Food and Nightlife Venue Data Analysis of Cape Town

Applied Data Science Capstone Project

1. **Introduction**

**1.1 Background**

Cape Town is a coastal city on the west coast of South Africa. The city possesses a number of tourist attractions and in 2018 was voted the World’s Best city by readers of Travel and Leisure. The cities most iconic landmark is undoubtedly the UNESCO World Heritage site, Table Mountain [1]. Cape Town's urban geography is influenced by the contours of Table Mountain, its surrounding peaks, the Durbanville Hills, and the expansive lowland region known as the Cape Flats. These geographic features in part divide the city into several commonly known groupings of suburbs (equivalent to districts/boroughs outside South Africa). These districts/boroughs are: Atlantic Seaboard, Cape Flats, City Bowl, Helderberg, Northern Suburbs, South Peninsula, Southern Suburbs, West Coast [1].

**1.2 Problem**

Aside from international and local tourists, the city also sees a relatively high amount of domestic migration from South African citizens moving in from other parts of the country. This is because the city is perceived as having a higher standard of living than other cities and better employment opportunities. The beautiful natural surroundings also serve as a significant draw card for domestic migrants. The majority of these migrants are recently graduated individuals and young professionals who are able to move to a new city because they have greater freedom to do so. There are a number of factors that a typical young person may consider when moving into a new neighbourhood. For the purpose we will assume that the two most important factors that these individuals consider as the following:

* The type of eateries that exist around the neighbourhood.
* The number of nightlife spots that are available within a short distance

We will therefore create a map that young people can use to decide which neighbourhood they want to move into based on the above mentioned factors. For the purpose of this analysis we will also only consider neighborhoods within the districts/boroughs of: Atlantic Seaboard, City Bowl, and Southern Suburbs because these form the economic hub of the city where all our main venues of interest are located.

1. **Data Sources**

To create the map we will need the following data sources:

* Food and Nightlife spot venues for each neighbourhood will be obtained from the Foursquare API [2].
* The list of suburbs in each district/borough (In South Africa, the term "suburb" does not necessarily mean "residential area on the edge of a city"; rather, it is used synonymously with neighbourhood to refer to the smallest geographical subdivision of the city.) [3]
* Google Maps to obtain the gps coordinates of the each neighbourhood. [4]
* We want to create a choropleth map to display the number of nightlife spots per neighbourhood. The highest level boundary file I could find was a .json file for South Africa was a Fourth-level Administrative Divisions from NYU spatial data repository [5]. The .json goes down to ward level. In South Africa, wards are geopolitical subdivisions of municipalities used for electoral purposes.
* Lastly we need to determine which ward each neighbourhood belongs to. For this we can use the map viewer provided by the city of Cape Town [6].

1. **Methodology**

**References**

[1]. [Cape Town - Wikipedia](https://en.wikipedia.org/wiki/Cape_Town)

[2]. [Foursquare API](https://developer.foursquare.com/)

[3]. [List of Cape Town suburbs - Wikipedia](https://en.wikipedia.org/wiki/List_of_Cape_Town_suburbs)

[4]. [Google Maps](https://www.google.com/maps/)

[5]. [Fourth-level Administrative Divisions, South Africa, 2015](https://geo.nyu.edu/catalog/stanford-jt291dy8932)

[6]. [City of Cape Town Map Viewer](https://citymaps.capetown.gov.za/EGISViewer/)