



Battle of the Neighborhoods

Evaluation of
Restaurant Locations

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Objective

Build a data driven model to rank potential restaurant locations

Factors

- ▶ Population
- ▶ Real estate prices
- ▶ Competition
- ▶ Complementary businesses

City Bangalore, India





Bangalore, Karnataka

Data Sources

Data{Meet}

Maps & Population



FOURSQUARE

Points of Interest
(Venue Data)



Nominatim



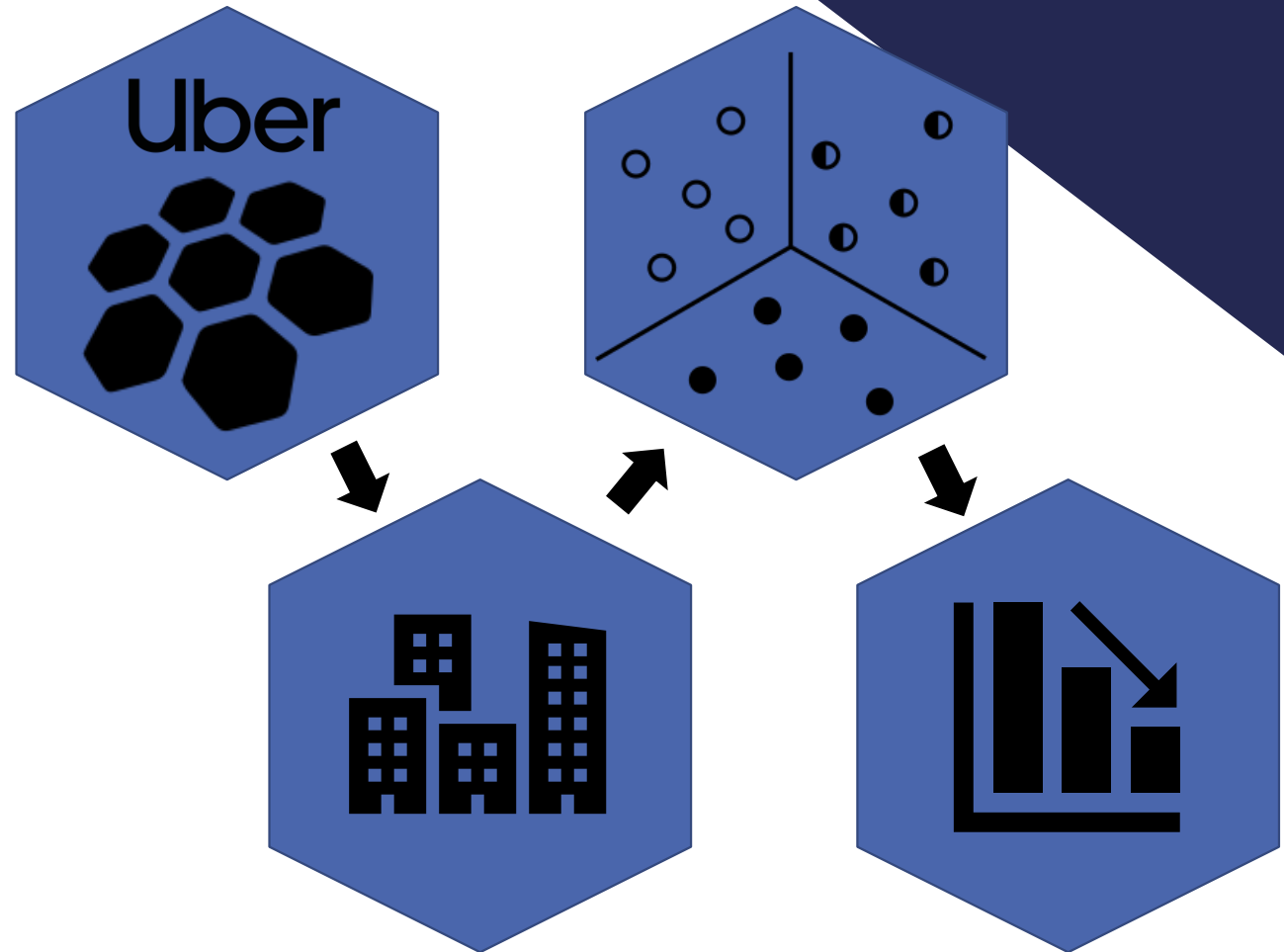
Geocoding
(Forward and Reverse)

99acres

Real Estate Prices

Procedure

- ▶ Create hexagonal grid map of Bangalore using Uber's H3 geospatial system
- ▶ Collect real estate and Foursquare venue data for all hexagons
- ▶ Build K – means clustering model and study results
- ▶ Create scoring metric and rank locations



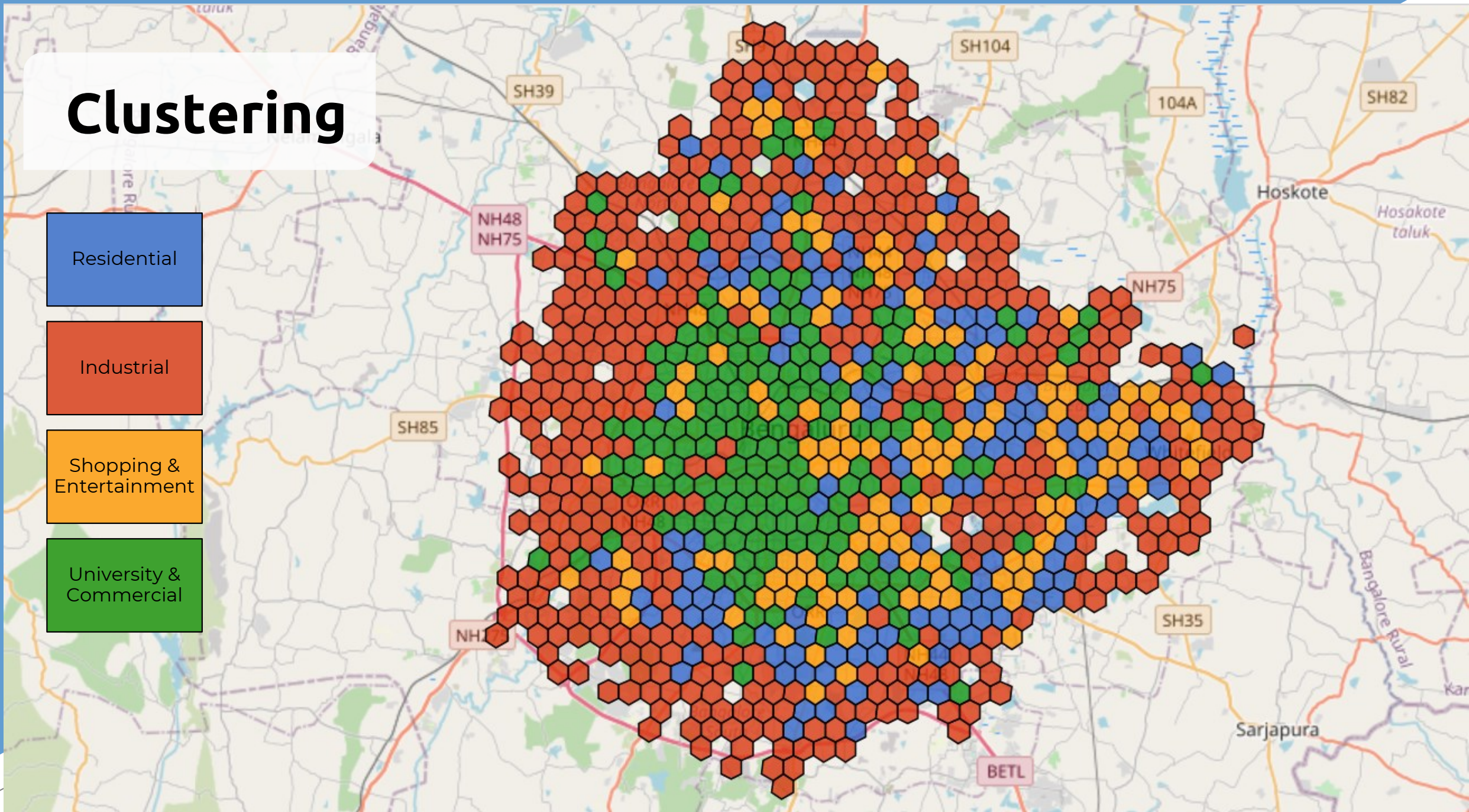
Clustering

Residential

Industrial

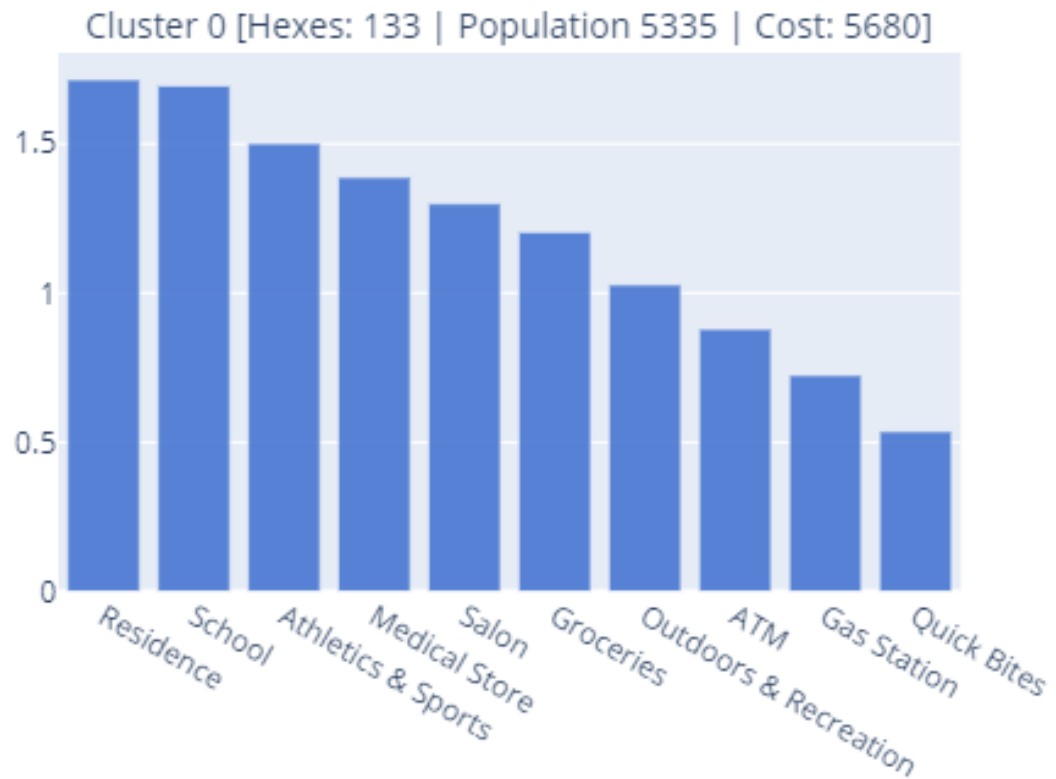
Shopping &
Entertainment

University &
Commercial

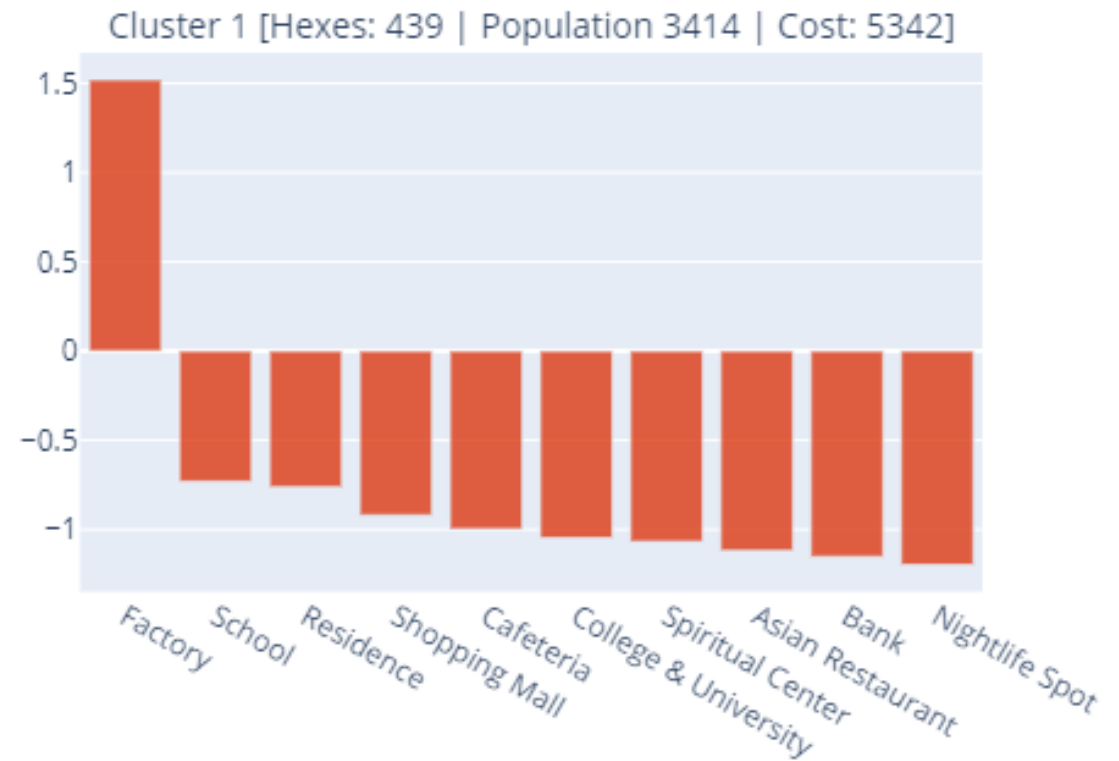


Cluster Profiles

Residential



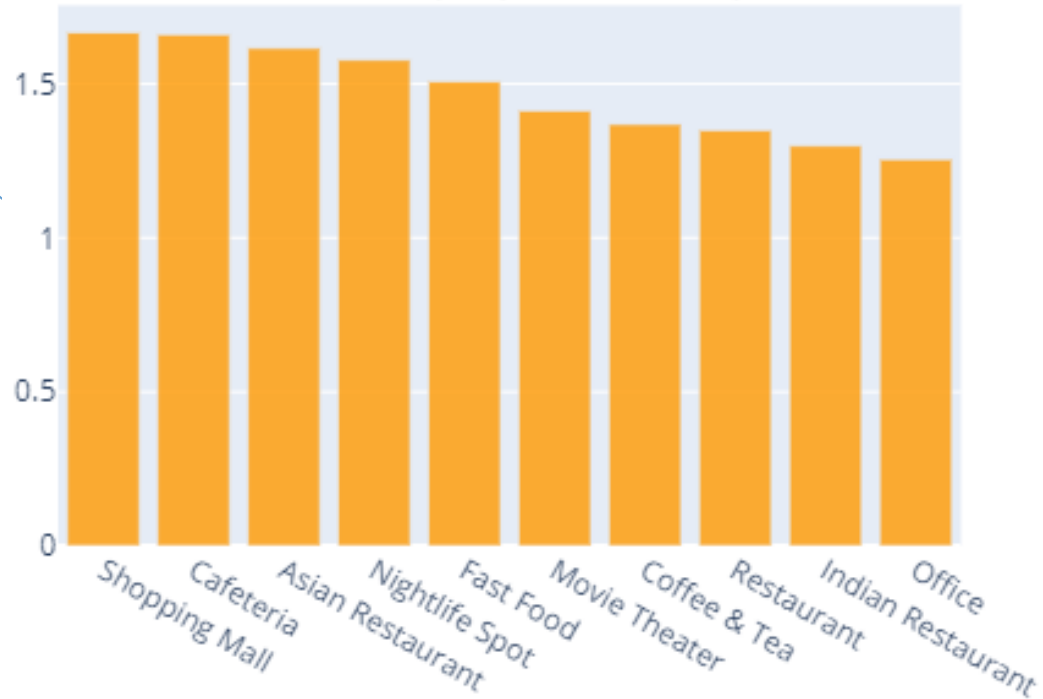
Industrial



Cluster Profiles

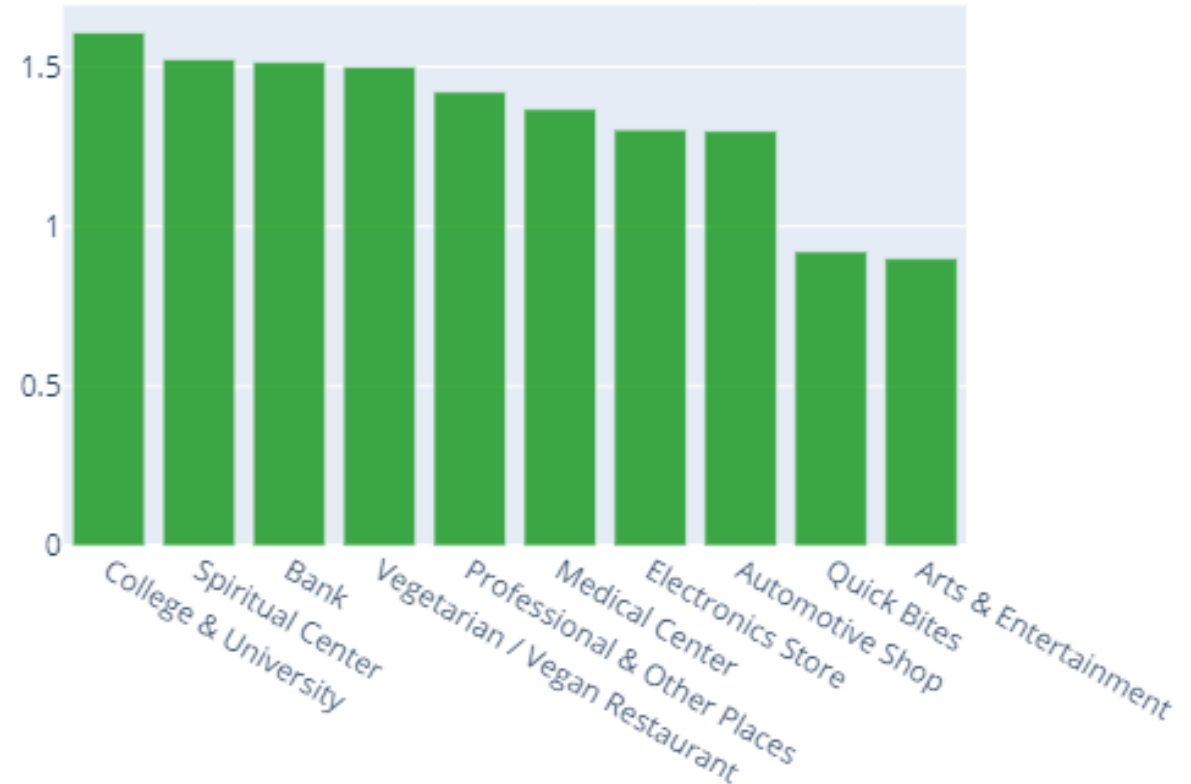
Shopping & Entertainment

Cluster 2 [Hexes: 134 | Population 7155 | Cost: 6028]



University / Commercial

Cluster 3 [Hexes: 169 | Population 15302 | Cost: 6757]



Case 1

Thai/Seafood Restaurant

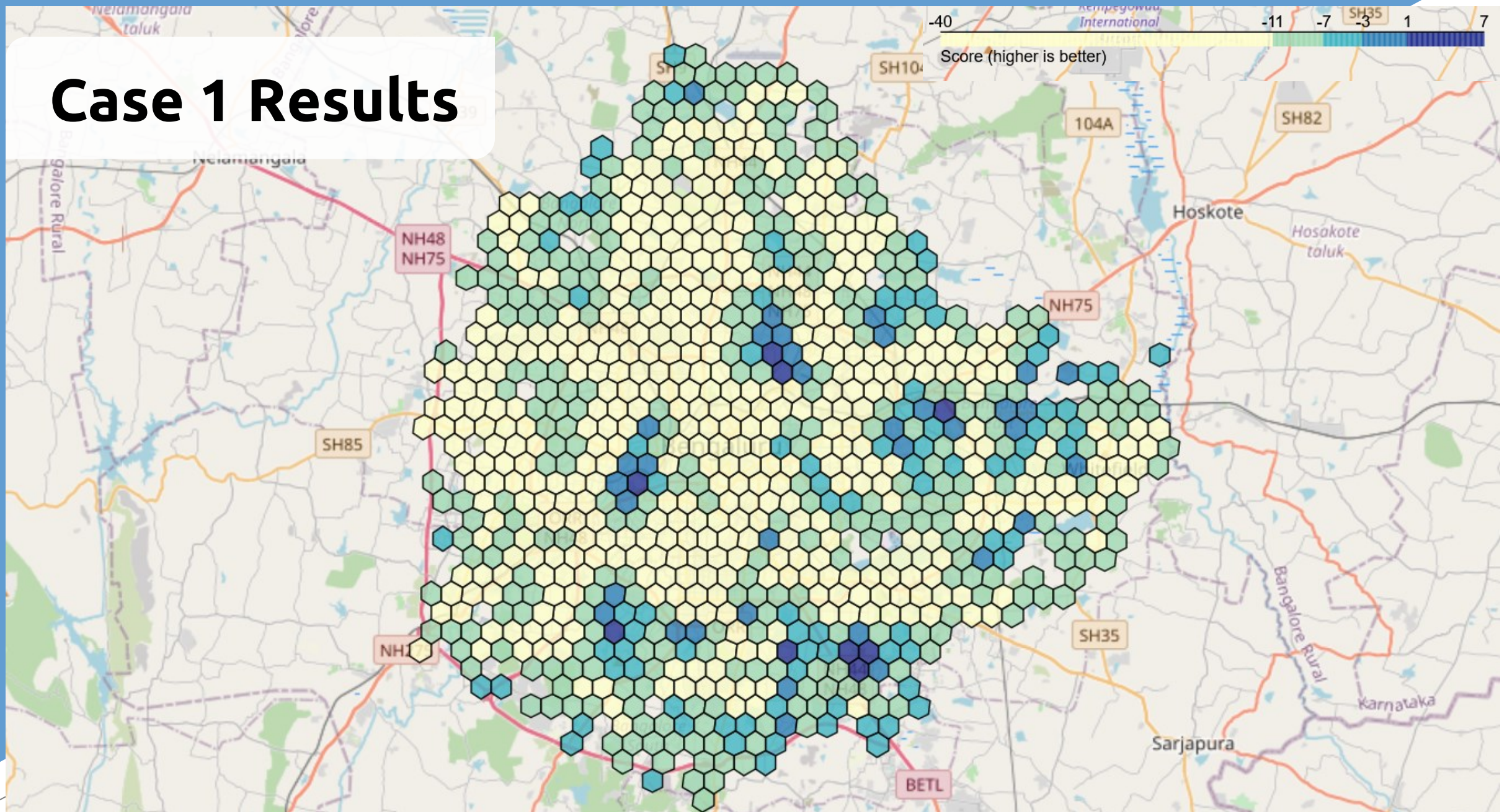
Format Casual Dining

Target Families, Corporate

Category	Variable	Weight
General	Population	10
	Real estate cost (per sq. ft.)	-15
Competition	Asian Restaurant	-10
	Indian Restaurant	-7
	Restaurant	-7
	Vegetarian / Vegan Restaurant	-5
	Quick Bites	-3
	Fast Food	-3
Complements	Residence	15
	Office	12
	Shopping Mall	10
	Movie Theater	10



Case 1 Results





Residential

Industrial

Shopping & Entertainment

University & Commercial

Case 1 Results

Top 10 Locations

H3 ID	Cluster	Score	Address
8861892461fffff	0	7.27	Mangammanapalya, Bommanahalli Zone, Bengaluru - 560068
8861892463fffff	1	3.53	Mangammanapalya, Bommanahalli Zone, Bengaluru - 560068
8861892439fffff	0	2.96	Bommanahalli Ward, Bommanahalli Zone, Bengaluru - 560068
8861892eb1fffff	0	2.49	Richards Town, Sagayarapuram Ward, East Zone, Bengaluru - 560084
8861892eb7fffff	1	2.13	Muneshwara Nagar, East Zone, Bengaluru - 560084
8860145a2dfffff	1	1.44	K H Ranganath Colony, Rayapuram Ward, West Zone, Bengaluru - 560026
8861892e03fffff	0	1.34	Mapple Heights Apartments, Vijnana Nagar, Mahadevapura Zone, Bengaluru - 560093
886189246bfffff	0	0.97	AECS Layout, A block, Singasandra, Bommanahalli Zone, Bengaluru - 560068
88618924b3fffff	0	0.68	AGS Layout, Uttarahalli, Bommanahalli Zone, Bengaluru - 560061
8861892ebdfffff	3	0.64	Lingarajapuram, Lingarajapura Ward, East Zone, Bengaluru - 560043

Case 2

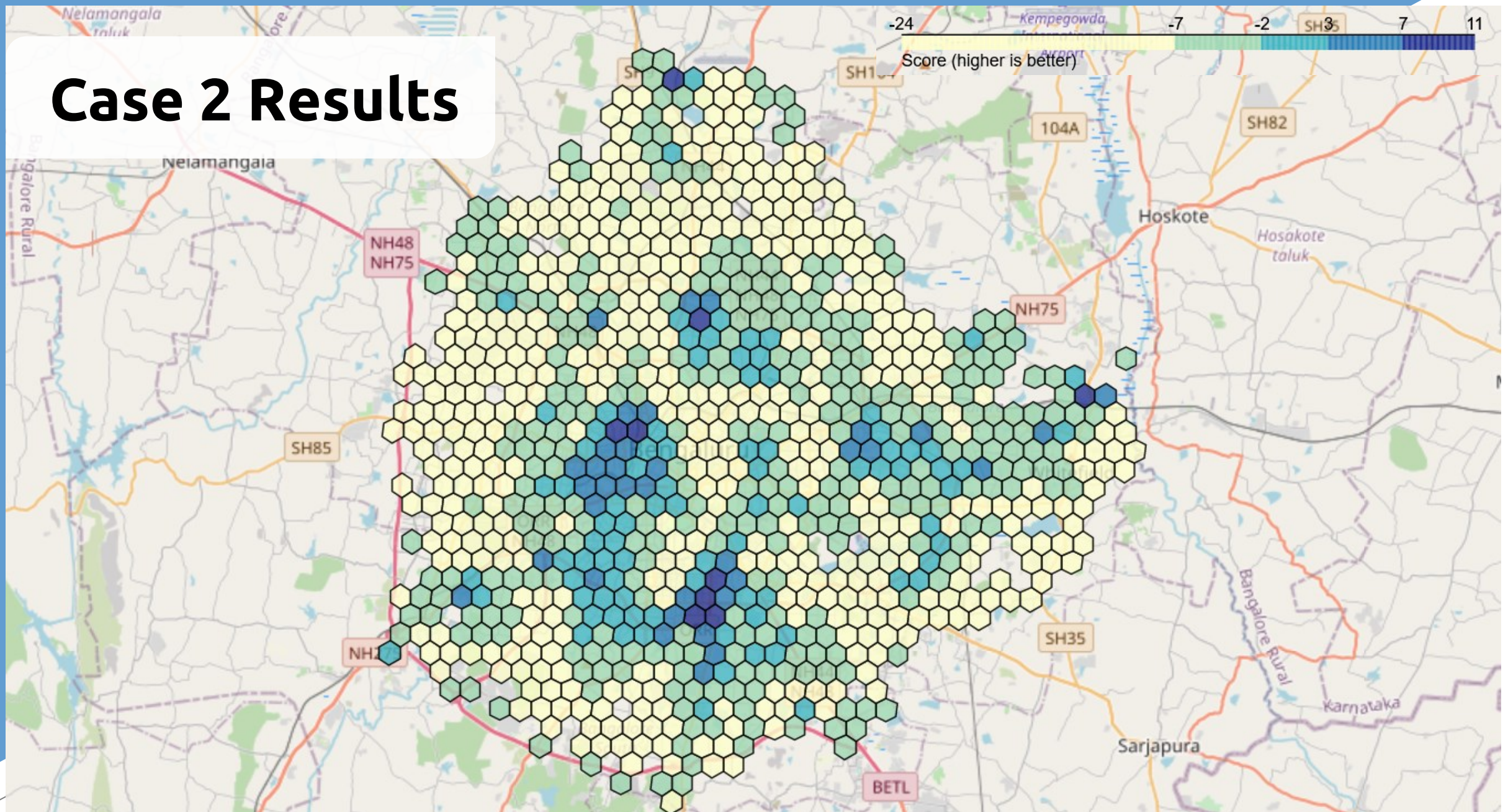
Restobar

Format Restobar / Gastropub

Target College students, Young professionals

Category	Variable	Weight
General	Population	10
	Real estate cost (per sq. ft.)	-15
Competition	Nightlife Spot	-15
Complements	Residence	5
	Office	10
	Shopping Mall	10
	Movie Theater	10
	College & University	15
	Arts & Entertainment	7

Case 2 Results



Case 2 Results

Top 10 Locations

Residential	Industrial	Shopping & Entertainment	University & Commercial
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H3 ID	Cluster	Score	Address
8860145b1dfffff	3	11.47	Hospital-ayurvedic Homeo Clinic, 2nd Main Road, Prakash Nagar Ward, West Zone, Bengaluru - 560021
88618925d9fffff	2	8.63	MICO Layout, BTM Layout Ward, South Zone, Bengaluru - 560069
8861892185fffff	3	8.52	Kadugodi, Mahadevapura Zone, Sheegehalli, Bengaluru - 560067
8860145b0bfffff	3	8.24	Ramachandra Pura, Okalipuram Ward, West Zone, Bengaluru - 560020
88618925d5fffff	3	7.80	Bismillah Nagar, Gurappanapalya Ward, South Zone, Bengaluru - 560029
88618925dbfffff	3	7.69	JP Nagar 2nd Phase, South Zone, Bengaluru - 560069
8861892cd7fffff	0	7.54	4th Cross Road, Anandanagar, Hebbala Ward, East Zone, Bengaluru - 560032
8860169625fffff	1	7.21	Chowdeswari Ward, Yelahanka Zone, Bengaluru - 560064
88618925d1fffff	2	7.19	Sahakari Vidyakendra AHPS Jayanagar, East End B Main Road, NAL Layout, Jayanagar East Ward, Bengaluru - 560069
8860145b03fffff	3	7.08	7th Main Road, Srirampura, Dayananda Nagar Ward, West Zone, Bengaluru - 560003

Conclusion

Model Evaluation

- ▶ Model produced good results for both cases
- ▶ Top 10 results for each generally consisted of the expected clusters
- ▶ Factor selection and weighting important
- ▶ Model is flexible enough for different scenarios

Future Plans

- ▶ Additional and updated economic and demographic information – income, age profiles, etc.
- ▶ More detailed restaurant data – ratings, prices, cuisines
- ▶ Allows better segmentation – both of customers and competition.