



Pedestrian Facilities as the Core of Sustainable Public Transport: A Case Study of Kuta-Bali Tourism Destinations

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ABSTRACT: A tourist destination should be designed to make walking more enjoyable and sustainable. Many tourist destinations fail to provide pedestrian facilities to support sustainable tourism. Recognizing the important role that walking has in creating attractive, accessible, safe, and healthy destinations, it is necessary to develop these pedestrian facilities as a core in designing and evaluating Public Transport systems in terms of mobility and sustainability. The purpose of this study is to improve pedestrian facilities based on walkability indexes. This study uses a mixed-methods approach that combines qualitative and quantitative methods to collect data and further information on the topic. The results of this research are in the form of a guide, covering all aspects of pedestrian and bicycle planning in the tourist destination area of Kuta-Bali in the form of basic and up-to-date information about various planning and design concepts.

KEYWORDS: Kuta Area, Public Transport, Pedestrian, Pedestrian Facility, Walkability

I. INTRODUCTION

Tourism plays an important role in the economy of a country. Tourism can create jobs in all sectors and provide income and business opportunities; providing endless benefits to residents through pedestrianization, and conservation programs in an effort to attract international and domestic tourists throughout the year. Meanwhile, visitors or tourists can better understand the culture and customs of the area visited and its people.

Indonesia continues to strive to improve the tourism sector, which is expected to be able to increase job opportunities, people's incomes and contribute to the gross domestic product; this is in accordance with the study that if the engine driving labor absorption in the 19th century was agriculture, in the 20th century it was manufacturing industry, and in the 21st century is tourism (Dowid J. Villiers, 1999, in Salah Wahab, 1999). This effort has shown visible results from the increasing number of tourist visits. Foreign tourists who visited Indonesia in 2018 were 15,806,192, an increase of 12.58% compared to 2017 and Bali ranks first for tourists visiting Indonesia with a total of 6,070,473 or 38.4% (BPS Bali 2018). The trend of tourist visits to Bali from 2016 continues to show a significant increase, in 2015 the number of foreign tourists was 4,001,835 in 2016 to 4,927,937 or an increase of 23.14%, in 2017 amounted to 5,697,739 or an increase of 15.62% and in 2018 amounted to 6,070,473 or an increase of 6.54%. Since the enactment of the Minister of Law and Human Rights Regulation No. 11 of 2020 concerning the Temporary Prohibition of Foreigners from Entering the Territory of the Republic of Indonesia, almost no foreign tourist visits come to Indonesia, which is an anticipatory measure to reduce the spread of Covid-19 in Indonesia.

The tourist destination or *Destinasi Tujuan Wisata* (DTW) of Kuta is one of the destinations that have an increasingly good reputation as a tourist attraction. Various tourist attractions, entertainments, hotels, shopping centers, beautiful beaches, galleries, conference facilities, Buddhist shrines (Klenteng), and hundreds of temples for the majority of the population, have made DTW Kuta the main destination for tourists visiting Bali both domestically and internationally (RakaMandi, Achmadi et al. 2015). The various kinds of tourism products offered are spread throughout the Kuta area. Besides that, there are still many other DTWs that are less accessible and known to tourists.

For most of the tourists who visit Bali, public transport currently serves a relatively small portion of the total trip, but the trips it serves tend to be of high value for tourists and the community. Public transport provides basic mobility by helping people reach tourism and local community activities such as medical services, education, and employment. This is especially true for Request-Response service riders, who have moderate to severe disabilities that limit their mobility, and are often unable to use other travel options, such as walking, cycling, or conventional taxis. Walking is the most common form of access to transit stops, due to almost all transit trips ending in pedestrian paths. Therefore, the accessibility of public transport stops (Halte), public transport mode



connectivity, and mobility systems should be considered to provide a system user-friendly public transport. This requires careful and sensitive planning of tourist travel routes to maximize pedestrian (walking tourists) and cycling.

The extensive benefits of cycling and walking for transportation can affect all areas of DTW Kuta: creating healthier and more prosperous communities and reducing congestion and air pollution on most of the busy highways in Kuta. Walk and cycle to work, restaurants, shopping, transit, and entertainment; Tens of kilometers along the Kuta coastline until now has not been well laid out, and there are no pedestrians even though the paths along the Kuta, Legian to Tanah Lot coastlines, Jimbaran to Pandawa beach offer beautiful views and rides for visitors and residents.

Pedestrian paths are needed as an important component that must be provided to increase the effectiveness of urban residents' mobility (Dadang Rukmana 2013). Currently, the availability of the pedestrian network in the DTW Kuta area in terms of the number of sidewalks along the sides of the road (sidewalks) is sufficient, although it has not been able to meet the needs in terms of its standard provision as a pedestrian network that is safe, comfortable, and humane (Permen 03/PRT/M/2014 2014). This is due to (see Figure 1): 1). There is not yet adequate parking space so many sidewalks have been converted into parking lots for two-wheeled motorcycles, 2). Public awareness and sense of ownership of the existence of pedestrian paths are still lacking, 3). The commitment of all stakeholders to the provision of pedestrian path infrastructure is still not strong, 4). Integration between pedestrian paths with building layout, accessibility between environments, and transportation systems has not yet been realized and 5). Complete references for planning, providing, and utilizing pedestrian infrastructure are not yet available (Dadang Rukmana 2013).

With the increasing number of vehicles by locals and tourists every year, DTW Kuta will not be able to survive in the future. One possible measure to address this mobility problem is to promote walkability, hence a pedestrian-friendly environment is crucial in DTW Kuta. The main research questions to improve pedestrian facilities are:

- Which attributes have the greatest impact on the level of tourist satisfaction with the current system?
- Which attributes need to be improved?
- How do we improve this attribute?

This paper is structured as follows. The next section presents a theoretical framework, focusing on key aspects related to pedestrians. The following describes the methodology adopted in this study. Then there is a brief description of DTW Kuta. Next, the results are presented and discussed, and ended with the conclusion as the final part.

II. CYCLING AND WALKING

A. Pedestrian

A Pedestrian is any person who walks in the traffic space of the road. Pedestrian Paths are for pedestrians only, both integrated and separated from the road, are designated for pedestrian infrastructure and facilities as well as connecting activity centers and/or mode change facilities (Permen 03/PRT/M/2014 2014).

Walking is a universal tourist activity, covering the entire spectrum of recreational participation; ranging from intensive long-distance walks and special walking holidays to unplanned walks in the DTW by tourists on more general holidays. Motivations for walking are diverse and include experiencing local social and cultural dimensions; health, physical rehabilitation, and mental well-being; adventure; discovery and interpretation of inheritance (Davies 2018).

Walking is fundamental to adventure travel destinations, where roads, cars, and infrastructure is often scarce. Accessing the site for more strenuous activities such as hiking, rivers for water-based activities, or other remote areas for recreation often requires walking. For the most part, walking itself is the main or most strenuous activity. When considered more broadly, the different avenues cover the adventure tourism niche, in addition to the more common forms of tourism. For example, long mountain walks are always taken by different tourists than shorter 'walks' in rural destinations. Stakeholders provide resources for recreational walks; from tourism organizations to equipment retailers, environmental organizations, and health authorities. If one considers the breadth of participation and the 'type' of walking, it is arguably the most comprehensive recreational activity, which leads to the aim of this paper.

B. Pedestrian Facility

Pedestrian facilities are an important aspect of the design of traffic management systems because they also have implications for the overall traffic system, especially in DTW. A pedestrian facility assessment is important to determine how well the facility is meeting its intended purpose. The problem with pedestrian planning is related to the absence of an objective method for assessing pedestrian



path provision. Those methods are widely available for cars, but sadly not for non-motorized fashion infrastructure. Assessing the condition of pedestrian facilities is much more difficult than assessing vehicle highways.

Pedestrian facilities include sidewalks, traffic lights, crossings, island shelters, and other facilities such as lighting and benches (Parameter and Alta Planning and Design 2010).

Trotoar are facilities built for use by pedestrians and wheelchairs. This *Trotoar* includes sidewalks dan paths:

Sidewalks, are pavements along the side of the road, bordered by curbs and/or painted lines along the side of the road with strong construction and flat surface.

Paths, are the type used by pedestrians, bicycles, runners, and joggers. Not intended for special pedestrians this facility is more suitable for other uses. Paths may not be paved with gravel or milled asphalt.

C. Walkability

(Darmoyono and Tanan 2015) discusses applied research on green pedestrian facilities in Indonesia based on the walkability index. As applied research that focuses on green pedestrian facilities, this study seeks to improve the quality of walkability in urban areas in Indonesia. This study attempts to answer basic research questions regarding walkability and green pedestrian facilities. What are the significant factors that affect walkability? How to improve walkability for green pedestrian facilities? This study uses a mixed-methods approach that combines qualitative and quantitative methods to collect data and further information on the topic. This study examines the concept of walkability in Indonesia, by referring to and analyzing the Global Walkability index method. Furthermore, to ensure that the theoretical discussion is appropriate and can be implemented, this study uses a design competition to examine the parameters of walkability and translate the green city concept into physical development. The innovative design of the competition will be implemented in several cities in Indonesia as a pilot project. This research will refer to (Darmoyono and Tanan 2015).

The concept of walkability has been developed over the years to support walking activities through physical and non-physical support. Many studies have covered this topic and introduced several useful indicators for identifying and assessing the walkability index. A study conducted by Krambek dan Shah (2006) in (Darmoyono and Tanan 2015) introduced the Global Walkability Index (GWI) to assess the quality and performance of walking as well as several factors that influence activity. In general, GWI introduces three components to assess walkability, namely (1) safety and security, (2) comfort and attractiveness, and (3) policy support (see Table I).

Table I. Global Walkability Index – A summary

Component	Variables
Safety and Security	1. Proportion of road accidents resulting in pedestrian deaths (last year available). 2. Pedestrian lane mode conflicts 3. Crossroad safety 4. Perception of security from crime 5. Quality of driver behavior
Comfort and Attractiveness	6. Maintenance and cleanliness of the path. 7. Availability and quality of facilities for the blind and disabled. 8. Facilities (e.g., coverage, benches, public toilets) 9. Permanent and temporary obstacles to walking path
Policy Support	10. Funding and resources devoted to pedestrian planning. 11. Presence of relevant urban design guidelines 12. Existence and enforcement of relevant pedestrian safety laws and regulations 13. Public outreach levels for pedestrian and driving safety and etiquette.

Source: (Krambek & Shah, 2006) in (Darmoyono and Tanan 2015).

Walkability is seen as one of the most important concepts for sustainable urban development and sustainable mobility (Forsyth dan Southworth 2008). The personal, social, economic, and environmental benefits of walking, both as a leisure activity



and a mode of transport, are well documented: walking reduces congestion and traffic pollution; it benefits the health and well-being of individuals; it has health-economic benefits; it affects real estate prices; and increases the socialization and vitality of urban spaces (Bahrain dan Khosravi 2013; Kim, Park, dan Lee 2014; Lee dan Talen 2014; Longo et al. 2015) dalam (Mona Jabbari, and et al. 2017).

To identify and assess the walkability index for several cities in Asia, ABD adapted several parameters from GWI with some adjustments referring to Asian conditions. The walkability index applies nine indicators as its assessment parameters, namely (1) footpath conflict, (2) availability of walking paths, (3) availability of intersections, (4) safety of intersections, (5) driver behavior, (6) facilities, (7) disability infrastructure, (8) barriers, and (9) security from crime (see Table II) (Fabian, Gota et al. 2011).

A walking path is an outdoor space used for the daily activities of city dwellers. For example, for activities such as walking, relaxing, sitting relaxed or as a place to trade. The function of public space for pedestrians is to move from one place to another in a certain area. Walking is also defined as the movement or circulation, or the movement of people from their original point to another place as a destination by walking. Current walking paths can be in the form of sidewalks, pavements, sidewalks, pathways, plazas, and malls (Parameter and Alta Planning and Design 2010).

A good walking path must be able to accommodate every walking activity smoothly and safely. While the convenience of pedestrians in walking is the existence of facilities that support walking activities and can be enjoyed by walking activities without interference from other activities.

Traffic-free (or pedestrian-only) destinations (e.g., the Great Wall, Forbidden City, and Golden Temple), which are only open to pedestrians, are some of the tourist destinations. The travel (or walking) system effectively links all scenic spots, thereby simultaneously ensuring "travel for tourism" and "travel as tourism." In this context, "the journey itself, any number of destinations, can be part or even the main attraction of the trip". Thus, tourist satisfaction with (or perception of) walking environment quality (or pedestrian satisfaction) in this subset should be well understood. However, there are few studies on pedestrian satisfaction in traffic-free tourist destinations in the existing literature, to the best of our knowledge (Yang, Wang et al. 2019).

III. METHODOLOGY

The method of discussion is carried out using a descriptive method to describe and explain the factors needed in planning, and the supporting factors that will determine the area design concept. The necessary data is collected and then described and analyzed, and from the results of the analysis conclusions, limitations, and responses are made that will be used as the basis for planning and design in the Kuta Area.

The data obtained comes from secondary data, namely literature studies through books, papers, references, design standards for pedestrians and bicycle lanes, the internet, and written sources related to planning and design in the Kuta area.

IV. RESULTS AND DISCUSSION

Kuta is an area with a mix of various activities; such as lodging, housing, entertainment venues, trade, education, worship, health, to offices. These diverse activities will certainly lead to various movements carried out by tourists and the surrounding community.

Based on the way of operation and use, the modes of transportation in DTW Kuta can be grouped into 3 categories: private transportation, rental/chartered transportation, and public transportation. Private transportation operates in DTW Kuta by using public roads which are mostly intended for movement. Besides private cars and motorbikes, other modes of transportation such as bicycles and walking are widely used and popular.

By looking at some of the existing facilities along with the Kuta Area that allow for various activities, it is necessary to evaluate the design of walking and bicycle paths by knowing the attraction of the trip and then summarizing it to plan the road and pavement network. A summary of towing trips is shown in Table II.

Table II. The attraction of bicycle and walking trips in the Kuta area

A summary of the types of travel attraction

Beaches, culture, history and DTW
Schools and training centres
Parks, open spaces, and recreational facilities
Shopping area, retail and souvenir centres
Transit, central parking, park and ride

- Have pedestrian space facilities for all users, including pedestrians with various physical limitations;
- Has a fairly gentle slope and a flat road surface that does not go up and down;
- Provide conditions that are safe, comfortable, environmentally friendly, and easy to use independently;
- Have added value both economically, socially, and environmentally for pedestrians;
- Encourage the creation of public spaces that support social activities, such as sports, social interaction, and recreation; and
- Adapting the physical characteristics to local social and cultural conditions, such as habits and lifestyles, population density, as well as heritage and values held to the environment.

A. Pedestrian Planning

The zoning system determines the width of the sidewalk corridor and ensures that obstacles, such as utility poles, do not restrict pedestrian access. This zoning system was originally adopted in Portland, Oregon, and has become a common practice in many cities. The four zones and the recommended minimum standards that comprise the zone system are listed below in Table III.

The sidewalk zone includes sidewalks as buffers between roads and pedestrian paths. A garden/furniture zone is a designated area for benches, street trees, newspaper boxes, decorative signs, or other types of obstructions between sidewalks and pedestrian paths. The pedestrian zone is a clean sidewalk area. The frontage zone is the buffer between the sidewalk and the building line. Figure 2 shows Haddon Avenue in Collingswood Borough, Camden County. The pavement configuration there roughly corresponds to the FHWA recommendations outlined in Table III.



Figure 2. Configuration for roadside’s sidewalk. Source: FHWA, 2001in (dvrpc 2011)

Table III. Dimensions for Sidewalk Zone System

Zone	Minimum Width
Curb Zone	152 mm (6 in)
Planter/Furniture Zone	610 mm (24 in) [1.22 m (48 in) if shading tree available]
Pedestrian Zone	1.525 m (60 in)
Frontage Zone	760 mm (30 in)*
Total Sidewalk Corridor	3.10 m (10 ft)*

Source: FHWA, 2001in (dvrpc 2011)

B. Traveler’s evaluation of the spatial characteristics of the pedestrian path

After evaluating the connectivity of the pedestrian and bicycle network in DTW Kuta in supporting the movement of pedestrian tourists, the role of policy in the development of transportation infrastructure is key in supporting sustainable tourism. Therefore; there is a need for a policy to promote using bicycles, develop pedestrian facilities that are safer and more comfortable, such as building lobbies along the road so that pedestrians can avoid rain and heat (RakaMandi and Joni 2017).

Tourist satisfaction usually refers to the satisfaction of tourists with a DTW. This is often thought of as a result of the quality of the travel experience (Richard A Spreng 1996) and is very strongly correlated with DTW success over the long term (Masiero, Qian, Fong, & Law, 2018) in (Linchuan Yang a 2019). This represents a function of the various attributes offered by DTW. Furthermore, a large body of literature has focused on the relationship between attribute satisfaction and overall tourist satisfaction and identified many determinants of overall satisfaction.

The study found that most of the respondents agreed there was easy access and a short walking distance to the places they wanted to visit. The places are easily accessible from the transit station (stop). However, the path that is directly connected to the destination is not considered a critical factor. The results show that pedestrian movement in the study area is more oriented towards land use and towing elements than pedestrian path connectivity. Meanwhile, most of them agreed that there were some points of interest along the walking route, though with many obstructions along the trail as well. This can be attributed to sidewalks obstructed by street furniture, business activities, motorbikes, and other vehicle parking. Furthermore, upon observations, there were ongoing construction activities that contributed to blocking the sidewalks, activities such as street vendors and vendors selling on sidewalks also add to the difficulty for pedestrians to walk from one location to another. To make things worse, some buildings do not allow public access across their property boundaries, leaving little or no room for sustainable pedestrian movement. (Figures 3 & 4).

The bus station or stop is the passenger's first point of contact with the transportation system; thus it should be designed as attractive as possible. If financially feasible, the following convenience aspects should be realized: 1) considered more public transport stops, 2) an elevated area around bus stops to improve passenger safety, 3) information for passengers (fare information, stop signs, bus route information depart from the bus stop, schedule, route map, map of the surrounding area), 4) A ticket machine, 5) protection against weather, 6) more seating. Especially in tourism destinations such as Kuta, the accessibility of public transport stations/stops does not only depend on bus routes but also on other forms of transportation. Suitable interfaces should be provided for this as well. Facilities that are suitable for dropping off passengers at stops or stations (sometimes called Kiss & Ride zones), pedestrians need safe and attractive sidewalks. In addition, there should be sufficient area for taxis, etc.

In reality, there are many problems with the facilities for pedestrians in the Kuta area; such as the condition of the sidewalk which has been damaged in several segments, traders who use the sidewalk as a place to trade, hotels using the sidewalk, and inadequate width of the sidewalk, as shown in Figure 3.

Tourists expect pedestrian facilities to be one of the concerns to support mobility and reduce emissions in the DTW Kuta area. However, the poor quality of the sidewalks and pedestrian facilities hinders walking activities in most areas of Kuta. In this condition, consideration to improve and provide facilities to run seems imperative. Under unfavorable or unsafe conditions (waiting for AU in a dirty and unsafe area, or walking on a busy street with no sidewalks), time spent walking, cycling, and using AU has two or three times the cost of the time it costs spent on traveling, depending on the degree of inconveniences (Litman. 2009) in (Litman, 2021). To ensure pedestrian facilities are walkable and accommodate basic requirements, facility planning and design must apply environmentally friendly concepts as well as a walkability index that focuses on identifying and measuring physical and social factors that affect pedestrian activity (World Bank, 2008). This index is useful for identifying and assessing several factors that can support and challenge the improvement of pedestrian facilities and affect the quality of walking. It is hoped that this approach can encourage walking and reduce emissions from vehicles. By combining the green city and walkability index, this study seeks to develop an understanding and identify several significant factors to support the provision of green pedestrian facilities in the DTW Kuta area.



Figure 3. Pedestrian arrangement to support the smooth running of public transport (PT)

Furthermore, from observations made on Jalan Legian in Kuta Bali, which is the second most popular area after the Kuta beach tourist attraction. It was found that most tourists who are traveling to Jalan Legian Kuta during the day will walk on the sidewalk. Along Jalan Legian Kuta, there are many small shops, large shops, bars, restaurants, and hotels. Aside from being a place for shopping, Jalan Legian at night turns into a nightlife center. Based on observations (see Figure 4), it can be seen that the arrangement here is almost the same as on the Kuta beach road.



Figure 4. Sidewalk Conditions on Jalan Legian – Kuta

C. Bicycle route planning

Regarding the planning of bicycle lane routes, the choice of route is part of the characteristics of the trip in addition to the destination and choice of mode. Bike path routes must be designed in a network that is connected to the main purpose of the trip in the form of public spaces. The route includes the available alternative routes along with the parking or rest spaces provided. Reflecting on the developed countries, bicycle paths are connected in a network of routes that can reach all parts of the city and are separated from pedestrians. There are even bicycle lanes on service roads on several toll roads that accommodate access for industrial workers. This is still coupled with a fairly shady green path and the anticipation of bicycle lanes at pedestrian bridge facilities.

There are no specific plans for bicycle lanes or the development of bicycle lanes in Bali, but bicycle lovers and local residents usually seek and create specific cycling destinations in rural areas in Bali (see Figure 5). Facilities for tourists or local people who want to use bicycles are also inadequate. There are no special lanes and storage for bicycles, and bicycle rental places are not yet widely available.

On one-way streets, it may be more appropriate to paint the bike path on the right side of the road unlike now on the left. Right-hand side bike lanes can reduce conflicts with parked cars due to possible 'doors', while all cars have a driver, a much larger number of passengers. The right-hand side bike lane also reduces the potential for conflict with buses stopping to pick up and drop passengers.

Until now, there has been no focus on bicycle transportation planning activities in Bali, especially in DTW Kuta. The initiative to design and build a 50 km regional bicycle network started ten years ago. The project received continuous and unwavering support throughout the development, design, and construction process. This section consists of on-road and off-road bike routes centered along Kuta beach. The villages on the outskirts of DTW Kuta are the more densely populated areas and also the easiest for cycling due to their relatively flat topography.

Bicycles can play an important role in the transportation system for recreational trips, errands, social excursions, and commuting. While a relatively small percentage of the adult population regularly uses bicycles, establishing safer bicycle facilities and more bicycle-friendly policies could increase the number of cyclists on the road, provide active transport options, increase individual mobility, and improve regional environmental health. Figure 4 shows the possible steps between a particular planning decision and its eventual impact.

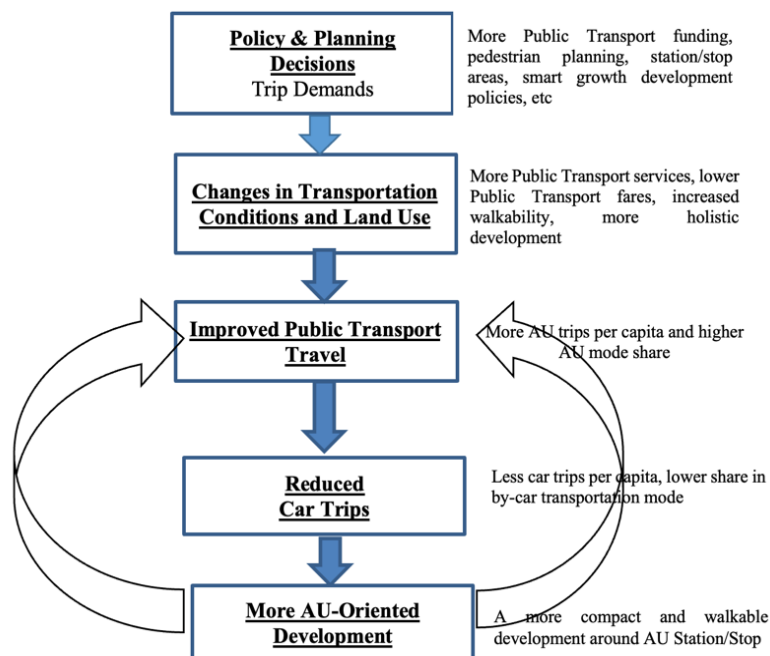


Figure 5. Impact of Policy and Planning Decisions. Source processed from: (Litman 2021)

V. CONCLUSION

This study is still exploratory in nature because the number and sampling technique still does not meet the requirements of a study on the development of pedestrian facilities as the core of the transportation system. However, the studies that have been conducted have been able to explain well the behavior of choosing bicycle and walking modes. Meanwhile, public transport includes a wide range of transportation services available to the general public, from shared taxis and vanpools, to buses, and their variations. These services can play a variety of roles in modern transportation systems and have a variety of benefits and costs, including some that are indirect and external.

Therefore, the results of this study can also be used as a reference for the management of bicycle and walking operations. Based on the results and discussion associated with transportation management, it can be concluded:

1. The choice of bicycle and walking mode will be influenced by the level of service attributes, socioeconomic attributes, and location attributes. In the study, the service attributes that are considered to affect the choice of bicycle or walking mode are easy access and short walking distances to the places they want to visit. While the socio-economic attributes that are considered influential are the time of travel and the purpose of the trip and location attributes such as there are interesting places along the pedestrian or bicycle route.
2. Pedestrian movement in the study area is more oriented towards land use and towing elements (malls, tourist attractions, etc.) rather than pedestrian road connectivity. That means the location attribute has the most impact and needs to be improved. The findings suggest that a pedestrian-oriented environment can make a major contribution to walkability through the integration of various street uses and activities.
3. To increase the influential attributes from observations and interviews, it is necessary to understand aspects as follows:
 - a. Congestion in the Kuta area is caused by the large number of tourists visiting and in moving activities, most of them use motorized vehicles. The sidewalks in the Kuta area are widely used as a place for trading, in addition to that, there is no special lane for bicycle users, which is an obstacle that must be fixed immediately.
 - b. Aligned with Other Programs – Kuta as a tourist destination will coordinate the pedestrian improvement project with other programs and initiatives such as the planning, local road program, Local Area Service improvement, Bike Master Plan, and Trails Master Plan;



- c. Walking and bicycle activities are an alternative to implementing sustainable transportation in the Kuta area.
- d. Public transport improvements are likely to increase mobility for non-drivers, especially if public transport provides the catalyst for a more walkable environment. As a result, evaluations that consider the objective of equity tend to prioritize transportation over road repairs, especially comprehensive programs that include transit-oriented development (TOD).

VI. SUGGESTIONS

This section highlights some of the best practices in pedestrian planning, particularly those that can be incorporated through policy planning and implementation. The following options:

1. The width of the pedestrian zone of five feet / 60 inches (1,525 mm) is the minimum standard and should be met by most areas or pedestrian communities.
2. It is recommended that the continental design be used consistently to mark all crossings due to their visibility to pedestrians and vehicles.
3. The phases of the crossing signal should be long enough to ensure that children, people with disabilities and the elderly have time to cross.
4. In the case of pedestrian lighting, crossings should be given special attention so that pedestrians waiting on the side of the road or at the crossing can be seen by drivers.
5. All roads (except those that expressly prohibit bicycle access) must be designed for cyclists.

At the very least, when applying bicycle lanes to the road, the AASTHO standard or the Highways standard is the minimum that must be considered.

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