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1 Introduction

While coffee has shown to boost productivity, the coffee breaks are costing companies millions of dollars¹ in lost hours. This problem is amplified for construction sites, which often do not have enough temporary structures to serve all people working on sites. As a result, considerably amount of staff's time is lost due to need to travel for coffee breaks, resulting in inflated project costs and timelines.

The above dilemma presents a business opportunity for a range of companies including coffee machines sellers, restaurants offering takeout services and mobile food truck operators. Moreover, since construction activity is usually a proxy for population growth, identifying construction clusters in advance, will provide valuable insights for food businesses looking to expand their physical footprint.

Against the above backdrop, the report attempts to utilise the data of construction activity to identify construction clusters underserved by existing food businesses with an aim to identify optimal location of mobile cafés / food trucks to minimise hours lost in travelling for coffee breaks. The report also analyses seating capacities in Melbourne CBD and surrounding suburbs to aid food franchises to identify potential expansion opportunities for opening new venues.

2 Data

The report will be based on the following data sources / datasets:

- Development activity monitor data ²
The above dataset monitors major new commercial and residential property development in the City of Melbourne municipality. The outputs inform short to medium-term supply forecasts in the commercial and residential markets.
- Cafes and restaurants with seating capacity³
This data is collected as part of City of Melbourne's Census of Land Use and Employment. It covers period 2002-2019 and show business establishments with their trading names, industry classification, number of dining seats etc.
- Four Square Database
The above database includes information regarding locations of range of restaurants, places of interest, user reviews etc.

¹ <https://www.businessinsider.com.au/81-of-australian-employees-believe-coffee-improves-workplace-conversations-but-coffee-breaks-are-costing-companies-millions-of-hours-2019-9>

² <https://data.melbourne.vic.gov.au/Property/Development-Activity-Monitor/gh7s-qda8>

³ <https://data.melbourne.vic.gov.au/Business/Cafes-and-restaurants-with-seating-capacity/xt2y-tnn9>

In addition to above, the report also relies on websites, business research and other miscellaneous sources of data reproduced as footnotes at relevant places in the report.

3 Methodology

3.1 Identifying Active and forecasted Construction Clusters

The report utilising the Development Activity Monitor Dataset identified active and upcoming construction sites. To do so, the report relied on the pandas library to filter out unwanted data and utilised libraries of matplotlib and folium to generate informing graphics and maps.

3.2 Identifying cafes surrounding construction clusters

The report then utilised the foursquare API to locate cafes within 100 metres of each of the construction sites identified above. The results of the above exercise were stored in the dataset and saved on local disk for future reference.

3.3 Creating a map of construction clusters and nearby cafes.

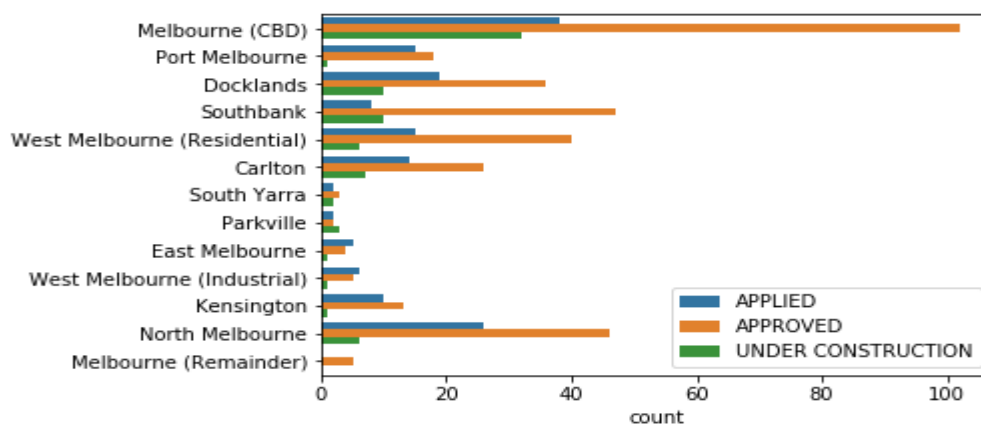
Utilising the folium library, the report created a created map of City of Melbourne and overlaid it with location of construction sites and surrounding cafes identify sites which do not have a café within 100 metres.

4 Discussion

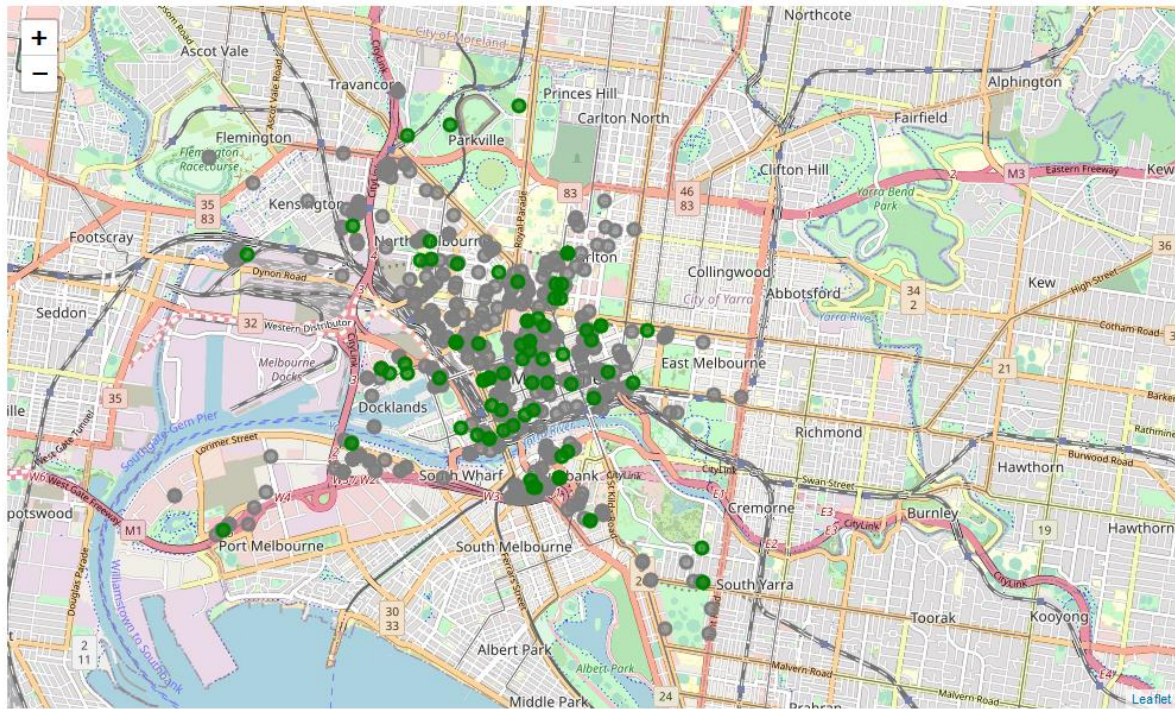
During the course of the analysis, the report uncovered various insights, some of which are detailed below.

4.1 Construction Activity is expected to remain high in Melbourne CBD, Southbank and West Melbourne.

As seen in the chart below, Melbourne CBD has the highest number of active construction sites followed by Docklands. Forecasted construction activity measured by approved sites, is expected to be highest in Southbank region followed by Residential suburbs in West Melbourne suburb.

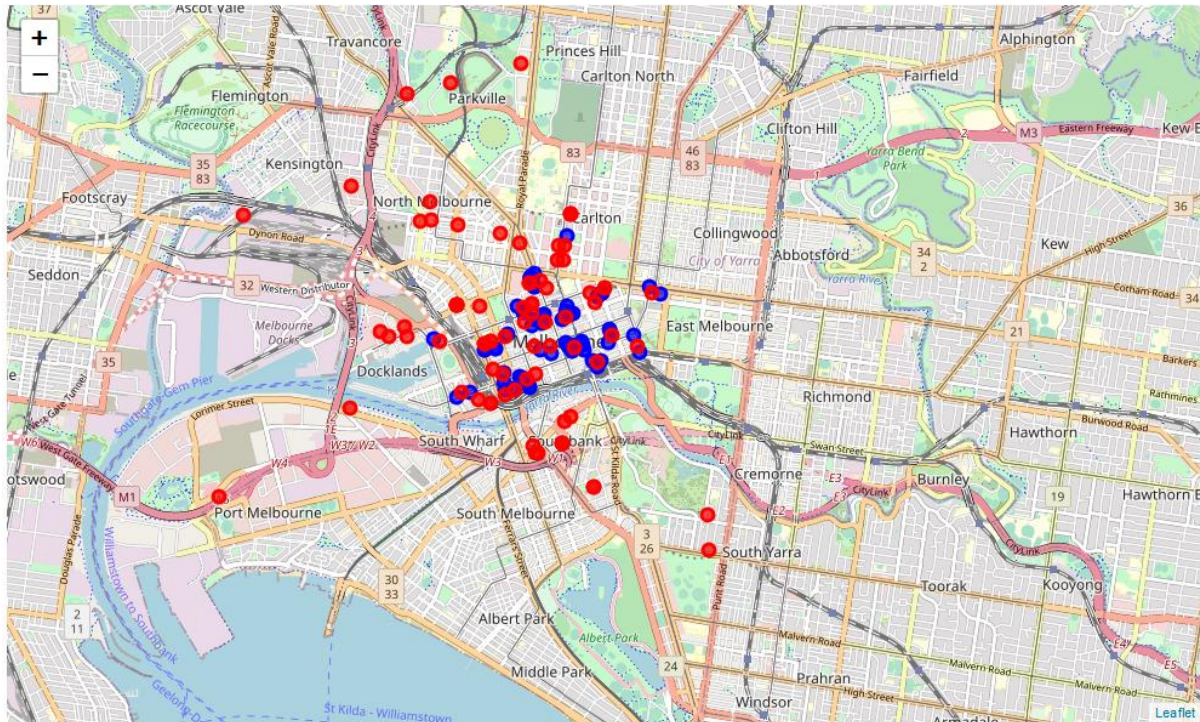


The map below plots the geographic location of construction sites with active sites being identified by green dots. While, CBD seems to currently have majority of live construction sites, they are expected to increase in North Melbourne region going forward.



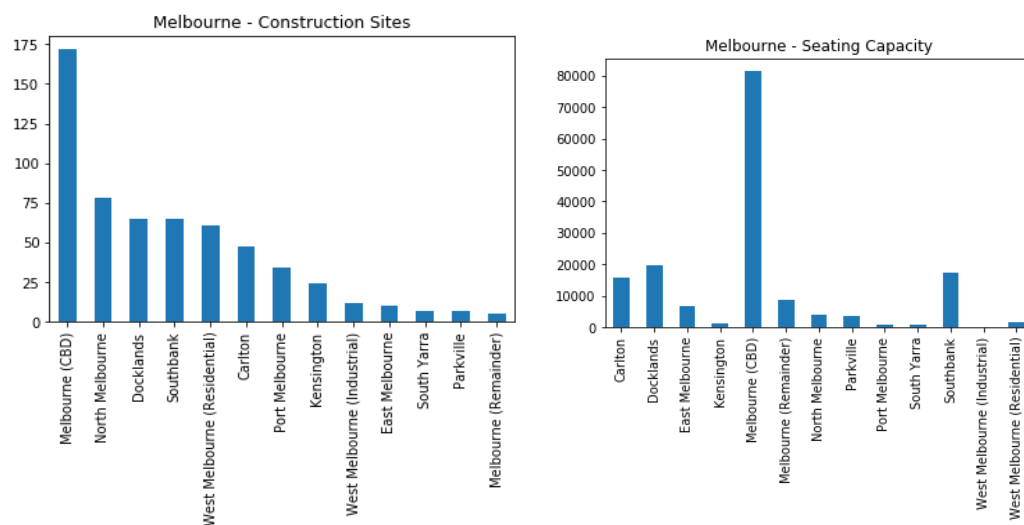
4.2 North Melbourne, Parkville, Southbank and South Yarra region are optimal sites for location of mobile food cafes.

While each of the construction sites (red dot) in Melbourne CBD seems to have a café (blue dot) within 100 metres, sites in North Melbourne, Parkville, Southbank and South Yarra regions remain unserved. Hence, positioning mobile cafes in this region around construction sites is likely to yield better results.



4.3 North Melbourne, Parkville, Southbank and South Yarra region are optimal sites for location of new physical restaurants.

Most of the seating capacity of existing restaurants is centralised around Melbourne CBD. Hence, any food business looking to open new venues is more likely to benefit from locating them around fringe suburbs like North Melbourne and Parkville while existing businesses within Melbourne CBD can tap additional markets by expanding their delivery services to above regions.



5 Limitations and Further Research

The report has various limitations, which include time, limitations of data and academic purpose of study. For instance, additional data regarding the size of construction sites will further aid in narrowing down the results. Also, information relating to demographics will further assist in selecting the cuisine of new venues. Thus, further research along above lines will help in improving/refining the results further.