

Instacart Market Basket Analysis

Data Science Challenge – Round 2

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Proposed By:
Noran Hany
Toka Khaled

Under the Supervision of:
Dr. Doaa Mahmoud





1 Introduction

Exploiting the power of data analysis
and machine learning to take
business to the next level!

2 Business Questions and Solutions

How to make customers never forget instacart? When to send reminders to users to shop from instacart?

From analyzing the data, we observed that:

- Most users make orders after a week from their last order. or from a month of their last order.
- After a week from the last order, the probability of reordering within the same month is small.
- The next order has a higher probability to be within 10 days from the current order.

Business solution: Send reminders to users who haven't ordered since 7 days from their last order. As the analysis shows, it's of high probability to buy on the 7th day, so remind them to and catch the high probability of a customer to make their next order.

When to recommend customized products to a user?

Concerning customers who have been inactive for more than 30 days from shopping at instacart, consider customizing recommending products according to their purchasing history, while avoiding recommending new products. We want to build loyalty with them again, they're not yet ready to leave their comfort zone. (products they used to buy

2 Business Questions and Solutions

When to recommend products that have a high ratio of being reordered?

- 74 % of products bought at the same day of prev order, are reorders.
- 69% of products bought after one week from the previous order are reorders.

Business solution: These are good timings to recommend highly reordering ratio products if the user has previously ordered on the same day or has passed a week since last ordered.

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- Products placed first in cart are the products mostly reordered.

Business solution: From this shopping behavior, at the start of the shopping process for a user, start recommending products with high reordering ratio. Then, can consider products with low sales and high association to the products bought first, to increase their sales.

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- By more than 65%, People usually buy previously ordered products from 6:00AM to 8:00AM

Business solution: Recommend previously ordered products at these hours, while avoiding recommending new products at these hours.

**** Please note**

We mean by products that have a high ratio of being reordered, those products that when a customer buys, he/she will most probably buy again.

2 Business Questions and Solutions

When is it most beneficial to both customer and business to make free coupons and offers?

- Peak orders happens at Saturday afternoon (1:00PM), and Sunday morning (10:00AM)

Business solution: At these hours each week, instacart can call it “the lucky hour” and make the most use of it by creating an offer “each 5 you buy, you get a free coupon of 10\$”. Since users at these hours buy most, this offer can boost the sales even more.

From analysis, we observed that:

- Most orders are ordered on weekends.
- Orders are mostly ordered during the day, from 9:00 AM to 4:00 PM.

Business solution: Do an offer that bundes (groups) one of the products a user will mostly buy with another product that is not frequently bought, but when it's bought, users always buys the first product with.

2 Business Questions and Solutions

When to recommend a customer new (never ordered before) products or a less frequently bought product?

Business solution: probability of a user buying during the afternoon of the weekends is high. Thus can target the weekends to recommend users to try new products they haven't bought before. To increase the probability the user will buy the recommended new products, consider customizing the recommendation where for each user, recommend new products that have high association with the products most likely to be bought by that user.

Another solution: Focus on targeting customers who never reorder a product they ordered before. This category of customers are the most encouraged to try something new.

2 Business Questions and Solutions

Which aisle or department to consider adding or offering more products to it?

From analyzing the data, we observed that:

- Although only 10% of all products instacart offers are Organic, the organic products are shaping 31% of total purchased products.

Business solution: Introducing new organic products to instacart's retailers portfolio. Also, consider introducing new products in the departments that offer few product choices, but these products are highly being purchased. In other words, consider introducing new products that have important similarities with the highly purchased products.

Three thin, light gray circles are positioned in the background. One circle is in the upper right, another is in the upper center, and a third is in the lower left. They overlap each other, creating a minimalist geometric design.

Thank You