

Developing a  
suitable model to  
predict the total  
sales of SuperKart's  
stores for the  
upcoming quarter

# Executive summary

**This predictive model can be effectively employed to anticipate the forthcoming quarter's total sales for SuperKart. The model proficiently explains around 79% of the variability evident in the data.**

**Notably, OUT004, classified as Supermarket Type2 and situated in a Tier 2 city with a medium-sized store, is demonstrating commendable performance.**

- Enhancing this store's size from medium to large could be a viable strategy for SuperKart.
- It might be advantageous to establish stores in similar socio-economic settings to expand their market outreach.

**Another instance of success is OUT002, functioning as a food mart in a Tier 3 city with a modest store size.**

- An option worth considering is upgrading the store size or targeting analogous cities for potential business expansion.

**However, the performance of OUT001, a Supermarket Type 1 store located in a Tier 2 city with a substantial store size, falls short of expectations.**

- It could be beneficial for SuperKart to formulate novel marketing strategies, including attractive discounts and offers, to attract a larger customer base to this store.

**A similar strategy can be applied to stimulate growth for OUT003, identified as a Departmental store in a Tier 1 city with a medium-sized store.**

- As a premium store that primarily sells higher-cost items, focused targeting of the right audience is pivotal for its success.

# Executive summary

**Products catering to daily necessities like fruits, vegetables, and snack foods are major contributors to revenue across all outlets.**

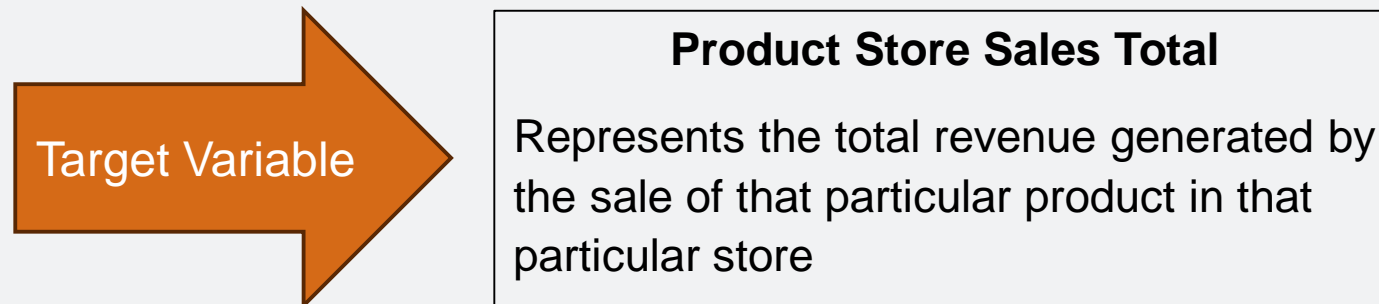
- SuperKart's vigilance in maintaining consistent inventory levels for these products is imperative to avoid supply shortages.

**Incorporating customer demographics such as age and gender into the model could yield better audience insights, enabling the company to tailor their sales strategies more effectively.**

**A consideration for seasonal festivities occurring in a quarter can guide inventory adjustments, ensuring preparedness for heightened demand during these periods.**

# Overview

- The dataset contains **16 distinct product types**, with the highest sales occurring in the "fruits and vegetables" category (1249 occurrences).
- There are a total of **4 unique stores** represented in the dataset.
- **Sales revenue** for specific products at different outlets varies widely, ranging **from 33 to 8000**. **Around 75% of the values exceed 2762**.
- The **average store sales amount to approximately USD 34,640**, while the median store sales value is around USD 34,523. This indicates a slight rightward skew in the distribution of Product Store Sales Total.

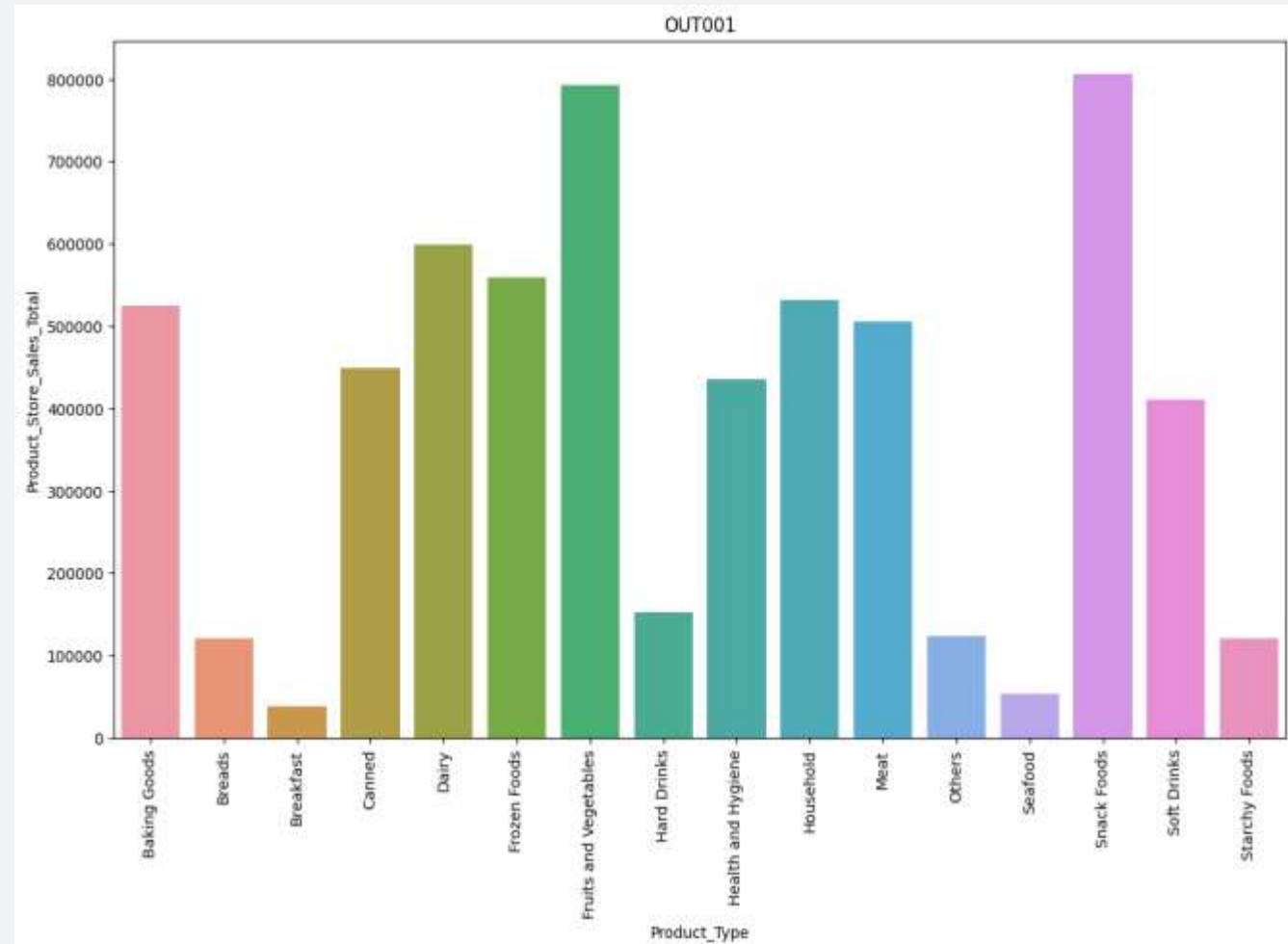


# Exploratory Data analysis per store

store: OUT001

Total Revenue  
\$6,223,113

- OUT001 is a **Supermarket Type 1** store situated in a **Tier 2 city**. The store boasts a **high-size profile** and was established in the year 1987.
- The products sold at OUT001 encompass a range of MRP values, spanning from \$71 to \$ 227.
- Snack Foods claims the title for the highest sales frequency.
- Revenue per product varying between \$2300 and \$5000.
- OUT001 has garnered the **highest revenue through the sale of fruits and vegetables** as well as snack foods, with both categories contributing approximately 800,000 units each.
- Conversely, breakfast items and seafood have yielded the lowest revenue, each contributing less than 70,000 units to OUT001's total revenue.

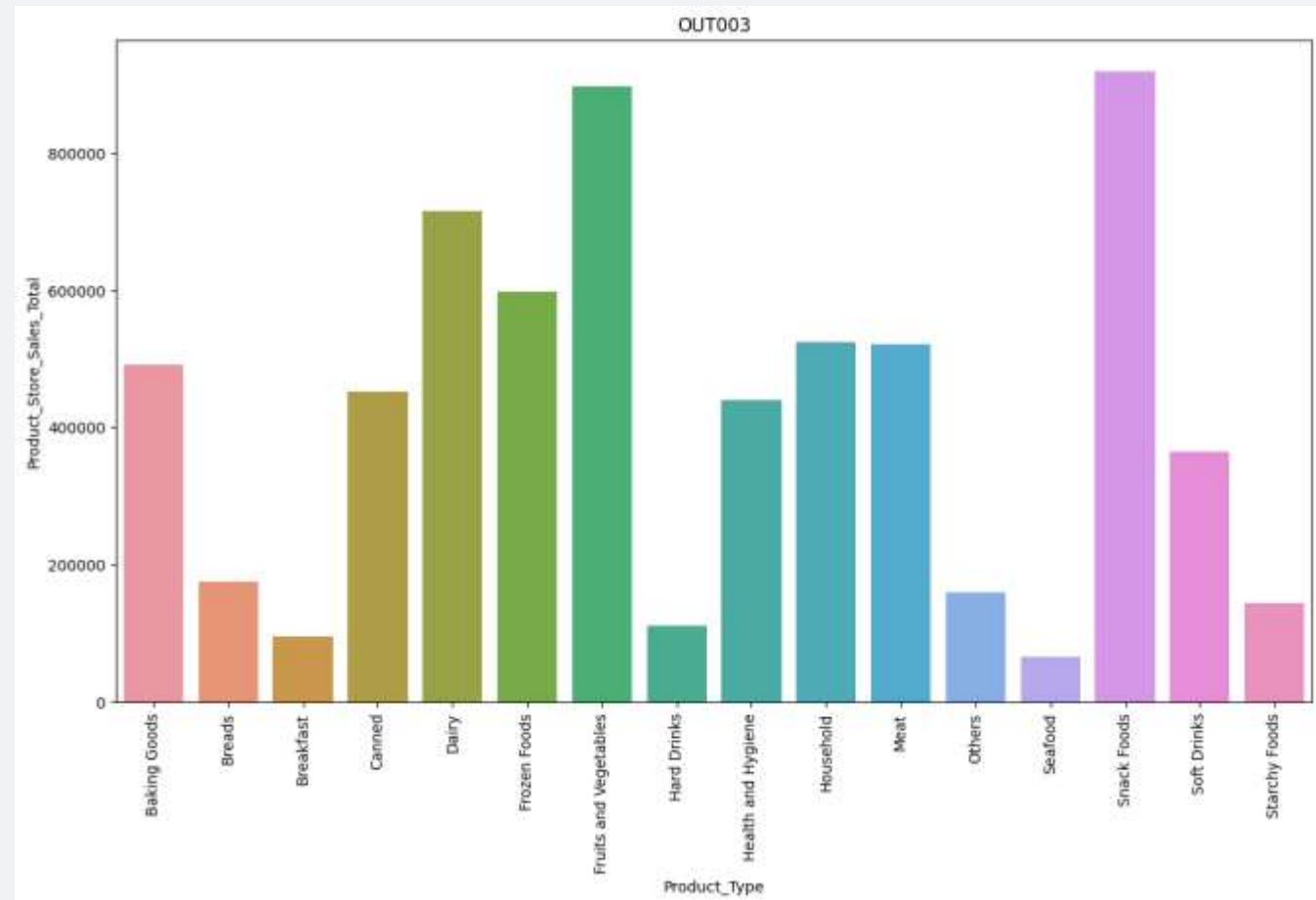


# Exploratory Data analysis per store

store: OUT002

Total Revenue  
\$2,030,910

- OUT002 is a **Food Mart** store situated in a **Tier 3 city**. The store boasts a **small-size profile** and was established in the year 1998.
- The products sold at OUT002 encompass a range of MRP values, spanning from \$31 to \$225.
- Fruits and Vegetables have the highest sales frequency.
- Revenue per product varying between \$33 and \$2300.
- **Highest revenue through the sale of fruits and vegetables as well as snack foods**, with both categories contributing approximately 300,000 and 250,000 respectively.
- Conversely, breakfast items and seafood have yielded the lowest revenue, each contributing less than 40,000 units to OUT001's total revenue.

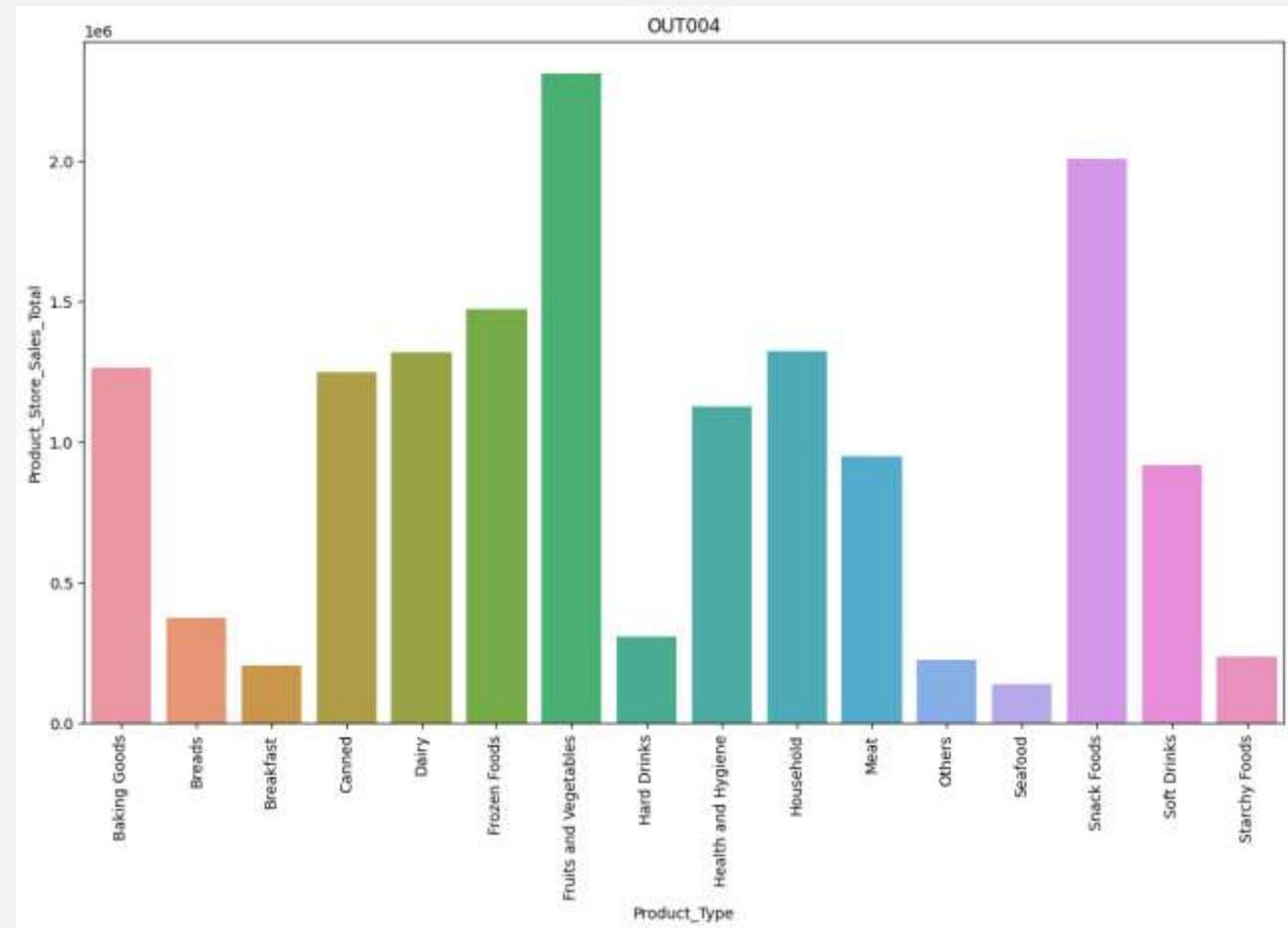


# Exploratory Data analysis per store

store: OUT003

Total Revenue  
\$6,673,458

- OUT003 is a **Departmental Store** situated in a **Tier 1 city (premium store)**. The store boasts a **medium-size profile** and was established in the year 1999.
- The products sold at OUT003 encompass a range of MRP values, spanning from \$3069 to \$8000.
- Snack Foods claims the title for the highest sales frequency.
- Revenue per product varying between \$678 and \$8000.
- OUT004 has generated the highest revenue from the sale of fruits and vegetables (~ 2500000) followed by snack foods (~ 2000000).

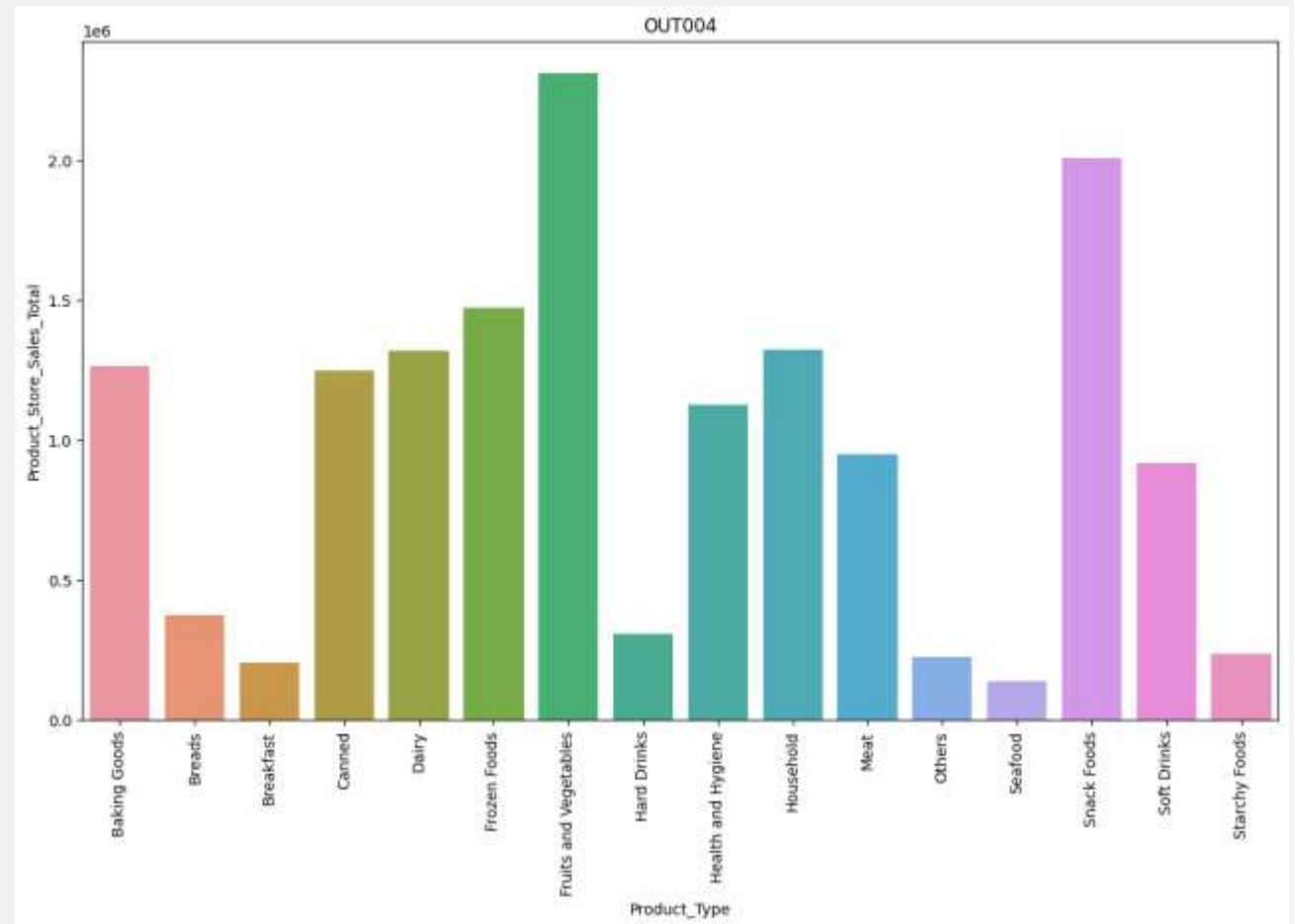


# Exploratory Data analysis per store

store: OUT004

Total Revenue  
\$15,427,583

- OUT004 is a **Supermarket Type2** store in a **Tier 2 city**. The store boasts a **medium-size profile** and was established in the year 2009.
- The products sold at OUT004 encompass a range of MRP values, spanning from \$83 to \$198.
- Fruits and vegetables have the highest sales frequency.
- Revenue per product varying between \$1561 and \$5463.
- OUT004's highest revenue is through the sale of fruits and vegetables as well as snack foods, both contributing approximately 2,500,000 and 2,000,000 respectively.

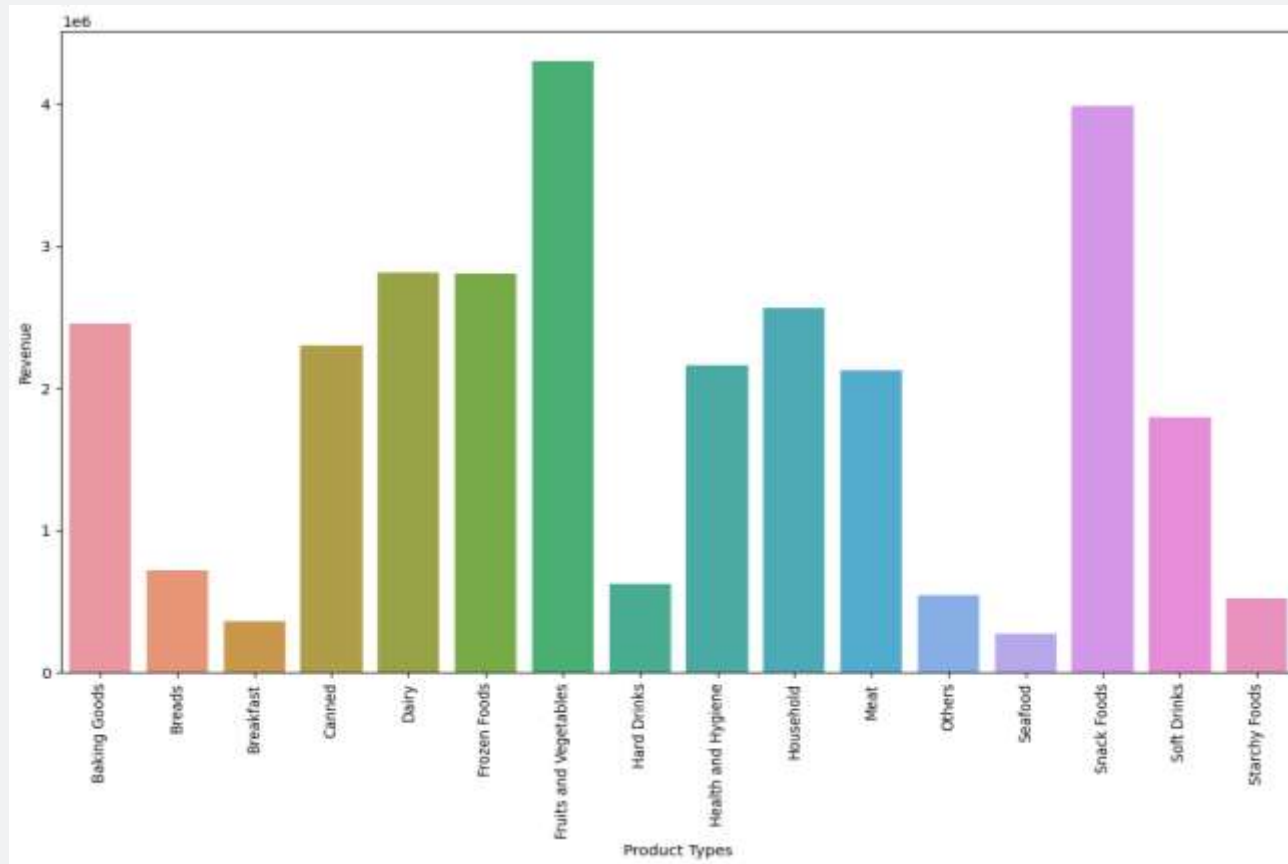




# Insights

- Across all product types, **OUT004 stands out as the top revenue generator**, which aligns logically given that approximately 53% of the total products were purchased from this particular store.
- In contrast, **OUT002 consistently reports the lowest revenue** across all product categories. This outcome is unsurprising, considering the store's small size and location in a Tier 3 city.
- The revenue generated by OUT004 is more than two times that of OUT003 across all product types.

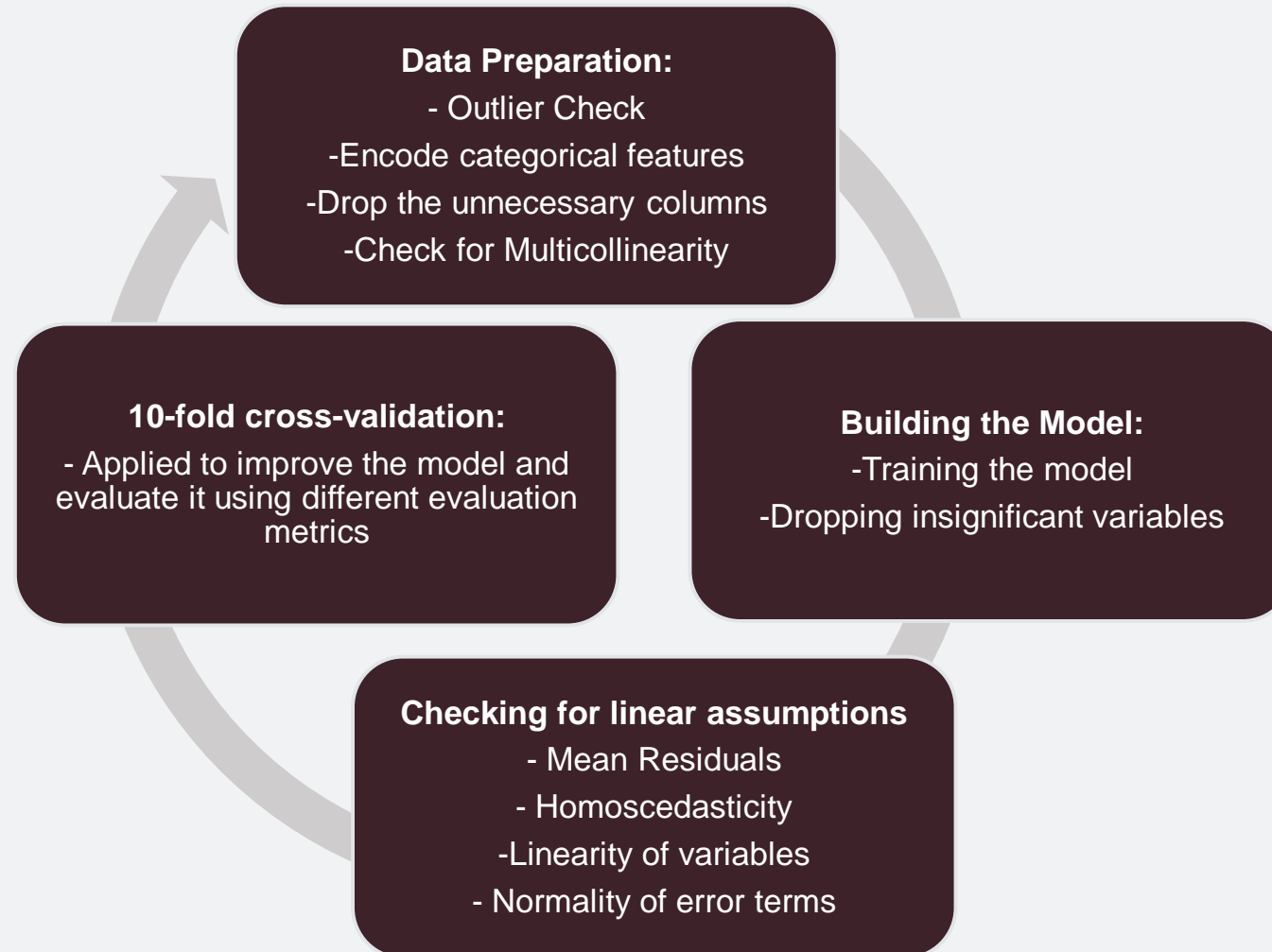
# Exploratory Data Analysis



**Which product type of the company generates most of the revenue?**

- The revenue of SuperKart is primarily driven by sales of "**Fruits and Vegetables**" and "**Snack Foods**."
- Conversely, "Seafood" accounts for the lowest revenue contribution to SuperKart.
- "Dairy" and "Frozen Foods" make nearly equal contributions to the company's revenue.

A Machine Learning model that can predict SuperKart's sales has been created with 82% accuracy and precision



# A summary of the most influential features relating to store sales and some recommended action steps

Stores	Performance	What can SuperKart do about it?
OUT001	<ul style="list-style-type: none"><li>• Supermarket Type 1, located in a Tier 2 city and having store size as big/high is <b>underperforming</b></li><li>• <b>Low Revenue</b></li></ul>	<ul style="list-style-type: none"><li>• Build new marketing strategies</li><li>• Giving attractive discounts and offers in this store in order to attract more customers.</li></ul>
OUT002	<ul style="list-style-type: none"><li>• Being a food mart in a Tier 3 city and having small store size, is <b>performing well</b>.</li><li>• <b>Moderate Revenue</b></li></ul>	<ul style="list-style-type: none"><li>• SuperKart can look to upgrade its size</li><li>• Target similar cities for business expansion.</li></ul>
OUT003	<ul style="list-style-type: none"><li>• Departmental store in a Tier 1 city and having store size as medium</li><li>• <b>Premium Store</b> of the company</li><li>• <b>Moderate Revenue</b></li><li>• Most costly goods are sold here</li></ul>	<ul style="list-style-type: none"><li>• As it's a premium store, SuperKart should focus on targeting the correct set of audience</li><li>• Build new marketing strategies accordingly</li></ul>
OUT004	<ul style="list-style-type: none"><li>• Supermarket Type2, located in a Tier 2 city and having a store size as medium, has an <b>outstanding performing</b></li><li>• <b>High Revenue</b></li></ul>	<ul style="list-style-type: none"><li>• SuperKart can look to increase the size of this store from medium to high.</li><li>• Set up stores in this type of city having comparable socio-economic conditions to expand their business and reach.</li></ul>

# Additional conclusions and recommendations

Features	Performance	What can SuperKart do about it?
<b>Products: Fruits and vegetables and Snack foods</b>	<ul style="list-style-type: none"><li>• They represent <b>the biggest contributors</b> to the revenue across all the stores.</li></ul>	<ul style="list-style-type: none"><li>• SuperKart should look to maintain the inventory of these products properly.</li><li>• Ensure that these products never face a shortage.</li></ul>
<b>Customers' details</b>	<ul style="list-style-type: none"><li>• The data is <b>missing customer information</b></li><li>• These customers' details could add value to SuperKart's <b>target audience</b></li></ul>	<ul style="list-style-type: none"><li>• The company should get basic details about their customers i.e. gender, age</li><li>• To build their sales strategies according to that.</li></ul>
<b>Festive Occasions</b>	<ul style="list-style-type: none"><li>• SuperKart does not seem to take into account the number of <b>festive occasions</b> present in a quarter</li></ul>	<ul style="list-style-type: none"><li>• The company should keep a watch for the number of festive occasions in a quarter</li><li>• So that they can strategize their inventory accordingly.</li></ul>