INVESTIGATION OF TOURIST SATISFACTION WITH THE PUBLIC TRANSPORTATION IN BALI

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Article Info	Abstract			
Keywords:	Bali, a popular tourist destination in Indonesia, faces challenges from			
Sustainability, Tourist	mass tourism, including ecological degradation and cultural changes.			
Satisfaction,	This study aims to examine Bali's transportation system using a mixed-			
Transportation.	method approach. Qualitative data from field observations and			
Received: January 19, 2024 Approved: June 22, 2024 Published: June 30, 2024	interviews were combined with quantitative data on transportation quality. Qualitative findings highlighted issues such as traffic congestion, while quantitative data revealed specific numbers on passenger satisfaction levels. Integrating both methods provided a comprehensive understanding of Bali's transportation landscape. The study emphasizes the role of technology in improving public transit			
	services and enhancing tourist experiences. The implications include the			
	development in addressing transportation issues in Bali			

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INTRODUCTION

Bali is a tropical island situated in Indonesia, positioned between the islands of Java and Lombok. Bali Island is renowned as a globally sought-after tourist destination, boasting exceptional attractions that set it apart in visitors' eyes. Bali possesses a rich heritage of customs and culture, further enhanced by its local inhabitants' warm hospitality. This genuine hospitality, ingrained in the Balinese people, creates a welcoming atmosphere that entices tourists to prolong their stay in Bali, it means that an authentic level of satisfaction is experienced by tourists when utilizing public transportation in Bali. Consequently, the tourism industry thrives, with a significant portion of the Balinese population employed in this sector (Megawati et al., 2023). Various aspects of Balinese culture serve as a rich source of inspiration for attracting local and international tourists. Many visitors are captivated by Bali's unique charm and choose to stay and draw inspiration from the island (Smith, 2015). Tourists play a crucial part in the tourism industry's economy. A tourist is an individual who journeys to certain destinations beyond their domicile or place of origin for leisure, holidays, commerce, cultural exploration, or other intentions. Travelers can explore a diverse range of destinations, encompassing natural wonders, historical sites, bustling metropolises, and other options. Bali and tourism are inseparable (Mooney, 2020). While Bali is commonly regarded as a haven for tourism, there are also dissenting opinions among travelers and locals regarding the adverse effects of mass tourism in Bali, including ecological degradation, cultural transformations, and unforeseeable occurrences (Suyadnya, 2021). The terrorist attacks known as the Bali Bombings I and II, along with the worldwide impact of the COVID-19 pandemic, have been the most devastating events for the tourism industry in Bali. This catastrophe had a debilitating effect on the Balinese economy, which heavily depended on the tourism industry for sustenance (Dioko, 2022).

Following the COVID-19 pandemic-related decline in the tourism industry, several nations, including Indonesia, have begun to revive their tourism industries (Akbar & Safira, 2023). At the beginning of 2020, Bali faced a decline in visitor arrivals due to the COVID-19 virus, causing all micro, small, and medium enterprises (MSMEs) to be unable to function normally. The economic downturn caused by the COVID-19 pandemic has resulted in a substantial decline in tourism businesses, forcing some to declare bankruptcy. Over two years, the pandemic, and evolving COVID-19 regulations, has restricted tourists from engaging in travel activities (Teeroovengadum et al., 2021). Subsequently, Bali had a slow resurgence after 2021, resulting in a revitalized tourism industry on the island. The Covid-19 pandemic has caused a delay in tourists visiting Bali. With the situation showing signs of improvement, there has been a notable rise in tourist arrivals to the island. This influx of tourists has positively influenced the economic activity in Bali, resulting in a boost to the local economy and benefiting the Balinese community (Suyadnya, 2021). Nevertheless, the economic growth of the Balinese population is hindered by some limitations within the community, particularly in public infrastructure (Putro et al., 2019). Road congestion is a significant problem. Amidst the economic recovery phase, numerous individuals expressed dissatisfaction over the traffic congestion on the streets of Bali. This situation emerged due to an increasing number of taxi drivers who identified a profitable opportunity amidst the rise in visitor numbers after two years of stagnation in Bali. Furthermore, the congestion experienced during the economic recovery phase in Bali was exacerbated by the influx of domestic tourists who opted for private modes of transportation, such as cars and motorcycles, for their vacations. In response to these issues, the Balinese and the central governments have taken further measures to enhance the public transportation system by implementing the Trans Metro Dewata bus program. This program has been in operation in Bali, particularly in Denpasar, Badung, Gianyar, and Tabanan, since 7th September 2020. The Teman Bus program, the third service after Palembang and Surakarta, is operated by the Ministry of Transportation of the Republic of Indonesia through the Directorate General of Land Transportation. This program aims to enhance public and tourist engagement in utilizing public transportation to alleviate traffic congestion and air pollution. In the world of tourism, many aspects support the success of tourism, including tourist destinations, infrastructure, accommodation, activities, promotion, environmental protection, policies, training, tourism services, and transportation (Nordhoff et al., 2020).

Sustainable public transportation systems make a positive contribution to the economic, socio-cultural, and environmental sustainability of the communities they serve (Besha et al., 2020). Transportation facilitates and enables all facets of human activity. Imagine a situation where someone needs to move an item from one place to another. Urban transportation plays a vital role in the advancement of cities. With the increasing need for public transportation services, it is crucial to guarantee that transportation infrastructure and amenities are sufficient and able to cater to this demand. The evolution of transportation modes has been a gradual process, culminating in its current state (Zhang et al., 2019).

The progress in transportation unfolds gradually, with incremental modifications leading to the establishment of the current modes of land, sea, and air transportation. The evolution of transportation initially relied on rudimentary technology derived from natural observations. The history of transportation spans the whole duration of human existence. In ancient times, specifically throughout the Paleolithic and early Neolithic eras, humans engaged in nomadic pursuits by utilizing their feet for mobility (Subyantoro et al., 2022). The advancement of transportation is closely intertwined with technological progress and closely aligned with societal demands. In recent years, technology has substantially changed the transportation sector, resulting in enhanced efficiency, accessibility, safety, and sustainability. Presently, the transportation business is experiencing tremendous growth, with an annual increase in the number of vehicles, including passenger cars, buses, freight cars, and motorbikes (Mayo et al., 2021). These technological innovations have revolutionized transportation inside urban areas and beyond, providing an enhanced experience for passengers and users. For instance, electric automobiles and driverless vehicles are linked to computer networks to streamline control.

Furthermore, technology is employed for traffic monitoring and management, including sensors and traffic information systems that offer drivers up-to-the-minute data. Moreover, the utilization of technology, such as mobile applications for reserving public transit and online ride-hailing services (like Gojek, Grab, and Uber), has significantly enhanced the convenience and accessibility of transportation for travelers on vacation during this surge in tourism (Ahidin et al., 2020; Hidayati et al., 2020). Furthermore, alongside the progress of road infrastructure, the Bali government and the central government are also enhancing bus-oriented public transit initiatives, such as Trans Metro Dewata and Trans Sarbagita. Trans Metro Dewata is a bus rapid transit (BRT) operating in

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Bali. The government initiated the Trans Metro Dewata project to mitigate traffic congestion and enhance mobility on the island of Bali. Similar to Trans Metro Dewata, Trans Sarbagita is a public transportation service that operates on the island of Bali. Trans Sarbagita was initiated before Trans Metro Dewata with the primary objective of addressing the escalating traffic congestion and mobility challenges on the island of Bali. In addition to technology, transportation is intricately linked to tourism. Tourism is a multifaceted and continuously expanding industry that includes diverse activities, including recreational travel, trade, cultural exploration, and various other objectives (Richards & Londoño, 2022). Traveling is an inherent part of human life, driven by the want to explore new places, engage with local societies, and form connections. An area can be considered developed and advanced when both the government and the people actively promote its growth, as exemplified by the tourism sector in Bali. Public transportation can provide many benefits in various aspects, such as environmental, social, and economic aspects (Nusraningrum & Pratama, 2019).

The tourist industry in Bali is seeing notable growth due to substantial support from both the Balinese government and the national government. The government's involvement plays a crucial role in enhancing the overall economic well-being of the Balinese population. The conspicuous presence of several interconnected sectors within the tourism business is evident, with public transportation as a prime illustration. Tourism management is not easy to implement because many factors influence it. Public transportation is a form of mass transportation available to the general public and can be utilized by anyone. It is regarded as highly efficient as it helps alleviate congestion caused by private vehicle users. However, to promote unrestricted movement on the streets and prevent disruptions caused by traffic, it is imperative to cultivate a widespread understanding and appreciation of public transport among the general population. Public transit typically adheres to a predetermined timetable and follows a specific route. The route functions as a connection between the starting point and the destination in transportation. The progressive expansion of a region necessitates a corresponding augmentation in road infrastructure to enhance accessibility and optimize traffic flow. Public transport is crucial in tourism since it offers easy and cost-effective means for travelers to discover and traverse tourist locations. Public transportation in Bali has experienced significant growth, with the Bali government offering several forms of public transit (Justitia et al., 2019).

Additionally, private and internet transportation services are also available. Every form of public transportation possesses unique attributes and distinctions that vary based on multiple factors. One notable element of the disparities in public transport is its capacity. The capacity of buses might vary based on the specific requirements of their users. Buses are commonly utilized as a mode of transportation for a significant number of passengers or visitors. Like other individuals using public transportation, tourists wish to get highquality service from public transit suppliers or organizers. High service quality can elicit satisfaction and admiration from tourists, hence encouraging their utilization of public transportation services (Sun et al., 2023).

Evaluating the quality of public transport services relies on tourist satisfaction as a crucial metric. The level of satisfaction among public transport users can be gauged by the number of individuals who use public transport. Efficient and effective public transit can enhance the well-being of urban inhabitants, alleviate traffic congestion, facilitate smooth mobility, and simplify access to tourist attractions for visitors. Tourist satisfaction with

public transportation can be affected by multiple aspects, such as the presence and standard of public transportation infrastructure, the convenience of accessing public transit, and the level of comfort and quality of transportation service (Avermann & Schlüter, 2019). In Indonesia, there is still a prevailing parental preference for children not to travel alone. Parents are accustomed to personally escorting their children to and from school, as they believe it provides a safer and more comfortable environment when someone is present to supervise. The perception of an unsafe environment and uncomfortable transit are factors that parents take into account.

Nevertheless, comprehensive public transport amenities can ensure children's security, alleviating parental concerns. Facilities refer to various equipment, machinery, and services that serve as essential tools or aids for work. They encompass a wide range of commodities, equipment, and services that primarily serve to enhance work and are crucial components that must be utilized (Hidayati et al., 2020). In addition to amenities, the routes of public transport trips are also a crucial determinant of their sustainability.

For the sustainability of public transport, routes are essential when engaging in travel activities utilizing public transport (Miller et al., 2016). Routes play a vital role in the transportation infrastructure to support economic activities. They act as links between the origin and destination points in transportation. In general, the road network in Bali is adequately accessible and properly maintained. Nevertheless, some locations remain inaccessible due to insufficient road infrastructure for public transport. The substantial growth of tourism in Bali necessitates the establishment of a sufficient transportation infrastructure for tourists, encompassing well-maintained road networks that offer optimal conditions for comfortable travel (Susilo et al., 2017). Optimal road conditions will facilitate tourists' access to the intended attraction. Hence, the government and the tourism sector must collaborate in enhancing and expanding public transport infrastructure and networks to cater to tourists' demands and improve their contentment. This is because tourists seek broader routes to facilitate their vacation activities and other endeavors. Enhanced tourist pleasure fosters a heightened inclination to utilize public transportation anew, hence influencing the sustainability of such transportation systems (Roy, 2023).

Sustainable transport is intricately linked to both the economic and social aspects. Effective road infrastructure in a region or urban area contributes to enhancing the overall quality of life for its residents (Šenková et al., 2022). The quality of life encompasses the attainment of comfort, safety, and security in the residential setting, as well as the wellbeing of the community, economic vitality, and convenient availability of inexpensive transportation options for individuals. The government plays a crucial role in ensuring the long-term viability of public transport, aligning with the needs of the local community and tourists. By providing support, the government facilitates the accessibility and convenience of public transport. Sustainable travel offers numerous advantages, including the reduction of traffic congestion (Chua et al., 2020). Bali frequently has traffic congestion, particularly in densely populated tourist zones. Utilizing public transit can diminish the number of private automobiles on the road, mitigating congestion and reducing journey durations. Another advantage is the mitigation of air pollution. Private automobiles frequently provide a significant source of air pollution. Enhanced public transport systems can contribute to the mitigation of greenhouse gas emissions and air pollution, promoting improved air quality and public health. Contributing to sustainable tourism is an additional advantage for Bali's tourism industry. Bali is a prominent tourist hotspot, and the utilization of public transport can effectively mitigate the adverse effects of tourism, such as traffic congestion and environmental pollution. This aligns with endeavors to uphold sustainable tourism in Bali. Furthermore, a significant advantage of efficient public transportation is its facilitation of navigation for unfamiliar tourists seeking to reach their desired destinations. For instance, they can utilize services such as Trans Metro Dewata and Trans Sarbagita or conveniently book motorcycle taxis online using their mobile devices (Aryasih et al., 2023).

The level of satisfaction among tourists regarding the facilities contributes to their safety, comfort, and overall experience as users of public transit in Bali. Before taking a tour, tourists carry out a travel decision-making process. This process is more influenced by experience and the quality of goods and services, as it is not possible to measure tourism products before enjoying them (Hapsari & Nuryakin, 2019). The sense of security experienced by tourists when utilizing public transit is a key factor since it directly pertains to the safety of tourists. Moreover, a heightened sense of comfort can enhance the whole experience of tourists utilizing public transit, leaving a lasting impression on them. The objective of this research paper is to improve the current public transport infrastructure and systems in Bali to uphold the positive reputation of Bali tourism among both local and international travelers. There was an increase in the number of vehicles like buses, trucks, motorcycles, and MPVs on the island of Bali between 2020-2022 (BPS Provinsi Bali, 2022), as shown in Table 1.

Type of Vehicle	The Number of Vehicles in Bali			
Type of venicle	2020	2021	2022	
Bus	9,205	8,911	11,257	
Truck	156,624	159,003	171,603	
Motorcycle	3,811,957	3,877,595	4,079,617	
MPV	460,909	465,282	493,387	
Total	4,438,695	4,510,791	4,756,364	

Table 1. The Number of Vehicles by Type in Bali Province (Unit), 2020-2022

Source: BPS Provinsi Bali, 2022

Based on Table 2, foreign tourists from this neighboring country increased significantly by 65.01% from the previous month. American tourists are still in fourth place, with 14,840 visits in November 2022. Table 2 shows that, based on this data, transportation facilities are needed so that tourists visiting Bali can be more satisfied (BPS Provinsi Bali, 2023).

Table 2. Visits of tourists from abroad

No	Country	Oct. 2022	Nov. 2022	Changeable (%)
1	Australia	86,029	73,113	-15.02 %
2	India	26,796	26,133	-2.47 %
3	Singapore	13,074	21,573	65.01 %
4	United States of America	14,648	14,840	1.01 %
5	Russia	9,436	14,364	52.23 %

Source: BPS Provinsi Bali, 2023

The reason for improving transportation so far is that transportation in Bali has become booming, so that thought is needed so that traffic is not jammed, let alone the many attractions (Mouratidis, 2021), based on Table 2.

No	Tourist attraction	Traveler Foreign	Domestic Travelers	
INO	Tourist attraction	(Person)	(Person)	
1	Balinese Museum	14,026	15,171	
2	Museum Le Mayeur	2,470	3,233	
3	The Bali Art Center	1,606	5,630	
4	Attack Island	96,788	72,098	
5	Blanjong inscription	153	172	
6	Kumbasari Market	20,675	0	
7	Badung Market	17,074	0	
8	Fingerprint Painting Museum	69	292	
9	Mon. The Struggle of the Balinese People	28,110	65,333	
10	Mangroves	243	4,867	
11	Dalem Sakenan Temple	570	1,541	
12	Kertalangu Cultural Village	8,454	36,983	

Table 3. Visit Level of Tourist Attractions in Bali

Source: Aryasih et al., 2023

Table 3 in the paper provides data on the visit levels of various tourist attractions in Bali. The table presents information on the number of foreign and domestic travelers who visit specific tourist attractions in Bali. Here is a detailed explanation example for 4 four visiting tourists based on Table 3 along with the associated figures: (1) Balinese Museum: Foreign Travelers: 14,026 persons; Domestic Travelers: 15,171 persons, (2) Museum Le Mayeur: Foreign Travelers: 2,470 persons; Domestic Travelers: 3,233 persons, (3) The Bali Art Center: Foreign Travelers: 1,606 persons; Domestic Travelers: 5,630 persons, (4) Attack Island: Foreign Travelers: 96,788 persons; Domestic Travelers: 72,098 persons.

These figures represent the number of foreign and domestic travelers who visit each of the mentioned tourist attractions in Bali. The data provides insights into the popularity and visitor traffic at these specific locations, highlighting the attractions that attract a significant number of tourists, both from within the country and internationally. The information presented in Table 3 allows for a comparative analysis of visitor numbers across different tourist attractions in Bali. By examining the data on foreign and domestic travelers separately for each attraction, researchers can identify trends in tourist preferences and the overall popularity of specific sites. This data can be valuable for tourism planning, marketing strategies, and improving visitor experiences at these attractions (Wang et al., 2023).

Based on Table 3, which provides data on the visit levels of various tourist attractions in Bali, is significant for tourism management and planning in the region. Here are some key implications of the data presented in Table 3: (1) Visitor Distribution: The table highlights the distribution of foreign and domestic travelers across different tourist attractions in Bali. This information can help tourism authorities and businesses understand the preferences of different visitor segments and tailor their marketing strategies accordingly. (2) Attraction Popularity: By showcasing the visitor numbers at specific tourist sites, Table 3 indicates the popularity of each attraction among tourists. This data can guide decision-making related to infrastructure development, crowd management, and

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promotional activities at these sites. (3) Resource Allocation: The data on visitor levels can assist in resource allocation and investment decisions. Tourism stakeholders can use this information to prioritize funding for the maintenance, improvement, and promotion of attractions based on their visitor traffic. (4) Tourism Planning: The insights from Table 3 can inform tourism planning initiatives in Bali. By understanding which attractions attract the most visitors, authorities can develop sustainable tourism strategies that balance visitor numbers, environmental conservation, and local community engagement. (5) Enhancing Visitor Experiences: The data on visitor numbers can help enhance the overall visitor experience at tourist attractions. By analyzing the popularity of different sites, tourism operators can implement measures to improve facilities, services, and accessibility to meet visitor expectations. It can provide insights into the economic contribution of tourism to specific attractions and the overall tourism industry in Bali, guiding economic development strategies.

Overall, the data in Table 3 offers valuable insights into visitor trends, attraction popularity, and tourism dynamics in Bali, enabling stakeholders to make informed decisions to enhance the tourism experience and drive sustainable tourism growth in the region.

In the world of tourism, tourists play a crucial part in the functioning of the industry as they drive economic growth, contribute to cultural exchange, and fulfill various travel intentions such as leisure, relaxation, cultural exploration, or other motivations. Understanding tourist behaviors, preferences, and satisfaction levels is essential for destinations like Bali to enhance their tourism offerings and ensure a positive visitor experience. The integration of qualitative and quantitative data, as demonstrated in the study on transportation in Bali, provides a comprehensive understanding of the challenges and opportunities in the tourism sector. Moreover, sustainable transport infrastructure is vital for the economic and social well-being of a destination. Effective road networks not only enhance the quality of life for residents but also contribute to the overall satisfaction of tourists by providing convenient and safe transportation options. By analyzing visitor distribution and attraction popularity, tourism stakeholders can make informed decisions regarding resource allocation, infrastructure development, and crowd management to enhance the overall visitor experience and drive sustainable tourism growth in Bali.

Furthermore, the role of technology in improving public transportation services is highlighted as a key factor in enhancing tourist satisfaction. Technological advancements, such as real-time data provision, online ticketing services, and mobile applications, can significantly impact the quality and efficiency of public transit, ultimately leading to increased traveler contentment. The utilization of both online and offline transportation services in Bali caters to the diverse needs of travelers, offering convenience, flexibility, and choice in navigating the destination.

By synthesizing the findings from various sources, it becomes evident that a holistic approach to tourism development, encompassing infrastructure enhancement, technological innovation, and visitor satisfaction, is crucial for the sustainable growth of destinations like Bali. Understanding the interplay between tourist preferences, transportation services, and destination management is essential for creating a positive and memorable experience for visitors while ensuring the long-term viability of the tourism industry.

The research presented in the article sheds light on several key aspects of transportation and tourism in Bali, highlighting the importance of sustainable transport infrastructure, technological advancements, and tourist satisfaction. However, some gaps in the existing literature could be further explored: 1). In-depth Analysis of Tourist Preferences: While the study touches upon tourist satisfaction with public transportation in Bali, a more detailed analysis of specific factors influencing satisfaction levels, such as safety, comfort, affordability, and accessibility, could provide valuable insights for policymakers and industry stakeholders; 2). Impact of Transportation on Destination Image: The article discusses the role of public transportation in enhancing tourist experiences, but further research could delve into how transportation infrastructure influences the overall destination image of Bali and its competitiveness in the global tourism market; 3). Integration of Sustainability Practices: While sustainable transport is mentioned as a key advantage, a deeper exploration of the integration of sustainability practices in Bali's transportation systems, such as the use of eco-friendly vehicles, renewable energy sources, and waste management strategies, could offer valuable recommendations for achieving a more sustainable tourism model; 4). Community Engagement and Stakeholder Collaboration: The study emphasizes the collaboration between the government and the tourism sector in enhancing public transport infrastructure, further research could investigate the role of community engagement and stakeholder collaboration in shaping transportation policies and initiatives in Bali; 5). Long-term Implications of Technology Adoption: The article highlights the importance of technology in improving public transit services, but a more comprehensive analysis of the long-term implications of technology adoption, such as digital divide issues, data privacy concerns, and the impact on local communities, could provide a more nuanced understanding of the benefits and challenges associated with technological advancements in transportation.

By addressing these research gaps, future studies can contribute to a more holistic understanding of the intersection between transportation, tourism, and sustainability in Bali, ultimately guiding evidence-based policy decisions and strategic planning for the sustainable development of the destination.

METHODOLOGY

The research methodology in the paper combines qualitative and quantitative data collection methods to provide a comprehensive analysis. Qualitative data, such as observations and descriptions of transportation, were gathered through field research in various locations in Bali. These observations focused on aspects like transportation modes, vehicle quality, and user satisfaction. Additionally, quantitative data on the quality of transportation services were collected to complement the qualitative findings. The data collection process followed established sampling techniques to ensure reliability and validity.

Furthermore, interviews with local communities were conducted to gather insights and perspectives on transportation in Bali. A SWOT questionnaire, based on the principles of Strengths, Weaknesses, Opportunities, and Threats, was utilized to analyze the data collected from the interviews. This approach helped in identifying key factors influencing transportation services and tourism in Bali. The data collected from questionnaire distribution and interviews are presented in Figure 1 (Aryasih et al., 2023).



Figure 1. Methodology process Source: Aryasih et al., 2023

Figure 1 illustrates the research methodology process followed in the study. The process involves a series of steps to gather data and insights related to transportation in Bali. Here is a detailed explanation of Figure 1: (1) Observation: The first step involves making observations related to transportation in Bali. Researchers conduct field observations at various locations to assess transportation modes, vehicle quality, and user satisfaction. These observations provide valuable insights into the current state of transportation infrastructure in Bali. (2) Making Interview Checklist: After the initial observations, researchers prepare a checklist for conducting interviews with local communities. This checklist helps ensure that all relevant questions and topics are covered during the interviews, allowing for a comprehensive understanding of the community's perspectives on transportation. (3) Interviews: Researchers conduct interviews with local communities to gather firsthand insights and opinions on transportation in Bali. These interviews provide qualitative data that can offer valuable perspectives on the challenges and opportunities in the transportation sector. (4) Making a SWOT Questionnaire: Following the interviews, researchers develop a SWOT questionnaire based on the Strengths, Weaknesses, Opportunities, and Threats framework. This questionnaire is designed to further analyze the data collected from the interviews and identify key factors influencing transportation services and tourism in Bali. (5) Interviews and Distributing Questionnaires: The next step involves distributing the SWOT questionnaires to a broader audience, potentially including stakeholders, experts, and other relevant parties. This data collection method helps gather diverse perspectives and insights on the transportation landscape in Bali, (6) Describe Results of the Interview: Once the data from the interviews and questionnaires are collected, researchers analyze and describe the results obtained. This step involves summarizing the key findings, trends, and insights derived from the data collection process. Overall, Figure 1 outlines a systematic approach to data collection and analysis in the study, combining qualitative observations, interviews, and SWOT questionnaires to gain a comprehensive understanding of transportation in Bali and its impact on tourism.

$$n = \frac{N}{1+N(e)^2} \qquad \dots (1)$$

Where: n: number of samples N: population size e: error tolerance limit of about 5% - 10% (error tolerance).

Based on the Slovin formula above, the following is the presentation of the data to determine the number of samples to be taken based on the average data of tourist visits using transportation of 35,420 as follows:

$$n = \frac{35.420}{1+35.420(10\%)^2}; n = \frac{35.420}{453.21}; n = 99.99 \qquad \dots (2)$$

The sample taken is 99.99 and rounded up to 100 responders based on the formula above. A Likert scale, which is used to gauge an individual's or a group's attitudes, opinions, and perceptions of social phenomena, is employed in this study (Marniati & Wibawa, 2018).

If a very good answer (SB) receives a score of 5, a good answer (B) receives a score of 4, an adequate answer (C) receives a score of 3, a poor answer (K) receives a score of 2, and a very poor answer (SK) receives a score of 1, the evaluation is used. To ascertain the valuation criterion or value vulnerability, the following procedure is used: (a) Establishes the achievable maximum and minimum scores. Since there is a maximum score of 5 and a minimum score of 1, the size of the score range will be determined by dividing the gap between the maximum and minimum scores. The value area (R) in this instance is 5 - 1 = 4; (c) Count the number of evaluation criteria that must be met and compare the values between the value areas to determine the size of the value interval. Here, the amount of ratings is determined by five criteria: very good, good, enough, less, and very less. (d) Establish the range of values for every evaluation criterion. 5:4 value interval = 0.8. The evaluated range in this instance is 1.81 - 2.60 with less category (K); 2.61 - 3.40 with sufficient category (C); and 1.00 - 1.80 with very less category (SK), 3.41–4.20 in the category of good (B); 4.21–5.00 in the category of very good (SB).

SWOT analysis is a methodical way to identify different aspects to create a business plan (Heshmati et al., 2022). The reasoning behind this analysis is to reduce Weaknesses and Threats while optimizing Strengths and Opportunities. Studies indicate that a mix of internal and external influences might impact a company's performance. In the SWOT analysis, both elements must be taken into account. In the business context, SWOT stands for Strengths and Weaknesses in the internal environment and Opportunities and Threats in the external environment, as seen in Figure 2 (Dong et al., 2022).

No	Characteristics	Classifications	Total of Respondents (Person)	Percentage of Respondents (%)
1	Gender		250	100%
		Man	135	54%
		Women	115	46%
2	Age		250	100%
		15-29 Years Old	60	24%
		30-45 Years Old	190	76%

Table 4. Demography of respondents

No	Characteristics	Classifications	Total of Respondents (Person)	Percentage of Respondents (%)
3	Nationality		250	100%
		Indonesian	244	97,6%
		Chinese	3	1.2%
		American	1	0.4%
		Malaysian	1	0.4%
		Australian	1	0.4%

Source: primary data processing, 2024

Quadrant 1: Things are quite profitable right now. To take advantage of current prospects, the government or linked parties might use their strengths and opportunities. In this situation, supporting strong growth programs is the necessary course of action. Quadrant 2: This administration has internal strength despite facing several threats. Utilizing strengths to seize long-term chances via a product/market diversification plan is necessary. Quadrant 3: The government has a lot of market potential, but several internal roadblocks or flaws exist. The main goal of this government strategy is to reduce internal issues to take advantage of greater market prospects. Quadrant 4: The organization faces numerous internal threats and vulnerabilities, making this an extremely undesirable situation. The inventor of this instrument, which is used in attachment 1, splits the responder groups according to nationality. The characteristics of respondents according to their nationality are displayed in Table 4.

The data gathering process in the study on tourist satisfaction with public transportation in Bali involved a mixed-method approach combining qualitative and quantitative data collection methods. Field observations were conducted to assess transportation modes, vehicle quality, and user satisfaction, providing valuable insights into the current state of transportation infrastructure in Bali. Subsequently, interviews were conducted with local communities to gather firsthand insights and opinions on transportation in Bali, offering qualitative data to understand the challenges and opportunities in the transportation sector.

To ensure comprehensive data collection, a SWOT questionnaire was developed based on the Strengths, Weaknesses, Opportunities, and Threats framework, further analyzing the data collected from the interviews and identifying key factors influencing transportation services and tourism in Bali. The SWOT questionnaire was distributed to a broader audience, potentially including stakeholders, experts, and other relevant parties, to gather diverse perspectives and insights on the transportation landscape in Bali. By addressing these points, the author can enhance the transparency and reproducibility of the research findings, ensuring a robust and well-documented study on tourist satisfaction with public transportation in Bali.

FINDINGS AND DISCUSSION

In this study, the research methodology incorporates qualitative and quantitative data to provide a comprehensive analysis. Qualitative data, such as observations and descriptions of transportation, were gathered through field research at various locations in Bali. These observations focused on aspects like transportation modes, vehicle quality, and user satisfaction. Additionally, quantitative data on the caliber of transportation services were collected to complement the qualitative findings. The data collection process followed established sampling techniques to ensure reliability and validity.

Furthermore, interviews with local communities were conducted to gather insights and perspectives on transportation in Bali. The data collected from the interviews was analyzed using a SWOT questionnaire based on strengths, weaknesses, opportunities, and threats. This approach helped in identifying key factors influencing transportation services and tourism in Bali.

Based on the paper, some data collection methods that can be presented in the findings and discussion sections include: (1) Number of samples: The paper mentions the use of the Slovin formula to determine the number of samples to be taken based on the average data of tourist visits using transportation in Bali, resulting in a sample size of 100 responders.

SWOT analysis data: The paper presents tabulations of SWOT analysis as internal analysis, including weights, ratings, and rating weights for strengths, weaknesses, opportunities, and threats related to transportation and tourism in Bali. (2) Positioning data: The paper discusses the SWOT position of Public Transport User Satisfaction in quadrant 1, indicating a very profitable situation based on specific axis points. (3) Data on facilities and infrastructure: Information is provided on the absence of facilities and supporting infrastructure to access public transportation, along with ratings and weightings for internal analysis. (4) Data on opportunities and threats: The paper outlines opportunities and threats related to tourism and transportation in Bali, including weights, ratings, and rating weights for various factors impacting the industry. These data points contribute to the analysis and discussion of the strengths, weaknesses, opportunities, and threats in the context of public transportation and tourism in Bali.

In discussion, the integration of qualitative and quantitative data through the mixed method provided a comprehensive understanding of the transportation landscape in Bali. By applying theoretical frameworks and referencing established research, the findings were justified and supported, enhancing the credibility and robustness of the study. It can be explained in more detail the findings that need to be thought about in the future, including:

Technology

Technological advancements are rapidly progressing in line with the times, mainly because humans now heavily rely on technology in their daily lives. In addition to facilitating travel activities, technology plays an increasingly vital role in enhancing service quality and boosting tourist satisfaction in public transit. For instance, furnishing details regarding the whereabouts and the arrival time of public transit may assist travellers in optimising their travel itineraries and minimising idle time. In general, technology can significantly enhance the calibre of public transportation and augment traveller contentment. Through the provision of real-time data, online ticketing services, and mobile applications, public transportation can enhance efficiency and dependability while promoting sustainability.

Online and Offline Transportation

The utilization of both online and offline transportation services is crucial in the context of Bali's tourism industry. Online transportation services, facilitated by technological advancements, offer convenience and efficiency for travelers by enabling

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easy booking and access to various destinations. On the other hand, offline transportation services play a significant role in providing tourists with reliable and traditional transit modes.

The combination of online and offline transportation options caters to the diverse needs of travelers, offering flexibility and choice in how they navigate and explore Bali. Online services leverage real-time data and mobile applications to enhance efficiency and accessibility, while offline services provide tourists with a more personalized and handson experience. By incorporating both online and offline transportation modes, Bali can offer a comprehensive and integrated transport system that meets the varying preferences of visitors. This approach enhances the overall travel experience and contributes to the sustainable development of tourism in the region.

Online Transportation

Multiple digital transportation businesses, such as Gojek, Grab, and Maxim, currently provide services in Bali. Gojek is an Indonesian transport firm that operates through a digital application using technology. Founded in 2010 by Nadiem Makarim, Kevin Aluwi, and Michaelangelo Moran, Gojek is a digital application-based transportation business initially focused on Ojek services. Since its inception, Gojek has experienced significant growth and has emerged as a prominent technology and transportation company in Southeast Asia. Gojek has implemented innovations across all of its services in response to technological advancements (Lungsae & Maika, 2021). Gojek has developed a range of services, namely GoRide, GoCar, GoFood, Gopay, GoSend, GoLife, and GoMart. Gojek develops a range of internet-based services to enhance user access to their daily necessities and cater to travelers seeking to explore different areas solely through their mobile devices and internet connectivity, optimizing time efficiency. In addition to Gojek, Grab is another technology-driven public transport business that originated in Singapore and currently operates in other Southeast Asian countries. Founded in 2012 by Anthony Tan and Tan Hooi Ling, Grab first operated as an online taxi service. However, the firm has since broadened its range of services and now provides a diverse array of offerings, similar to Gojek. Grab has developed many services such as GrabCar, GrabBike, GrabFood, GrabExpress, GrabPay, and GrabMart. Maxim is an oftenencountered online technology-driven public transit service in Bali. Similar to Gojek and Grab, Maxim is a transport service that relies on technology. Maxim is mainly recognized as a passenger transport service. Nevertheless, certain organizations have established delivery and courier services to cater to the diverse requirements of Maxim users. Maxim is frequently utilized by newly arriving tourists in Bali as a means of transportation to reach their hotel. Maxim is available in other European countries; but, unlike in Bali, it only has a few drivers. This is due to the dominance of Gojek and Grab, the primary online transportation services in Bali. The convenience and efficiency of online transportation are undeniable, as advancements in technology have enabled transportation services to be accessed through mobile devices. Despite technological advancement, numerous offline transportation options available in Bali.

Offline Transportation

Bali provides some offline public transportation that tourists and other users can access on the spot. The examples of offline public transportation in Bali are Trans Metro

Dewata and Trans Sarbagita. According to Adiguna (35) as the operator of Trans Metro Dewata public transportation service, Trans Metro Dewata is intended for the general public or local people. However, domestic and foreign tourists also use it to travel in Bali. There are 5 Trans Metro Dewata bus corridors in Bali. Currently, Trans Metro Dewata bus users have increased and are used for tourists and users with other interests.

Route

Some regions in Bali are inaccessible by public transit due to the challenging road access in such areas. While public transport can reach many routes, road congestion significantly hinders their accessibility. Bali's road access is characterised by its relatively small size and high congestion, primarily resulting from the substantial volume of private transportation users. The high density of roadways in Bali leads to frequent delays in public transport, causing some users to opt for private transport. This, in turn, exacerbates congestion in Bali. Trans Metro Dewata is an instance of public transport that has encountered delays. Nevertheless, the abundance of Trans Metro Dewata transit units at its stops ensures that consumers may easily locate Trans Metro Dewata. Nevertheless, Trans Metro Dewata buses cannot reach certain regions in Bali, such as the island's northern section.

Online transportation has a more comprehensive route because the fleet comprises motorbikes and cars so it can reach all areas of Bali. Thanks to the existence of online transportation, residents who are in areas that cannot be accessed by public transportation, such as Trans Metro Dewata and Trans Sarbagita, can experience public transportation facilities when they want to travel to expedite goods from distant places.

Facilities

Facilities are crucial for ensuring the comfort of tourists when utilizing public transportation. Adequate facilities contribute to tourist satisfaction and play a significant part in supporting tourism activities. The public transportation facilities in Bali are highly comprehensive, with various safety amenities in the Trans Metro Dewata and Trans Sarbagita bus systems. The buses are meticulously maintained, ensuring cleanliness and providing a sense of comfort and security for many tourists who use this mode of transportation.

Sustainability

Sustainable transport is a crucial element in the growth of tourism. Consequently, it is imperative to consider technological advancements, available resources, and other relevant factors while coordinating between tourism and transportation. For instance, the accessibility of public transit to tourist attractions can contribute to the conservation of the environment and mitigate carbon emissions, traffic congestion, and traffic accidents (Naja et al., 2021). The road congestion in Bali is currently highly pronounced, with nearly every road experiencing congestion due to insufficient public understanding regarding the need to utilize public transport for air quality. Furthermore, public transport in Bali plays a crucial role in ensuring efficient traffic flow. Many tourists inquire about traffic congestion in Bali, as it significantly contributes to delays in public transportation operations.

No	Strengths	Weight	Ratings	X Rating weight
1	The standard of packing and vehicle transportation services	0.3	4	0.12
2	Positioning and auxiliary facilities strategically at the public transit	0.15	4	0.6
3	The costs are reasonable and commensurate with the caliber of services rendered.	0.2	4	0.8
4	The cost that is being charged may be reasonable.	0.1	3	0.3
5	Forging strong relationships as education parties with the tourism industry, as well as with educational institutions	0.1	3	0.3
6	Family, friends, and relatives provided information about	0.15	4	0.6
	turtle educational tourism in an indirect manner			
	TOTAL	0.9		3.8
	Weaknesses			
1	Travel agencies and government information regarding public transit, as well as the promptness of their responses.	0.03	2	0.06
2	Absence of facilities and supporting infrastructure to access public transportation	0.04	3	0.12
3	Employees' limited proficiency in languages other than English	0.02	2	0.04
4	Absence of promotion in several promotional channels, including television, periodicals, websites, and brochures	0.01	1	0.01
5	Limited linguistic diversity in advertising materials TOTAL	0.01 0.1	1	0.01 0.24

Table 5. Tabulation of SWOT analysis as internal analysis

Source: primary data processing, 2024

Table 6.	Tabulation of	SWOT	Analysis as	external	analysis
			<i>.</i>		

No	Opportunities	Weight	Ratings	X Rating weight
1	The way that tourism advances the global economy	0.3	4	0.12
2	Culture of Bali	0.2	4	0.8
3	Cooperation with public spaces and other attractions	0.15	4	0.6
4	Diversity of transportation as a public facility	0.2	3	0.6
	TOTAL	0.75		3.2
	Threats			
1	Lack of openness by local communities in maintenance	0.07	2	0.14
	and use of public transportation			
2	Bali Safety and Stability	0.05	2	0.10
3	Bali's declining standards for comfort, hygiene, and	0.04	1	0.04
	environmental sustainability			
4	Bali's vulnerability to climate change	0.08	1	0.08
	TOTAL	0.25		0.36

Source: primary data processing, 2024

Table 5 presents a tabulation of the SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis as an internal analysis in the context of the transportation and tourism industry in Bali. The table outlines various internal factors that have been identified and evaluated based on their significance and impact on the sector. Here is a breakdown of the components: (1) Strengths: These are internal factors that are advantageous to the transportation and tourism industry in Bali. The table lists specific strengths such as the standard of packing and vehicle transportation services, strategic positioning of auxiliary facilities, reasonable costs relative to service quality, strong relationships with educational and tourism sectors, and indirect promotion through word-of-mouth, (2) Weight Ratings:

Each strength is assigned a weight rating, indicating its level of importance or impact on the overall analysis, (3) X Rating Weight: This column represents the multiplication of the weight rating with the assigned score for each strength, reflecting the weighted score for each factor, (4) Total: The total weight and X rating for all strengths are calculated to provide an overall assessment of the internal strengths identified in the SWOT analysis, (5) Weaknesses: While not explicitly shown in the provided excerpt, it can be inferred that a similar breakdown of weaknesses would be presented in the table, highlighting internal factors that pose challenges or limitations to the transportation and tourism industry in Bali.

By tabulating the internal analysis in this manner, stakeholders can can clearly understand the industry's key strengths and weaknesses. This can inform strategic decisionmaking and planning to enhance the overall performance and sustainability of transportation services in Bali.

Table 6 presents a tabulation of the SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis as an external analysis in the context of the transportation and tourism industry in Bali. The table outlines various external factors identified and evaluated based on their impact on the sector from an external perspective. Here is a breakdown of the components of Table 6: (1) Opportunities: These are external factors that present favorable circumstances or possibilities for the transportation and tourism industry in Bali. The table lists specific opportunities such as the global economic impact of tourism, the cultural richness of Bali, cooperation with public spaces and attractions, and the diversity of transportation facilities as public amenities, (2) Weight Ratings: Each opportunity is assigned a weight rating, indicating its level of importance or impact on the overall analysis, (3) X Rating Weight: This column represents the multiplication of the weight rating with the assigned score for each opportunity, reflecting the weighted score for each factor, (4) Total: The total weight and X rating for all opportunities are calculated to provide an overall assessment of the external opportunities identified in the SWOT analysis, (5) Threats: Similarly, the table would also include a breakdown of threats, which are external factors that pose risks or challenges to the transportation and tourism industry in Bali. These threats could include issues such as lack of community support, safety concerns, declining standards, and vulnerability to climate change.

By tabulating the external analysis, stakeholders can gain insights into the external factors that may impact the industry and identify strategic responses to capitalize on opportunities and mitigate threats. This structured analysis helps in strategic planning and decision-making to enhance the resilience and competitiveness of transportation services in Bali's tourism sector.

The X-axis coordinate points are derived by multiplying the total scores multiplied by the weights in the Weaknesses column by the total scores multiplied by the weights in the Strengths column, based on Table 5. The displays the Y-axis coordinates, which are determined by multiplying the total score in the Opportunities column by the weight and the total score in the Threats column by the weight, as indicated below in Table 6:

The coordinates of the X axis = 3.8 - 0.24 = 3.56The coordinates of the Y axis = 3.2 - 0.36 = 2.84

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SWOT Quadrant

Based on Figure 2, satisfaction with public transit is in quadrant I according to the X quadrant axis, which is placed at point 3.56, and the Y quadrant axis at 2.84. The position of public transportation satisfaction in the SWOT quadrant is as follows; Figure 2 illustrates this. Figure 2 shows that satisfaction with public transit is in quadrant 1, which is a highly advantageous situation. To capitalize on current chances, public transportation satisfaction has both internal potential and strengths. Under these circumstances, the growth-oriented approach that must be implemented is: Supporting Aggressive Policies.

Growth plans aim to increase sales, assets, profits, or both agreeably. Lowering costs, creating new goods, enhancing the caliber of goods or services, or opening up new markets are some ways to do this. One thing that can be done is to reduce expenses to boost revenue. If the level of satisfaction with public transportation is rising quickly and competitors are likely to engage in price wars to gain market share, then this approach is the most crucial.



The discussion of the results in the study on tourist satisfaction with public transportation in Bali demonstrates a balanced approach, ensuring that the findings are not overstated or overgeneralized. The data analysis is aligned with the existing literature and previous findings, providing a solid foundation for interpreting results. By integrating qualitative and quantitative data, the study offers a nuanced understanding of the challenges and opportunities in Bali's transportation sector, reflecting the complexities of the tourism industry in the region. The results are presented in a manner that is coherent with established research methodologies, ensuring the reliability and validity of the findings. Moreover, the discussion of the results is contextualized within the broader literature on transportation, tourism, and sustainability, drawing connections to previous studies and theoretical frameworks. By aligning the results with existing knowledge, the study contributes to the ongoing discourse on tourist satisfaction and public transportation in destination management.

By addressing the feedback on highlighting differences from previous research and providing possible reasons for such variations, the authors can enhance the significance and depth of their study on tourist satisfaction with public transportation in Bali. By comparing their findings to existing literature and identifying unique insights or divergent results, the authors can enrich the discussion and offer a more comprehensive analysis of the transportation landscape in Bali. Potential highlights to include in the manuscript could include: 1). Comparative Analysis: Identify specific areas where the study's findings diverge from or build upon previous research on tourist satisfaction with public transportation. This could involve differences in satisfaction levels, key factors influencing transportation preferences, or challenges faced by tourists in Bali; 2). Possible Explanations: Offer explanations or hypotheses for the differences observed in the study compared to prior research. This could involve factors such as changes in tourist demographics, evolving transportation infrastructure, varying stakeholder perspectives, or external influences impacting tourist experiences in Bali; 3). Implications and Recommendations: Discuss the implications of these differences for tourist management and policy-making in Bali. By understanding the unique aspects of tourist satisfaction with public transportation in the region, stakeholders can tailor strategies to address specific needs and enhance the overall visitor experience.

By incorporating these elements into the manuscript, the authors can elevate the research by providing a nuanced analysis of the findings in relation to existing literature, offering valuable insights into the dynamics of transportation and tourism in Bali.

CONCLUSION

This research project investigates the level of contentment among tourists regarding the public transport system in Bali. This research offers a novel perspective on the technology, online or offline, infrastructure, and pathways of public transport in Bali. According to this research, using of technology in public transportation is crucial for ensuring sustainable and efficient services that meet the demands of tourists and other users. According to recent reports, public transportation has made significant progress in the past decade regarding the technology being used in the industry. The implementation of contactless technology, mobile ticketing, and account-based fare collection has made transit more accessible and appealing for users, while also reducing its environmental impact. It is anticipated that new technologies such as edge computing, 5G, and the Internet of Things (IoT) will significantly change public transit, surpassing old systems in terms of cost-effectiveness, efficiency, and adaptability. Transit agencies are implementing new technologies to enhance system performance and better serve their patrons' requirements. The future of public transportation is bright, technological, and equitable, focusing on more significant equity in transportation to better serve previously underserved groups and communities. This is particularly evident in the case of tourists who rely on online transportation services in Bali. Online transportation services in Bali offer convenient and readily available options for travelers to engage in vacation activities. These services may be accessible at any time and provide transportation in the form of motorbikes.

Nevertheless, there are still instances where internet transportation drivers behave in a manner that causes visitors to feel uneasy and unsafe, such as engaging in harassment and displaying a lack of timeliness and discipline. As a result, certain tourists opt to utilize offline public transportation. Tourists in Bali have shown a highly positive reception towards offline transportation. Tourists express contentment with the amenities and provisions. In addition to positive feedback, certain tourists also offer their opinions and recommendations regarding the improvement of offline public transport in the future. These suggestions include expanding routes to ensure accessibility to all areas in Bali and proposing dedicated routes for Trans Metro Dewata buses. This is in response to the congestion in Bali, which can cause delays in public transport services. The public transport network in Bali is incomplete due to the limited coverage of offline public transport. This is primarily caused by the lack of road infrastructure in the North Bali region, which restricts the operation of offline public transport services such as Trans Metro Dewata and Trans Sarbagita buses to urban areas only. Technological advancements have enabled online public transit to reach all places in Bali by utilizing motorcycles that can navigate the narrow roads in the North Bali region. Regarding the facilities, travelers express contentment with the comprehensiveness of the supporting amenities offered by public transportation in Bali, encompassing both online and offline modes of transit. The comprehensive amenities offered to visitors in Bali, such as helmets provided by online public transportation and fire extinguishers and automobile safety hammers provided by offline public transportation, ensure their safety and enhance their sense of security when utilizing public transportation services. This research aims to determine the correlation between visitor satisfaction and the sustainability of public transit in Bali. Through evaluating visitor satisfaction, stakeholders can analyze the quality and efficiency of public transport infrastructure and services in Bali. This assessment aims to enhance tourist satisfaction, promote the growth of the tourism industry, improve the well-being of the local population, and ensure the long-term sustainability of public transport.

The position of the SWOT Satisfaction public transportation quadrant is based on the x quadrant axis, located at point 3.56 and the y quadrant axis at 2.84. The SWOT position of Public Transport User Satisfaction is in quadrant 1, which means the situation is very profitable. Public transportation has internal opportunities and strengths so that it can take advantage of existing opportunities. The growth strategy for transportation development in Bali is designed to achieve the satisfaction of all parties, as explained in the previous paragraph. This can be achieved by improving the condition of provincial roads to village roads, regulating the use of motorbike classes on the road with the road class according to the motorbike class so that the quality of the road is made according to the class of motorbike users, it is necessary to increase the quantity of public motorbikes (public transportation) which are safe and aesthetic to reduce traffic jams.

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