

**SOCIALIZATION AND SHUTTLE BUS ARRANGEMENT FOR PEMEDEK IN THE  
IMPLEMENTATION OF IBTK AT PURA AGUNG BESAKIH**

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**ABSTRACT**

The Ida Bhatara Turun Kabeh (IBTK) ceremony is a major Hindu religious event held at Pura Agung Besakih, Bali, attracting thousands of devotees from across the island. This significant increase in visitor numbers often leads to traffic congestion, limited parking space, and reduced comfort and safety for temple visitors. To address these issues, this community service activity was conducted through participatory and directly applied methods in the field, involving the dissemination of information and the regulation of shuttle bus operations. The program was implemented over 21 days with the involvement of 210 students from Politeknik Transportasi Darat Bali. The shuttle service operated between the lower parking area (Kedungdung) and the upper parking area (Manik Mas), carrying out a total of 2,160 trips and serving over 22,000 round-trip passengers. Despite an imbalance in passenger flow between the two terminals, the shuttle service was considered effective in facilitating high mobility during the IBTK ceremony. This activity recommends future improvements in passenger information systems and user satisfaction surveys to enhance the quality of similar services.

Keywords: ida bhatara turun kabeh ceremony; pemedek mobility; pura agung besakih; shuttle bus, transportation management

**INTRODUCTION**

Pura Besakih, regarded as the most sacred temple by Hindus and the largest temple in Bali, is located in Karangasem Regency and holds great historical and spiritual significance for the Hindu community in Bali (Pusparani et al., 2020). Pura Agung Besakih hosts numerous significant religious ceremonies, one of which is the annual Ida Bhatara Turun Kabeh (IBTK) ceremony. This area serves as a spiritual destination for the Balinese Hindu community to perform religious rituals. In addition to the Balinese community, some international tourists also visit Pura Agung Besakih, making such ceremonies influential not only in religious and socio-cultural aspects but also in posing serious challenges to transportation management and human mobility. The development of spiritual tourism as a form of sustainable tourism must adhere to principles that are environmentally friendly, supportive of local communities, and beneficial to the local economy (Sutarya, 2022).

The high mobility of private vehicles to the Pura Agung Besakih area has led to traffic congestion, an excessive number of parked vehicles, and disruptions to both comfort and safety for the community. The limited availability of public transportation services has encouraged pilgrims to travel using private vehicles (Cheng et al., 2018). To address this issue, relevant authorities need to take action to manage the situation. In the context of modern transportation, an environmentally friendly and efficient transport system is one of the

solutions that can be implemented during the IBTK ceremony, such as providing shuttle buses for pilgrims to overcome the transportation challenges (Nurrisqi et al., 2025).

The annual IBTK religious ceremony at Pura Agung Besakih consistently attracts thousands of pilgrims (pemedek) from across Bali, which directly contributes to increased vehicle volume, parking congestion, and the potential for traffic jams in the sacred area (Krisnayanthi et al., 2023). Without proper traffic management and integrated transportation services, these conditions may reduce the comfort, safety, and spiritual solemnity of the pilgrims during worship. Therefore, it is necessary to conduct socialization and implement a shuttle bus service as a solution to alleviate vehicle congestion and manage pilgrim movement in a more orderly and efficient manner. The shuttle bus can serve as a solution to reduce traffic congestion (Dwipayana et al., 2024; Putri et al., 2021). This initiative not only aims to ensure smooth operations during the ceremony but also serves as a form of public education on the importance of using environmentally friendly shared transportation, as well as an effort to build a culturally based transportation system that can be replicated during other large-scale religious celebrations in Bali.

Students, as agents of change, hold a strategic role in bridging the knowledge acquired in higher education with the real needs of society (Suartawan et al., 2023). Community service activities (PkM), such as the socialization and organization of shuttle bus services during the IBTK ceremony at Pura Agung Besakih, serve as an ideal platform for students—particularly from the Bali Land Transportation Polytechnic—to apply their competencies in transportation, traffic management, and public service. With technical skills, communication abilities, and a strong spirit of service, students can directly contribute to managing the movement of pilgrims in an orderly, efficient, and safe manner. Furthermore, their involvement in this activity helps strengthen social awareness, tolerance, and understanding of local wisdom and Balinese cultural values. This makes the PkM activity both relevant and strategically valuable as a form of experiential learning and as a reinforcement of the active role of higher education institutions in community life.

Community service represents the tangible involvement of higher education institutions in addressing societal needs through the direct application of science and technology (Soehadha, 2016). In this context, the service activity is carried out to support the smooth implementation of the IBTK 2025 ceremony at Pura Agung Besakih through participatory socialization and management of shuttle bus services. The primary focus of this activity is not only on evaluating the effectiveness of passenger volume and transport capacity, but also on direct observation of mobility dynamics, schedule accuracy, queuing, and the comfort of services provided to pilgrims. This initiative constitutes a meaningful contribution by students in the field of transportation management rooted in cultural and religious values, while also documenting the practice of mass mobility management based on collaboration among local communities, higher education institutions, and regional governments (Soehadha, 2016).

## **METHOD**

The method used in this community service activity is a combination of participatory socialization, direct field implementation, and structured field observation. This approach aims to optimize the management of pilgrim mobility during the Ida Bhatara Turun Kabeh

(IBTK) ceremony at Pura Agung Besakih, Bali. The activity begins with socialization to pilgrims and field personnel regarding the importance of using the official shuttle bus service provided by the organizing committee. This socialization is conducted directly at the parking areas and main entrance through information dissemination, verbal appeals, and on-site assistance by students.

Subsequently, the shuttle bus service system is implemented, which includes scheduling, queue system management, and monitoring of passenger boarding and alighting flows. The shuttle service operates from the lower parking area (Kedungdung) to the upper parking area (Manik Mas), with an operational period of 21 days, covering a total of 2,160 trips and serving more than 22,000 round-trip passengers. This implementation is supported by 210 students from the Bali Land Transportation Polytechnic who are responsible for traffic management, vehicle escorting, and monitoring of critical points.

As part of the evaluation process, this method also involves direct observation (participatory observation) in the field focusing on several key aspects, including traffic density around the area, the effectiveness of passenger queues, shuttle service punctuality, and the distribution of passenger flows between the two main terminals. Daily observations were conducted by the community service team, who recorded field findings to support the evaluation process and the development of recommendations. With this methodological approach, the community service activity not only focused on delivering information but also created tangible impact through the active involvement of students and the large-scale implementation of transportation solutions (Suartawan et al., 2023). The findings and data from this implementation will serve as the foundation for developing a passenger information system and measuring user satisfaction for similar future events.

## **RESULTS AND DISCUSSION**

### **Effectiveness of Socialization on Pilgrims' Behavior**

The socialization activities carried out directly by the community service team, particularly students from Bali Land Transportation Polytechnic, have proven to positively impact pilgrims' awareness in using the official shuttle bus. The outreach was conducted through verbal appeals, guidance in the parking areas, and assistance during queuing. This face-to-face approach was more effective in reaching a wide range of pilgrims from various regions compared to passive methods such as billboards or information boards. However, some pilgrims were still found walking or using private vehicles to reach the temple due to a lack of prior information, indicating the need for improved pre-event socialization strategies in the coming years.

### **The Role of Students in Managing Transportation for Religious Events**

The involvement of 210 students in this activity significantly contributed to traffic flow management and passenger services. Students were not only assigned as field officers but also actively engaged in monitoring and recording operational conditions, as shown in Figure 1. This field experience served as a tangible form of experiential learning while assisting the organizing committee in supporting daily operational arrangements. In addition, students were responsible for promoting the importance of using the official shuttle bus service provided by the committee, as illustrated in Figure 2. They demonstrated adaptability in responding to field dynamics such as passenger surges, unexpected queues, and technical issues affecting several shuttle units.



Figure 1. The Role of Students Serving as Field Officers



Figure 2. Socialization of the Importance of Using the Official Shuttle Bus Service Provided by the Committee

The community service activity held in conjunction with the IBTK Ceremony at Pura Agung Besakih provided numerous benefits for the participating students. They gained firsthand experience in understanding the importance of social awareness by observing how a large-scale religious event requires coordination and support from various stakeholders to run smoothly. Moreover, students obtained practical experience by applying the knowledge they had learned in the classroom. This experience also enriched their cultural and spiritual values, as they gained a deeper understanding of Balinese traditions and culture in the context of worship at Pura Agung Besakih. In addition, their communication and teamwork skills improved through interaction with community members from diverse backgrounds. This activity made a tangible contribution to society. More importantly, it served as a valuable field experience for the students—especially those from the Road Transportation Management study program—by allowing them to engage directly with the public and apply

their academic knowledge in real-life situations. Students also became more aware of the importance of collaboration in ensuring the success of major events such as the IBTK Ceremony. They witnessed how various groups, including educational institutions, local communities, and medical teams, worked together to serve the public. Thus, this activity went beyond the scope of traditional community service. It offered a meaningful experience that helped shape the students' character and skill sets, preparing them for their future roles in society.

### **Passenger Flow Patterns and Imbalance**

The IBTK Ceremony at Pura Agung Besakih is one of the largest religious celebrations in Bali, attracting thousands of devotees from various regions. This influx of participants can lead to severe traffic congestion and a shortage of parking spaces around the temple area, particularly due to the narrow and crowded road network and challenging topography surrounding Besakih during major events. To address these issues, the IBTK 2025 organizing committee, in collaboration with relevant stakeholders, is preparing a shuttle bus service to regulate the movement of worshippers. The service will transport passengers from the main parking area in Kedungdung to the transit point at Manik Mas, which serves as the gateway to Pura Agung Besakih. From Manik Mas, devotees will continue their journey on foot toward the temple complex.

This shuttle bus service is provided as part of a transportation management strategy aimed at improving efficiency and access control, with the following objectives:

1. To reduce the number of private vehicles entering the temple area.
2. To accelerate the movement of worshippers.
3. To enhance comfort and safety during the worship activities.

Based on the recorded operational data of the shuttle bus during the event (from April 12 to May 2, 2025), the following information was obtained:

1. There were 1,193 trips from Kedungdung to Manik Mas.
2. 967 trips from Manik Mas back to Kedungdung.
3. A total of 2,160 round trips were completed over approximately 22 days.

The days with the highest travel volumes indicate an increased demand for public transportation, for example:

1. On Tuesday, April 29, 2025, there were 133 trips to the temple and 99 return trips. This reflects a significant surge, possibly related to the peak or main part of a religious ceremony.
2. In contrast, Thursday, April 17, 2025, recorded the lowest travel volume, with only 10 trips to the temple and 13 return trips, which may indicate a quieter day or a pause in religious activities.

The difference in the number of trips between outbound and return journeys indicates an imbalance in pilgrim mobility patterns. This may be due to varied return times, the availability of alternative transportation for the return journey, or an increase in the number of pilgrims choosing to walk back. In terms of passenger numbers, the data shows that:

1. A total of 12,717 people were transported from Kedungdung to Manik Mas.
2. Meanwhile, 9,572 people were recorded returning via the shuttle from Manik Mas to Kedungdung.
3. Overall, the shuttle system served no less than 22,289 pilgrim trips.

The day with the highest number of passengers was Wednesday, April 16, 2025, with 1,366 people traveling to the temple and 1,030 returning. This indicates efficient service during peak days. On the other hand, Wednesday, April 23, 2025, recorded the lowest number of passengers, with only 103 departing and 73 returning.

### **Operational Effectiveness of the Shuttle Bus Service**

The average daily ridership (round trips) exceeded 1,000 passengers, indicating that the shuttle bus was the primary transportation choice for worshippers, especially on busy days. This also reinforces public trust in the collective transportation mode provided by the organizing committee. Based on the data, the shuttle bus service during IBTK 2025 can be considered effective according to the following indicators:

#### **1. Capacity to Accommodate High Demand**

Based on the shuttle service volume exceeding 2,000 trips and more than 22,000 passengers in less than a month, the system has successfully met the needs of mass mobility. The number of trips, which adjusted to daily demand, also demonstrates responsive operational management.

#### **2. Traffic and Access Control**

By limiting private vehicle access to the Kedungdung parking area and continuing the journey via shuttle buses, the number of vehicles in the temple's main area was significantly reduced. This helped to decrease congestion, minimize the potential for road conflicts, and support both the safety and comfort of the worshippers (Yasein & Khan, 2023).

#### **3. Service Efficiency and Distribution**

The relatively stable number of trips and passengers on certain days indicates successful scheduling and vehicle cycling. Additionally, the fairly balanced two-way distribution of trips—though not identical—reflects a system responsive to on-site demand.

#### **4. Potential for Future Improvement and Innovation**

The difference in passenger numbers between outbound and return trips (approximately 3,145 passengers) suggests a potential imbalance in return mode usage. This provides an opportunity to evaluate the return patterns of worshippers—whether they return in groups, on foot, or using different private vehicles than those used for arrival.

#### **5. Positive Social Impact**

By providing a temporary public transport system, the community experienced the benefits of a service focused on comfort and social welfare. Indirectly, this effort reinforced traffic discipline and emphasized the importance of public transportation in large-scale events.

### **Queue Management and Passenger Density**

The management of passenger queues was one of the critical aspects influencing service comfort and orderliness. The student team established a queue line system using physical barriers (cones and ropes) and ensured that queues remained organized and orderly. Observations indicated that during peak hours, queues could extend into the parking area, highlighting the need for additional queue signage and the implementation of zigzag lane arrangements to reduce the impression of overcrowding and disorder. Figures 3 and 4 below illustrate the number of shuttle bus trips.

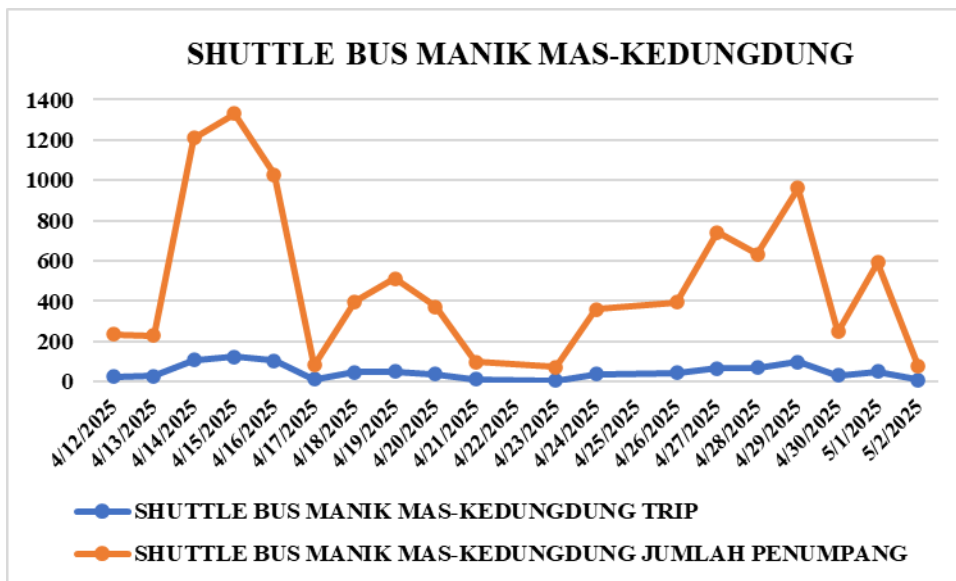


Figure 3. Shuttle Bus Route: Manik Mas to Kedungdung

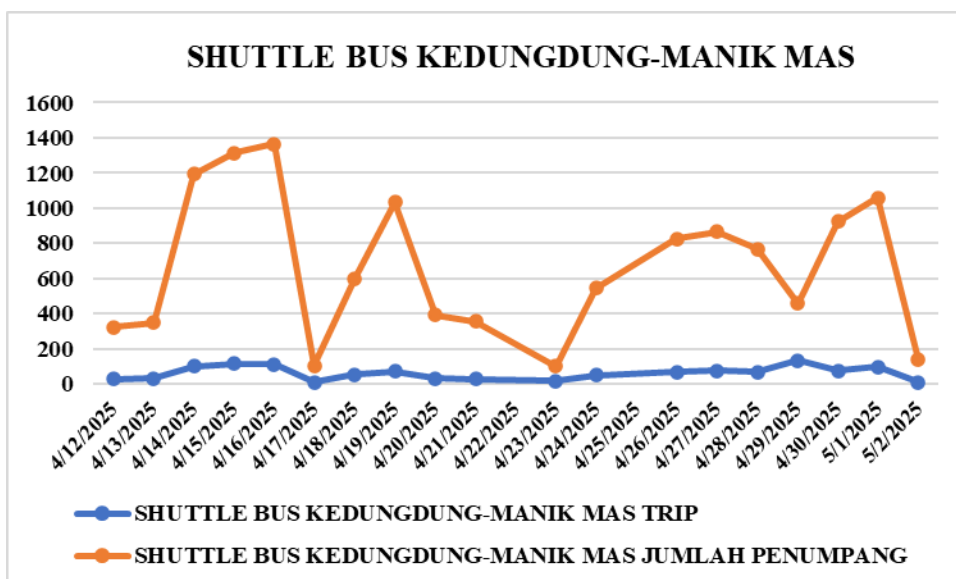


Figure 2. Shuttle Bus Route: Kedungdung to Manik Mas

Based on Figure 3, a fluctuating usage pattern is observed throughout the period from April 12 to May 2, 2025. There was a significant surge in the number of passengers between April 14 and 16, exceeding 1,300 individuals—likely due to the peak of the Galungan religious celebration at Pura Agung Besakih. Following this period, the number of passengers dropped sharply and became unstable, while the number of daily shuttle trips remained relatively consistent, ranging between 20 and 60 trips. This indicates that the service capacity and scheduling were not yet fully adapted to the dynamic needs of the public.

Figure 4, which shows on-site activity, further supports the high level of public interest in using the shuttle service during peak moments. The imbalance between the number of passengers and the number of trips during peak days suggests the need to evaluate the shuttle service operations, particularly in terms of fleet allocation and departure scheduling, to ensure optimal service and prevent passenger congestion.

### **Passenger Information System Needs**

One of the key findings from field observations is the lack of an adequate passenger information system, including both vehicle arrival schedules and estimated waiting times. Many pilgrims expressed confusion due to the absence of information about when the next shuttle would arrive. This led to disorder and negative perceptions of the service. The unavailability of bus arrival schedules at shuttle stops caused many passengers to wait for extended periods and eventually switch to alternative modes of transport (Ridwan, 2017). Therefore, this activity recommends the development of a basic passenger information system, such as dynamic schedule boards, scheduled loudspeaker announcements, or even a mobile-based application in the future.

### **Field Observation as the Basis for Development Recommendations**

All findings from this activity were obtained through daily direct observations conducted by the community service team. These observations included data on daily passenger counts, waiting times, travel times, queue conditions, and traffic situations. The results of these observations served as the foundation for formulating strategic recommendations, both short-term and long-term. Key recommendations include the need for an adequate passenger information system, additional training for staff, measurement of user satisfaction levels, and replication of this shuttle service model for other major religious events in Bali.

### **CONCLUSION**

The face-to-face socialization activities conducted directly by students of the Bali Land Transport Polytechnic (Poltrada Bali) proved effective in increasing pilgrims' awareness and use of the official shuttle bus service. Face-to-face approaches such as verbal appeals, guidance at parking areas, and assistance during queuing were found to be more effective in reaching a wide range of people—particularly when compared to passive information media like banners or notice boards. In addition, the involvement of 210 students in traffic management, vehicle escorting, and monitoring of critical points not only ensured smoother daily operations but also strengthened their competencies through experiential learning. It further nurtured their social awareness and understanding of local cultural values. From an operational standpoint, the shuttle service showed strong performance, with over 2,000 trips and a total of 22,289 passengers during 21 days of implementation. However, the imbalance between departure and return passenger volumes indicates a need to re-evaluate return trip scheduling strategies and pre-event information dissemination. Overall, the shuttle service successfully reduced traffic congestion toward Pura Agung Besakih, enhanced the comfort and safety of pilgrims, and fostered meaningful collaboration among the event organizers, students, and local communities in managing transportation based on local wisdom.

### **ACKNOWLEDGEMENTS**

We extend our sincere gratitude to all parties who supported the implementation of this Community Service (PkM) activity, especially the Bali Provincial Transportation Agency and the management of the Manik Mas–Kedungdung shuttle bus service for providing access to data and field facilities. Our appreciation also goes to the students of the Bali Land Transport Polytechnic (Poltrada Bali) for their active roles in data collection, operational observation, and field documentation. The support from the local community and stakeholders greatly contributed to the smooth execution of this program, enabling the successful achievement of our goals in enhancing understanding and evaluation of public transportation services in the tourism area.

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