

# Immersive Capstone: Instacart Customer Behavior Analysis

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# Goal

- 🥕 Present insights with actionable marketing strategy to optimize hyper-targeted marketing campaigns
- 🥕 Offer basket analysis with marketing recommendations for specific user groups

# Instacart Data

- 🥕 Total Users: 206k
- 🥕 Total Orders: 3.2 m
- 🥕 Total Products: 48k
- 🥕 Order details: dow, hour, days between orders, product descriptions

# Methodology

-  SQL
-  Python
-  Excel

users_orders	
order_id	integer
user_id	numeric
user_order	
user_id	numeric
num_order	integer
max_days_since_order	numeric
min_days_since_order	numeric
avg_days_since_order	numeric
user_groups_department	
user_id	integer
order_id	integer
department_id	character varying
product_qt	numeric
quartilespqt	integer
order_dow	
user_id	numeric
order_dow	integer
count	bigint

insta_user_product_purchase	
user_id	numeric
order_dow	integer
product_name	character varying
product_id	integer
order_id	integer
Insta users	
user_id	numeric
order_id	integer
department_id	integer
product_qt	integer
quartilespqt	integer
user_cat	character varying(50)
Insta_basket	
order_id	integer
product_id	integer
product_name	character varying
quantity	integer

instacart_prodtqt_bydept	
department_id	
order_id	
product_qt	
user_groups_departments	
order_id	integer
product_id	integer
product_name	character varying
aisle_id	numeric
department_id	integer
add_to_cart_order	integer
reordered	integer
total_or_re	
product_id	integer
total_orders	bigint
total_reorders	bigint
department_id	integer

# Background




- 🥕 E-commerce platform founded in 2012
- 🥕 Apoorva Mehta, CEO and Founder
- 🥕 Personal shoppers fulfill orders on-site and deliver items to customers

“Instacart is building the best way for people  
anywhere in the world to shop for groceries.”




# Instacart Delivers

## Customers

-  Products You Love -
-  Same day delivery
-  Save time and money  
(exclusive deals of popular items)

## Partners

-  A way to make same day deliveries
-  Digital storefront and marketing campaigns

# Total Items by Users Groups

Quantity of items purchased by users used to determine user groups



Low cart: lower quartile

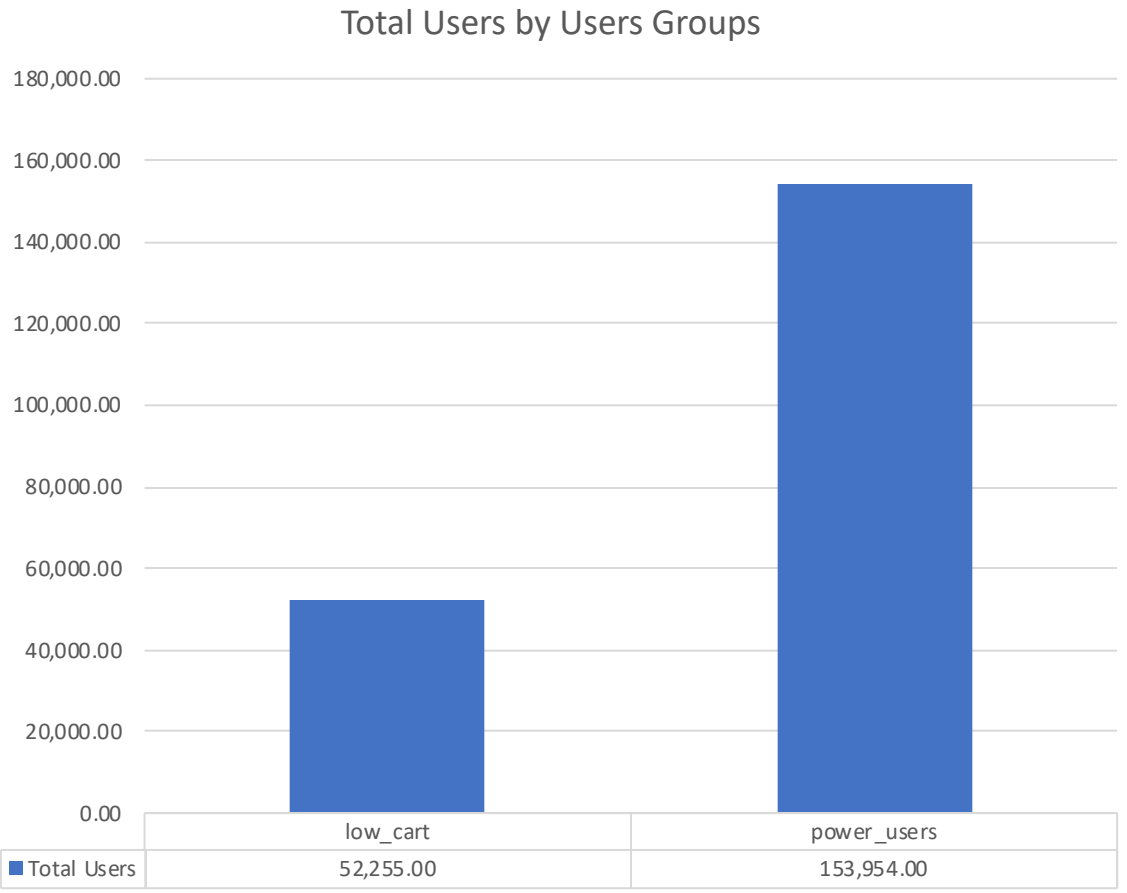


Power users: top 75% of users





# Power User vs Low Cart



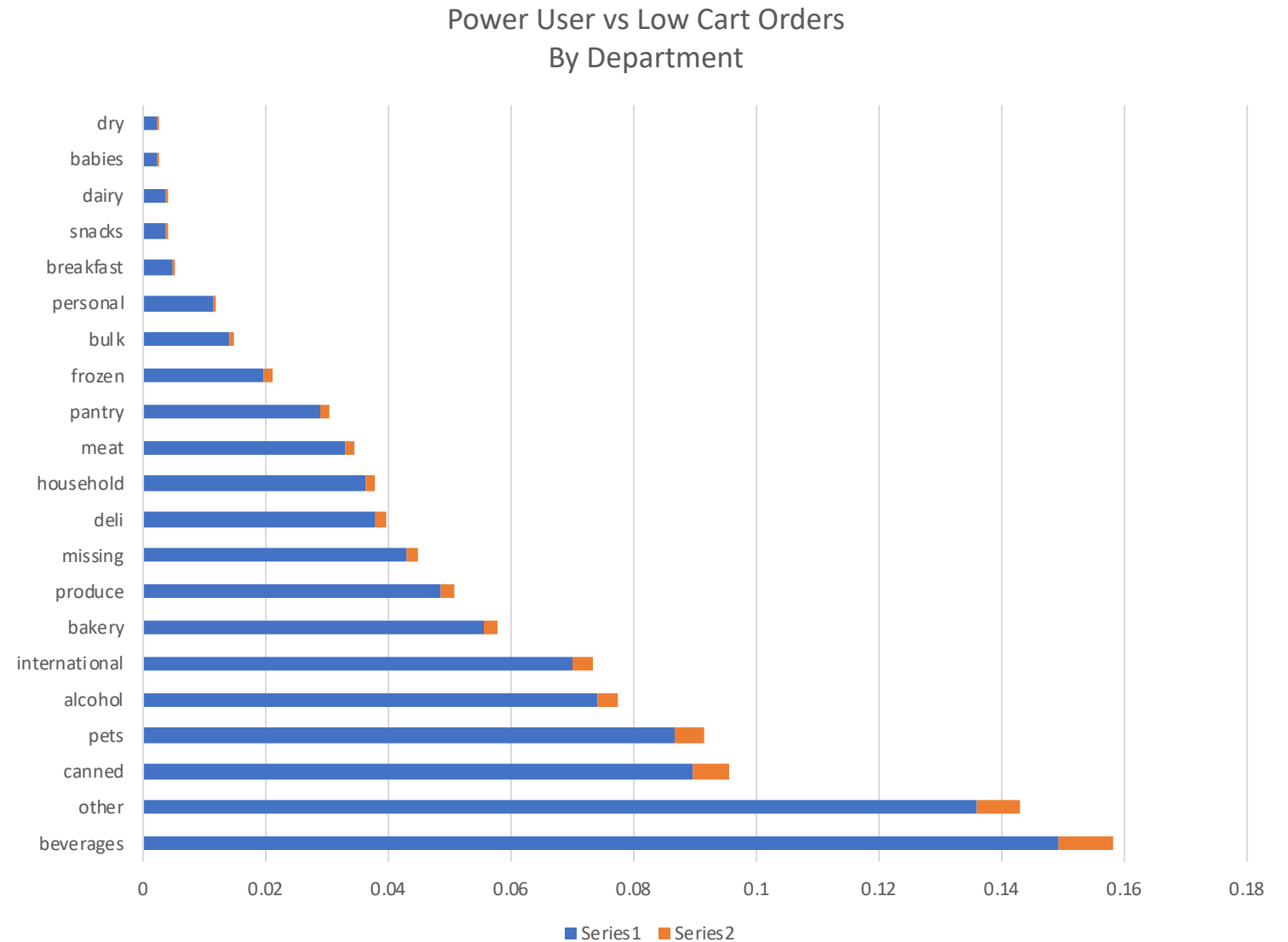
# By Department

Low Cart Users

# Mighty Orders

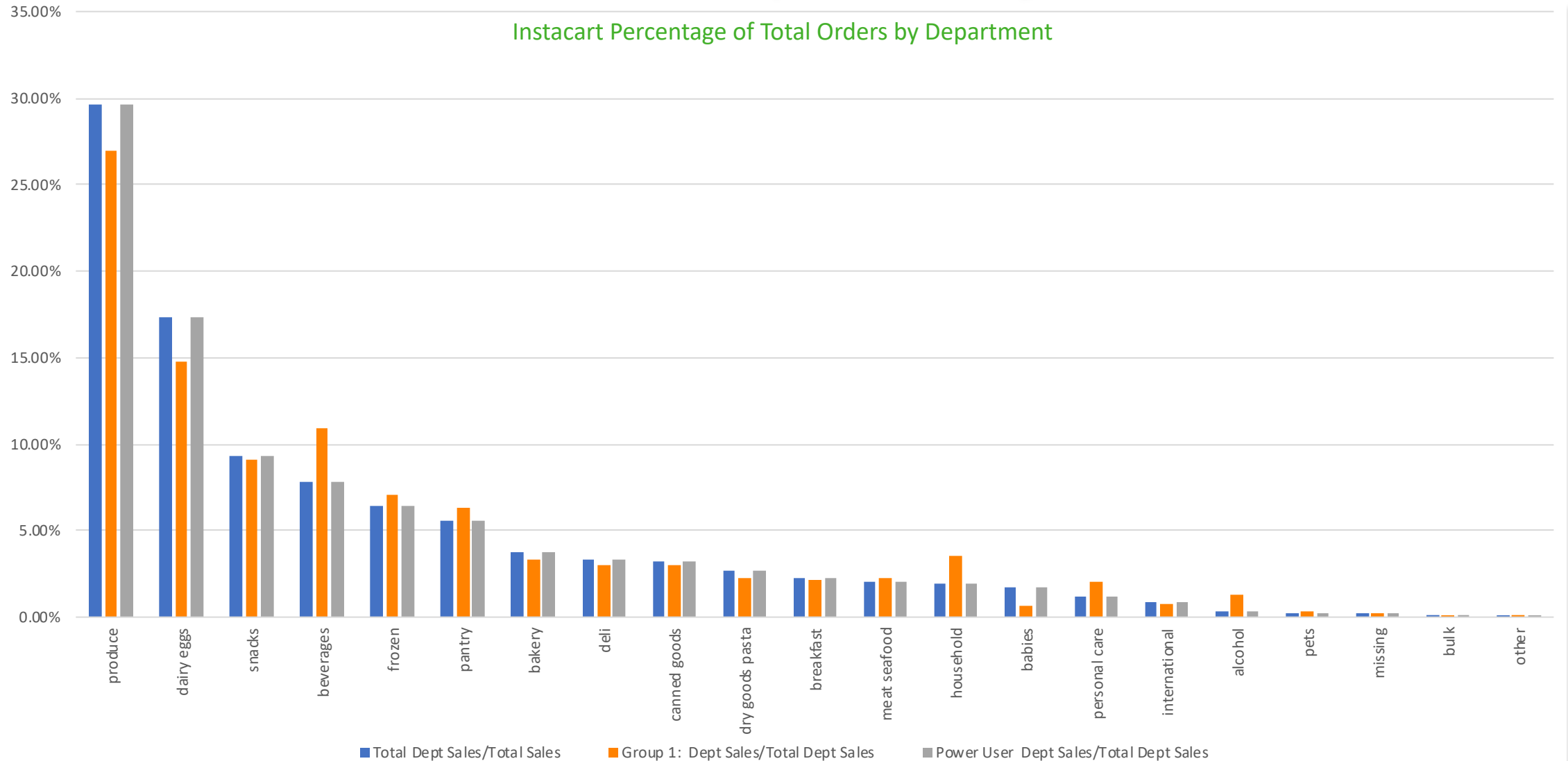
Low cart users purchased 25% of all items sold

And only made 5% of total orders



# User Groups Analysis

Instacart Percentage of Total Orders by Department



# What's in your order?

Number of orders containing products from each department




11% of orders included breakfast items

2x number of orders containing items from other departments






Description	low_cart	%	power	%	Sum of total_orders
alcohol	55,130.00	5%	1,125,888.00	95%	1,181,018.00
babies	1,899.00	5%	33,157.00	95%	35,056.00
bakery	34,409.00	4%	847,147.00	96%	881,556.00
beverages	135,544.00	6%	2,273,776.00	94%	2,409,320.00
breakfast	9,670.00	11%	75,019.00	89%	84,689.00
bulk	7,266.00	3%	214,271.00	97%	221,537.00
canned	93,131.00	6%	1,364,220.00	94%	1,457,351.00
dairy	2,896.00	5%	56,386.00	95%	59,282.00
deli	20,219.00	3%	577,643.00	97%	597,862.00
dry	1,110.00	3%	32,692.00	97%	33,802.00
frozen	18,353.00	6%	300,202.00	94%	318,555.00
household	23,673.00	4%	551,058.00	96%	574,731.00
international	53,426.00	5%	1,064,466.00	95%	1,117,892.00
meat	21,528.00	4%	503,660.00	96%	525,188.00
missing	26,042.00	4%	655,263.00	96%	681,305.00
other	107,642.00	5%	2,069,696.00	95%	2,177,338.00
pantry	30,461.00	6%	440,319.00	94%	470,780.00
personal	4,417.00	2%	173,295.00	98%	177,712.00
pets	71,638.00	5%	1,319,809.00	95%	1,391,447.00
produce	29,155.00	4%	741,145.00	96%	770,300.00
snacks	2,491.00	4%	56,986.00	96%	59,477.00
					15,226,198.00

# Departments of Interest

## Low Cart

-  Breakfast (1st)
-  Beverages (5th)
-  Babies (6th)

## Power

-  Personal (1st)
-  Bulk(2nd)
-  Produce (5th)
-  Bakery (7th)
-  Household (9th)

# Low Cart User Strategy

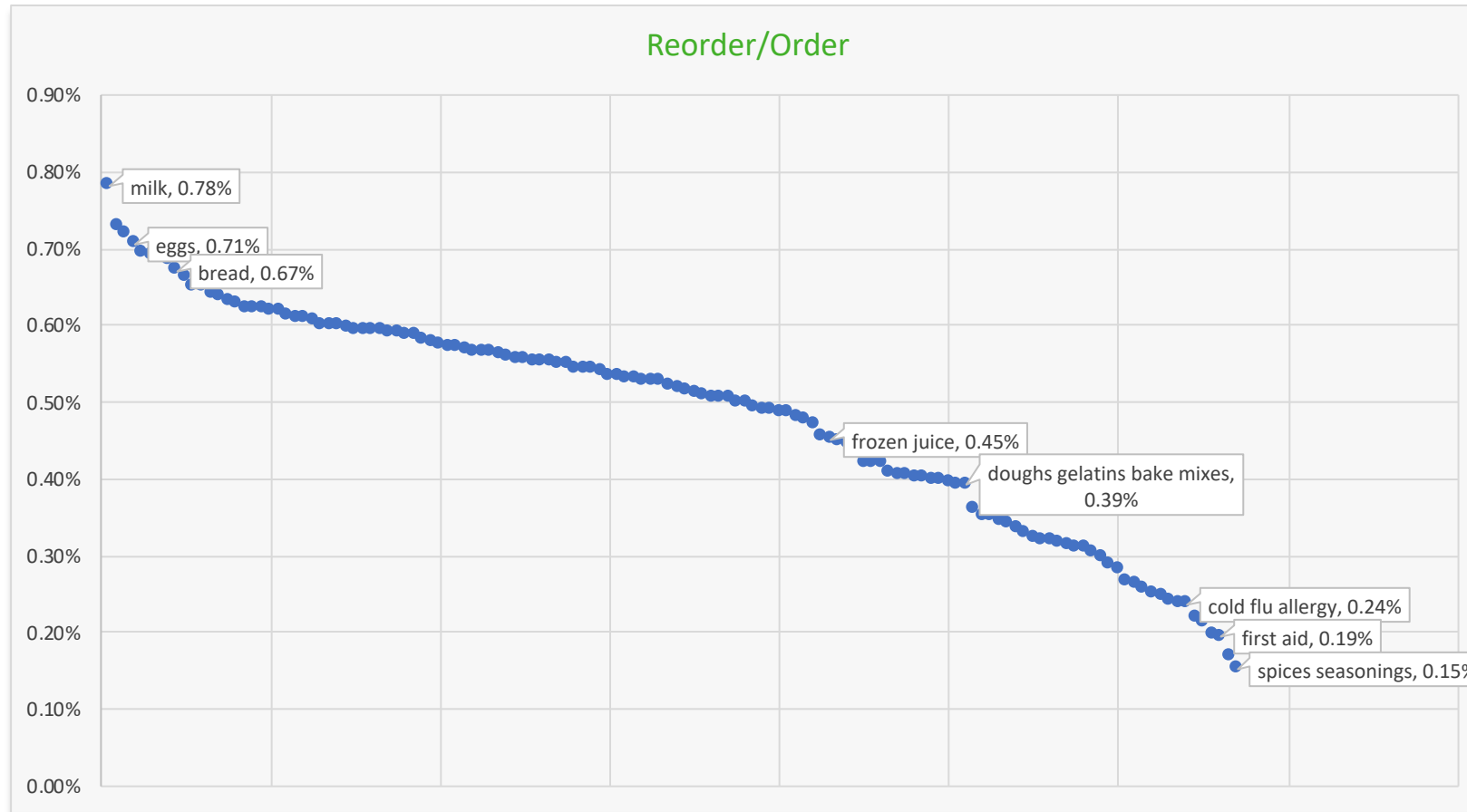
-  Increase orders by low cart users
-  Market products from low cart top departments to low cart user (BBB)

# By Aisle

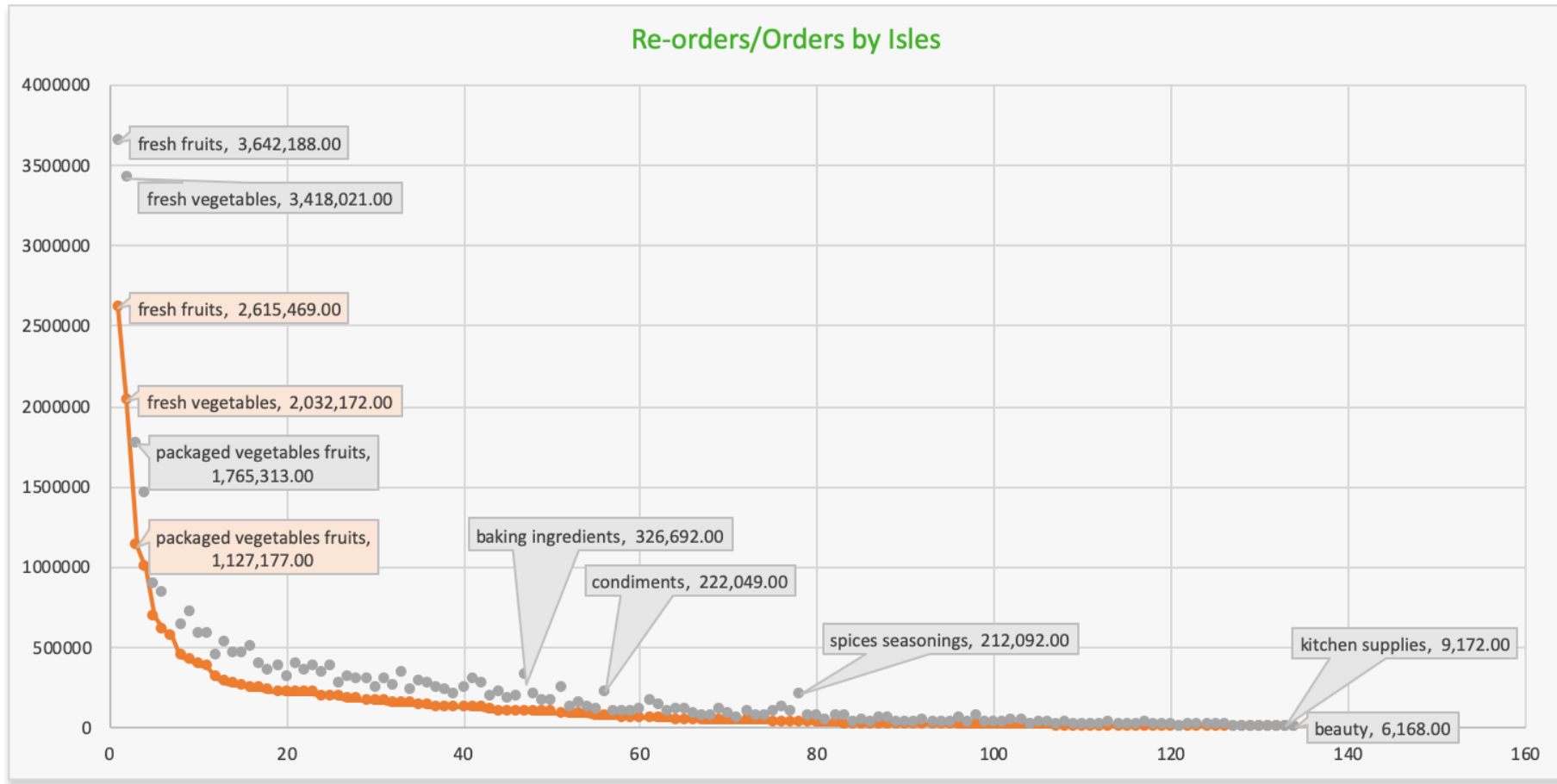
Power User



# Aisles – (Reorders:Orders)%



# Aisles – Reorders:Orders



# Power User Strategy

- 🥕 Increase revenue by increasing reorders
- 🥕 Promote reordering of produce as part of a healthy life and habit to power users

# Takeaway

- 🥕 Low cart users and power users are different
- 🥕 We can get a picture of who are users are just using data

# Next Steps

## Further

- 🥕 Orders and basket analysis to identify items that can be promoted as a bundle for low cart users
- 🥕 Compare purchase day of week and average number of days between orders to appropriately schedule push notifications – “nudges” or reminder emails
- 🥕 Monitor landing page activity for low cart users and new visitors to validate findings
- 🥕 Hypothesis testing to confirm significance of differences observed between user groups



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