







BACKGROUND



Instacart business

BUSINESS GOALS

-  Understand consumer behaviour in the business
-  Which types of products should have an extended amount of product offerings.
-  Which products can be considered as substitute products
-  Which products are complementary

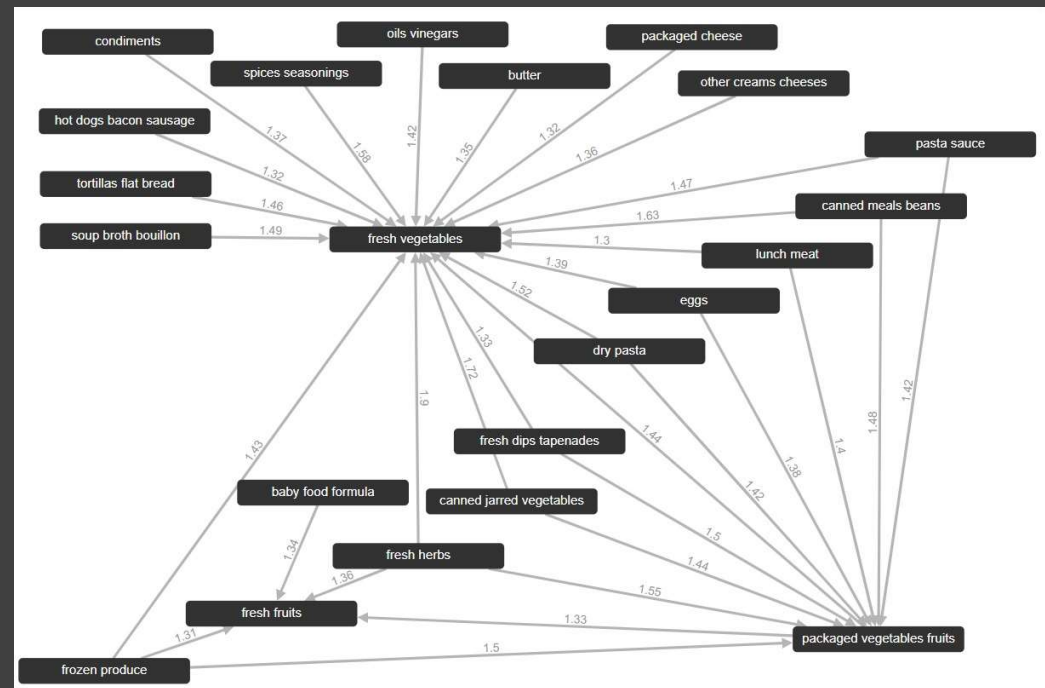


KEY FINDINGS

Algorithm: Apriori algorithm

Metrics Threshold	Number of rules
Support ≥ 0.03 (unlimited number of products)	1550
Support ≥ 0.03 + Confidence ≥ 0.05 (unlimited number of products)	405
Support ≥ 0.03 + Confidence ≥ 0.05 + Lift ≥ 1 (only 2 products, 1 antecedent and 1 consequent)	404
Support ≥ 0.03 + Confidence ≥ 0.05 + Lift < 1 (unlimited number of products)	1

Network visualization: AlgorithmX





Complementary products (rules with 2 products only) : 33 rules




KEY FINDINGS

Consumer behaviours


 Most orders were acquired in the day 0 and day 1. The day with less orders was day 4


 The time of day that customers usually shop with more intensity is from 10 am until 16 pm.

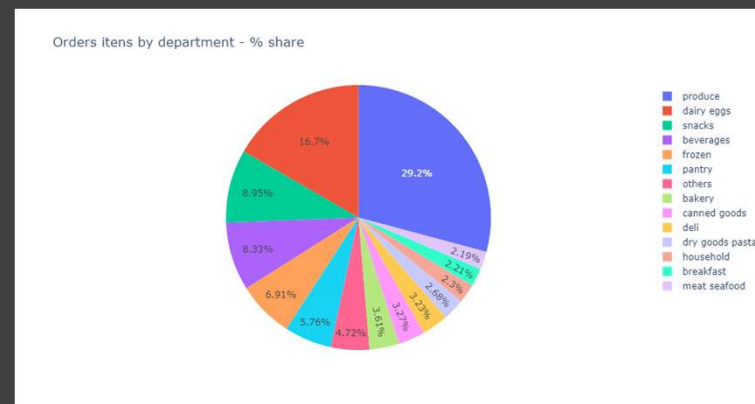
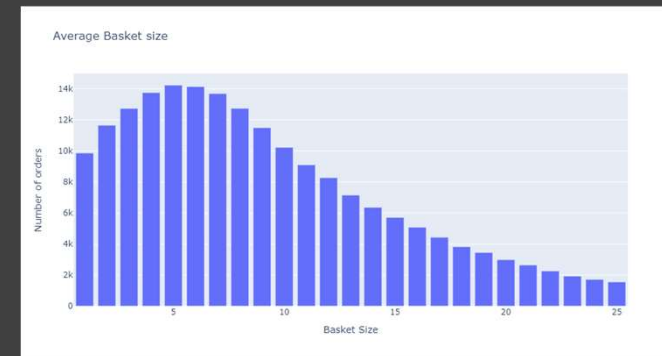
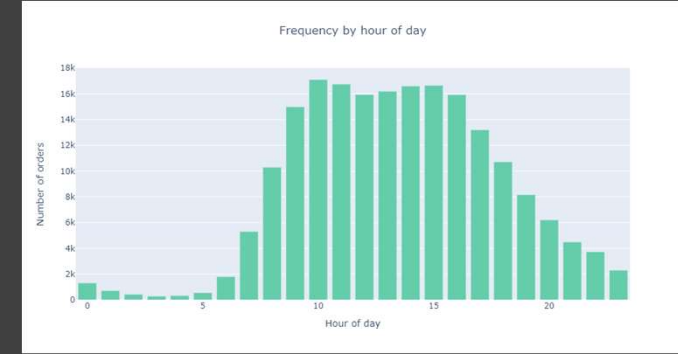
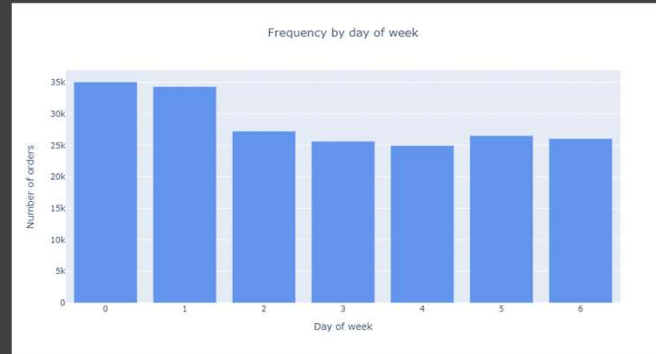
 Most of costumers placed only one order.

 Orders often have between 3 till 8 products.

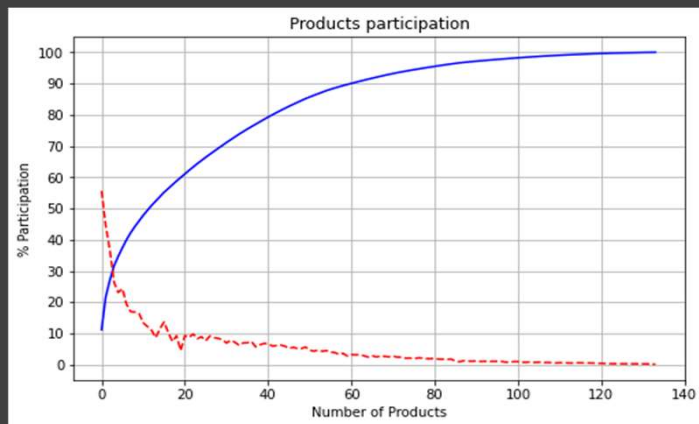
 After one order, customer usually make the next one 30 days later.







 The top 10 products represented almost 50% of items sold and they are present at least in 10% of orders.

 Almost 50% of items sold are concentrated on 2 departments: dairy eggs and produce



PROJECT PLAN



-  **Data understanding:** Analysis and find consumers behaviours and purchase patterns.
-  **Data preparation:** Create a matrix in a binary format.
-  **Algorithm :** Apriori algorithm.
-  **Evaluation:** Association rules: support ≥ 0.03 ; Confidence ≥ 0.5 ; Lift.
-  **Network visualization:** AlgorithmX
-  **Application:** Plotly and dash



INSTACAR APPLICATION

<http://127.0.0.1:8050/>

