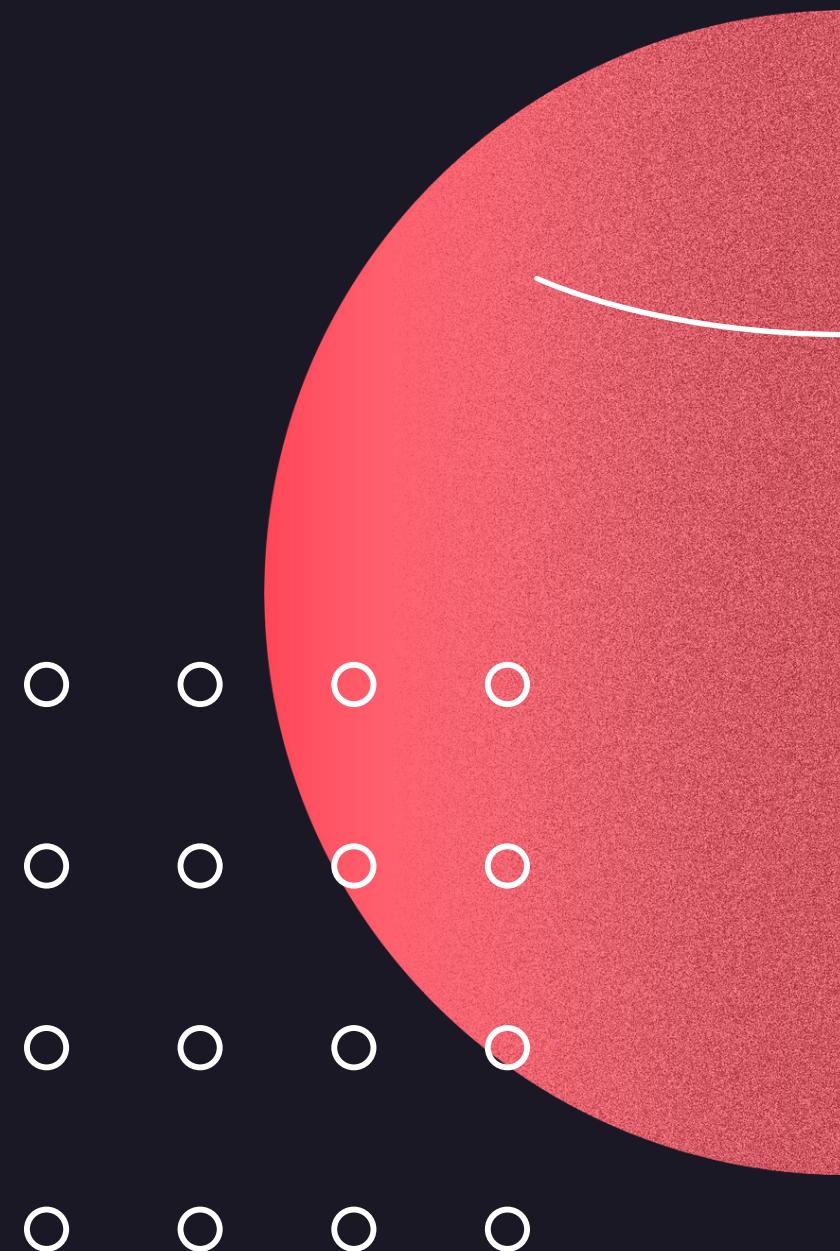


**Venues data analysis
of the cities with the highest
population in Ecuador.**

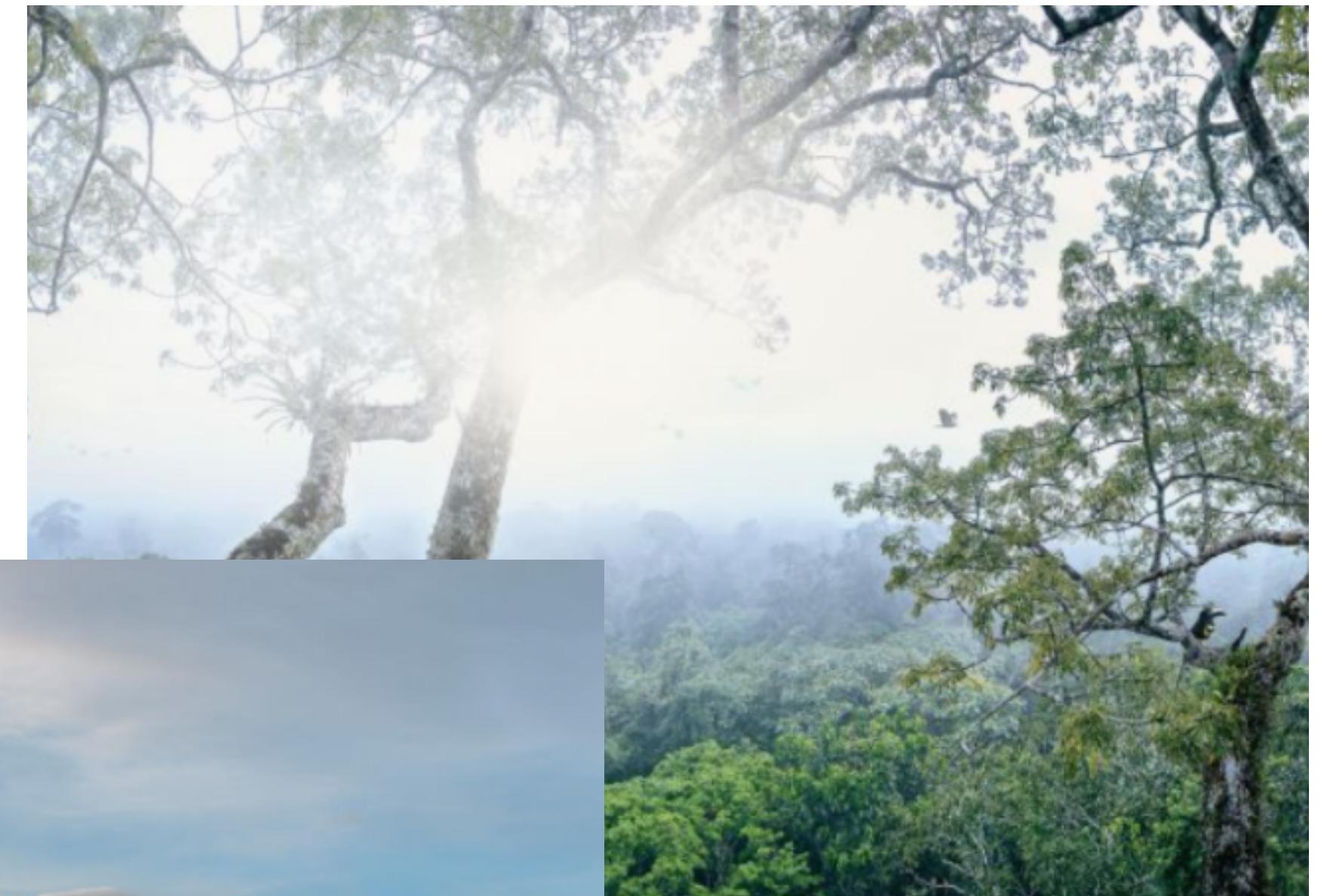
Author: Daniela Sánchez Soto

Motivation

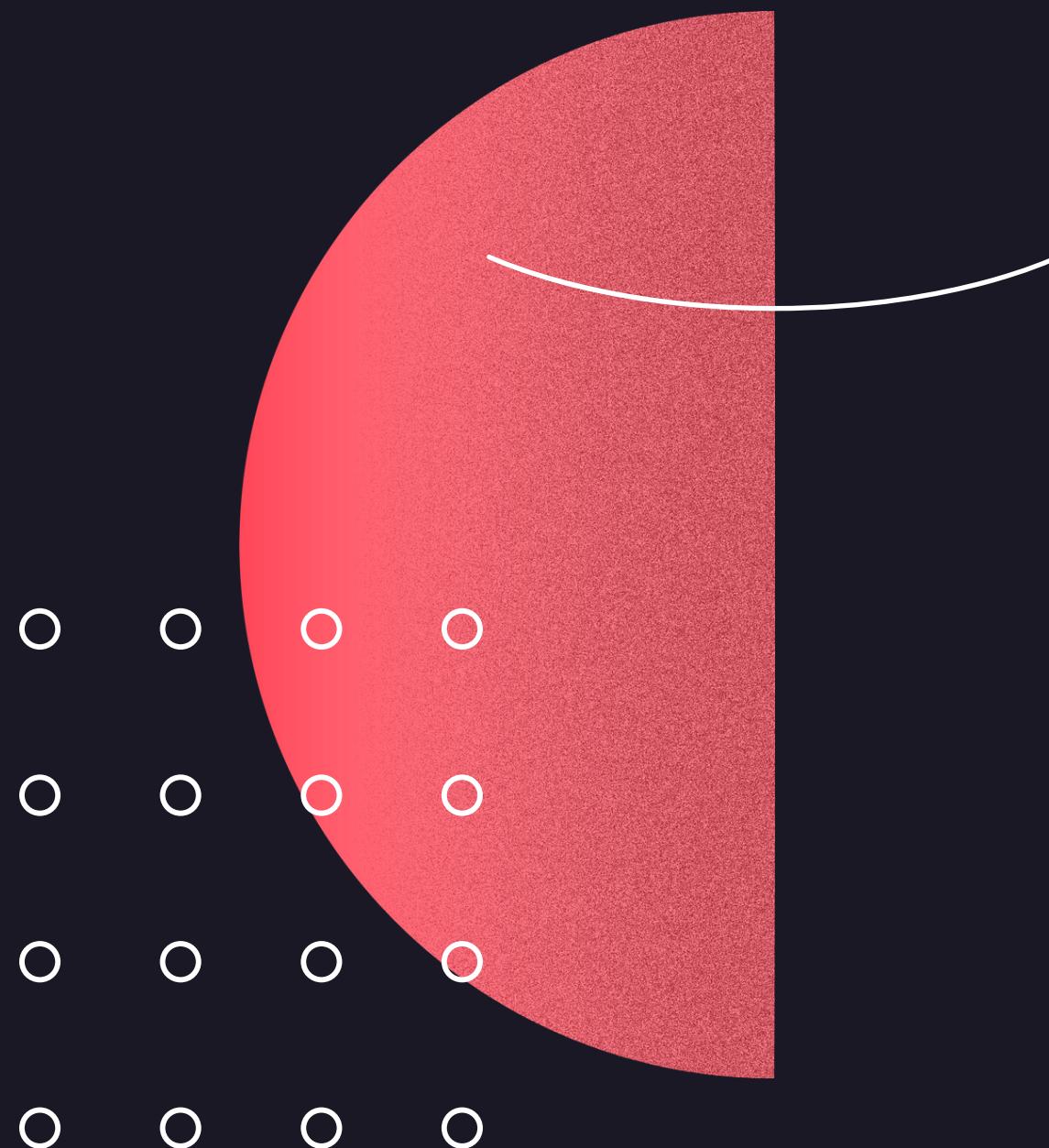


Tourism is one of the most important economic and cultural activities for any country. This industry generates sources of employment and tourism activities creates demand across diverse industries.

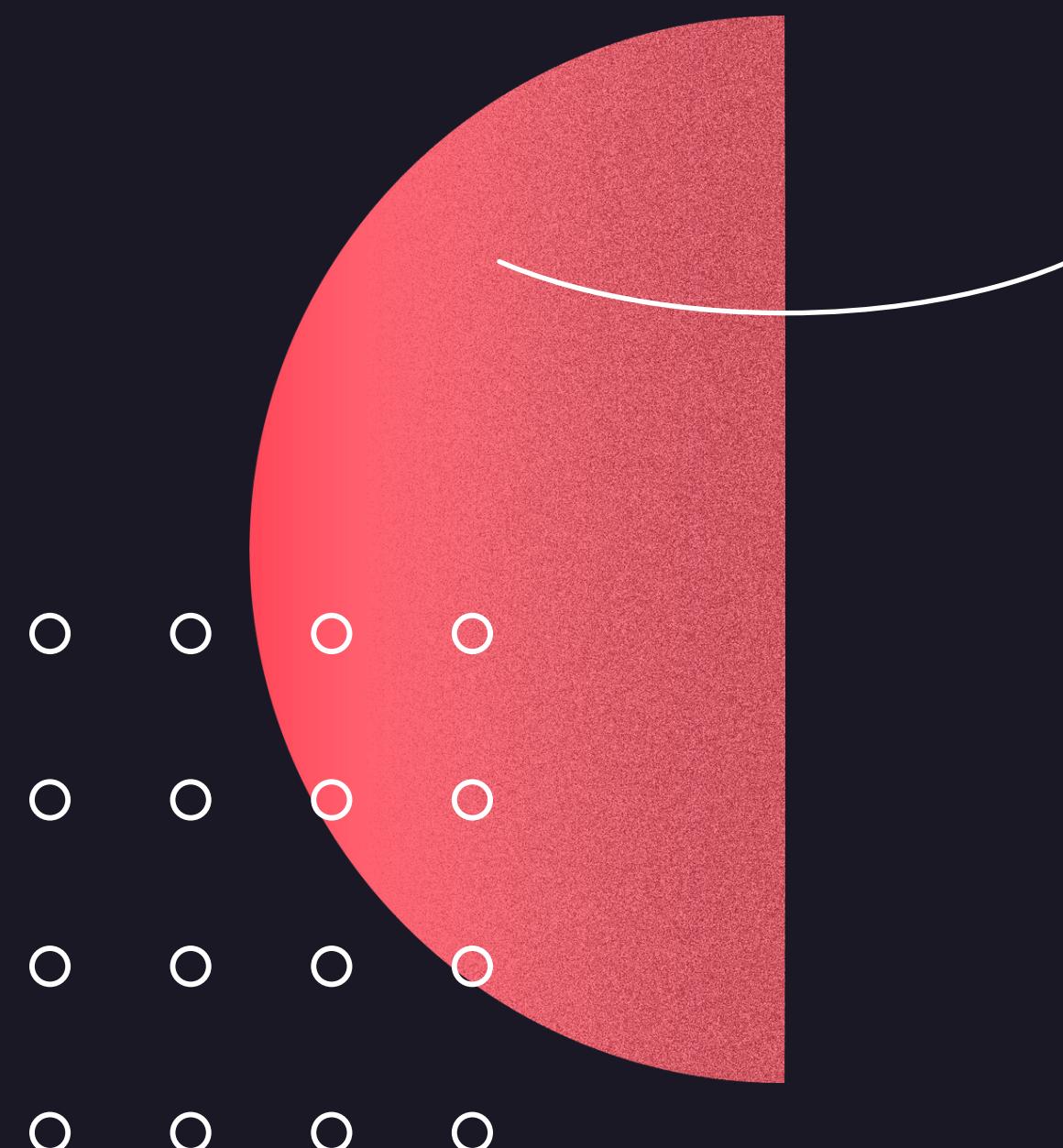
Ecuador is one of seventeen megadiverse countries in the world according to Conservation International.



Business problem



Analyze the most common venues of the most populous cities in Ecuador. Due to the diversity of the country, determine if there is a relation between the cities of a region and the categories of the venues. This analysis could contribute to identify a business opportunity.

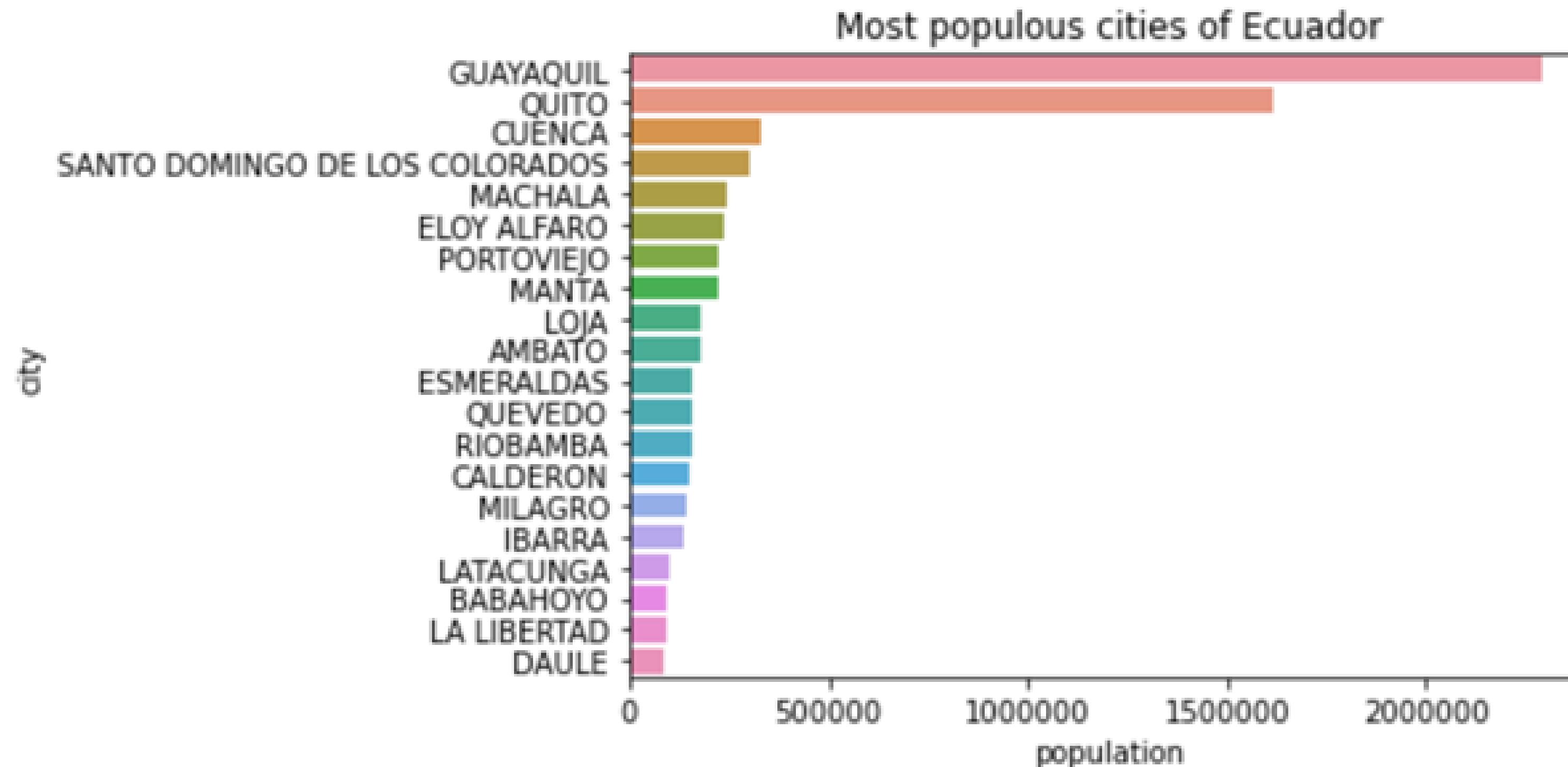


Data acquisition

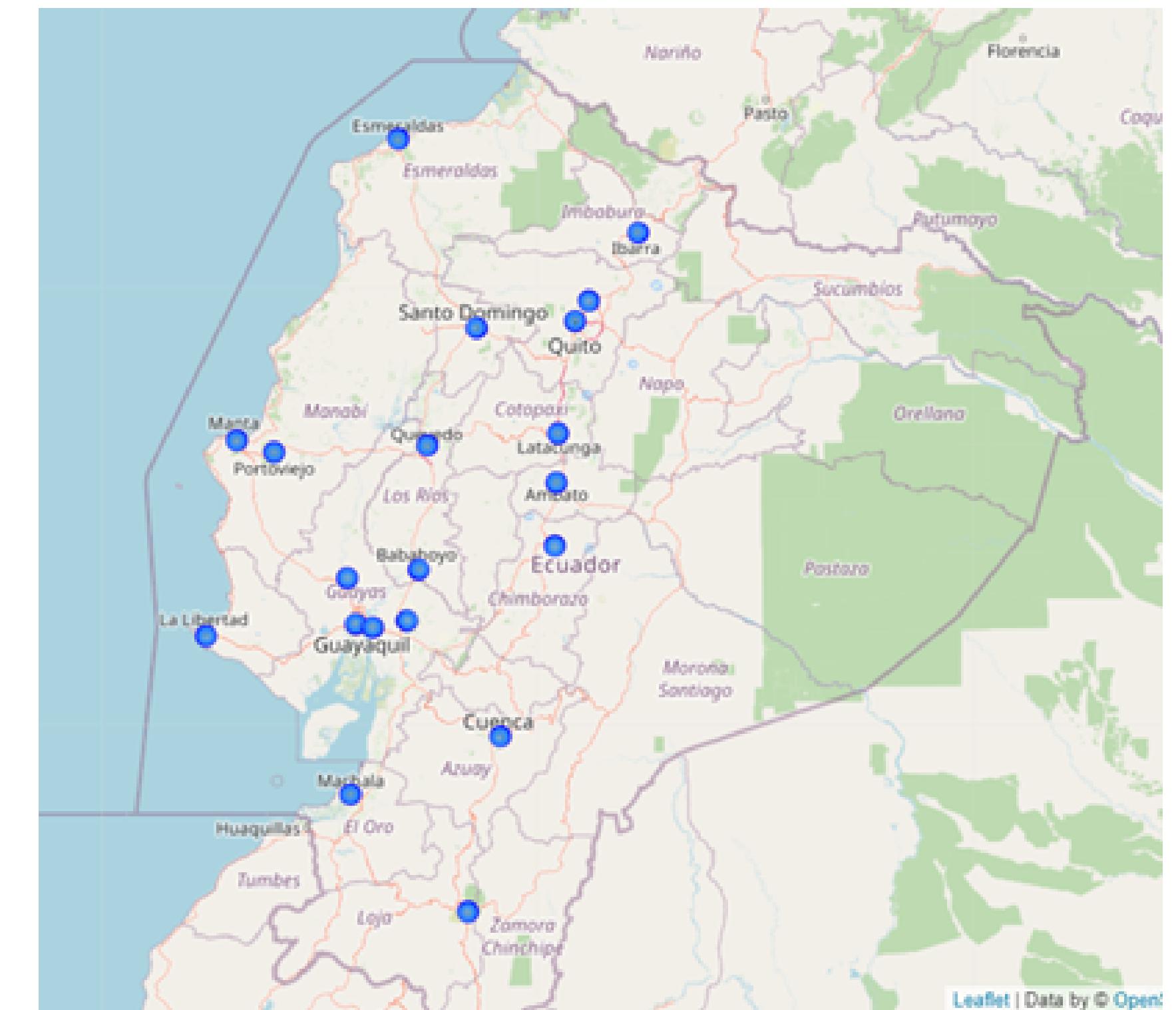
- From the National Institute of Statistics and Censuses of Ecuador (INEC), the data of the Ecuadorian population distributed by provinces, cantons (local government area) and cities was obtained.
- The latitude and longitude coordinates of the cities was obtained with the python's package geocoder.
- Foursquare API to get the most common venues of the selected cities.

SELECTED CITIES FOR ANALYSIS

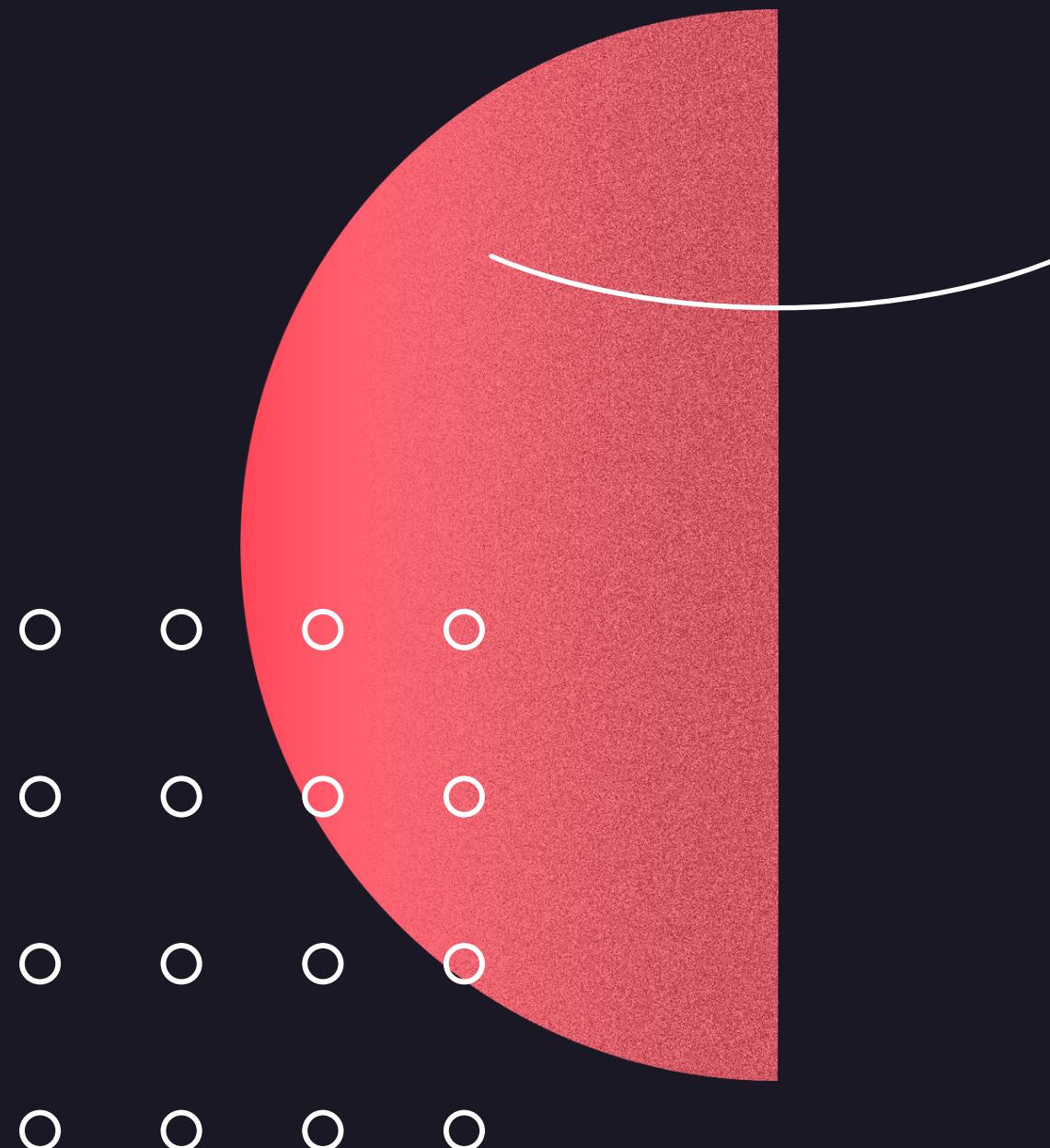
06



The cities with the highest population belong to the Coastal and Andes Regions of Ecuador.



Methodology



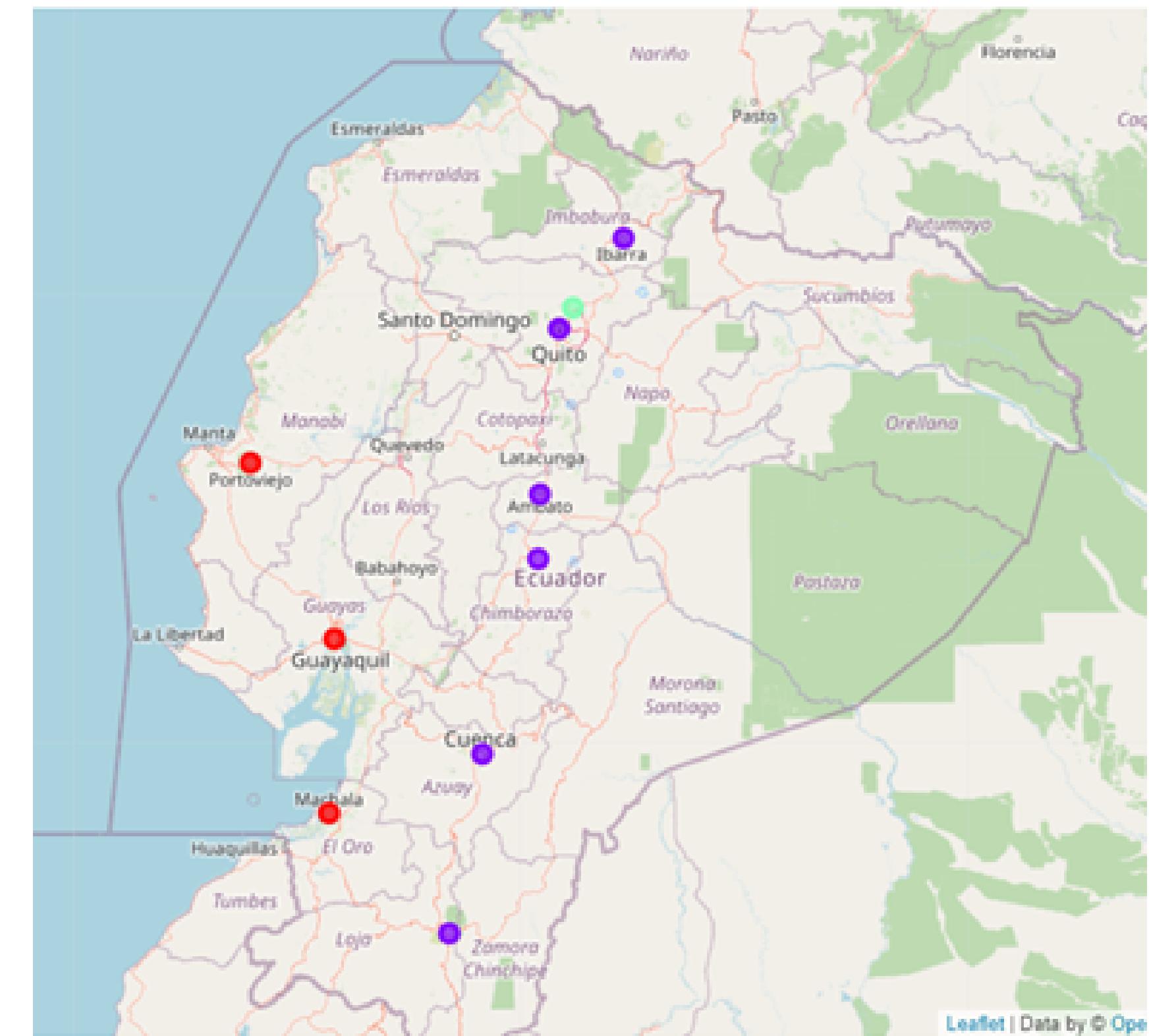
- One-hot encoding of the venues retrieved from each selected city via Foursquare API.
- Perform K-mean clustering to identify a pattern between tourist venues and the cities. The silhouette coefficient method was used to determine the optimal number of clusters.

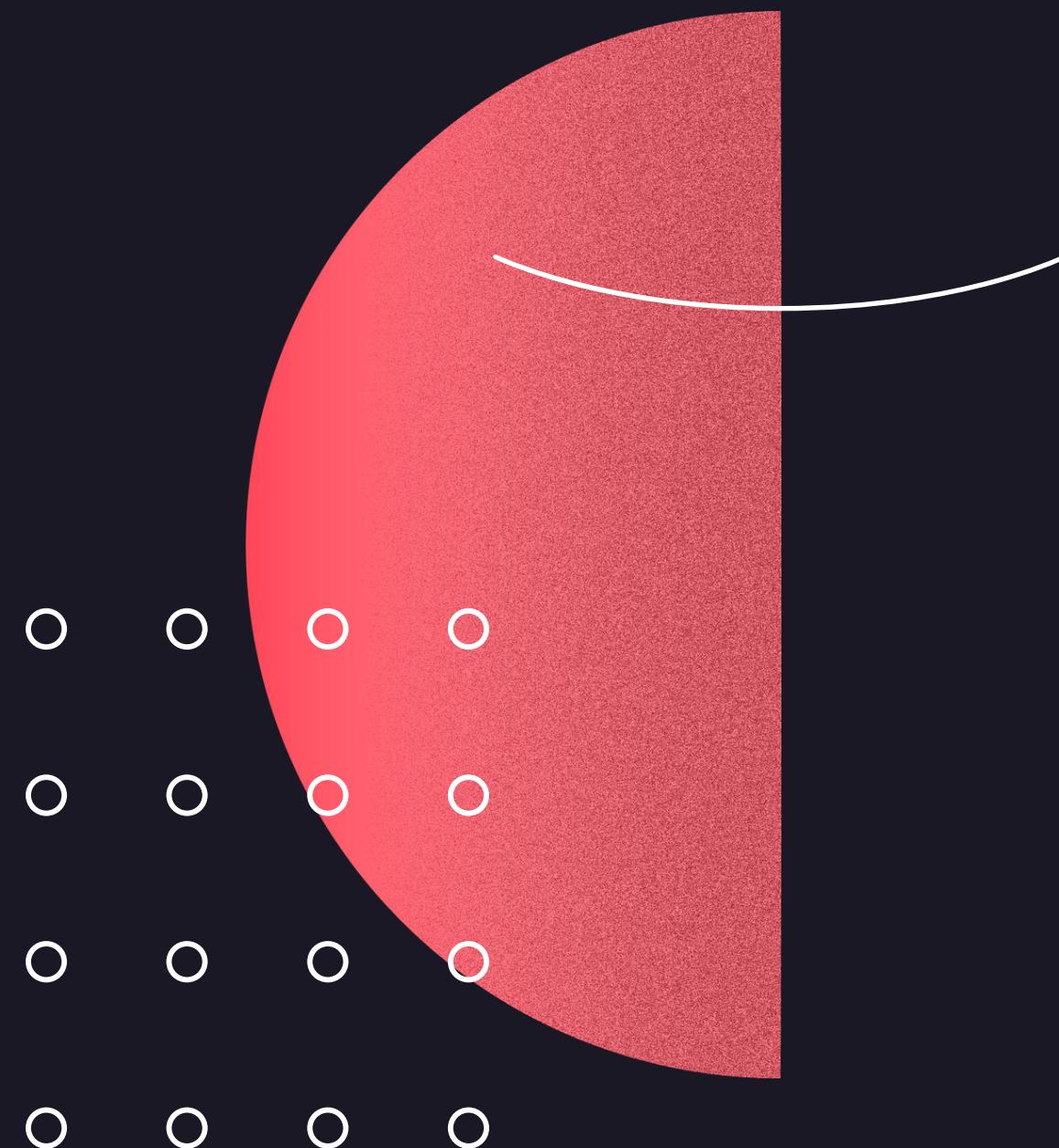
RESULTS

Cluster 0. Cities belong to the coastal region and most common venues are seafood restaurants.

Cluster 1. Cities belong to the Andes region and the common venues are hotels, seafood restaurants and coffee shops.

Cluster 2 only contains one observation refer to Calderon, a rural zone with a strong urban development in the last few years. Different kind of restaurants are the common venues in this area.





Conclusions

- Across all the clusters the gastronomy or food is the most common category venue related to tourism in Ecuador.
- Each region analyzed has their own common categories of venues.
- Due to the lack of venues related to transportation, a business opportunity could be a personalized and affordable transportation service.