Customer Purchasing Behaviour: Optimizing sales channels for Arhaan Thai

- André Samuelsen – cph-as760

- Mathias Falcham – cph-mf398

- Idris Isci – cph-ii38

- Frederik Franck – cph-ff72

This report is a research paper made for *Arhaan Thai* with the focus of understanding customer purchasing behavour across its sales channels. The purpose of the research is to use machine learning models in order to predict customer behaviour on a given sales channel, so that the restaurant can optimize operations on sales channels most relevant, adjust menu offerings and marketing and lastly increase revenue and customer satisfaction. Historical data has been wrangled in order to fit into different machine learning models such as multiple linear regression, classification and clustering. The following research questions were made before the analysis began:

- How do order characteristics differ across the five sales channels?

- Can we predict the sales channel of a new order with at least 80% accuracy?

- Which features are most important for differentiating sales channels, and how can these insights guide operations and marketing?

Looking at the confusion matrix, more customers are predicted to the mealo sales channel, than wolt, when it is actually in house customers. A new hypotheses for further analysis is therefore posed saying, "Customers ordering through the restaurants web-page, have been to the restaurant at least once".

Putting the cleaned data into a decision tree model gave us an accuracy of 80%.

When looking at the feature importances the features most important is the 'is_takeaway' 'order_total', while 'number_of_snacks' and 'number_of_maindishes' looks to be equally important. Our results are not strong enough to give any concrete recommendations to the restaurant. More research is needed.

Find the full report on github, by following the link below.

Github: https://github.com/AndyTheDragon/dat4bi_examproject