

THE CHARACTERISTICS OF LAND USE AND TRANSPORTATION INFRASTRUCTURE IN TOURISM AREAS IN BALI PROVINCE

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Abstract

Due to the over-concentration of tourism infrastructure development in South Bali, Bali's other tourist areas have experienced uneven tourism development and economic disparities. In this research, a mixed approach of qualitative and quantitative methods is used to evaluate the characteristics of land use and transportation infrastructure in Bali's tourist areas. Both primary and secondary statistics come from observation and related organizations, respectively. This research demonstrates that the land use in South, Central, and East Bali is very well characterized by lodging and amenity facilities, tourism services, and utilities. Moderate accessibility, an unorganized parking system, a good supply of public transportation, good road performance, and a good supply of terminals, airports, and harbors are characteristics of the transportation infrastructure. In contrast, land use in North and West Bali is defined by a lack of amenities, utilities, and tourist services. Low accessibility, inadequate parking and public transportation, excellent road performance, well-stocked terminals, and subpar airports and seaports are characteristics of the transportation infrastructure. Secondary evidence showing unequal amounts of land use and transportation infrastructure, which results in unequal numbers of tourist visits, supports this. Further research needs to examine the relationship between land use, transportation infrastructure and the development of tourist areas.

Keywords: land use, tourist area development, transportation infrastructure.

Introduction

Bali is one of the Indonesian provinces whose economy is dependent on tourism. Tourism development in Bali is gradually changing the lifestyle of Balinese people from agriculture to tourism industry, nevertheless, though tourism development are flourishing, farmers and agricultural activities are still important in Bali. Bali's regional development and tourism infrastructure development are too concentrated in southern Bali. For this reason, a strategy for regulating land use and building transport infrastructure is needed in tourist destinations in Bali. Unequal tourism development hinders the rest of Bali and creates economic disparities that create new problems such as traffic congestion and high accident rates (Kompasiana.com, 2021). This uneven development of tourism is certainly not good because it will hinder other areas in Bali and create economic disparities which will lure people to move to the South Bali area and its surroundings to look for work because they are considered to have more opportunities to increase their standard of living, but without realizing it it will cause new problems such as

congestion and high crime rates. Traffic jams that occur in a number of areas need integrated handling so as not to further disrupt tourism activities, if traffic jams are not resolved immediately, the impact will expand and will become a threat to tourism (Relawanto, 2018).

In addition to congestion problems, several tourist areas in Bali are also constrained by problems such as parking, both related to parking capacity and parking pattern arrangements that have not been well organized, problems with accessibility to tourist areas, problems with modes of transportation to tourist areas that have not been organized are also obstacles to the development of several tourist areas. in Bali, because not all areas have complete transportation services (Communications Department, 2020). Based on these issues, this study aims to identify the existing characteristics of land use and transport infrastructure in tourist destinations as solutions for balancing the development of tourist destinations in Bali.

Literature Review

A. Land Use

Land use (land) is a form of activity or effort to utilize land to meet certain needs (Hardjowigeno & Widiatmaka, 2018). The development of regional space is a benchmark for the development of tourism activities such as changes in land use, expansion of built-up areas experienced a shift due to the addition of land functions (Da Costa et al., 2021).

B. The Characteristics of Land Use in Tourism Areas

The development of tourism as a human activity, including the construction of accommodation, infrastructure, transportation, tourism and other activities, contributes to significant changes in land cover and land use (Irshaddin, 2020). The Law of the Republic of Indonesia No. 10 of 2009 on tourism, stipulating that a tourist area is an area of a certain area built or provided to meet the needs of tourists to become a tourist target, while a strategic tourist area is an area with the main function of tourism or with potential for tourism development. have a significant impact on one or more aspects such as economic growth, society, culture, capacity building of natural resources, environmental capacity, national defense and security.

The main drivers of land use efficiency are (i) economic impact of tourists, (ii) occupancy intensity and (iii) density of beds per area covered by residential buildings and visitors. Land use planning, building design and facilities management also play a major role in improving land use efficiency in the tourism sector (Kytzia et al., 2010). Research by Haneef (2017); Robustin et al., (2018); Mandic et al., (2018) ; Uswatun Hasanah, (2020); Dewandaru et al., (2020); Supraptini & Supriyadi (2020); Abdulhaji & Yusuf (2016); Muslim (2021) found that the components of tourism such as accommodation, access, amenities, attractions and supporting facilities (utilities) have a positive impact on the development of the destination tourism, tourist loyalty and length of stay. Another study by Bhuiyan et al., (2021) found that staff, accessibility, attractions and facilities influence tourist satisfaction.

C. Transportation Infrastructure

Types of infrastructure according to Kodoatie, 2005, namely: (1) Physical infrastructure is infrastructure that has actual physical form and is primarily concerned with the public interest of the community. For example: airports, railways, ports, docks, irrigation canals, sewers, dams, highways, etc. (2) Non-physical hard infrastructure is hard infrastructure that has no actual physical form, but is useful in supporting other physical infrastructures and is concerned with public satisfaction. For example, electricity supply, availability of drinking water, communication network, availability of gas pipelines, etc. ; (3) Soft infrastructure takes the form of an institution or an institutional framework and involves community service activities provided by the government. For example, postal service, police service, etc.

Rozy & Koswara (2017) argue that in the development of an area, infrastructure is a strategy of providing facilities and infrastructure. The role of infrastructure affects not only the development of the region but also the tourism sector. Transport infrastructure is the basic public means, such as roads, railways, seaports and airports provided by the government and/or private sector to accelerate and improve services or the economy of a region/country Palilu (2018). Transport infrastructure will have a major impact on production costs, with transport infrastructure being an increase in accessibility, which can facilitate the more efficient movement of goods and services. Lestari & Suhadak (2019).

D. The Characteristics of Transportation Infrastructure in Tourism Areas

Transport infrastructure is an integral part of tourists' travel activities, in which a well-developed transport infrastructure is necessary for tourism development in a destination. The development of transport infrastructure has facilitated the development of mass tourism Mandic et al., (2018). The growth in tourist numbers in some destinations is closely related to incentives and the level of development of the transport system in the region. Tourist destinations connected by good road, rail and air transport systems will receive the maximum number of tourists (Hartono & Listifidah, 2011).

Research by Jian et al., (2017); Kanwal et al., (2020); Khan et al., (2017); Sulistyorini (2020); Kartika & Wahyono (2019), examined the influence of body transport infrastructure i.e. roads, seaports and airports to the interest of tourists' visit. The results indicate the availability of transport infrastructure such as roads, ports and airports as increase interest in tourists' visit to a destination. Another study by Astami and Astami & Handayeni (2015) looked at road conditions, modes of transport and transport aids as infrastructure that play an important role in the development of a tourist attraction. tourism. While Ouariti & Jebrane (2020), in their study examined the influence of transport infrastructure, namely roads, airports and railway stations on tourist's length of stay. The results of the study indicates that transport infrastructure, namely roads, airports and railway stations, has a positive impact on the length of stay of tourists in a tourist area.

Research Methods

This study uses a mixed method that combines qualitative and quantitative methods. Mixed methods are developed based on the practical philosophy that qualitative and quantitative methods are compatible and complementary. The data obtained are more complete, complete and targeted (Sugiono, 2017). Primary data collection is conducted through observational methods of direct field observations and interviews with resort managers to obtain land use characteristics, tourism elements i.e. accommodation, facilities, tourism service facilities, facilities, accessibility and transport infrastructure characteristics. will be split. The transport component reflects availability of parking, transport, road performance, passenger terminals, airports and ports. Meanwhile, secondary data from previous institutions, articles, and studies relevant to this study were obtained to support the primary data.

The location of this research is in a tourist area in Bali, where the determination of the location sample uses proportional sampling. The study is conducted in a popular tourist area of Bali, where the concept of regional destination development for tourism (DPD-Destinasai Pariwisata Daerah in Indonesian) was realized by taking into account the province's geographic conditions, the potential to attract tourists as a competitive force to promote, rationally allocating tourism development according to potentials, and connecting tourism development to sectors related to tourism. Based on this, the Province of Bali has created five regional tourism destinations (DPDs) with distinct themes that are backed by provincial strategic areas (KSPs; known in Indonesian as Kawasan Strategis Provinsi) that have a tourism-related focus.

The first of these are the South Bali Area Tourist Attractions (DPD); the second is the Regional Tourist Destination (DPD) East Bali; the third is the North Bali Area Tourist Attractions (DPD); the fourth is the West Bali Area Tourist Attractions (DPD); and the fifth is the Central Bali Tourism Destinations (DPD). District/city coverage and distribution of strategic regional tourist areas (KSPD-Kawasan Strategis Pariwisata Daerah in Indonesian) are shown in Figure 1 and Table 1 below (Bali Province Regulations, 2020):



Figure 1: Bali Regional Tourism Strategic Area
[Source: Bali Province Regulations, 2020]

Table 1: Distribution of Regional Tourism Destinations (DPD) in Bali

No	DPD	Regency/City	Development Theme	KSPD
1	South Bali	Denpasar City; Badung Regency; Kabupaten Southern Part of Gianyar Regency; Southern Part of Tabanan Regency	The mainstay of beach and leisure tourism is supported by cultural tourism, marine tourism, shopping tourism, MICE, and others	KSPD Sanur
				KSPD Nusa Dua
				KSPD Canggu
				KSPD Kuta
				KSPD Lebih
				KSPD Tanah Lot
2	East Bali	Klungkung Regency; Karangasem Regency	Marine tourism and adventure tourism are supported by cultural tourism, nature tourism, village tours, cruise tours, and others	KSPD Nusa Penida
				KSPD Tegal Besar-Goa Lawah
				KSPD Candidasa
				KSPD Ujung KSPD Tulamben
3	North Bali	Central Part and Eastern Coast of Buleleng Regency	The mainstays of marine tourism and cultural tourism are supported by natural tourism, village tours, village tourism, yachting, beach recreation, and others	KSPD Air Sanih
				KSPD Kalibukbuk/Lovina
4	West Bali	Jembrana Regency; Western Part of Buleleng Regency; Western Part of Tabanan Regency	Marine tourism and cultural tourism are supported by natural tourism, village tours, national parks, tourist villages, and others	KSPD Batuampar
				KSPD Candikusuma
				KSPD Perancak
				KSPD Soka
				KSPD Gilimanuk KSPD Palasari
5	Central Bali	Kabupaten Tabanan bagian utara; Kabupaten Gianyar bagian tengah; Kabupaten	Nature tourism, cultural tourism, village tourism, creative tourism, supported by agro-tourism, historical	KSPD Ubud
				KSPD Bedugul – Pancasari

		Bangli; Kabupaten Buleleng bagian selatan	tourism, museums, back-to-back tours, hiking, tracking, eco- tourism, adventure tourism, culinary, village tours, nature tourism parks, lake tourism, and others	KSPD Kintamani
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[Source : Bali Province Regulations, 2020]

The data analysis method used in this study is a Qualitative Descriptive method use Microsoft Excel 2013 as software, through several processes, namely data collection, data reduction, data presentation, and data verification/conclusion (Sugiono, 2017), as presented in the figure below:

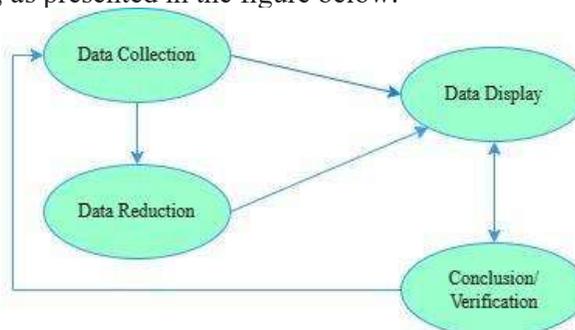


Figure 2: Data Analysis Methods

[Source : Sugiono, 2017]

Results and Discussion

Tourism remains an excellent industry in the province of Bali, as evidenced by the wide range of facilities and infrastructure in the form of hotels, villas, restaurants and other infrastructures built to support the tourism industry. This is done because tourism contributes significantly to Bali's regional income. In addition, the tourism industry also attracts a large number of workers in the formal and informal sectors. On the other hand, the tourism industry also encourages the development of industries and handicrafts so that they can indirectly pull the local economy in Bali.

Tourism is not only the mainstay of the Bali provincial government, but also the mainstay of most people in Bali. Tourism development in Bali cannot be separated from the uniqueness of tourist areas supported by comprehensive tourism infrastructure and facilities. Based on observations, regional development and tourism infrastructure development in Bali is too limited in the South Bali area, leading to inequalities in tourism development in other regions in relation to tourism. Land use for tourism components such as accommodation, facilities, tourism service facilities, facilities, accessibility and infrastructure, especially transportation infrastructure such as parking capacity, mode of transport, operational efficiency of passenger transport routes, airports, seaports serving the

sightseeing of domestic and foreign tourists. Characteristics of Land Use and Characteristics of Transportation Infrastructure in Tourism Areas in Bali based on primary data are presented in table 2 and table 3 below:

Table 2: The Characteristics of Land Use in Tourism Areas in Bali

		DPD				KSPD							
		North Bali		West Bali		South Bali				Central Bali		East Bali	
		Lovina	Air Sanih	Soka	Pernak	Sanur	Kuta	Nusa Dua	Tanah Lot	Bedugul	Ubud	GoLawah	Candi Dasa
Accommodation Facilities	Hotel	Present	Not Present	Not Present	Not Present	Present	Present	Present	Present	Present	Present	Not Present	Present
	Villa	Present	Present	Not Present	Present								
	Campsite	Not Present	Present	Not Present	Not Present	Not Present							
	Other Lodging	Not Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present
Amenity Facilities	Restaurant	Present	Present	Present	Present								
	Depot	Present	Present	Present	Present								
	Culinary Center	Present	Not Present	Present	Present	Present	Present	Present	Present	Present	Present	Not Present	Present
Tourism Service Facilities	Public Toilet	Present	Present	Present	Present								
	Management Office	Not Present	Not Present	Present	Present	Present	Present	Present	Present	Present	Not Present	Not Present	Present
	Security Office	Present	Present	Present	Present								
	Park	Not Present	Present	Present	Present	Not Present	Not Present	Not Present					
	Worship Place	Present	Present	Present	Not Present								
	Information Center Office	Present	Not Present	Not Present	Not Present	Present	Present	Present	Present	Present	Present	Not Present	Present
Tourism Utilities	Shopping Center	Present	Not Present	Not Present	Not Present	Present	Present	Present	Present	Present	Present	Not Present	Present
	ATM	Present	Not Present	Not Present	Not Present	Present	Present	Present	Present	Present	Present	Not Present	Present
	Bank	Present	Not Present	Not Present	Not Present	Present	Present	Present	Present	Present	Present	Not Present	Not Present
	Money Changer	Present	Not Present	Not Present	Not Present	Present	Present	Present	Present	Present	Present	Not Present	Present

		Souvenir Shop	Present	Not Present	Not Present	Not Present	Present	Present	Present	Present	Present	Present	Not Present	Present
		Health Facilities	Present	Not Present	Not Present	Not Present	Present	Present	Present	Present	Present	Present	Not Present	Not Present
	Accessibility	Accessibility	Accessible	Accessible	Accessible	Accessible	Accessible	Accessible	Accessible	Accessible	Accessible	Accessible	Accessible	Accessible

[Source: Survey Results]

Table 3: The Characteristics of Transportation Infrastructure in Tourism Areas in Bali

DP D	KSPD	Infrastruktur Transportasi										
		Parking Availability			Transportation Mode		Road Performance			Terminal		
		Land	Pattern	Parking Facilities	Public Transport	Various Modes of Transportation	Road Pavement	Road Traffic Condition	Road Sign and Marking	Highway	Airport	Seaport
North Bali												
	Lovina	Present	Not Present	Not Present	Present	Not Present	Present	Present	Present	Not Present	Not Present	Present
	Airsanih	Present	Not Present	Not Present	Present	Not Present	Present	Not Present	Present	Not Present	Not Present	Present
West Bali												
	Soka	Present	Not Present	Present	Not Present	Not Present	Present	Smooth	Not Present	Not Present	Not Present	Not Present
	Perancak	Present	Not Present	Not Present	Not Present	Not Present	Present	Smooth	Not Present	Not Present	Not Present	Not Present
South Bali												
	Sanur	Present	Present	Present	Present	Present	Present	Congested	Present	Present	Present	Present
	Kuta	Present	Present	Present	Present	Present	Present	Congested	Present	Present	Present	Not Present
	Nusa Dua	Present	Present	Present	Present	Present	Present	Not pPresent	Present	Present	Present	Not Present
	Tanah Lot	Present	Present	Present	Not Present	Not Present	Present	Not pPresent	Present	Not Present	Not Present	Not Present
Central Bali												
	Bedugul	Present	Present	Present	Present	Not Present	Present	pPresent	Present	Not Present	Not Present	Not Present
	Ubud	Not Present	Not Present	Not Present	Present	Present	Present	pPresent	Present	Present	Not Present	Not Present
East Bali												
	Goa Lawah	Present	Not Present	Not Present	Not Present	Not Present	Present	Not pPresent	Present	Present	Not Present	Not Present
	Candidasa	Present	Not Present	Not Present	Not Present	Not Present	Present	Not pPresent	Present	Present	Not Present	Not Present

[Source : Survey Results]

Meanwhile, based on secondary data, The characteristics of land use in tourist areas in Bali are presented in table 4 and figure 3, while the characteristics of transportation infrastructure in tourist areas in Bali are presented in table 5 and figure 4 below:

Table 4: The Characteristics of Land Use in Tourism Area in Bali

DPD (Regional Tourist Destination)	KSPD (Regional Tourism Strategic Areas in Indonesian)	Year					
		2017		2018		2019	
		Accommodatio n Facilities	Amenity Facilitie s	Accommodatio n Facilities	Amenity Facilitie s	Accommodatio n Facilities	Amenity Facilitie s
North Bali							
	Lovina	33	30	44	48	44	90
	Airsanih	1	4	4	6	17	38
West Bali							
	Soka	7	87	12	81	10	67
	Perancak	12	5	120	19	0	5
South Bali							
	Sanur	120	215	117	248	110	1087
	Kuta	247	122	22	114	391	516
	Nusa Dua	117	326	15	339	117	337
	Tanah Lot	2	98	939	360	53	561
Central Bali							
	Bedugul	14	180	8	340	10	110
	Ubud	326	777	44	494	939	494
East Bali							
	Goa Lawah	1	23	7	23	1	23
	Candidasa	8	23	12	23	9	14

[Source : BPS Bali Province, 2020]

Figure 3: The Characteristics of Land Use in Tourism Areas in Bali

Table 5: The Characteristics of Transportation Infrastructure in Tourism Areas in Bali

DPD (Regiona l Tourist Destinati on)	KSPD (Regiona l Tourism Strategic Areas in Indonesi an)	Year								
		2017			2018			2019		
		Road Lengt h (Km)	Type of Road Pavem ent	Road Condi tions	Road Leng th (Km)	Type of Road Pavem ent	Road Condi tions	Road Leng th (Km)	Type of Road Pavem ent	Road Condi tions
North Bali										
	Lovina	33	Asphalt	Good	33	Asphalt	Good	33	Asphalt	Good
	Airsanih	50	Asphalt	Good	50	Asphalt	Good	50	Asphalt	Good
West Bali										
	Soka	10	Asphalt	Good	10	Asphalt	Good	10	Asphalt	Good
	Perancak	137	Asphalt	Good	200	Asphalt	Good	204	Asphalt	Good
South Bali										
	Sanur	134,3 65	Asphalt	Good	150,1 5	Asphalt	Good	165	Asphalt	Good
	Kuta	114	Asphalt	Good	114	Asphalt	Good	114	Asphalt	Good
	Nusa Dua	71	Asphalt	Good	81	Asphalt	Good	81	Asphalt	Good
	Tanah Lot	189	Asphalt	Good	190	Asphalt	Good	190	Asphalt	Good
Central Bali										
	Bedugul	97,7	Asphalt	Good	97,7	Asphalt	Good	114	Asphalt	Good

	Ubud	177	Asphalt	Good	177	Asphalt	Good	177	Asphalt	Good
East Bali										
	Goa Lawah	58	Asphalt	Good	58	Asphalt	Good	58	Asphalt	Good
	Candidasa	120,25	Asphalt	Good	120,25	Asphalt	Good	120,25	Asphalt	Good

[Source : BPS Bali Province, 2020]

Figure 4: The Characteristics of Transportation Infrastructure

Based on the uneven development of land use and transportation infrastructure in tourist areas in Bali, there is an imbalance in the development of the number of tourist visits, as presented in table 6 below:

Table 6: The Characteristics of Land Use, Transportation Infrastructure dan Tourist Visits

DPD (Regional Tourist Destination)						
Year	Variables	North Bali	West Bali	South Bali	Central Bali	East Bali
2017	Land Use (Piece)	68	111	1.247	1.297	47
	Transportation Infrastructure (Kilometers)	83	147	508,365	274,7	178,254
	Tourist Visits (People)	7.763	8.509	4.866.346	1.768.440	109.345
2018	Land Use (Piece)	102	119	1.452	1.788	47
	Transportation Infrastructure (Kilometers)	83	210	535,15	274,7	178,254
	Tourist Visits (People)	9.409	8.407	4.774.400	3.355.667	104.734
2019	Land Use (Piece)	189	82	3.172	1553	38
	Transportation Infrastructure (Kilometers)	83	214	550	274,7	178,255
	Tourist Visits (People)	1.052.126	7.489	3.191.258	733.669	96.584

[Source :BPS Bali Province, 2020]

Conclusions

The study results show that the land use characteristics of tourist areas such as accommodation, leisure facilities, tourism services and utilities in southern, central and eastern Bali are very complete and reasonable, and the degree of access is relatively good. In contrast, accommodation, leisure and tourism services and utilities in north and west Bali have incomplete and inadequate land use characteristics and relatively low accessibility.

On the other hand, the transport infrastructure in tourist destinations in South, Central and East Bali is characterized by ample parking spaces but lack of

regular parking patterns. Public transport is available but not working optimally. Roads in tourist areas are congested and passenger terminals are well maintained but not optimal. Although airports and seaports are well developed, they still cannot serve all tourist destinations, and some tourist destinations are still far away.

Parking lots in the tourist areas of north and west Bali are still lacking in terms of capacity and layout. Public transport is still lacking, road performance is good, and terminals, airports and seaports for passenger transport are inadequate. According to secondary data, land use development in terms of number of accommodation and residential facilities and uneven development of transport infrastructure in terms of road development lead to imbalance in the number of tourists visiting. Based on the conclusions obtained, it is necessary to carry out further research related to the relationship between land use and transportation infrastructure in order to achieve equitable development of tourist areas in Bali.

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