**Battle of Neighbourhoods: A Case study of two Major Financial hubs in their Countries**

1. **Introduction**

**1.1 Background**

The City of Johannesburg in South Africa is a major hub for economic activity in the country and is the financial centre of Africa’s most industrialised economy. Similar to Toronto in Canada, they are the financial capital centres as well as largest GDP contributors in their countries respectively. Toronto contributes about 20% to the GDP of Canada while Johannesburg contributes about 14%. Though the two countries are major contributors to the economies the size of the contribution varies vastly with GDP per capita of Toronto being 36000 US dollars and the GDP per capita for Johannesburg being 3000 US dollars GDP per capita. In a world where economies are fluid and international work opportunities are available for the skilled and mobile working professionals; as well as to investors looking to diversify their investments, understanding neighbourhoods in the two cities can be used as a marketing tool to help attract skilled contributors to the countries economy in the form of visitors, investors or as a way to boost local economy by the locals.

**1.2 Problem**

The Financial Districts of Johannesburg and Toronto are by nature and design present a flurry of financial activities and attractions, stemming from the fact that the financial industry has been and continues to engine of growth and wealth in economies across the World. This study explores how an individual living or a visitor to the two cities is likely to experience the neighbourhoods surrounding the two financial districts. The two financial districts will be indexed by the Johannesburg Stock Exchange and the Toronto Stock Exchange for Johannesburg and Toronot respectively.

### 1.3 Interest

The study of the two financial districts would be of particular interest to, a working professional, looking to enrich their local experience (South African/Canadian), a visitor looking to enrich their international experience of South Africa or Toronto, or an investor conducting research to assess viability for a financial investment project.

## 2 Data Acquistion and Cleaning

### 2.1 Data Acquisition

For the Initial starting points of the two financial districts the Google search engine was used to determine the address of the stock exchnage buildings. For the Toronto Stock Exchange, the Google search engine was further used to obtain the GPS coordinates of the building. For all data pertaining the project reliance was placed on the Foursquare API for input into the exploration and analysis work.

### 2.2 Feature Selection

After extensive research and exploration of Foursquare API documentation, I settled on 3 API's to use for the study in this project. These are Building, Entertainment and Restaurant API’s. Selection of these API's in my view will be able to provide one with high level information and also directionally will be able to make educated decisions regarding neighbourhoods of the two financial districts.

## 3. Data Exploration

As the study is an exploration study with reliance on on built in Python function. Neccesary libraries needed to perform analysis needed to be imported. The next section imports the relevant Python Libraries

## 3.1 Exploring Buildings around the Johannesburg Stock Exchange

Using the address obtained from the Google Search engine as input, the below program seeks to find the GPS coordinates of the Johannesburg stock exchnage building in South Africa.

* 6 building location exist within 1 KM radius from the Johannesburg Stock Exchange
* 4 of them are Hotels and with the other being a Shopping Mall and an African Restaurant

## 3.2 Exploring Buildings around the Johannesburg Stock Exchange

* 65 buildings exist around the Toronto Stock Exchange within a 1KM radius
* Building category with most buildings is Hotel category just like in Johannesburg

## 3.3 Entertainment Comparison between JSE and TSE

## 42 Entertainment Categories exist within 1 KM radius of TSE vs 4 that exist within 1 KM radius of the JSE.

## The highest proportion in both neighborhoods is the General category

## TSE neighborhood offers more variety compared to JSE neighborhood.

## 3.4 Restaurant Category Comparison between the JSE and TSE neighborhoods.

# 42 Entertainment Categories exist within 1 KM radius of TSE vs 4 that exist within 1 KM radius of the JSE.

# The highest proportion in both neighborhoods is the General category

# TSE neighborhood offers more variety compared to JSE neighborhood.

# 4. Discussion

Buildings around Financial Centres Explorations of the buildings around the Johannesburg Stock Exchange revealed 6 buildings of interest with 66% of them being Hotels and the remaining buildings being a shopping Mall and Wall Street restaurant. Exploration the buildings around the Toronto Stock exchange revealed 65 buildings with diverse categories of which only 12% of them was hotels. Though in terms of percentage Toronto’s number is low in terms of quantity it is still more than Johannesburg’s. Toronto also offer 41 more categories that I was not able to find in the Johannesburg data.

Exploration of entertainment areas around Johannesburg only reveal 4 spots with only two categories being a nightclub and general entertainment. For the same category Toronto offers 42 areas of entertainments, offering visitors variety of things to do and explore around the Financial District. In terms of the categories of entertainment Toronto has 25 (60%) venues categorised under general entertainment. 40% of offer alternative categories which are not found around the Johannesburg Financial district area.

Exploration to the food market in both cities, indicate that there are 34 restaurant around the Johannesburg stock exchange compared to more than 100 around the Toronto Stock exchange. There is 32 categories of restaurants in the Toronto Stock exchange area compared to 15 around the Johannesburg stock exchange. Though Johannesburg offers fewer restaurants there is more variety in this category for visitors to the area than in any other category explored in this study.

# 5. Recommendation

The data does indicate low levels of maturity especially for the Johannesburg data where there were no Office building categories which is a little hard to fathom considering that Johannesburg is the Financial hub of the country of South Africa. As such, I do recommend adding that the provider finds a way to get more data points.

The City of Toronto has more categories of buildings and entertainment areas indicating that there is more points of interest for both visitors and investors. This number of interests do indicate that people are likely to spend in the neighbourhood. Recommendation would be for Johannesburg to invest in more diverse buildings so as to create more interest in the city for people to spend more on the local economy.

# 6. Conclusion[¶](https://render.githubusercontent.com/view/ipynb?color_mode=auto&commit=04a41606814f622629f19a5ee860d8dd32369e93&enc_url=68747470733a2f2f7261772e67697468756275736572636f6e74656e742e636f6d2f4d616b2d6d656f2f4170706c6965642d446174612d536369656e63652d43617073746f6e652f303461343136303638313466363232363239663139613565653836306438646433323336396539332f4150495f546573742532302832292e6970796e62&nwo=Mak-meo%2FApplied-Data-Science-Capstone&path=API_Test+%282%29.ipynb&repository_id=341275478&repository_type=Repository#6.-Conclusion)

Toronto does offer variety of areas of interests, entertainment, and restaurants compared to Johannesburg. People visiting the Toronto exchange neighbourhood are likely to spend more time in the area as well as their money compared to Johannesburg. Opportunities of enriched experience are therefore more in the Toronto area compared to Johannesburg.