

# Efficient Position for Food Delivery Apps

## 1. Introduction

### 1.1 Background ; Milan: internationalisation and integration

Milan is a city with a strong international vocation. For its history and geography, Milan has always represented a bridge between Italy, the rest of Europe and the world. Today, around 19% of Milan's total population of 1,380,873 people have a migration background: this share (which is twice the Italian national average) is an indicator of richness and attractiveness – the more magnetic the metropolis, the higher the number of immigrants.

- 30,604 nationals from other EU countries and 236,238 citizens of countries outside the EU;
- 107,155 from Asia (40% of the city's total migration population), 59,358 from Africa (22%) and 46,154 from Central and South America (18%);
- 92% of Milan's migrant population come from developing countries, 5% from developed countries, and the remaining approximate 3% is represented by refugees and asylum-seekers;
- 52,911 migrant minors (24.8% of the city's total migration population), among whom 815 unaccompanied migrant minors.

Another feature of Milan's international dimension regards foreign students, who increasingly choose the city for their tertiary education programs. They make up 6.72% of Milan's university students and mainly come from China, Albania and Iran.

Not only are these figures important to understand today's migration situation, but they also help us imagine the future of Milan. A clear tendency towards further internationalisation is taking shape: the number of third-country nationals is expected to rise by 30% by 2036, when the migrant population will represent 21.2% of Milan's total population. In light of this, the Municipality is committed to making Milan more attractive, by balancing increasing internationalisation with integration processes and by promoting the new citizens' positive contribution to the urban social fabric.

These past years with the development of applications like CASE and food delivery businesses these fraction of the population, started to make his life from delivery businesses and this analysis goal is help to make their process faster.

## **1.2 Problem**

These workers are waiting their delivery orders in random places some of them wait through all day and just selected once for a food order and some is working more than his power. The data will taken by Foursquare but to achieve a more successful result we need to add a lot more databases from different sources but for the sake of this project I will use just he foursquare database and that will show the basic structure of it.

## **1.3 Interest**

Obviously, the people who works in this area would be very interested in accurate prediction position, for competitive advantage and business values to make his time efficient.

# **2. Data acquisition and cleaning**

## **2.1 Data sources**

Venues stats are taken from Foursquare database.

## **2.2 Data cleaning**

This process is a lazy work and mostly inefficient. The taken venue datas from Foursquare checked and cleaned manually by hand if venues existed in these applications or not.

### 3. Exploratory Data Analysis

#### 3.1 Calculation of target variable

From the selected center point there is a 1500 meter radius to find the related venues in the main area of Milan.

#### 3.2 Visualization

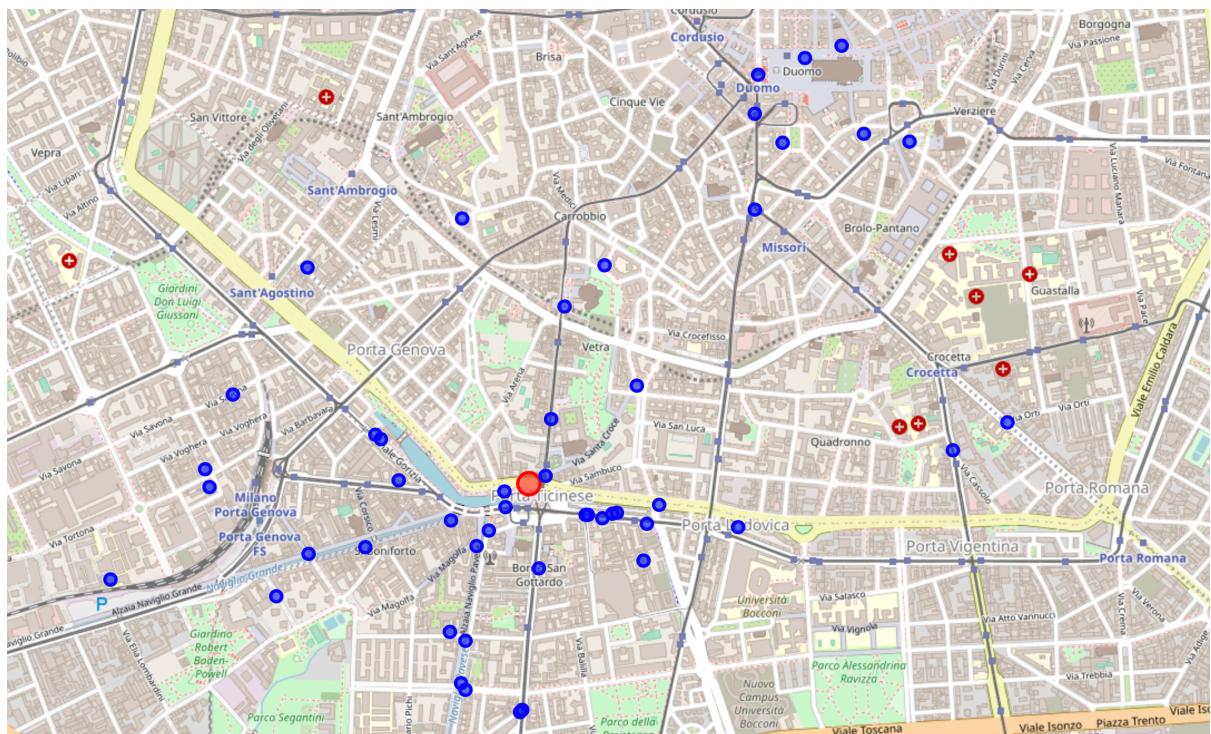


Figure 1. Distribution of actual and venues in the area.

Center point is the red dot in the map and the blue dots are the venues which is restaurants and cafes who works in this business.

## **4. Conclusions**

In this study, I analyzed the distance between each venue in the area and where the volume of these businesses high in order to find a good position for the people who works for food delivery to increase their chances on selection via by these applications.

## **5. Future directions**

The dataset taken from just Foursquare' database but to achieve a more realistic result, we need to take datas from different areas and sources. We still don't know what is the other variables in selection rather than distance and also by entering the efficient position circle in the area it is not guaranteed if these restaurants are going to select the driver because some restaurants are earning less than popular high chain venues like fast food places so if the orders are higher than the other places this will effect the selection of drivers because there is a need for delivery in this restaurant rather than three other restaurants in the other areas so this will affect the position. Some neighborhoods are easier to go with motorbikes rather than bicycles this will affect the efficiency on the drivers earning through the day and much more points to add these analysis but for the project this will serve the requirements.