

# LOCATION STUDY FOR NEW FABIA RESTAURANT IN MELBOURNE

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## 1. Executive Summary

The location study for the second Fabia Restaurant using a Clustering approach initially **considered 18 suburbs in Northern Melbourne** (Australia) and narrowed it down to 6 suburbs (Moonee Ponds, Essendon, Carlton North, Fitzroy North, Northcote & Ivanhoe). These 6 suburbs have most demographic, income & types of venue attributes in common with Hawthorn (where Fabia Restaurant is located) and are the most likely candidates for the new Fabia Restaurant.

What makes these **6 suburbs similar to Hawthorn** is:

- **Higher** average level of weekly family **income**
- **Larger presence of cafes & restaurants** that offer authentic food (rather than bars and pubs)

It is important to note that 2 suburbs (**Carlton North and Fitzroy North**) out of the 6 are located **very close to Melbourne's CBD** (within 4 kms) while others are further away (between 6 and 12kms from CBD) which we believe would make these two locations **even more attractive** (Melbourne's CBD is visited by millions of people every day).

**Our recommendation** to Ernesto, the owner of Fabia Restaurant **is to consider first the inner locations** such as Carlton North & Fitzroy North, **and then the outer locations** such as Moonee Ponds, Essendon, Northcote & Ivanhoe.

In addition to our recommendation above, choosing the right location for a restaurant should also entail other considerations such as ease and cost of acquiring local city council permits, rental costs, rental space availability, existing similar restaurants, and general population trends within each suburb.

## 2. Background

Our client Ernesto owns an Italian restaurant Fabia which is located in Hawthorn (south east) in Melbourne (Australia) and is interested in opening a second restaurant in the northern suburbs of Melbourne.

Fabia restaurant has become increasingly popular over the recent years and is well known for its authentic Italian dishes at reasonable prices and great service. Usual patrons are middle class families.

Ernesto (owner) is keen to open another Fabia restaurant in the Northern suburbs of Melbourne but is unsure which suburb would be the most appropriate.

Ernesto believes that suburbs with similar characteristics (population density, socio economic, demographic attributes as well as similar types of venues) to Hawthorn should be considered first.

Hawthorn is one of the older and more established up-market Melbourne suburbs.

## 3. Problem Statement

Identify suburbs (Northern Melbourne) with similar location characteristics to Hawthorn, understand what makes these suburbs similar to Hawthorn and finally make a recommendation to Ernesto which suburbs he should consider first and why with regards to opening his second restaurant.

## 4. Data Sources & Methodology

### 4.1. Data sources

**a) Postal Codes/Suburbs location data (latitude and longitude)**

This information is sourced from Australian Post. It is important to note that some post codes capture more than one suburb, this information is in Appendix.

**b) Socio Economic & Demographic data - Australian Bureau of Statistics Census 2016 data.**

The data is based on Census 2016 and the data considered is:

- Median age of persons living within post code
- Median weekly family income within post code
- Average household size within post code

**c) Location and Venue Data - Foursquare**

The data sourced are up to 100 venues within 500 meters from the latitude and longitude location of each post code.

### 4.2. Methodology

Analytic approach that we used is k-means clustering in order to find similarities and dissimilarities between suburbs in Melbourne.

The data used to create clusters included median age of persons, median weekly family income, average household size, type of venues and their representation in each post code (proxy for suburb).

The output of clustering was analysed, the insights and recommendations documented in this report. The final report will be discussed and provided to our client Ernesto.

### 4.3. Data Preparation

The k means clustering was applied to normalised data (i.e. all features were normalised into a range between 0 and 1).

The Census 2016 data (median age of persons, median weekly family income, average household size) were normalised using the maximum value in the range.

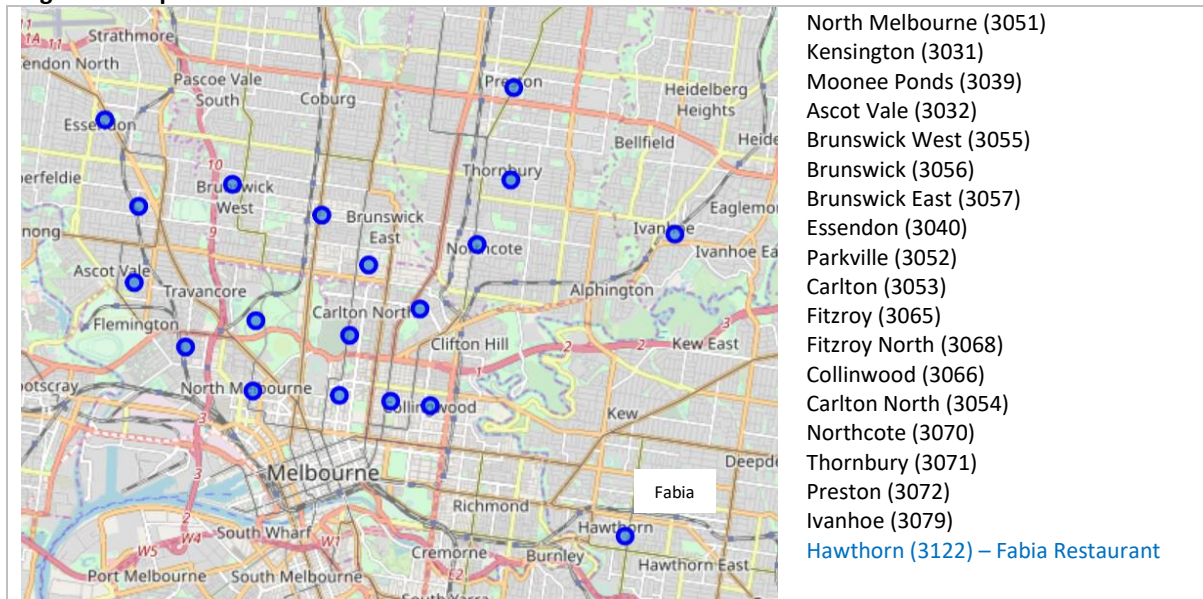
The type of venue data (Foursquare) for each post code were represented as a proportion of the number of venues of the same type relative to the number of all venues (within the same post code)

## 5. Results

### 5.1. Clustering

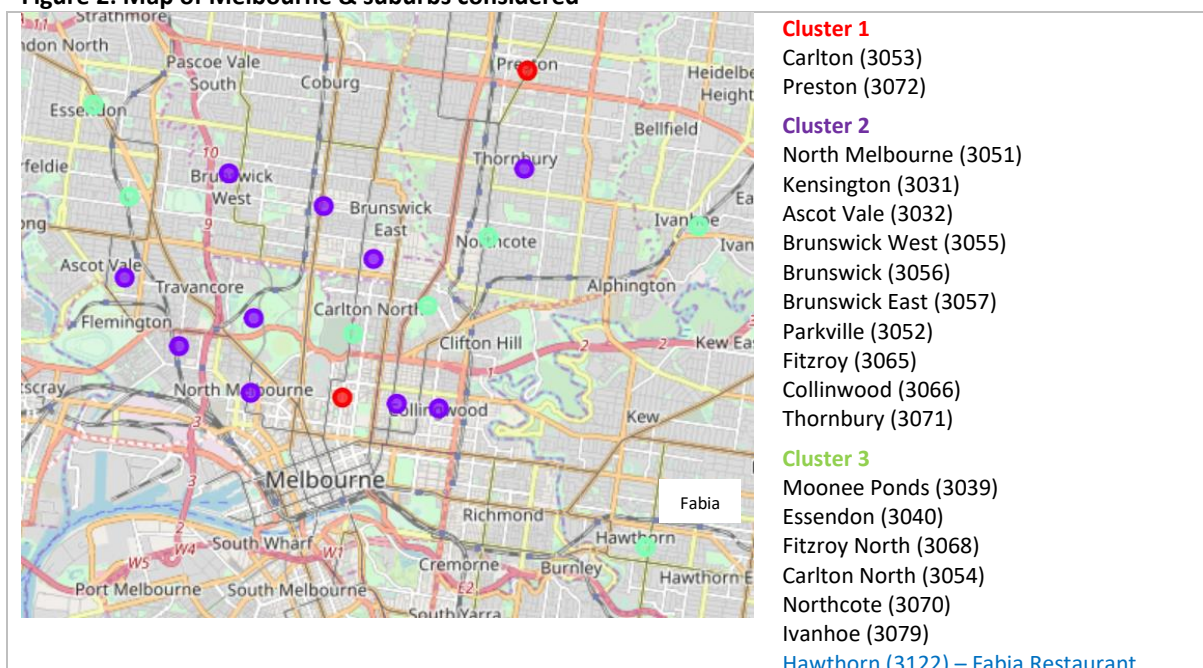
We have taken into consideration 17 suburbs in Northern Melbourne.

**Figure 1: Map of Melbourne & suburbs considered**



We have used the k means clustering approach with 3 clusters and the results are as follows:

**Figure 2: Map of Melbourne & suburbs considered**



## 5.2. Definition of Clusters

Our clustering approach defined the following clusters:

**Cluster 1:** 2 x suburbs with lower family income (average \$1.5k per week).

**Cluster 2:** 10 x suburbs with medium family income (\$2.1k per week), with significant presence of cafes, bars and pubs.

**Cluster 3:** 6 x suburbs with higher family income (\$2.5k per week), with significant presence of cafes & restaurants that offer authentic food (rather than bars and pubs). Hawthorn is identified in this cluster.

## 5.3. Analysis of Clusters

It appears that weekly family income contributes significantly to clustering.

With respect to Cluster 2 & 3, besides the weekly family income, it can be observed that suburbs in Cluster 2 have significant presence of bars & pubs. Pubs are well known for offering to their patrons less authentic and less expensive food menus, in addition with their growing popularity with families (with kids) it may be very hard for Fabia Restaurant to compete on price in order to get the desired number of customer visits.

## 5.4. Analysis of Cluster 3 (includes Hawthorn where Fabia Restaurant is located)

In addition to Hawthorn, Cluster 3 suburbs include: Moonee Ponds (3039), Essendon (3040), Fitzroy North (3068), Carlton North (3054), Northcote (3070), Ivanhoe (3079).

**Table 1: Cluster 3 Comparison**

|                             | Cluster 3* | Hawthorn |
|-----------------------------|------------|----------|
| Median age per person       | 36.5       | 32       |
| Median weekly family income | \$2.4k     | \$2.6k   |
| Average family size         | 2.4        | 2.2      |

\*excludes Hawthorn

Unsurprisingly, median weekly family income is higher in Hawthorn than the rest of Cluster 3 (as Hawthorn is more established, up-market suburb) indicating that there is a risk that the pricing of Fabia's meals may be less attractive in Cluster 3 suburbs leading potentially to less visits. However, this could be offset by the fact that average family size is bigger in Cluster 3 suburbs compared to Hawthorn which in turn could lead to more dollar spent per visit.

Another observation is that some suburbs in Cluster 3 are closer to CBD and some are further away. In our view the suburbs closer to Melbourne Central Business District (CBD) such as Carlton North & Fitzroy North have some advantages with respect to generating more visits (as millions of people visit Melbourne's CBD every day).

## 5.5. Other Considerations

Choosing the right location for a restaurant should also entail other considerations such as:

- Local City Council Permits & Rules (including costs)
- Rental cost in preferred suburbs
- More research on similar (to Fabia) existing venues in preferred suburbs
- Latest trends in preferred suburbs
- Availability of restaurant locations & rental spaces

## 5.6. Conclusion

In conclusion, our clustering analysis identified 3 distinct clusters.

**Cluster 1:** 2 x suburbs with lower family income (average \$1.5k per week).

**Cluster 2:** 10 x suburbs with medium family income (\$2.1k per week), with significant presence of cafes, bars and pubs.

**Cluster 3:** 6 x suburbs with higher family income (\$2.5k per week), with significant presence of cafes & restaurants that offer authentic food (rather than bars and pubs). Please note that Hawthorn is included in this cluster.

Analysis of clusters showed that two key features set apart Cluster 3 from other clusters: a) families in Cluster 3 on average earn more income per week and b) higher presence in Cluster 3 of more authentic restaurants (as opposed to bars and pubs).

It should also be noted that 2 (Carlton North, Fitzroy North) of the 6 suburbs (in Cluster 3) are very close to Melbourne's CBD which makes them potentially more attractive.

In addition to our location analysis & insights, other consideration should be given to local City Council's regulations and costs associated, cost of rental, rental space availability, other similar restaurants, latest trends within each suburb considered etc.

## 6. Appendix

Mapping of post codes and suburbs

| Post Code | Suburbs                             |
|-----------|-------------------------------------|
| 3053      | Carlton                             |
| 3072      | Preston                             |
| 3051      | North Melbourne                     |
| 3055      | Brunswick West                      |
| 3071      | Thornbury                           |
| 3032      | Ascot Vale, Maribyrnong, Travancore |
| 3052      | Parkville                           |
| 3066      | Collingwood                         |
| 3056      | Brunswick                           |
| 3031      | Kensington, Flemington              |
| 3057      | Brunswick East                      |
| 3065      | Fitzroy                             |
| 3040      | Essendon, Aberfeldie, Essendon West |
| 3070      | Northcote                           |
| 3039      | Moonee Ponds                        |
| 3079      | Ivanhoe, Ivanhoe East               |
| 3054      | Carlton North, Princess Hill        |
| 3122      | Hawthorn                            |
| 3068      | Fitzroy North, Clifton Hill         |