**Data Analysis of Rio de Janeiro - Housing Sales/Rental Prices,Venues & International Schools.**

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**INTRODUCTION**

Rio de Janeiro is known as the “Wonderful City” and it is famous worldwide. It´s the most important tourist spot in Brazil. There are many beautiful places, especially amazing beaches. It´s considered by UNESCO as a cultural landscape. The weather is perfect, about 23 degrees all year around.

I´ve been living here for decades, and I had the opportunity to see the city grows and develops with events such as the Soccer World Cup and the Olympic Games. I think the events that took place in the city attracted many foreign investors, especially for the real estate market. In addition, the city receives many foreign employees from multinational companies every year. However, these companies have some difficulties when these employees arrive in Rio. They have to find a house and an international school for their families.

Therefore, I decided to do my project about oceanfront boroughs in Rio de Janeiro city, due to the fact that it is the most desired place to invest, live and visit. The most important tourist spots are in or around these boroughs, as well as many offices and main shopping centers. If a brand needs to get attention in Brazil, it will have to open a store in one of them. This project will be interesting for investors, multinational companies, tourists, foreign and Brazilian people.

**DATA**

In the first place, I got the data about housing average sales prices and average rental prices per square meters in SECOVIRIO – Housing Union (<https://www.secovirio.com.br/wp-content/uploads/2020/07/precos-dos-imoveis-jul20.pdf>). The data was cleaned, reduced and separated. The information about housing average rental prices per square meters was plotted on vertical bars graph and housing average sales prices per square meters on horizontal bars graph. After that, I got in official government website of INEA – Instituto Estadual do Ambiente (<http://www.inea.rj.gov.br/wp-content/uploads/2018/12/Coordenadas-Geogr%C3%A1ficas-das-Esta%C3%A7%C3%B5es-de-Amostragem-Praias.pdf>) a file with all the beaches coordinates. It was also used the .json file in all areas of Rio de Janeiro´s boroughs from other official government website of Instituto Pereira Passos (<https://opendata.arcgis.com/datasets/8454eb0454b7424d89c61b67742286a1_15.geojson>). And that data was cleaned and reduced to just oceanfront boroughs. Therefore, with this information, I created a choropleth map of Housing sales price.

About international schools, I searched in Google and checked all the information. This data was combined into the table with boroughs and then changed from category data to numeric data. A pie chart was created to visualize number of schools by boroughs.

Foursquare API (<https://developer.foursquare.com/>) was used to get the most common venues about oceanfront boroughs. In this case, I showed venues about the boroughs as well as I used unsupervised learning K-means algorithm to cluster the boroughs.

Finally, a choropleth map was plotted with all information about oceanfront borough such as housing average sales price per square meters, international schools and clusters. Thus, with all information, it´ll be easier to investors, multinational companies or anyone to choose the better place in Rio de Janeiro according their needs.

**METHODOLOGY**

**RESULTS**

**DISCUSSION**

**CONCLUSION**