani, E., & Onofri, E. (2021). Managing crowded museums: Visitor flow measurement, analysis, modeling, and optimization. *Journal of Computational Science*, 53, 101357. <https://doi.org/10.1016/j.jocs.2021.101357>
- Farhadighalati, N., Estrada-Jimenez, L. A., Nikghadam-Hojjati, S., & Barata, J. (2025). A Systematic Review of Access Control Models: Background, Existing Research, and Challenges. *IEEE Access*, 13, 17777–17806. <https://doi.org/10.1109/ACCESS.2025.3533145>
- Henry Richardson, K. A. (2022). *Thinking Framework Preparation Strategy: Improving Research Quality*. 15(2), 146–157.
- Ilhami, M. W. (2024). *Application of Case Study Methods in Qualitative Research*. 32(3), 462–469.
- Jannah, F., Sa, H., Maisuri, D. E., Religion, I., & State, I. (2025). Journal of Qualitative and Quantitative Research Components in Qualitative Research. *Journal of Qualitative and Quantitative Research*, 2(2), 98–109.
- Kim, M., & Shin, K. (2022). *Exploring the Major Factors Affecting Generalized Anxiety Disorder in Korean Adolescents: Based on the 2021 Korea Youth Health Behavior Survey*. 0–8.
- Merta, V. M. P. (2023). Consumer Protection Against Cancellation Of The Berdendang Music Festival Event Swaying Due To Overcapacity. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, 53(1), 1–19. <http://publications.lib.chalmers.se/records/fulltext/245180/245180.pdf%0Ahttps://hdl.handle.net/20.500.12380/245180%0Ahttp://dx.doi.org/10.1016/j.jsames.2011.03.003%0Ahttps://doi.org/10.1016/j.gr.2017.08.001%0Ahttp://dx.doi.org/10.1016/j.precamres.2014.12>
- Nafisa Rahmi, K. (2024). *JICN: Journal of Intellectual and Scholars of the Archipelago The Existence Of Malangan Mask Puppetry In Malang Regency 1990-2022*. 1(3). <https://jicnusantara.com/index.php/jicn>
- Nishinari, K., Feliciani, C., Jia, X., & Tanida, S. (2024). Recent Developments in Crowd Management: Theory and Applications. *Journal of Disaster Research*, 19(2), 239–247. <https://doi.org/10.20965/jdr.2024.p0239>

- Priambodo, R. B. (2025). *Crowd Control Analysis On Staging Kesenian JIMEA | MEA Scientific Journal (Management, Economics, and Accounting)*. 9(2), 168–179.
- Purwantari, N. V. A. (2024). Analysis of Audience Safety Satisfaction Level With Crowd Control at Music Concerts. *Journal of Event, Travel and Tour Management*, 4(2), 37–43. <https://doi.org/10.34013/jett.v4i2.1761>
- Rahma Ayuningtyas, S., Cindy Sujatno, T., Soehadi, A. W., & Jayawardhana, I. (2024). The Effect of Perceived Crowding on Memorable Experience and Behavioral Intention with Fandom Moderation Variables in Blackpink Jakarta 2023 Concert. *Global Research on Tourism Development and Advancement*, 6(2), 111–123. <https://doi.org/10.21632/garuda.6.2.111-123>
- Richards, G. (2025). *Cultural Tourism: An Integrative Review*. 21(4), 19–31. Rihi, N. B., Rahmanita, M., & Mariati, S. (2025). *Operational Management in Crowd Control: A Case Study of Concerts at ICE BSD City*. 7(2), 121–130. <https://doi.org/10.30812/target.v7i2.5660>
- Risnita, Sofwatillah, Jailani, M. S., & Saksitha, D. A. (2024). Quantitative and qualitative data analysis techniques in. *Journal of Honorable Mention*, 15(2), 79–91. <https://ejournal.stkipbbm.ac.id/index.php/gm>
- Sholichah, R. H., & Hidayatullah, N. L. (2025). Internationalization Strategy for Malangan Masks by Padepokan Asmorobangun in the 2023 International Mask Festival (IMF). *Journal of Social and Political Sciences*, 7(1), 16–34. <https://doi.org/10.56552/jisipol.v7i1.271>
- Spradley, P., & Huberman, M. (2024). Theoretical Studies on Analytical Techniques: Qualitative Research in Data And Accounting Management, *Journal Administration*, 1(2), 77–84. <https://pub.nuris.ac.id/journal/jomaa/article/view/93>
- Wardhani, A. (2022). Risk Analysis and its implications for implementing festivals/special events from the Perspective of Attendance Management (Case Study: Berdendang Bergoyang Event 2022). *National Seminar on Applied Research*, 11(1), 396–400