



# Supermart Grocery Sales

AACSI573 Introduction to Data Science

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The background is a light cream color with various abstract brushstrokes and shapes. In the top left, there is a large orange shape, a blue curved stroke, and a cluster of small green dots. In the top right, there are orange brushstrokes and a green circle. In the bottom left, there is a large blue shape and a green oval. In the bottom right, there are orange dots and a green spiral.

# 1.0 Introduction

# 1.1 Introduction to Data Science

- A branch of study that combines subject-matter expertise, programming prowess, and understanding of math and statistics.
- The insights produced by these technologies may then be transformed into real commercial value by analysts and business users.

# 1.2 Significance of Data Science

- To understand the pattern of datasets.
- Allows researchers to draw insights from the data that has been analysed.
- Make predictions from the data and know what is the trend in the future.
- Data science is useful in many industries.

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## 2.0 Case Study

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## Case Study: Supermart Grocery Sales

- Many aspects that will affect supermarket grocery sales.

**Purpose:** Find out the factors that affected the supermart grocery sales.

## Hypothesis factor:

- Customers' region
- Supermarts' located city
- Profit margin of the supermarts' city
- Category and subcategory of goods
- Customers' order date
- Order's discount

The background is a light cream color with several abstract, hand-drawn elements. In the top left, there are green and blue brushstrokes. In the top right, there is a large orange shape with green dots. In the bottom left, there is an orange shape with a blue squiggly line. In the bottom right, there is a blue scribbled shape.

# **3.0 Data Science Process**





# 3.0 Data Science Process


## 3.1 Data Preparation

- Reading the data from various sources.
- Convert the data into the same format type.
- Cleansing the data  
Remove corrupt or problematic data.

## 3.2 Data Exploration

- Analyse data and get some useful data.
- Find out the similarities, differences, outliers.
- Hidden data can be figure out.


## 3.3 Data Representation

- Allows us to transform raw data into a dataset.
  - Interpret the data more easily and accurately.
- 






# 3.0 Data Science Process

## 3.4 Data Discovery


- Conducting initial data analysis.
  - Collecting and evaluating data from different sources.
  - To filter out less significant correlations.
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## 3.5 Learning From Data

- Vital in data science process.
  - Learn types of useful data from the datasets.
  - Can totally understand what the datasets are trying to interpret.
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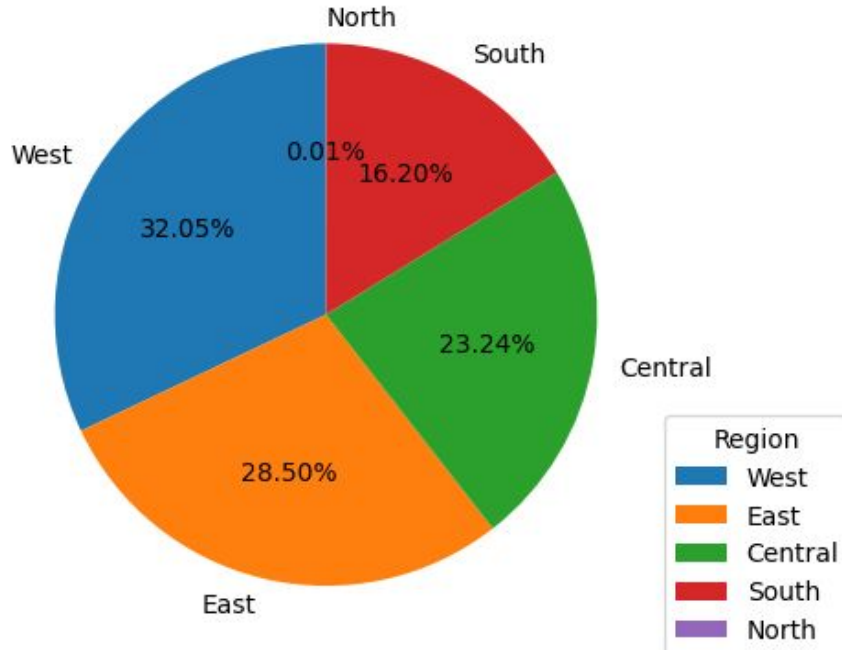


# 4.0 Result & Discussion

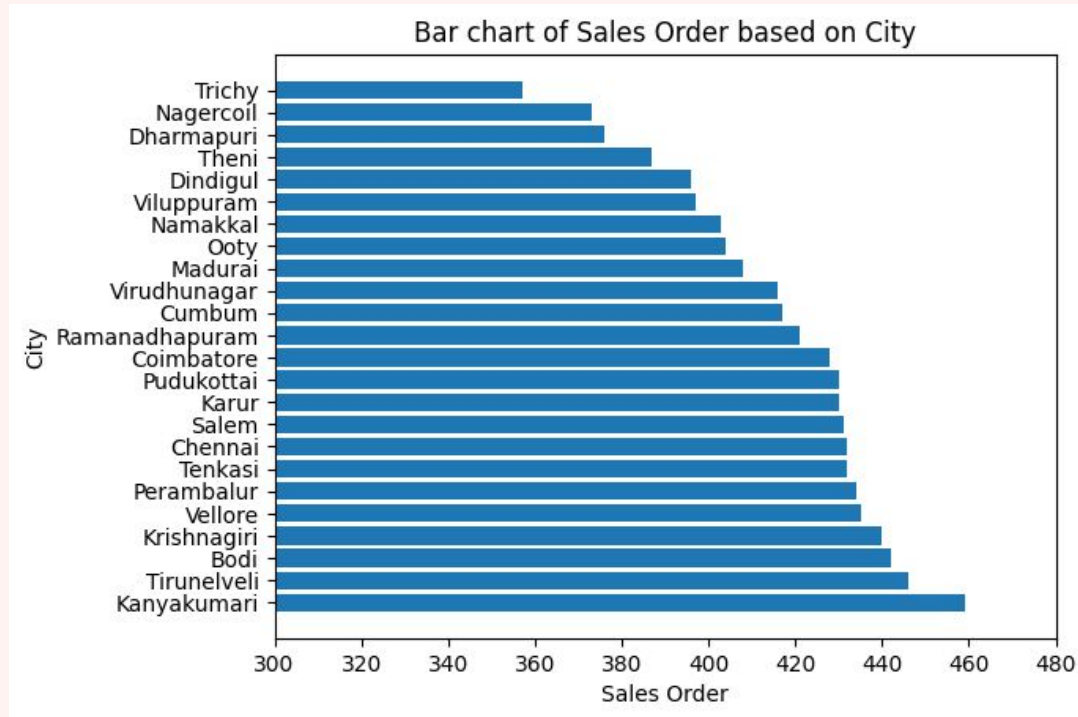


# 4.1 Customers' Region

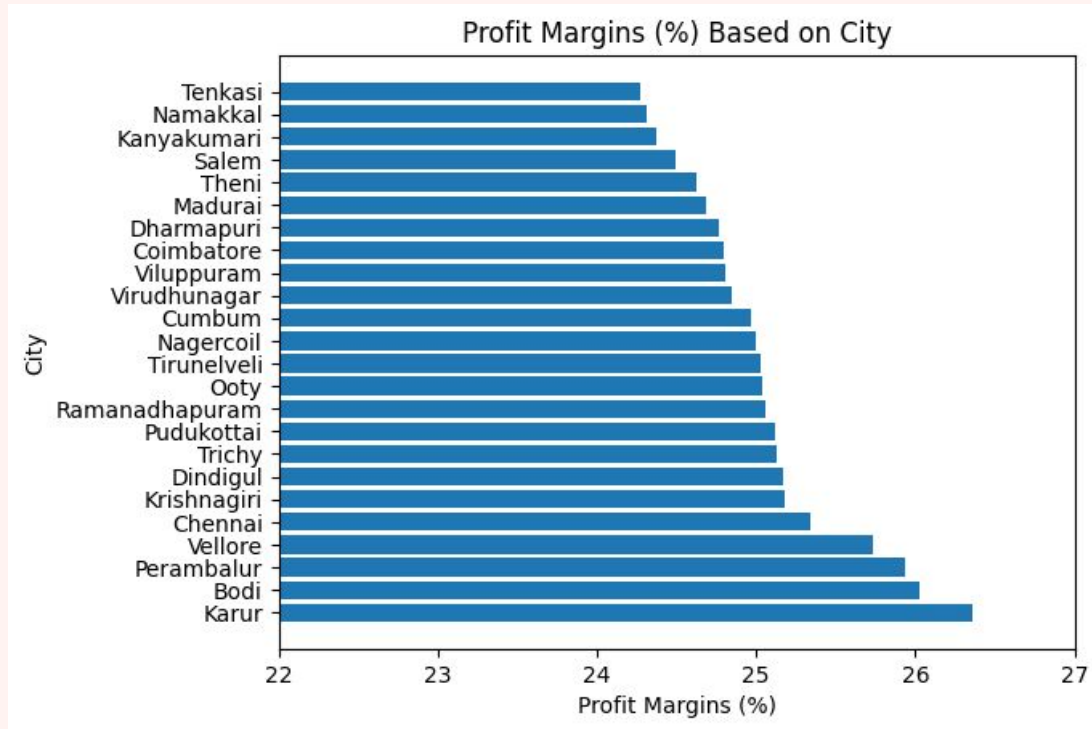
Pie Chart of the Percentages of Sales Order by Customers' Region



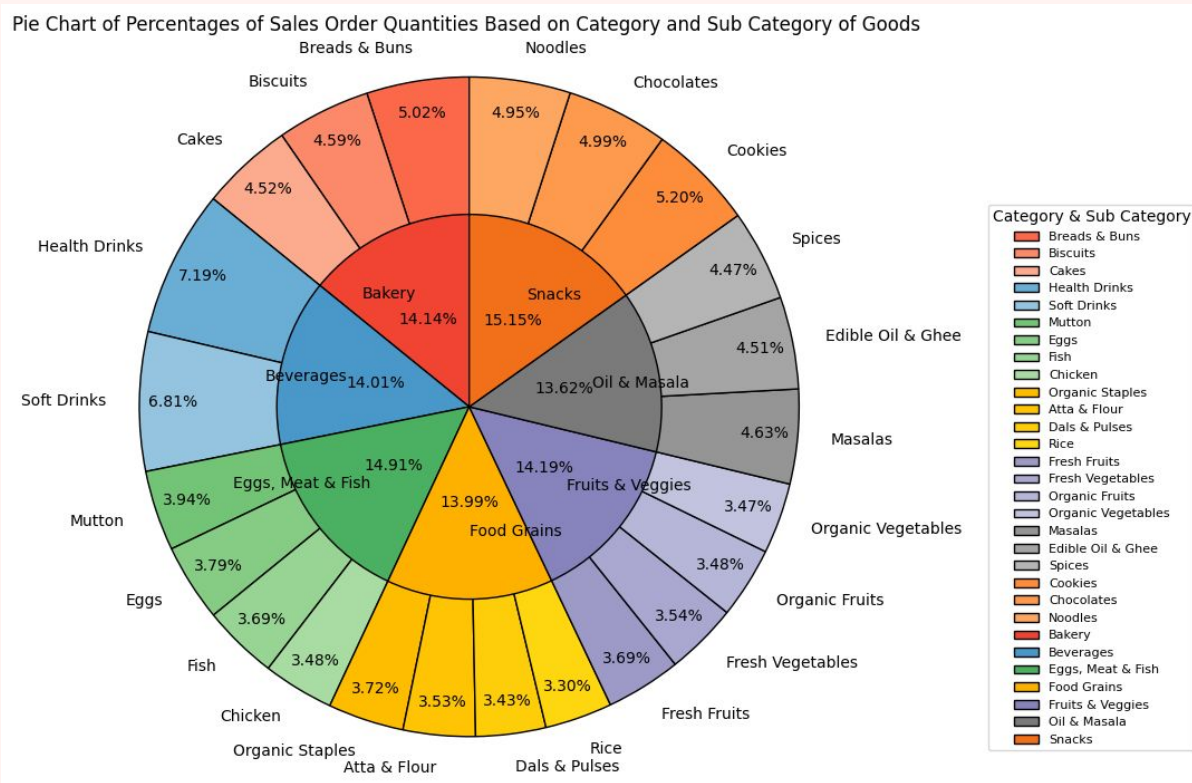
## 4.2 Sales Order Based on City



## 4.3 Profit Margins Based on City

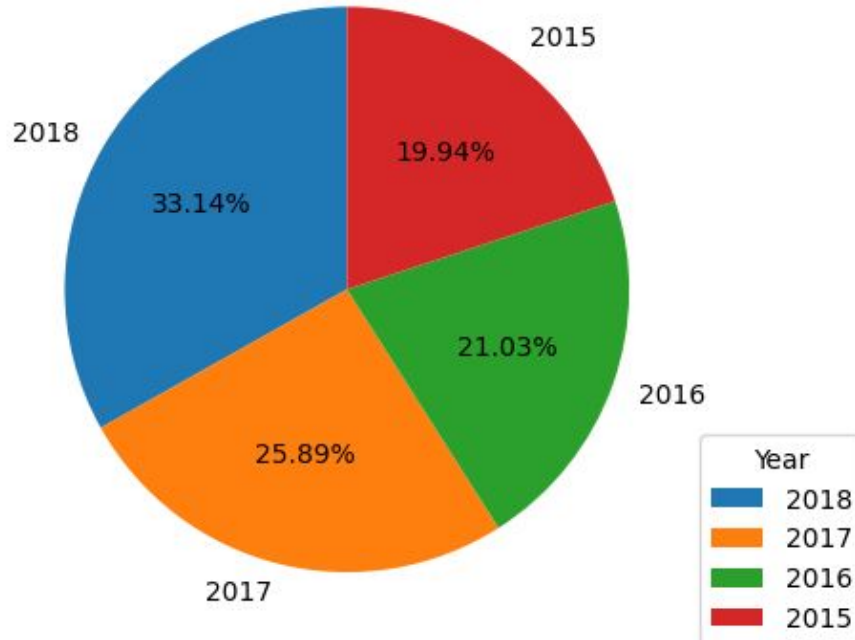


## 4.4 Category and Sub Category



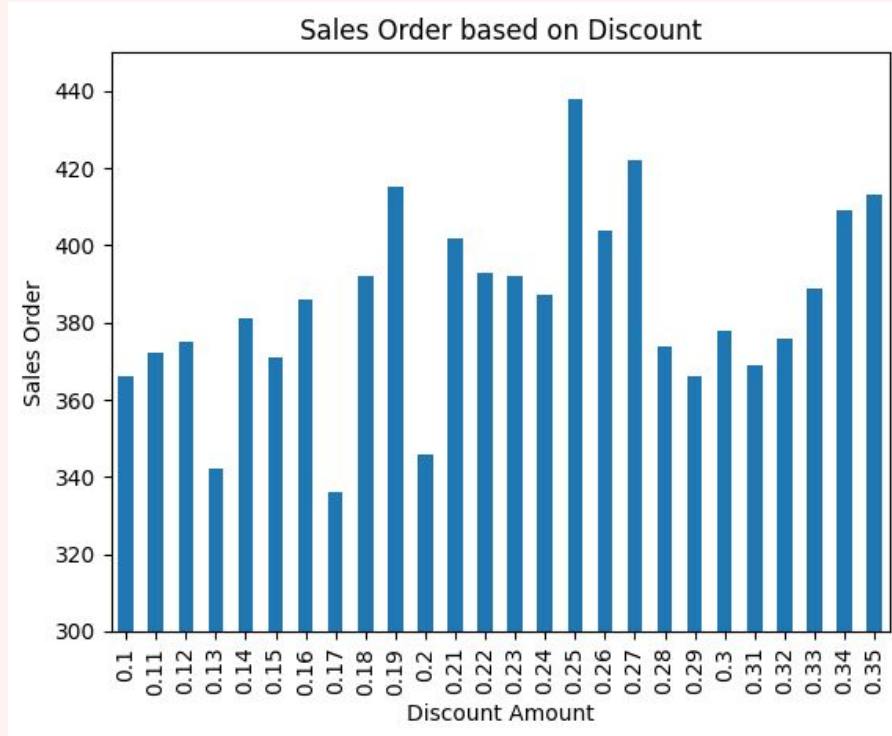
## 4.5 Order Date Based on Year

Pie Chart of Percentages of Sales Order by Different Years





## 4.6 Discount Amount



The background features several abstract, hand-drawn elements. In the top left, there is a solid blue shape, a blue brushstroke resembling a 'C' or a smiley face, and a cluster of small blue dots. In the top right, there are orange brushstrokes and a solid orange circle. In the bottom left, there is a large, dark blue brushstroke and a green oval. In the bottom right, there are orange dots and a green spiral brushstroke.

# 5.0 Conclusion

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**Factors influence supermart sales:**

- Region
- City
- Category of goods
- Subcategory of goods

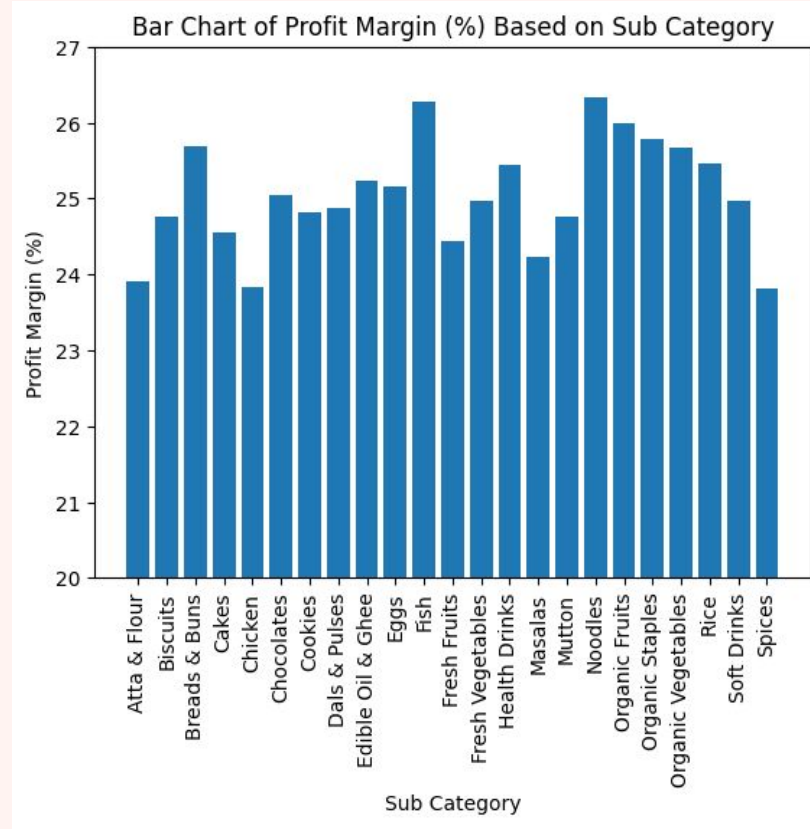
# 5.0 Conclusion

## Advantages:

- To prevent out of stock problems
- Increase the customer's satisfaction and retention towards the supermart.

## Disadvantages:

- The correlation between discount rate and sales orders is relatively weak.
- A large number of sales orders does not indicate that it will bring high profit to our supermart.



The background is a light cream color, decorated with various hand-drawn elements. In the top left, there is a solid orange shape, a blue swirl, and a cluster of green dots. In the top right, there is a hand-drawn orange hand holding a green circle. In the bottom left, there is a dark blue shape and a green oval. In the bottom right, there is a green swirl and a cluster of orange dots.

**Thank  
You!**