

Analysis of Bali Tourism Data to Map the Potential of Tourism Objects

Rizki Mawan^{*1}, M. Rinandar Tasya², Dimas Wiryatari³, Rooy Marthen Thaniket⁴, M. Kurniawan⁵, Harianto⁶

^{1,2,3,4,5,6} Magister Teknik Informatika Universitas AMIKOM Yogyakarta,

E-mail: ^{*1}rizki.mawan@students.amikom.ac.id, ²rinandar.t@students.amikom.ac.id,

⁴dimas.wiryatari@students.amikom.ac.id, ⁴rooy.thaniket@students.amikom.ac.id,

⁵muhamad.17@students.amikom.ac.id, ⁶harianto.27@students.amikom.ac.id

Abstrak

Pariwisata tidak bisa lepas dari kehidupan manusia. Beberapa tahun terakhir pariwisata telah menjadi budaya bagi masyarakat modern baik lokal maupun mancanegara. Untuk meningkatkan potensi objek wisata bisa diketahui dengan adanya fasilitas-fasilitas umum disekitarnya seperti rumah sakit, restaurant, bank, Pertamina, bar, toko, hotel dan coffee. Tujuan penelitian ini untuk mengetahui bagaimana pengaruh fasilitas-fasilitas tersebut dalam potensi meningkatkan jumlah pengunjung. Untuk mengetahui pengaruh fasilitas-fasilitas umum yang tersedia pada objek wisata dalam potensi meningkatkan daya tarik pengunjung, harus diketahui berapa jarak fasilitas-fasilitas tersebut dari objek wisata dan fasilitas-fasilitas apa saja yang ada di sekitar objek wisata tersebut. Jarak antara fasilitas pada objek wisata dapat dihitung menggunakan rumus yang telah ditentukan. Objek wisata yang paling banyak dikunjungi adalah Taman Budaya yang bertempat di Kota Denpasar dengan total kunjungan 7.500 dari tahun 2013-2018. Kebangsaan yang paling banyak berkunjung ke Bali pada tahun 2018 adalah Middle East dan Negara Turkey yaitu sebanyak 9.247. Wisatawan mengunjungi Bali melalui 2 mode transportasi. Adapun 2 mode transportasi tersebut adalah air dan udara. Total keseluruhan jumlah pengunjung dengan mode transportasi air sebanyak 20,460,556.00 sedangkan mode transportasi udara sebanyak 237,428.00.

Kata kunci : Analisis Data, Pariwisata Bali, Potensi.

Abstract

Tourism can not be separated from human life. The last few years tourism has become a culture for modern society both locally and abroad. To increase the potential of tourist attractions can be known by the presence of public facilities around it such as hospitals, restaurants, banks, Gas Stations, bars, shops, hotels and coffee. The purpose of this study was to determine how the influence of these facilities in the potential to increase the number of visitors. To determine the effect of public facilities available on attractions in the potential to increase visitor attraction, it must be known how far the facilities are from attractions and what facilities are in the vicinity of these attractions. The distance between facilities on the tourist attraction can be calculated using a predetermined formula. The most visited tourist attraction is Taman Budaya which is located in Denpasar Regency with a total of 7.500 visits from 2013-2018. The most visited nationalities in Bali in 2018 are Middle East and the State of Turkey which is 9,247. Tourists visit Bali through 2 modes of transportation. The 2 modes of transportation are water and air. The total number of visitors with the mode of water transportation was 20,460,556.00 while the air transport mode was 237,428.00.

Keywords: Data Analysis, Bali Tourism, Potential.

1. INTRODUCTION

Bali is the belle of one of the tourist destinations in Indonesia that brings tourists. The island of Bali is well known in foreign countries and the archipelago, so it is visited by many tourists, both foreign and domestic tourists. This is because the appeal of Bali that amazes tourists both because of culture, customs, diverse arts and stunning natural beauty, so that Bali is nicknamed The Last Paradise [1]. Tourism is a whole of related elements consisting of tourists, regions tourist destinations, travel, industry, etc. which constitute tourism activities. currently tourism is not foreign to be heard among the public at large, this activity carries out activities to visit or travel to a place that will indirectly affect the increasing number of tourists both local and foreign and places that have been visited by tourists will be known and introduced in others so as to make the attraction of tourism will quickly spread. Tourists are people who visit a place with a duration of more than one day or 24 hours, if below it is only called a normal visitor [2].

In Indonesia, especially the Province of Bali is known for its advanced tourism and can bring tourists who continue to increase every year, not only from local tourists but also foreign tourists. The reason Bali was chosen by tourists as a tourist destination is because the province of Bali is known to have a variety of tours ranging from cultural tourism offered, the natural beauty that is served, art performances and festivals that are always held throughout the year, culinary known to be very varied and tend to be desirable tourists to the culture of the local people who are always friendly to tourists who come to visit Bali so that Bali tourism is known to be very promising for tourists who want to visit. This is also evidenced by the tourism statistics of the province of Bali, which almost always experiences a significant increase every year. In 2015 the number of tourists was 8,611 people, then in 2016 it increased to 13,481, in 2017 it fell again to 12,580 and then the number of tourists again rose significantly in 2018 to 20,140. The amount was obtained based on BPS Bali Province data based on data visits per tourist attraction. Tourist attraction, especially in natural tourism is the largest contributor in the province of Bali, Tabanan regency is the largest contributor of tourists with a lot of visits 20,074 people followed by the second number by Gianyar district with 16,218 visits and then in the third position of the city of Denpasar with many visits 15,751 people and followed by districts - other regencies in the province of Bali. The growth of tourism in Bali is also inseparable from the advantages offered by each tourist attraction, both in terms of supporting facilities around the tourist area and other things that make the tourist attraction a prima donna for tourists who will come to visit.

Based on the explanation above, the purpose of this study is to analyze what strengths there are in attractions in the province of Bali and see the correlation between the variables of the facility to the number of visitors who have visited the province of Bali so that conclusions can be obtained to assess the quality of tourism in the province of Bali.

2. RESEARCH METHOD

The study was conducted by collecting data from several sources, while data sources were obtained through the Bali provincial tourism office website, the website of the Bali provincial statistics agency and Google Maps. Data that had been taken from several sources were carried out in a document and excel format to facilitate data retrieval. After the data is converted into an excel format, new databases and tables are created according to existing data. Following the flow of data collection and data search can be seen in Figure 1.

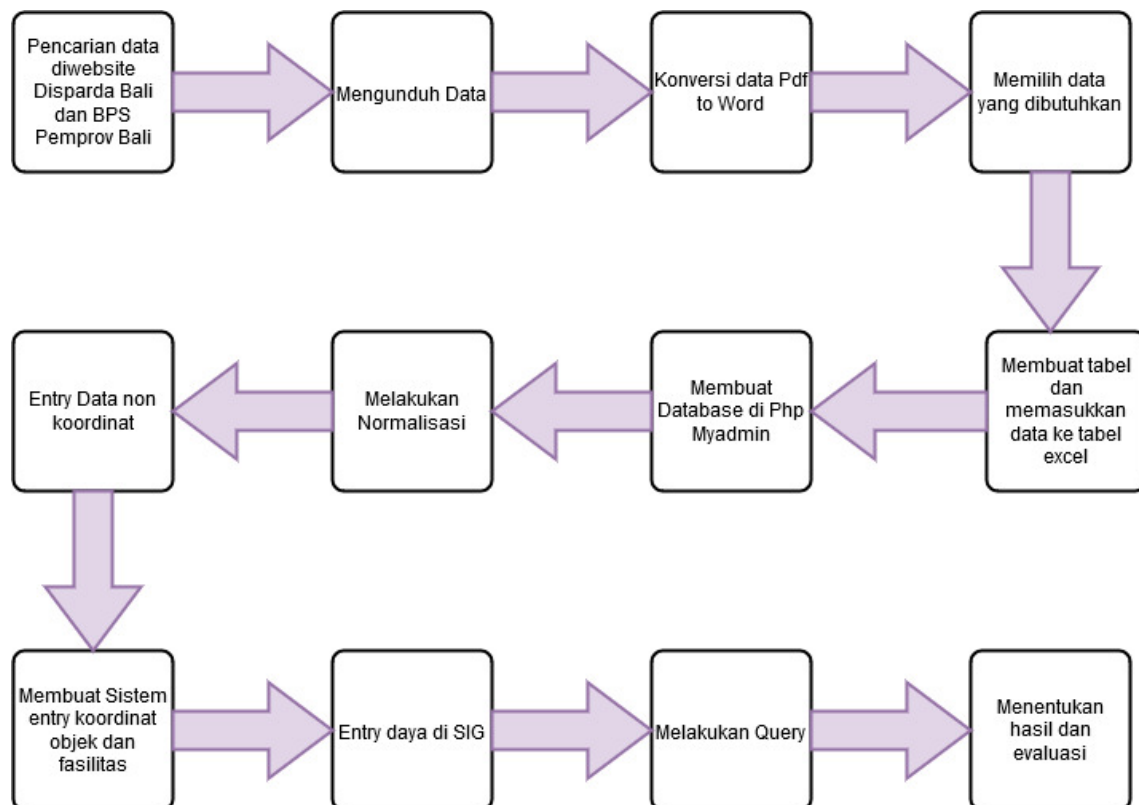


Figure 1. Data Collection Flow

The research phase was carried out by conducting a review of previous studies related to the database and data analysis using queries [3]. Data collected from the website of the Bali Provincial Government Tourism Office took the form of a recapitulation of the number of tourists, both foreign and domestic tourists. The recapitulation of tourists per year by country and the mode of transportation used from 2013 to 2018. The data on the recapitulation of foreign tourists per month by country only exists in 2018. While the recapitulation of the number of visitors both foreign and domestic tourists based on attractions visited only recapitulation per year, from 2014 to 2018.

The database is a collection of information preferably related information and better organized. The database consists of physical files that you set on the computer when installing database software. On the other hand, the database model is more a concept than a physical object and is used to create tables in your database. This section discusses databases, not database models [4]

Tourism is currently one of the spearheads of Indonesia in producing economic coffers [2]. Tourism Business is a business that provides goods and or services for meeting the needs of tourists and tourism operators. The tourism business is expected to improve the economy and also improve the welfare of the community.

Bali is a tourism paradise in Indonesia, various tourism businesses can be enjoyed on this island of the gods. For this reason, accommodation providers are one of the tourism businesses which are important aspects of tourism activities, whether natural or artificial tourism objects. Therefore many are competing to establish an accommodation service [3].

In this research a case study on the number of visitors to the attractions of the Bali provincial government. Data on the number of visitors obtained from the website of the provincial government of Bali tourism in the form of recapitulation. In this study aims to look for facilities that are near attractions. The facilities referred to in this study are restaurants, hotels, banks / ATMs, shops, parking lots, Pertamina / gas stations, coffee shops, bars, hospitals

and post offices. To determine the advantages and disadvantages of each tourist attraction, seen from the many facilities that are around the attraction. Determine the facilities closest to the attraction, the coordinates of each facility are used. The coordinates are then calculated for their proximity to the tourist attraction using the following formula.

$$\text{Distance between two points} = \sqrt{(y_1 - y_2)^2 + (x_1 - x_2)^2}$$

To measure the correlation of facilities to attractions in this study using the following formula.

$$r = \frac{n\sum xy - (\sum x)(\sum y)}{\sqrt{\{n\sum x^2 - (\sum x)^2\} \{n\sum y^2 - (\sum y)^2\}}}$$

n = Number of data pairs X and Y

$\sum x$ = Total Amount of Variable X

$\sum y$ = Total Amount of Variable Y

$\sum x^2$ = Square of the Total Amount of Variables X

$\sum y^2$ = Square of the Total Amount of Variables Y

$\sum xy$ = Multiplication Results of the Total Amount of Variables X and Y Variables

If the correlation value is close to 1, then x is positively correlated with y. Positive correlation means the greater the value of x, the greater the value of y. If the correlation value is close to 0, then x is less correlated with y. If the correlation value approaches -1, then x is negatively correlated to y. Negative correlation means the greater the value of x, the smaller the value of y.

3. RESULTS AND DISCUSSION

3.1. Data Collection and Analysis

Data processing in this study was conducted in two types of processing based on the type of data obtained. This was done in accordance with the main purpose of this study, which is to find advantages over a tourist attraction. The strengths that are included in this research are the supporting facilities such as hospitals, restaurants, banks, Pertamina, bars, shops, hotels and coffee that are around these attractions.

After being able to determine the facilities closest to the tourist attraction, then the number of tourists is then calculated based on the regency / city, the number of tourists based on the country and based on nationality according to the type of data mentioned in point 2 above. Then look for the most tourists from each of these criteria.

3.2. Database Design

Making a database that refers to data obtained through data sources that have been alluded to in the previous section, the database schema created can be seen in Figure 2.

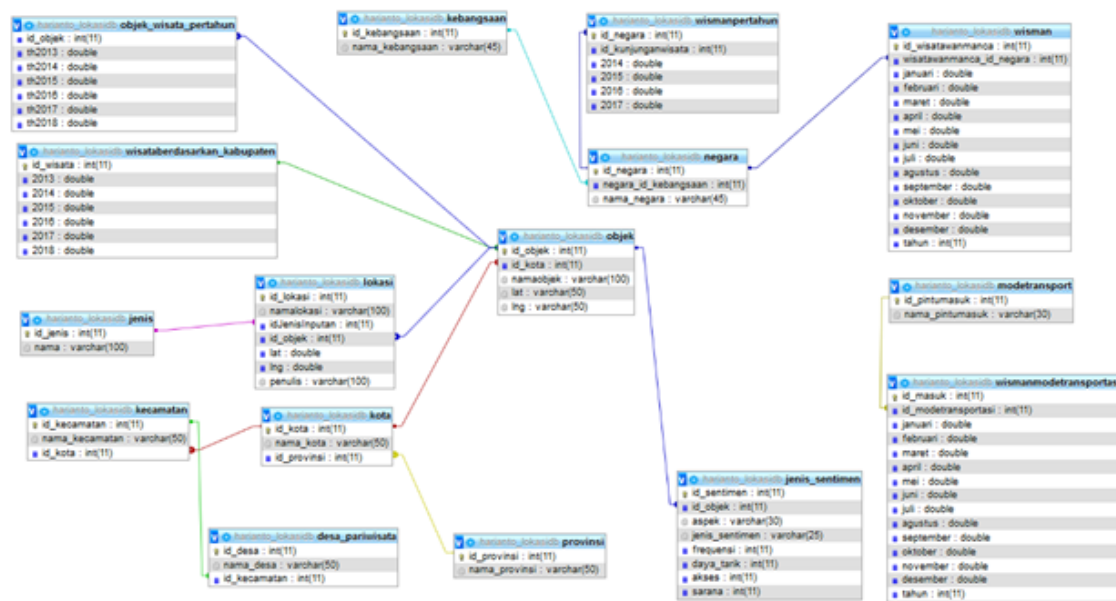


Figure 2. Database Schema

To calculate the number of tourists based on district / city, country, nationality and based on the mode of transportation used. This can be done by calculating using Query on related data.

3.3. Query Search

After the required databases are related, only then do a data search or calculation of tourist data from 2013-2018 based on the criteria mentioned in points 3.1 and point 3.2. A search is also conducted to calculate aspects of a tourist attraction.

3.3.1. Nearby Facilities of Attractions

In this study, the calculation of distances between attractions and facilities mentioned in the previous section uses the formula that has been described in the research methodology section. To support the formula, an information system is created that is used to store data and coordinates of tourism objects and facilities. After the data and coordinates are stored then the system can be calculated the facilities closest to the tourist attraction entered in the search section. The search results can be seen in Figure 4. Before the query is entered into the system, the distance object can be calculated using Figure 3.

```
SELECT namalokasi,jenis.nama,lokasi.lat,lokasi.lng,objek.id_objek, sqrt(power((objek.lat-lokasi.lat),2))+
(power((objek.lng-lokasi.lng),2)) as jarak, objek.namaobjek, penulis from lokasi INNER JOIN jenis on
lokasi.idJenisInputan=jenis.id_jenis
INNER JOIN objek on lokasi.id_objek=objek.id_objek
WHERE lokasi.id_objek=objek.id_objek
ORDER BY jarak ASC
```

namalokasi	nama	lat	lng	id_objek	jarak	namaobjek	penulis
Cafe Raden Music & Karaoke	Restauran	-8.399063	114.675617	131	0.0000005695686399524789	Pantai Delod Berawah	Nandar
Bali Starling Restaurant	Restauran	-8.599974	115.252057	29	0.000011739378490809414	Taman Burung dan Rimba Reptil	Nandar
Warung Makan Prabandana	Restauran	-8.584092	115.348603	37	0.00001664106520973998	Bali Safari & Marine Park	Nandar
Villa Drupadi Hotel	Hotel/Pondok	-8.659904	115.233986	3	0.00002122948355915903	Taman Budaya	dimas
Kebab Turki Baba Rafi	Restauran	-8.656574	115.210155	7	0.00002191050624835318	Pasar Badung	Nandar
Waroeng Bakso Setia Hati	Restauran	-8.366088	114.625536	83	0.000023484281290050288	Makam Tua Buyut Lebai	Nandar
Warung Veteran	Restauran	-8.124841	115.095164	112	0.000026437848890773502	Gedong Kertya	Nandar
SARI SAMUDRA Cafe Music & Karaoke	Restauran	-8.399037	114.675759	131	0.000026737185440029528	Pantai Delod Berawah	Nandar
Klepon AKKAS	Restauran	-8.663281	115.240303	8	0.000029525568039631824	Museum Lukisan Sidik Jari	Nandar
Warung Andika	Restauran	-8.591966	115.266562	35	0.000030879470441237134	Bali Zoo Park	Nandar
Warung Mawar 5	Restauran	-8.535662	115.402472	50	0.00003743295075984515	Kerta Gosa/Museum	Nandar
Warung Gede	Restauran	-8.4188	114.805402	129	0.000038168520999123487	Pantai Medewi	Nandar
Warung Bu Galung	Restauran	-8.844838	115.185806	21	0.00004328023240942241	Pantai Pandawa	Nandar
THE MOOI RIVER VALLEY	Restauran	-8.575195	115.290913	43	0.000052045633438437114	Air Terjun Tegenungan	Nandar
Waroeng Podjok Food and Drink	Restauran	-8.423622	115.309521	24	0.000052819281959666515	Gn. Kawi Tampak Siring	Nandar
Warung Merta Segara	Restauran	-8.844769	115.185951	21	0.00005356204841037693	Pantai Pandawa	Nandar
WARUNG REMPONG	Restauran	-8.844835	115.187486	21	0.00005539317640994804	Pantai Pandawa	Nandar
nirmalatirta restaurant	Restauran	-8.210592	114.967044	100	0.00006075109209071878	Air Panas Banjar	Nandar
Wt. Bu Made Sumamingsih	Restauran	-8.083677	115.139949	107	0.00006307953935992255	Pura Beji	Nandar
ACK Kukuh Kerambitan	Restauran	-8.542352	115.083922	94	0.00006423879024997336	Puri Anyar Kerambitan	Nandar
Dr Tuti Parwati, SPPDK	Rumah Sakit	-8.663196	115.240394	8	0.00006451237264072822	Museum Lukisan Sidik Jari	dimas
Green Warung Taro	Restauran	-8.391267	115.278537	31	0.00006548490000584756	Wisata Gajah Taro	Nandar
Console Music & Karaoke	Restauran	-8.398997	114.67489	131	0.00006634318084029598	Pantai Delod Berawah	Nandar

Figure 3. Query and Attraction List

To get facilities that are close to attractions, this study uses a geographic information system created using the PHP programming language. The calculation uses the formula in section 2 above. The results after the query is used in geographic information systems that are made can be seen in Figure 2.

Tabel Lokasi							
Ulun Danu							
No.	LATITUDE	LONGITUDE	JENIS	NAMA LOKASI	JARAK KE	OBJEK WISATA	PENULIS
331	-8.275901	115.164452	Bank/ATM	Mandiri	72.4043 M	Ulun Danu Beratan	Mawan
408	-8.276041	115.163103	Bank/ATM	BNI OBYEK WISATA BEDUGUL	86.6424 M	Ulun Danu Beratan	Mawan
458	-8.276166	115.164377	Bank/ATM	BRI	98.9080 M	Ulun Danu Beratan	Mawan
474	-8.274168	115.160977	Hotel/Pondok	dong losog camping lodge and resto	102.2564 M	Ulun Danu Beratan	dimas
578	-8.273876	115.159596	Geceries	Setia Asih	132.6644 M	Ulun Danu Beratan	Dimas
648	-8.276768	115.164676	Geceries	M Minimart	159.1000 M	Ulun Danu Beratan	Dimas

Figure 4. Distance Calculation Results for the system being built

From the picture above, there are 3 types of facilities in the form of Banks / ATMs which are the closest with a distance of 72,4043 m. The nearest hotel is 3 with the closest distance is 102,2564 m. and there are 2 Geceries or shopping places with the closest distance 132.6644 m.

3.3.2. Visitors by Regency / City

To display a list of the number of visitors by regency / city in the province of Bali, a query process is needed. The query and results used to display a list of the number of visitors by district / city can be seen in Figure 5.

```
SELECT kota.nama_kota, Round(sum(objek_wisata_pertahun.th2013),2) as TH2013, Round(sum(objek_wisata_pertahun.th2014),2) as TH2014, Round(sum(objek_wisata_pertahun.th2015),2) as TH2015, Round(sum(objek_wisata_pertahun.th2016),2) as TH2016, Round(sum(objek_wisata_pertahun.th2017),2) as TH2017, Round(sum(objek_wisata_pertahun.th2018),2) as TH2018, Round(sum(objek_wisata_pertahun.th2013+TH2014+TH2015+TH2016+TH2017+TH2018),2) AS total FROM `objek_wisata_pertahun` INNER JOIN objek on objek_wisata_pertahun.id_objek=objek.id_objek INNER JOIN kota on objek.id_kota=kota.id_kota WHERE objek.id_kota=objek.id_kota GROUP BY kota.nama_kota ORDER BY total DESC
```


nama_kota	TH2013	TH2014	TH2015	TH2016	TH2017	TH2018	total
Kabupaten Tabanan	2340.30	2220.91	2145.94	3428.51	2551.36	7386.49	20073.52
Kabupaten Gianyar	1926.58	2552.19	2168.44	3413.14	2833.07	3324.78	16218.20
Kota Denpasar	2248.36	3385.74	2102.79	2463.12	3038.86	2511.75	15750.63
Kabupaten Badung	1192.13	423.78	459.36	1981.78	1436.71	1054.85	6548.61
Kabupaten Jembrana	1002.60	972.95	152.47	163.12	263.56	3273.92	5828.62
Kabupaten Karang Asem	1193.67	1011.88	524.14	840.80	1006.45	995.38	5572.31
Kabupaten Bangli	1378.72	597.79	554.49	647.73	790.82	1302.77	5272.32
Kabupaten Klungkung	298.98	328.31	372.05	378.89	496.18	244.18	2118.59
Kabupaten Buleleng	170.72	89.35	130.85	164.37	162.83	45.97	764.09

Figure 5. Query and number of tourists by Regency / City

3.3.3. Visitors by Country

To see the list of visitors by country and nationality, a query must be made. Based on the results of the Query of the State of Chile, the American nationality is the country with the most number of visitors in 2018. The queries used and the results can be seen in Figure 6.

```
SELECT kebangsaan.nama_kebangsaan, negara.nama_negara, wisman.januari, wisman.februari, wisman.maret, wisman.april,
wismen.mei, wisman.juni, wisman.juli, wisman.agustus, wisman.september, wisman.oktober, wisman.november,
wismen.desember,
Round(sum(wisman.januari+wisman.februari+wisman.maret+wisman.april+wisman.mei+wisman.juni+wisman.juli+wisman.agustus+wisman.september+wisman.oktober+wisman.november+wisman.desember),2) as total, wisman.tahun from wisman INNER JOIN
negara on wisman.wisatawanmanca_id_negara=negara.id_negara INNER JOIN kebangsaan on
negara.negara_id_kebangsaan=kebangsaan.id_kebangsaan GROUP by negara.nama_negara ORDER by total DESC
```

nama_kebangsaan	nama_negara	januari	februari	maret	april	mei	juni	juli	agustus	september	oktober	november	desember	total	tahun
AMERICA	Chile	826	1236	847	804	822	715	966	627	753	759	645	590	8355.24	2018
Middle East	Turkey	899	615	750	960	712	909	1306	163	979	707	514	521	7568.94	2018
ASIA PACIFIC EXCLUDING ASEAN	Nepal	1084	739	915	949	685	739	1061	833	759	1526	882	896	7400.67	2018
EUROPE	Slovak	490	571	698	944	648	705	534	442	654	703	510	417	7316.00	2018
EUROPE	Romania	839	770	842	933	993	1079	1034	1231	1305	975	811	974	7141.65	2018
EUROPE	Hungary	892	1026	936	880	782	1002	654	704	838	1141	584	725	6998.17	2018
EUROPE	Lithuania	789	772	819	550	508	441	445	369	485	573	519	597	6867.00	2018
AMERICA	Mexico	593	576	908	842	873	767	879	517	772	1043	1006	1066	6730.12	2018
ASIA PACIFIC EXCLUDING ASEAN	Sri lankan	944	563	873	1738	857	729	748	778	1264	1248	122	971	6468.47	2018
EUROPE	Bulgaria	596	741	722	675	408	335	310	404	463	405	513	529	6101.00	2018
EUROPE	Kazakhstan	501	482	590	393	312	421	488	416	300	363	360	691	5317.00	2018
Middle East	egypt	790	545	881	1346	455	796	1158	1118	1119	1159	844	854	5170.97	2018
ASIA PACIFIC EXCLUDING ASEAN	Pakistan	267	284	310	524	328	477	720	422	375	345	366	585	5003.00	2018
ASEAN	Brunei Darussalam	256	315	566	450	420	409	318	232	470	361	341	792	4930.00	2018
AMERICA	Argentina	1224	115	1186	1049	927	618	639	458	533	638	448	481	4746.61	2018
ASEAN	Myanmar	367	505	516	2101	730	698	575	394	4	8	6	928	4733.10	2018
EUROPE	Greece	324	315	336	542	329	277	430	1075	526	544	523	550	4697.08	2018
AMERICA	Colombia	323	239	408	381	314	268	390	317	397	424	417	528	4406.00	2018
Middle East	Saudi Arabia	109	533	500	564	248	1228	1607	1228	629	472	544	882	4377.15	2018
Middle East	Iran Islamic Republic	494	512	3953	392	526	537	401	366	451	147	210	241	4280.95	2018
EUROPE	Estonia	1173	1477	916	613	267	266	192	238	258	566	368	569	4255.65	2018
AFRICA	Morocco	223	215	312	425	271	329	647	1254	596	479	304	327	4129.25	2018
Middle East	Lebanon	140	120	331	266	223	510	627	611	452	294	214	278	4086.00	2018
EUROPE	Belarus	392	437	449	433	314	251	259	240	247	295	310	396	4023.00	2018
EUROPE	Serbia	241	318	284	316	307	390	465	346	428	337	234	340	4006.00	2018

Figure 6. Query Results by number of visitors by country

3.3.4. Nationality Based Visitors

Seeing the list of visitors based on national origin of foreign visitors with data in 2018, can be done by querying. In this query displays a list of the highest number of visitors to the fewest based on national origin. The nationality which is the origin of nationality visitors is the most number of visitors in 2018 to reach an average visitor value of 18,971.56. The query used and the results can be seen in Figure 7.

```

SELECT kebangsaan.nama_kebangsaan, Round(SUM(wisman.januari),2) as Jan, Round(SUM(wisman.februari),2) as Feb, Round(SUM(wisman.maret),2) as Mar,
Round(SUM(wisman.april),2) as Apr, Round(SUM(wisman.mei),2) as Mei, Round(SUM(wisman.juni),2) as Jun, Round(SUM(wisman.juli),2) as Jul,
Round(SUM(wisman.agustus),2) as Agu, Round(SUM(wisman.september),2) as Sep, Round(SUM(wisman.oktober),2) as Okt, Round(SUM(wisman.november),2)
as Nov, Round(SUM(wisman.desember),2) as Des, Round(SUM(wisman.januari+wisman.februari+wisman.maret+wisman.april+wisman.mei
+wisman.juni+wisman.juli+wisman.agustus+wisman.september+wisman.oktober+wisman.november+wisman.desember),2) as total, wisman.tahun
FROM 'wisman' INNER JOIN negara ON wisman.wisetawanmance_id_negara=negara.id_negara
INNER JOIN kebangsaan ON negara.negara_id_kebangsaan=kebangsaan.id_kebangsaan
WHERE kebangsaan.id_kebangsaan=negara.negara_id_kebangsaan
GROUP BY kebangsaan.nama_kebangsaan
ORDER BY kebangsaan.nama_kebangsaan ASC

```

nama_kebangsaan	Jan	Feb	Mar	Apr	Mei	Jun	Jul	Agu	Sep	Okt	Nov	Des	total	tahun
AFRICA	975.94	851.48	1364.85	1969.99	1107.26	1221.38	2265.99	1639.32	2075.49	2377.31	1273.93	1848.61	18971.56	2018
AMERICA	2397.49	1694.42	3661.32	3094.68	3751.69	3127.71	3632.01	2624.89	3330.01	2794.53	2181.28	2400.12	34690.15	2018
ASEAN	1714.05	1063.08	1403.93	1084.43	1552.42	1501.00	1284.37	838.69	830.88	1015.17	919.67	2358.94	15566.63	2018
ASIA PACIFIC EXCLUDING ASEAN	2115.37	2460.83	2932.46	2348.70	2641.62	2768.45	2391.56	2933.72	1958.75	1249.53	1999.38	3941.71	29742.07	2018
EUROPE	8651.06	6110.96	8496.26	8223.21	6402.64	4562.22	5978.29	6026.10	7102.11	6818.05	7239.90	7608.37	83219.20	2018
Middle East	3618.09	3232.00	3757.95	3729.35	2806.00	4282.23	3147.07	3382.98	4020.19	2871.16	3478.00	4257.00	42582.01	2018

Figure 7. Query and the number of visitors based on nationality

3.3.5. Visitors Based on Transportation Mode

The mode of transportation used is the mode of water and air based on data obtained from the website of the provincial government DISPARDA. Bali. The data obtained is based on the DISPARDA website from 2015 to 2018. The number of visitors to Bali uses more modes of water transportation than air. The total number of visitors with the mode of water transportation from 2015-2018 was 20,460,556.00 while the air transportation mode was 237,428.00. The query used and results can be seen in Figure 8.

```

SELECT modetransport.nama_mode as MODE, januari, februari, maret, april, mei, juni, juli, agustus, september, oktober,
november, desember, SUM(januari+februari+maret+april+mei+juni+juli+agustus+september+oktober+november+desember) As Total,
Tahun FROM 'wismanmodetransportasi' INNER JOIN modetransport ON
wismanmodetransportasi.id_modetransportasi=modetransport.id_mode GROUP BY wismanmodetransportasi.id_masuk ORDER BY
Total DESC

```

MODE	januari	februari	maret	april	mei	juni	juli	agustus	september	oktober	november	desember	Total	Tahun
Air	345191	443805	484846	516143	526281	540462	624337	572027	555888	515859	406679	495641	6027159	2018
Air	452660	447762	422757	474338	486207	503617	591812	599827	550238	462263	358012	307321	5656814	2017
Air	343663	367024	354778	367370	394443	405686	482201	437929	442304	423140	396150	437946	4852634	2016
Air	288755	333072	294737	309888	287141	357712	381890	298638	379397	366759	262180	363780	3923949	2015
Udara	12993	5919	10535	3875	8832	1990	793	4983	9663	2688	8755	6860	77886	2015
Udara	6929	8720	9335	13397	114	149	2030	206	3412	9075	17082	4854	75303	2016
Udara	12874	8618	7832	634	2231	4088	29	1739	15	2030	46	3178	43314	2018
Udara	8164	6223	2742	3126	3169	524	234	2057	282	2822	2994	8588	40925	2017

Figure 8. Query and visitor list results based on transportation mode

3.3.6. Visitors by Attraction

The analysis conducted in this study is the data of tourist objects that have the most number of visitors and the data of tourist objects that have the least number of visitors. As sampel, each of the three most tourist attraction is taken with the highest number of visitors and three attractions with the least number of visitors. For more details query results 3 objects that have the highest number of visitors and take 2 objects to represent the small number of visitors. The query used and the results can be seen in Figure 9.

namaobjek	nama_kota	th2013	th2014	th2015	th2016	th2017	th2018	total
Taman Budaya	Kota Denpasar	1000	1100	1200	1300	1400	1500	7500
Ulun Danu Beratan	Kabupaten Tabanan	724.065	735.634	650.412	687.916	947.393	475.043	4220.463
Tirta Empul	Kabupaten Gianyar	445.502	443.883	450.12	524.647	642.669	631.592	3138.413
Pura Maspahit Grenceng	Kota Denpasar	92	0	0	0	0	0	92
Syahbandar Serangan	Kota Denpasar	0	0	0	0	0	3.91	3.91

Figure 9. Number of tourist attractions

Number of facilities with a distance of less than 1 km. which is around the tourist attraction shown in figure 9 can be seen in table 1. The purpose of searching for existing facilities around the tourist attraction is to determine the correlation or influence of facilities that affect the number of visitors to the attraction.

Table 1. Number of facilities in the tourist attraction

No.	Name of Attraction	Hospital	Restorant	Bank/ATM	BAR	S P B U	Hotel/ Pondok	Store	Number of visitors (2018)
1	Ulun Danu Beratan	1	45	9	0	0	14	12	967.682.00
2	Taman Budaya	16	109	18	9	2	19	36	7.364.00
3	Tirta Empul	3	35	2	2	0	3	8	49.770.00
4	Tanah Lot	0	45	9	5	0	2	7	3.335.822.00
5	Syahbandar Serangan	1	50	1	4	1	6	7	8.300.00

Table 2 shows the correlation coefficient value of the number of facilities to the number of visitors to the tourism site. It can be seen that the correlation value closest to -1 is the gas station (-0.505725), the correlation value approaches -1 indicates that the more the number of gas stations around the tourism site, the less the number of visitors (inverse relationship). R. Taylor [8] writes that the correlation value between 0.36 and 0.67 (or -0.36 and -0.67) indicates that the variable has a moderate correlation, so the gas station variable has a negative negative correlation value to the number of visitors. The hospital and hotel / cottage variables also fall into this category. He also wrote that correlation values between 0 and 3.5 (or 0 and -0.35) have low correlations. From this information, it was concluded that shops, restaurants, bars and banks / ATMs had a low correlation with the amount of tourism.

Table 2. Correlations between facility variables and number of visitors

Hospital	Restorant	Bank/ATM	BAR	SPBU	Hotel/Pondok	Store
-0.44542	-	0.12467764	-0.030679	-0.505725	-0.421059	-0.355724

4. CONCLUSION

Indonesia has a lot of tourism, one of the famous tourism is in the Province of Bali. From the query that has been done it can be concluded: 1. The most visited tourist attraction is the Cultural Park which is located in Denpasar City with a total of 7,500 visits from 2013-2018 2. Nationalities that visited Bali the most in 2018 were Middle East and the State of Turkey, which were 9,247. 3. Tourists visit Bali through 2 modes of transportation. The 2 modes of transportation are water and air. The total number of visitors with water transportation mode was 20,460,556.00 while air transportation mode was 237,428.00.

5. SUGGESTIONS

1. Improvement of facilities on tourism objects should be added because it influences tourist visits
2. Facilities available at a tourist attraction may be lost / moved. This can happen depending on Google Maps

REFERENCES

- [1] D. M. Sari, “Partisipasi Masyarakat Dalam Mengembangkan Sarana Prasarana Kawasan Desa Wisata Borobudur,” vol. 15, no. 2, pp. 133–139, 2015.
- [2] A. Agung and M. Sukana, “Pengaruh Store Atmosphere Terhadap Minat Beli Wisatawan Di Pasar Seni Sukawati Kabupaten Gianyar,” vol. 7, no. 2, pp. 288–294, 2019.
- [3] A. D. W *et al.*, “Analisis Return on Investment (ROI) dengan Penelusuran Basis Data Guna Perhitungan Tingkat Keberhasilan Promo,” *Creat. Inf. Technol. J.*, vol. 5, no. 3, p. 196, 2019, doi: 10.24076/citec.2018v5i3.193.
- [4] C. Churcher, *Beginning database design*. 2007.
- [5] R. Taylor, “Interpretation of the Correlation Coefficient: A Basic Review,” *Journal of Diagnostic Medical Sonography*, vol. 6, no. 1. pp. 35–39, 1990, doi: 10.1177/875647939000600106.