

Analysing
Neighbourhoods in
Arunachal Pradesh,
India in order to
provide for an
appropriate location
for setting of holiday
homes

A perfect location in Tourism Industry can be key to Profitability

- North East India is a developing Tourist destination offering ample natural beauty.
- With Government's further initiatives to enhance tourism in the area, it provides a wonderful opportunity for businesses who would like to invest in tourist resorts and restaurants.
- Location of holiday homes in tourism make great difference in footfall and profitability and hence finding an appropriate location is of much importance.

Stakeholders

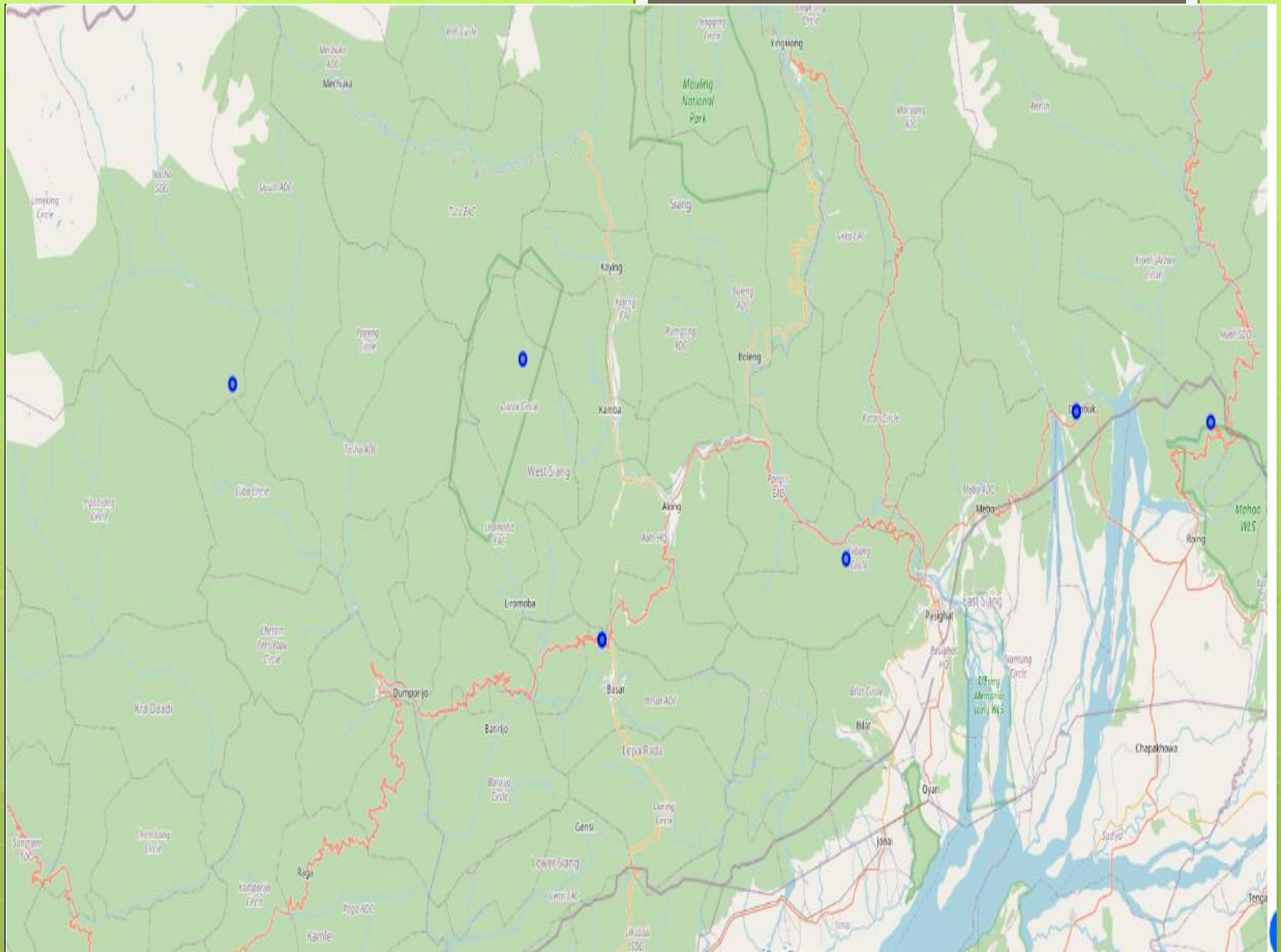
- Business houses already in tourism wanting to expand their presence or entrepreneurs looking to set foot in the industry can benefit from such an analysis.

Data acquisition

- The **data for districts** of Arunachal Pradesh was obtained from the wikipedia page (https://en.wikipedia.org/wiki/List_of_districts_of_Arunachal_Pradesh).
- The **geographical coordinates** were sourced from GeoPy library in python for map display.
- **Venue data** were extracted from Foursquare API data to study popular venues around in order to determine the location for holiday homes.

Data cleaning and visualisation

- The data for districts is obtained through web scrapping. The columns that were not needed were dropped.
- The **geographical coordinates** were sourced from GeoPy library in python for map display.
- The data was combined with districts data to obtain district wise geographical coordinates.
- Foursquare API was used to obtain **Venue data** in order to study popular venues around so as determine the location for our holiday homes.
- A map of Arunachal Pradesh was plotted using Folium in python to depict the various districts.



Data analysis

- Most popular venues for each district were explored and made into a pandas dataframe for further analysis.

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Tawang	27.652623	91.952569	Taste of Tawang	27.594523	91.870127	Indian Restaurant
1	Tawang	27.652623	91.952569	Tawang Light And Sound Show	27.587080	91.876835	Amphitheater
2	Tawang	27.652623	91.952569	Gakyi Khang Zhang	27.595053	91.865910	Hotel
3	Tawang	27.652623	91.952569	Sungester Tso	27.722061	91.825432	Lake
4	West Kameng	27.295305	92.386397	Hotel Yethrog	27.264484	92.421110	Hotel

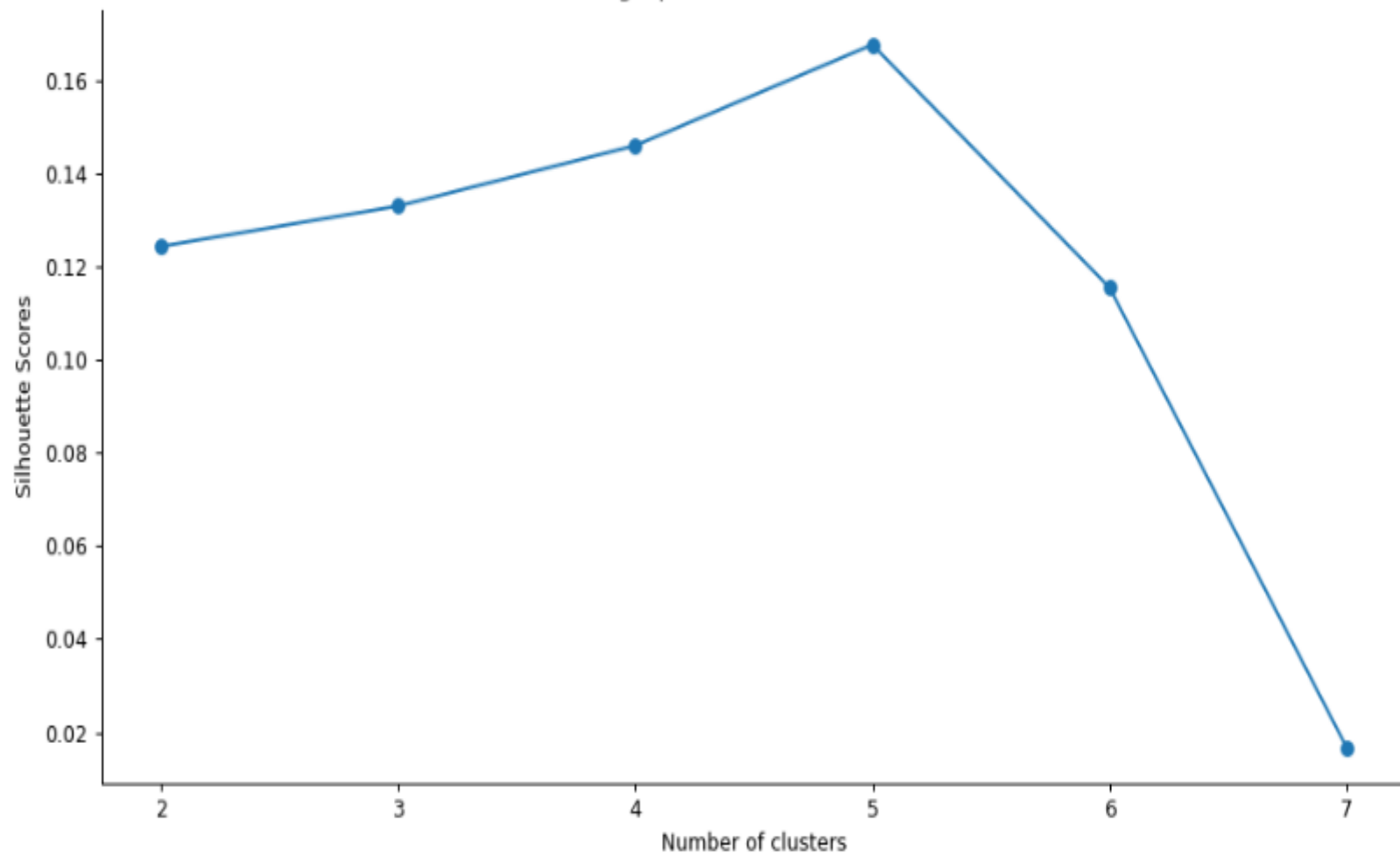


	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
0	Anjaw	Movie Theater	Train Station	Snack Place	Mountain	Lake
1	Lohit	Snack Place	Mountain	Train Station	Movie Theater	Lake
2	Lower Subansiri	Asian Restaurant	Train Station	Snack Place	Movie Theater	Mountain
3	Namsai	Hotel	Department Store	Train Station	Snack Place	Movie Theater
4	Papum Pare	Train Station	Snack Place	Movie Theater	Mountain	Lake

Modelling(KMeans Clustering)

- The neighbourhoods were clustered using KMeans Clustering.
- The number of clusters were determined using Silhouette Score. A maximum score was obtained for k equals to 5. Thus, the neighbourhoods were classified into 5 clusters

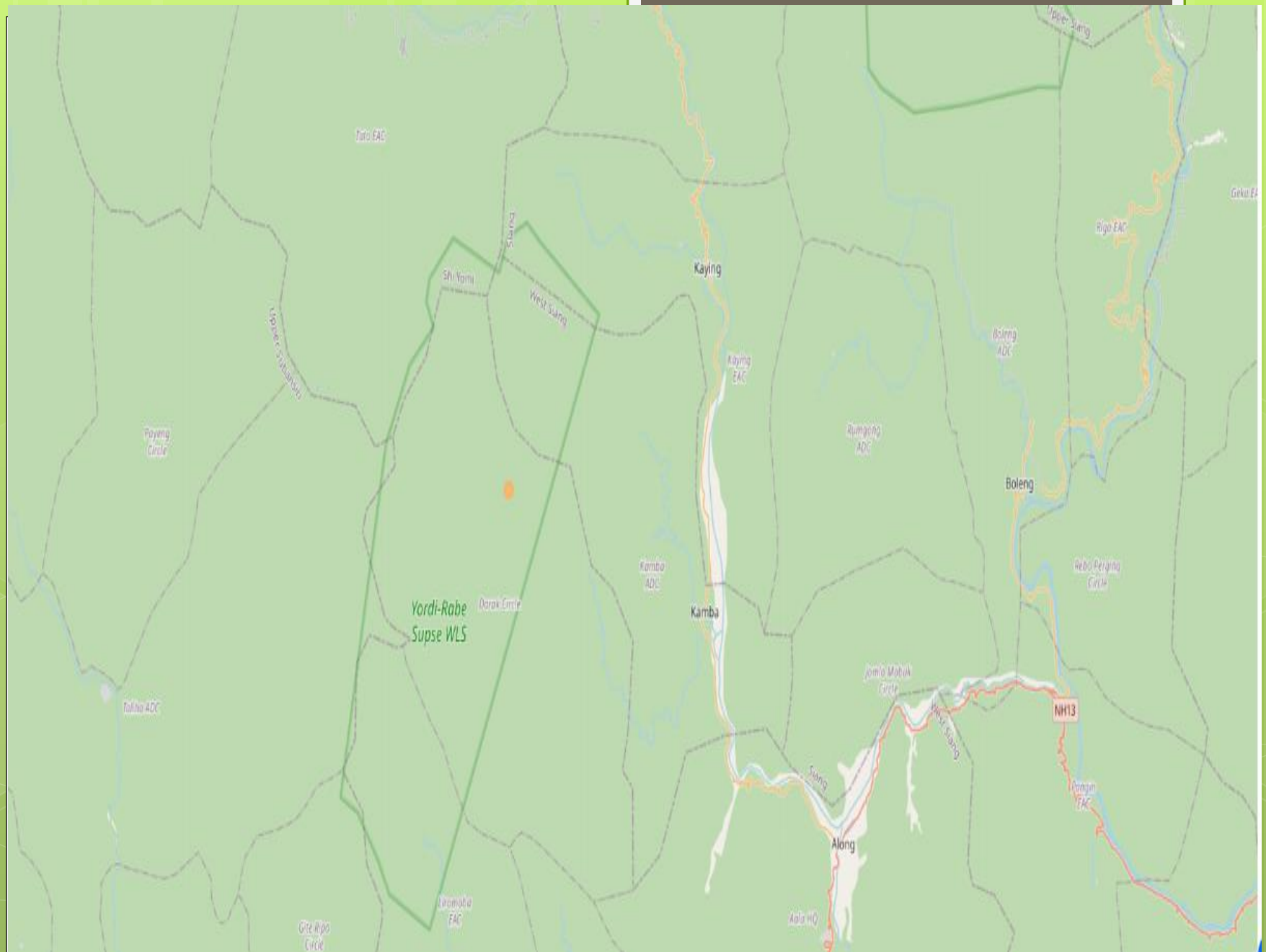
Checking Optimum Number of Clusters



Analysis

- Again, the map was plotted. This time, however, to visualize the clusters.
- The clusters were then analysed to get appropriate locations of interest.
- Note-All the clusters are not visible due to zoom. The original map can be verified in the notebook.

Code	District	Headquarters	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	
0	TA	Tawang	Tawang Town	27.6526	91.9526	2	Lake	Indian Restaurant	Hotel	Amphitheater	Train Station
1	WK	West Kameng	Bomdila	27.2953	92.3864	2	Hotel	Gift Shop	Campground	Train Station	Snack Place
4	PA	Papum Pare	Yupia	27.2835	93.6132	0	Train Station	Snack Place	Movie Theater	Mountain	Lake
7	LB	Lower Subansiri	Ziro	27.6374	93.9323	1	Asian Restaurant	Train Station	Snack Place	Movie Theater	Mountain
9	WS	West Siang	Along	28.3194	94.503	4	ATM	Train Station	Snack Place	Movie Theater	Mountain
18	AJ	Anjaw	Hawai	28.0707	96.8426	3	Movie Theater	Train Station	Snack Place	Mountain	Lake
19	EL	Lohit	Tezu	27.8254	96.2427	2	Snack Place	Mountain	Train Station	Movie Theater	Lake



Conclusion

- In this project, the districts in Arunachal Pradesh, India were successfully analysed for determining the best neighbourhoods for establishment of a holiday home, resort or restaurant.
- Based on the analysis, there are districts in Arunachal Pradesh like Tawang, Lower Subansiri and Anjaw that can serve as a potential location for establishment of a holiday home, resort or restaurant.

Future course

- Various other factors like legal formalities, transport requirements, tourism potential of each area, cost, etc. has to be further studied.
- After obtaining concrete information from authorities, the area can be further analysed to figure out the most profitable location to serve the purpose.