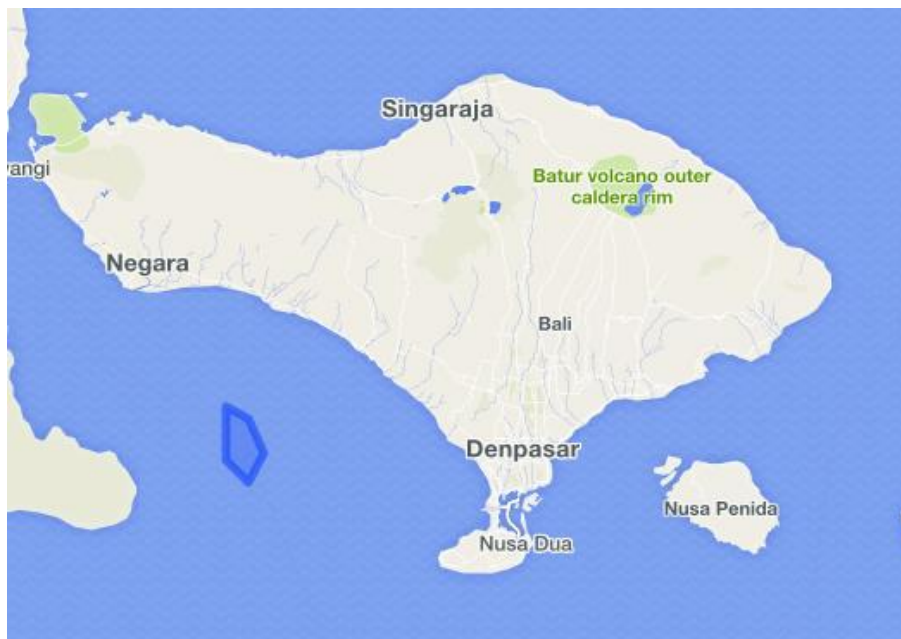


Find the Best Place to Opening Restaurant in Bali



Elvin Nur Furqon

elvinnurfurqon17@gmail.com

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1. INTRODUCTION

1.1 Background

From U.S.News, Bali is 4th Best place to Visit in Asia, there so many historical places that you can visit in there, such as Tirta Empul Temple, Uluwatu Temple , Tanah Lot Temple ,etc. Balinese culture is an elaborate and rounded one, manifested in almost every aspect of life, including foods. The traditional dishes in Bali are a big part of its tradition, some of which are almost as old as the culture itself. Here are example traditional dishes you can try in bali, like Satay, Betutu, Lawar, Nasi Jinggo, Urab and Sambal matah. You can find them along the main road near Denpasar.

The main sectors business bali is tourism and food travel, so it's not surprising that when you visit there, you will find various restaurants around your place.

1.2 Problem

If someone want to open a restaurant in Bali, at the first time he should make a business plan. Business plan require great strategies that cover dominant areas, selling price, affordability, and customer experience. But it will be difficult to make business plan if we only use hypothesis based on observations. Consequences, possibility that the business plan will not go according to plan, so we need data science to handling that problem.

2. Data acquisition

2.1 Data Sources

To make decision for this problem, for Data Scientist, data is important, we should know where data is come from and how we use that. For this problem, the data obtained from Foursquare using API and Department Statistic Bali. The data be use namely name, longitude, latitude, name restaurants, category and address. After collecting data, we can perform Exploratory Data Analyst (EDA) then we segmentation the data using various algorithm machine learning to gain information to help making decision.

2.2 Data Cleaning

I decide to only take the information like name of regency or city from website like Wikipedia because for this problem the first thing I should have is what area we are going to analyst, then take coordinate using geopy.

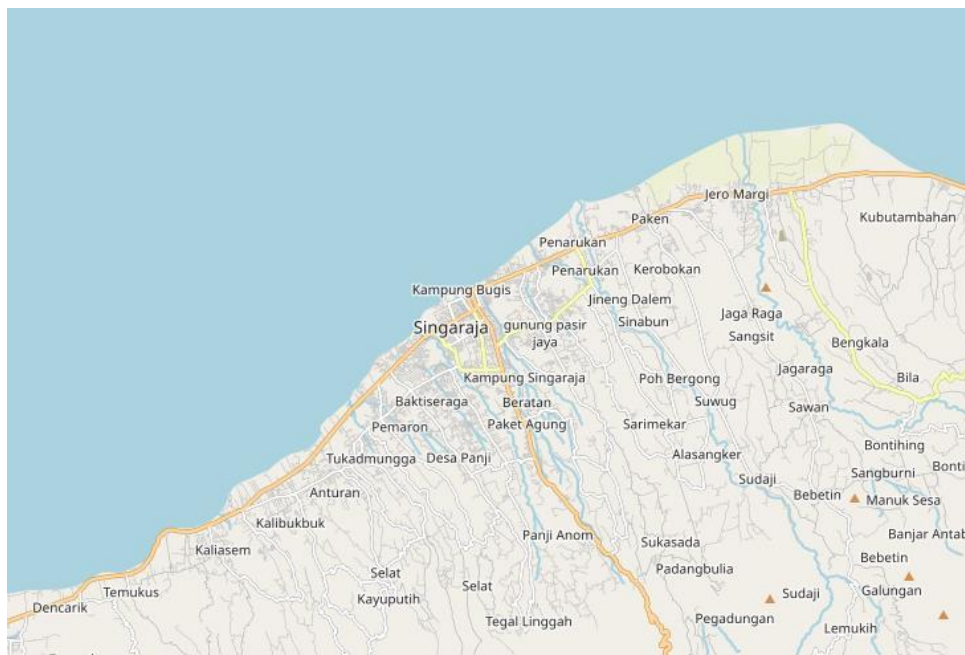
For data from Department Statistics Bali the data should be cleaning because some data having null condition, so we can use drop method or fill them.

3. Exploratory Data Analysis

3.1 Analysis Recommendation Restaurant

In Bali there are 6 regency and 1 city, for each regency have recommendation place for restaurant and non-restaurant.

3.1.1 Buleleng

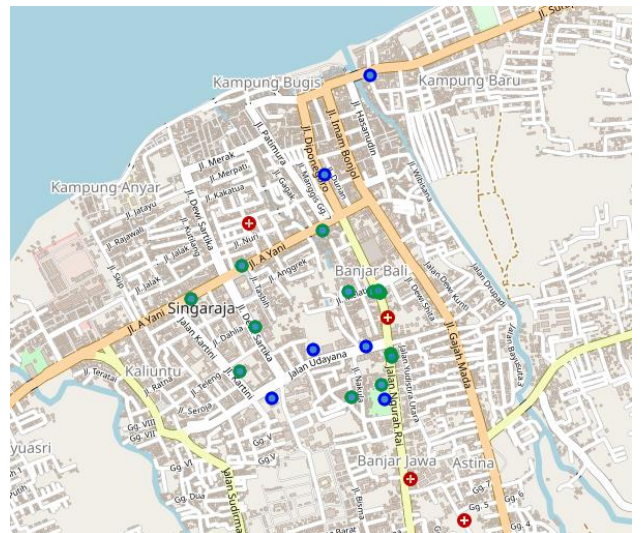
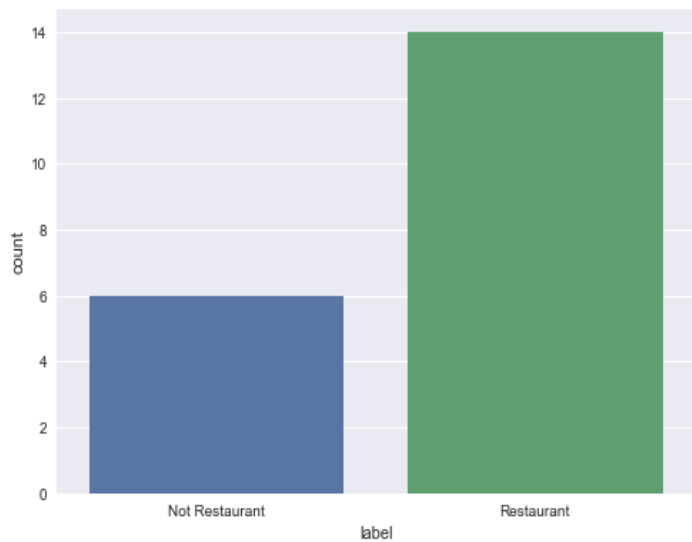


Buleleng is a regency (kabupaten) of Bali, Indonesia. It has an area of 1,365.88 km² and population of 577,644 (1999). Its regency seat is Singaraja. Location Buleleng for latitude is -8.1118271 and longitude is 115.0909707.

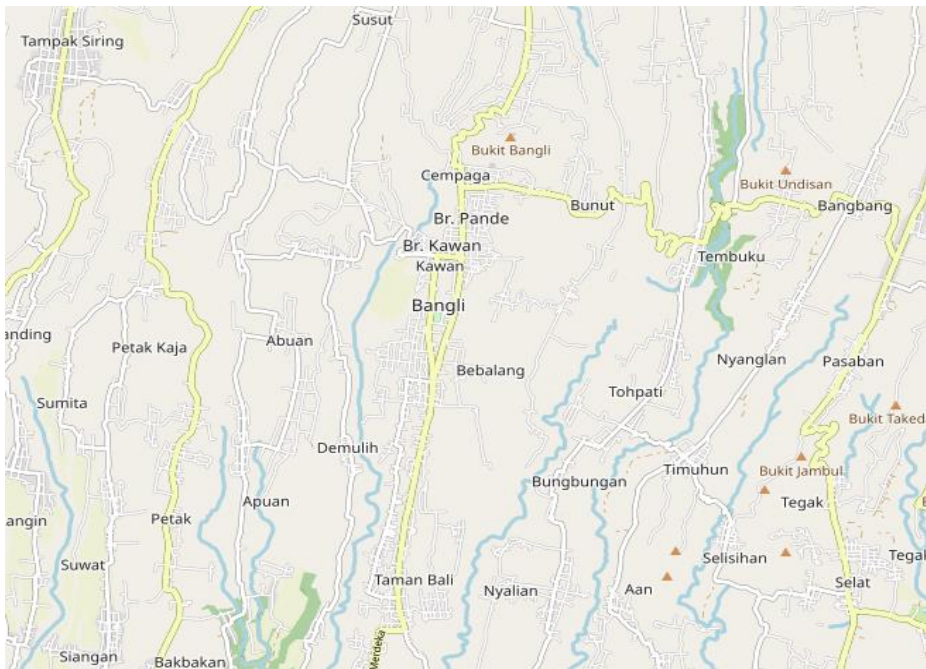
In this location foursquare give 20 place, there are Fast food restaurant, Indonesian Restaurant, Café, Harbour, Asian Restaurant, Basketball Stadium, etc.

Fast Food Restaurant	3
Indonesian Restaurant	2
Café	2
Harbor / Marina	1
Asian Restaurant	1
Basketball Stadium	1
Fried Chicken Joint	1
Bakery	1
Juice Bar	1
Dim Sum Restaurant	1
Coffee Shop	1
Chinese Restaurant	1
Theater	1
Field	1
Cosmetics Shop	1
Flea Market	1
..	..

Buleleng having 14 recommendation restaurants and 6 recommendation places



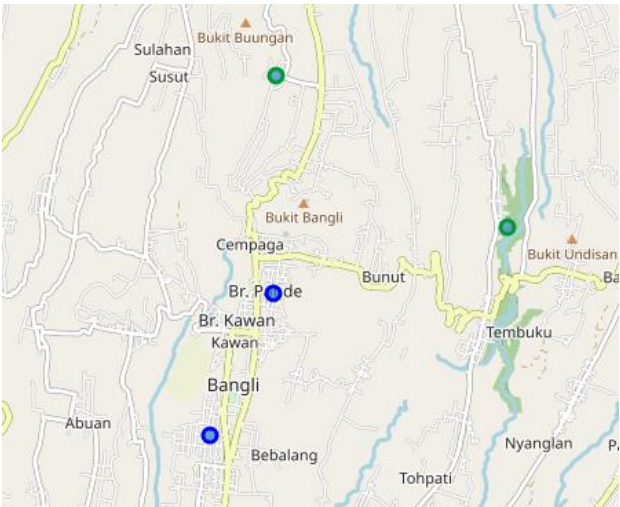
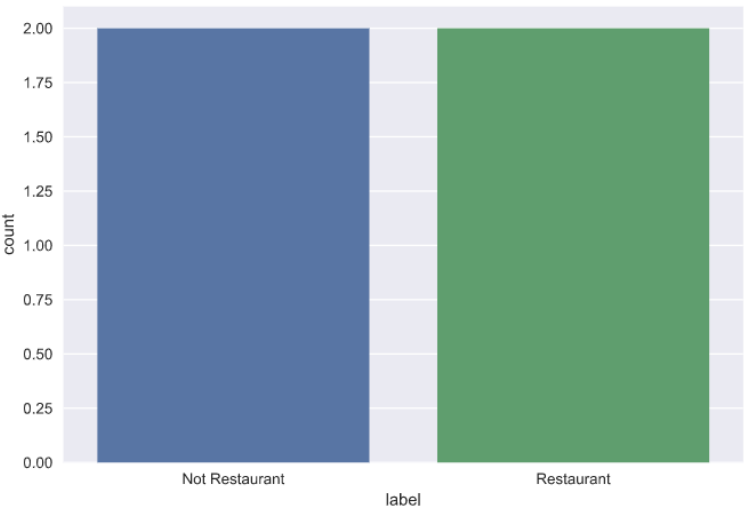
3.1.2 Bangli



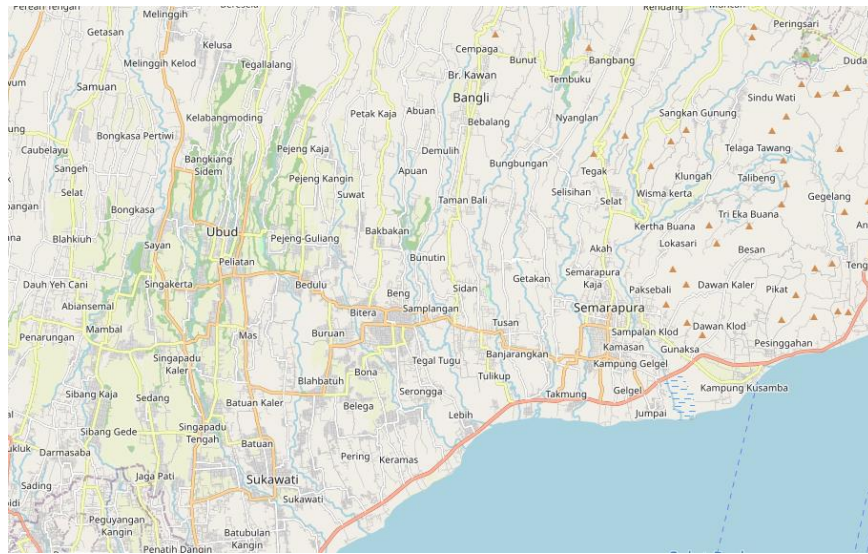
Bangli is a regency (kabupaten) of Bali, Indonesia. It has an area of 520.81 km² and population of 197,210 (2004). Its regency seat is Bangli. Location Bangli for latitude -8.4603116 and longitude 115.3535198.

Fish & Chips Shop	1
Indonesian Restaurant	1
Waterfall	1
Neighborhood	1
.	.

In this location foursquare give 4 place, there are Waterfall, Indonesian Restaurant, Penglipuran Neighbourhood, and Shop



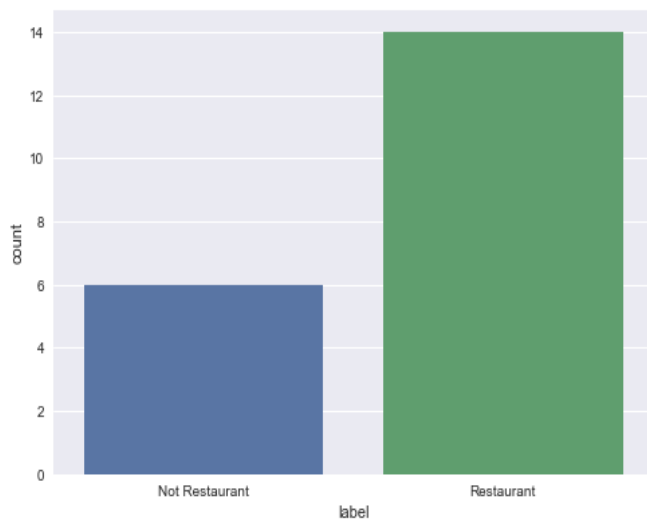
3.1.3 Gianyar



Gianyar is a regency (kabupaten) in the Indonesian province and island of Bali, Indonesia. It has an area of 368 km² and population of 470.380, making it the second most densely populated district in Bali (after Badung). Gianyar for latitude -8.5482357 and longitude 115.32605401537212.

Fast Food Restaurant	3
Indonesian Restaurant	3
Café	2
Flea Market	2
Cosmetics Shop	1
Coffee Shop	1
Theater	1
Basketball Stadium	1
Chinese Restaurant	1
Field	1
Fried Chicken Joint	1
Bakery	1
Dim Sum Restaurant	1
Juice Bar	1

In this location foursquare give 20 place, there are Fast Food Restaurant, Indonesian Restaurant, Flea Market, Theatre, etc.

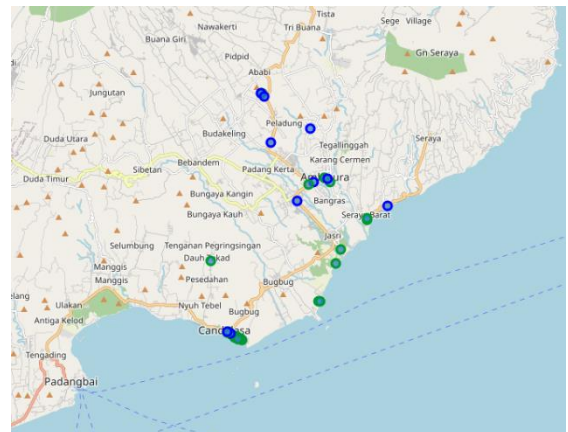
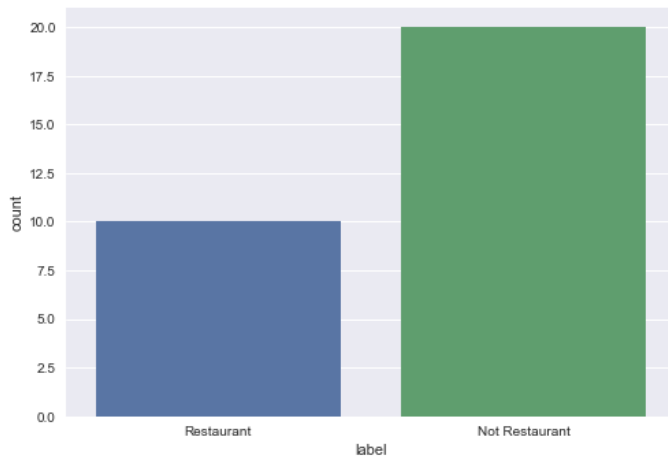


3.1.4 Karangasem

Karangasem Regency (Indonesian: Kabupaten Karangasem) is a regency (kabupaten) of Bali, Indonesia. It covers the east part of Bali, has an area of 839.54 km² and a population of 369,320 (2002).

Resort	4
Hotel	2
Restaurant	2
Indonesian Restaurant	2
Beach	2
Sri Lankan Restaurant	1
Temple	1
Diner	1
Park	1
Hotel Bar	1
Garden	1
Balinese Restaurant	1
Café	1
Department Store	1
Seafood Restaurant	1
Scenic Lookout	1
Market	1
Water Park	1
Farm	1
Jazz Club	1
Asian Restaurant	1
Cosmetics Shop	1
Boarding House	1

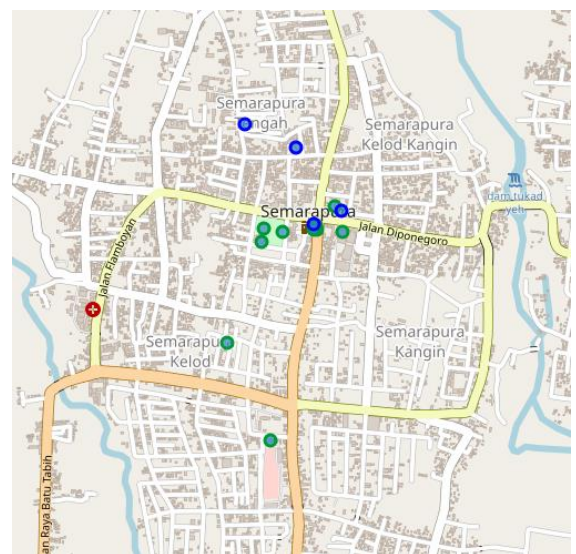
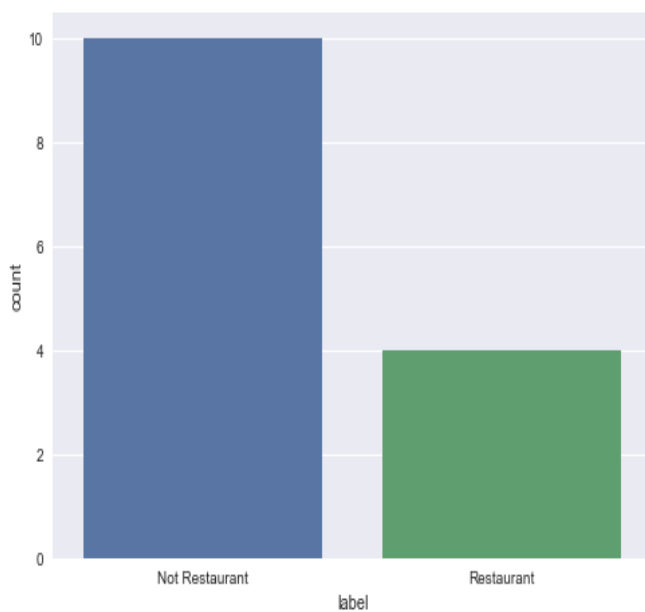
In this location foursquare give 30 place, there are Resort, Hotel , Restaurant, Indonesian Restaurant, Beach, etc.



3.1.5 Klungkung

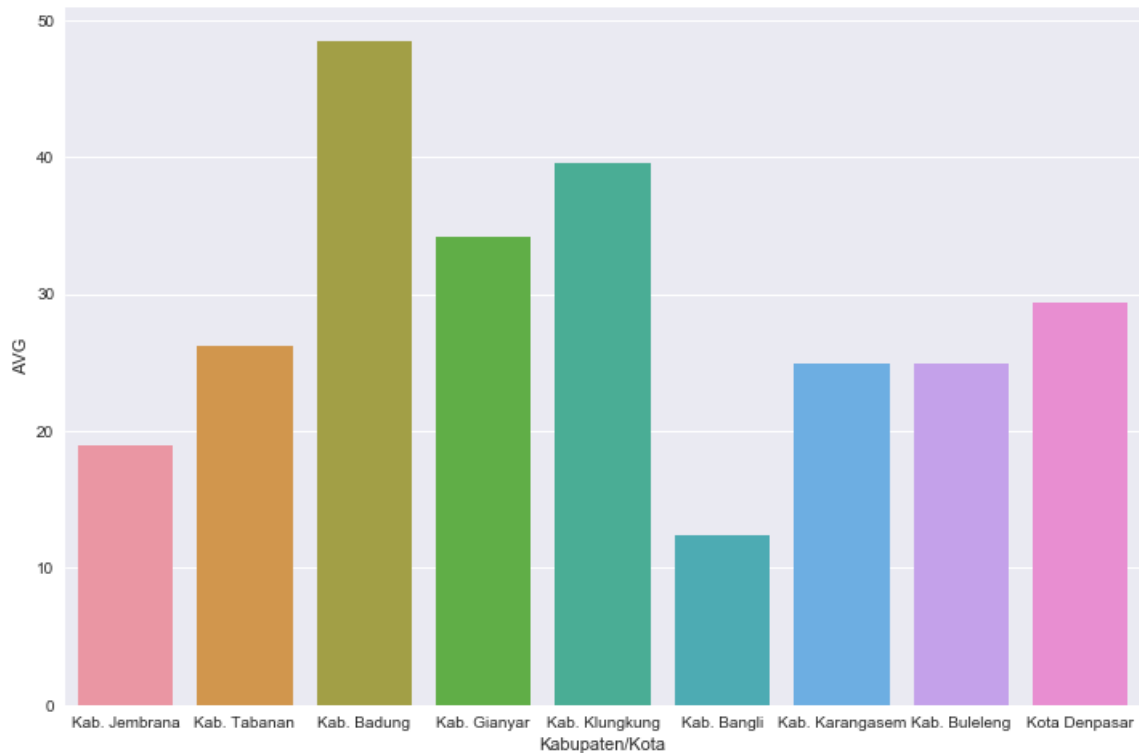


Klungkung is the smallest regency (kabupaten) on Bali, Indonesia. It has an area of 315 km² and population of approximately 180,000 (2013). Its seat is Semarapura. Klungkung for latitude -8.5350173 and longitude 115.4032763



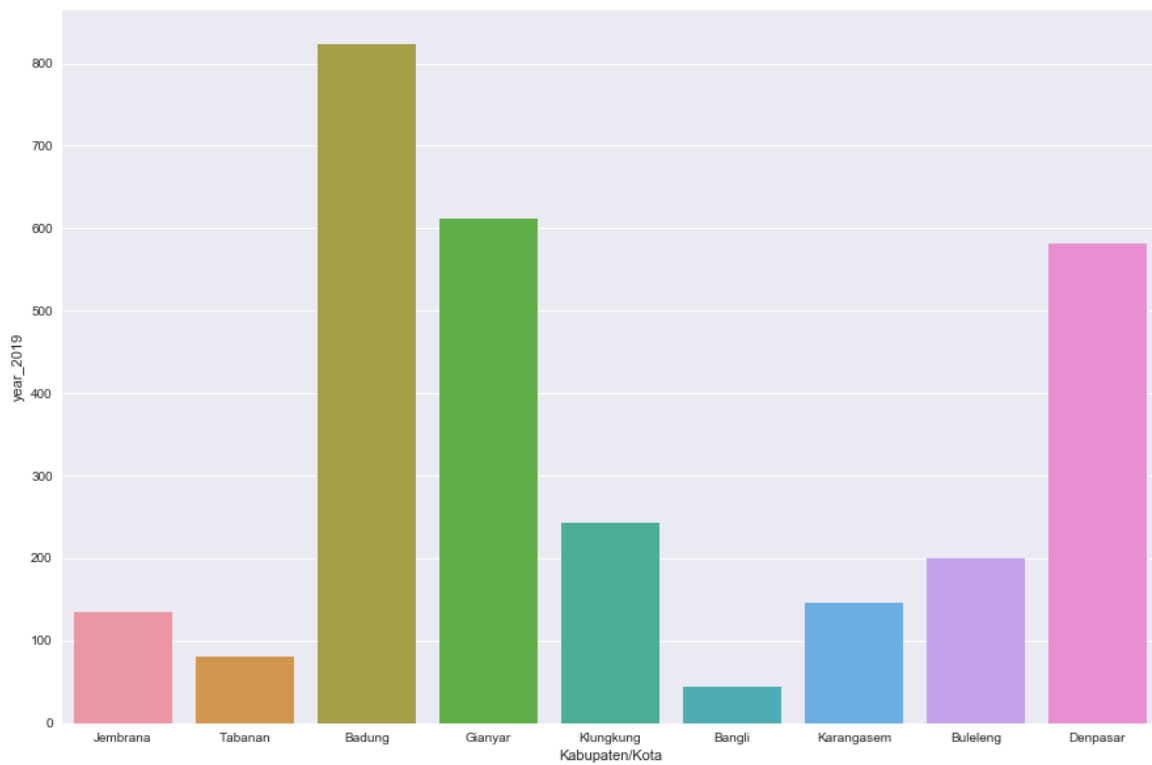
3.2 Analysis Statistical Data

Department statistics Bali have data about record number of visitors, number of restaurants, or average visitor stay overnight, or any else. In here I just take number of restaurants by regency, number of travel bureau by regency, number of foreign visitor to bali by month, and average visitor stay overnight. For average visitor stay overnight just like this.



As you can see, for Badung the average time stay overnight is very higher. It almost 50 days than others.

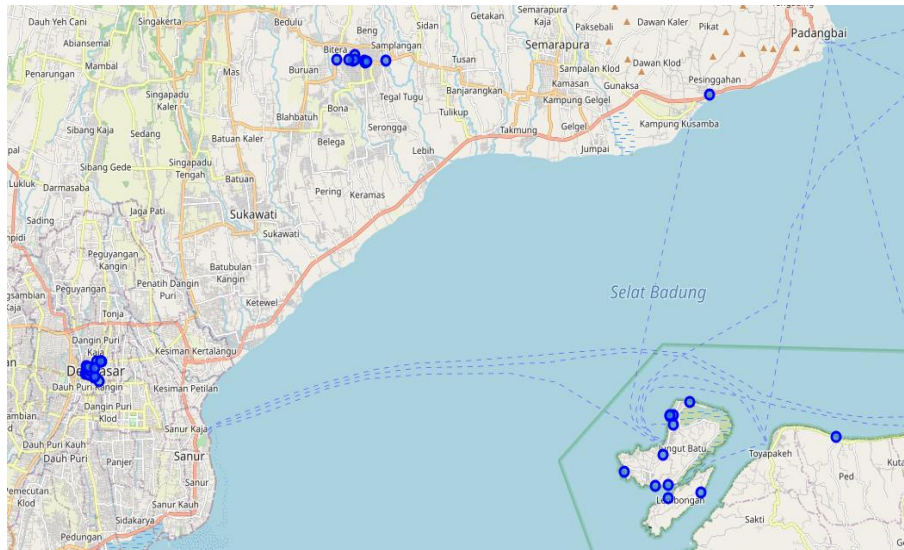
After that for number restaurant the bigger is Badung to in 2019.



Then for Number travel by Regency for 2012-2019 is;

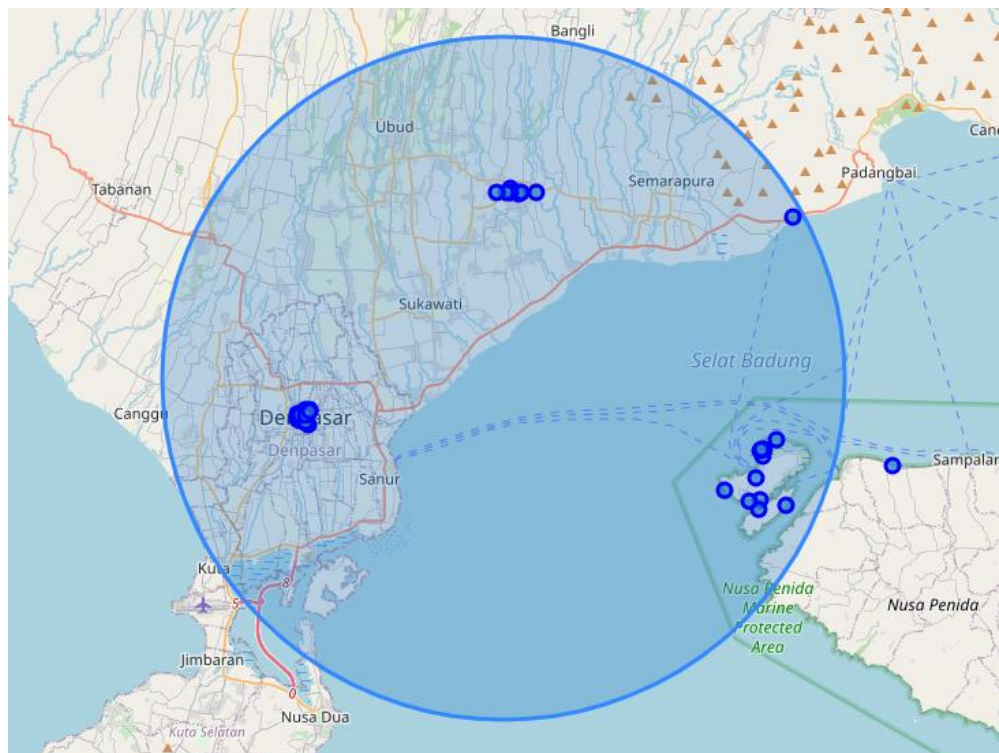
	Kabupaten/Kota	2012	2013	2014	2015	2016	2017	2018	2019
0	Jembrana	0	0	0	0	0	0	0	0
1	Tabanan	3	3	3	3	3	3	3	4
2	Badung	116	117	129	131	132	135	135	143
3	Gianyar	15	17	19	19	20	20	20	20
4	Klungkung	0	0	1	1	1	1	1	1
5	Bangli	1	1	1	1	1	1	1	2
6	Karangasem	1	1	1	1	1	1	1	2
7	Buleleng	0	0	1	1	1	1	1	1
8	Denpasar	198	220	211	211	213	243	243	243

So, in here we can conclusion that there are 3 best regency, namely Denpasar, Gianyar, and Badung.



4. Predictive Modeling

To find from 3 regency, we can use k-means to find center using $k=1$.



5. Results and Discussion

now, after analyzing data from foursquare, department statistics bali and wikipedia, we can conclusion that the best location for open restaurant in denpasar, gianyar, or badung. in denpasar you can open Indonesian restaurant in there, denpasar is the best place that if you focusing costumer who want to going to airport or harbor. after that for badung is very stategy place for open restaurant but it will dificult if you didn't have much marketing strategy. and the last is gianyar. if you want to safe play you can try that because cooperating with service providers there

6. Conclusion

the final is for each place having plus and minus, it's dependent with your situation which situation you want to.

References

Bali Travel Guide. (2020, May 6). Retrieved from U.S.News:
https://travel.usnews.com/Bali_Indonesia/