



# Supply Chain Management

**Data Analytics Portfolio Project**

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# About Project

**Executive Committee of a firm want to enhance efficiency, effectiveness, and overall performance of the supply chain management process through data-driven insights.**

**Our team perform this task, analyze the supply chain data and extract meaningful insights and forward recommendations for achieving goals.**



# Stakeholders

Supply Chain Managers



Sales & Marketing Team

Finance Department

Customer Service Reps

Product Managers

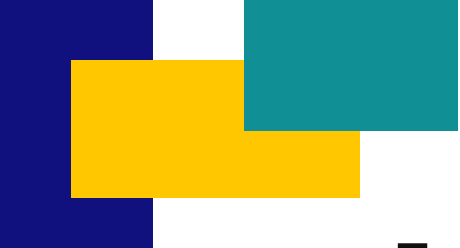
Executive & Decision Makers





# Objective

**Analyse supply chain data to increase profitability. Identifying the different factors have a significant impact on profit or cost.**



# Objectives & Approach

**RFM analysis**

**Market Demand Analysis**

**Product Performance Analysis**

**Delivery Impact Analysis**

**Customer Segmentation Analysis**



# Problems

## Problem 01

Is there any change in the market demand?

## Problem 03

Can late delivery risk lead to customer dissatisfaction, reduced repeat business, and lower sales? How often late deliveries occur?

## Problem 02

Which products or product category experienced the most significant decline in sales and profit ratio.

# Problems

## Problem 04

How different customer segments contribute to sales and profit?  
RFM analysis.

## Problem 06

Which product categories are least and most profitable?

## Problem 05

Does shipping mode affect the profitability?

# Problems

## Problem 07

Which city/state/country has placed maximum orders?

## Problem 09

What is the trend of profit of shipment of products in different regions?

## Problem 08

Which city/state/country has generated maximum profit?



# Problems

## Problem 10

Which market generates maximum profit (pacific Asia, Europe etc) ?

## Problem 11

Does order status (pending, Cancel, pending-payments, suspected-fraud) have an impact on profit/loss?

## Problem 12

Does the mode of payment or mode of shipping have any impact on profit?

# Data Analysis Process

1

DATA  
MODELLING

2

DATA  
CLEANING

3

EXPLORATOY  
DATA  
ANALYSIS



# Data Exploration

Explore change in market demand

Explored products or product categories with highest sales and profit ratio

Analyse the late delivery impacts

Identified customer segments and their contribution in sales and profit

Analyse shipping mode over profit



# Data Exploration

Identify profitable product categories

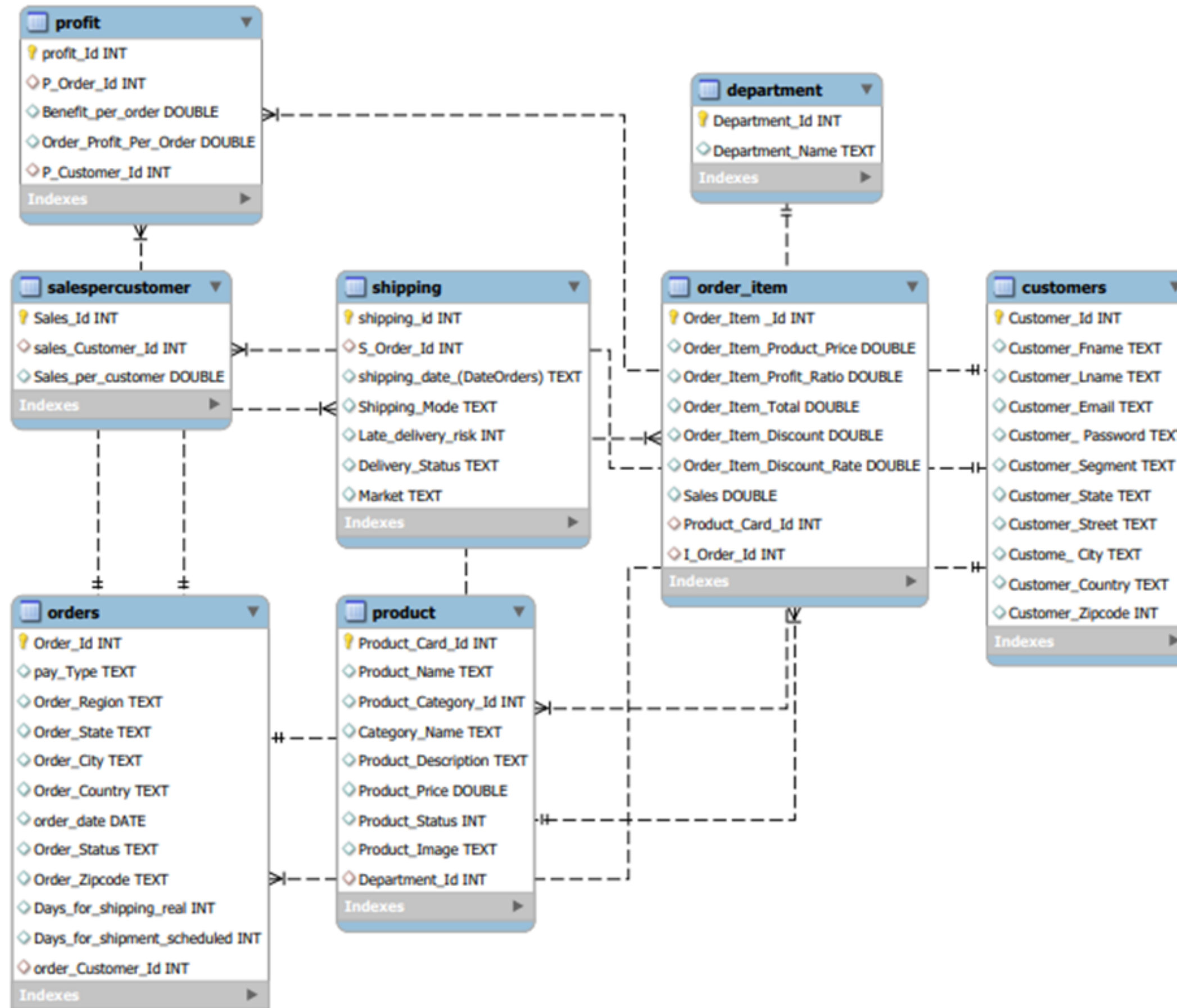
Analyse the city/state/country with respect to orders and profit

Explore the regions with highest profits

Identify profitable markets

Explore order status on profit

# ER Diagram





# Analysis

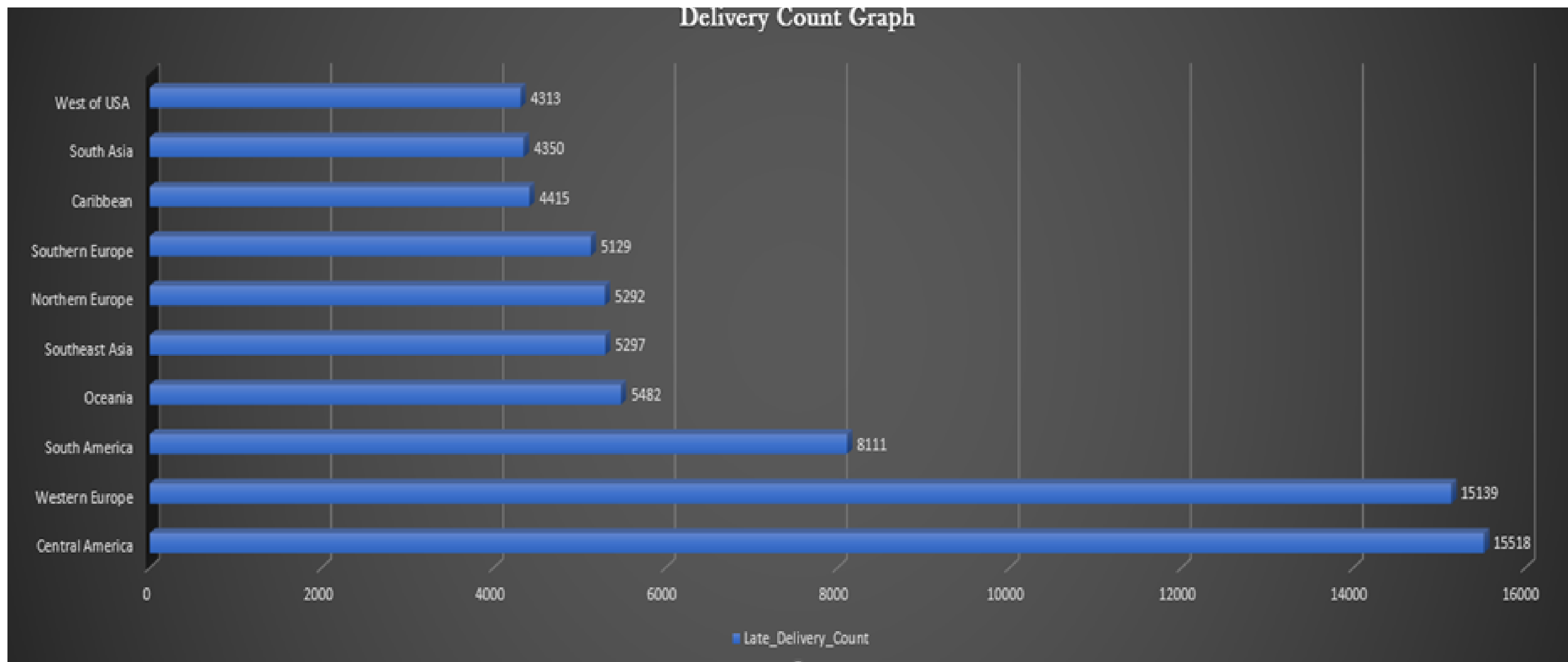
1

## Late Delivery Count , Product Catagory & Frequency

### Late Delivery Count

The analysis shows that maximum late deliveries occurred in Central America that makes a total of 21.24% whereas minimum late deliveries occurred in West USA which is only 5.90% of the total.

# Late Delivery Count





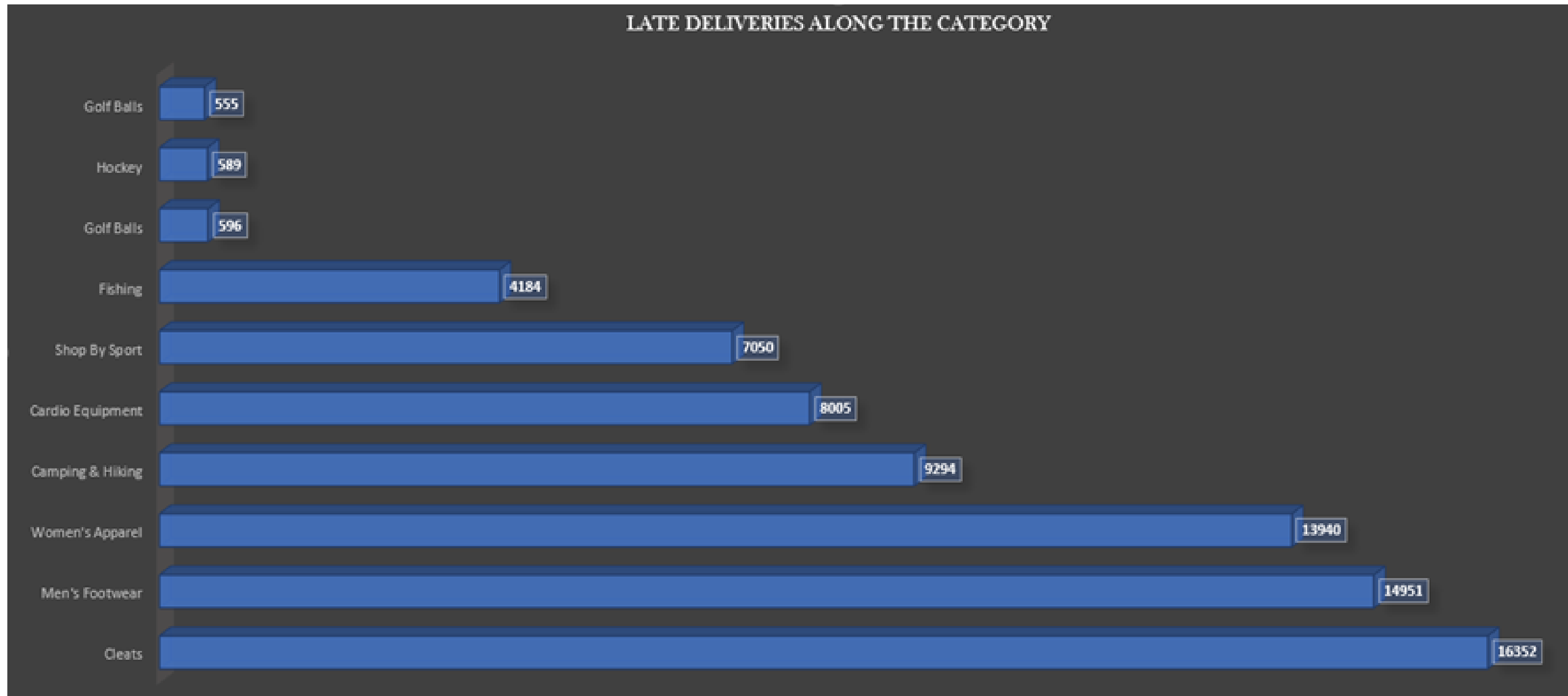
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## Late Delivery Count , Product Catagory & Frequency

### Late Delivery Along the Catagory

In case of product category, the minimum late deliveries occurred in golf balls that is 0.7% and maximum late deliveries were of Cleats making up to 21.65% of the total late deliveries.

# Late Delivery Along the Catagory





1

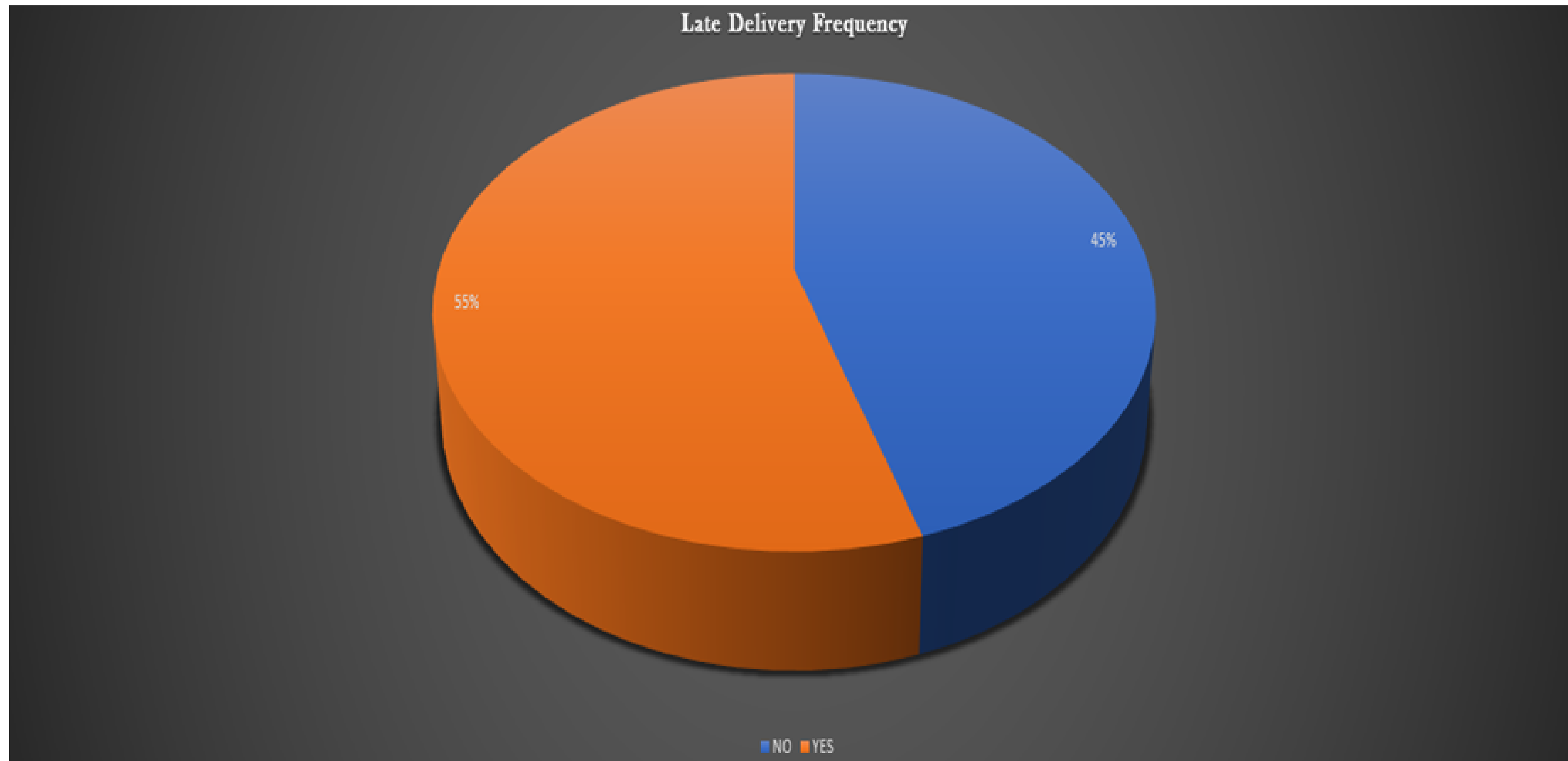
## Late Delivery Count , Product Catagory & Frequency

### Late Delivery Frequency

Analysis shows that 55% of the total deliveries were consistently arriving late. This indicates a significant issue within the delivery process that demands critical attention.



# Late Delivery Frequency



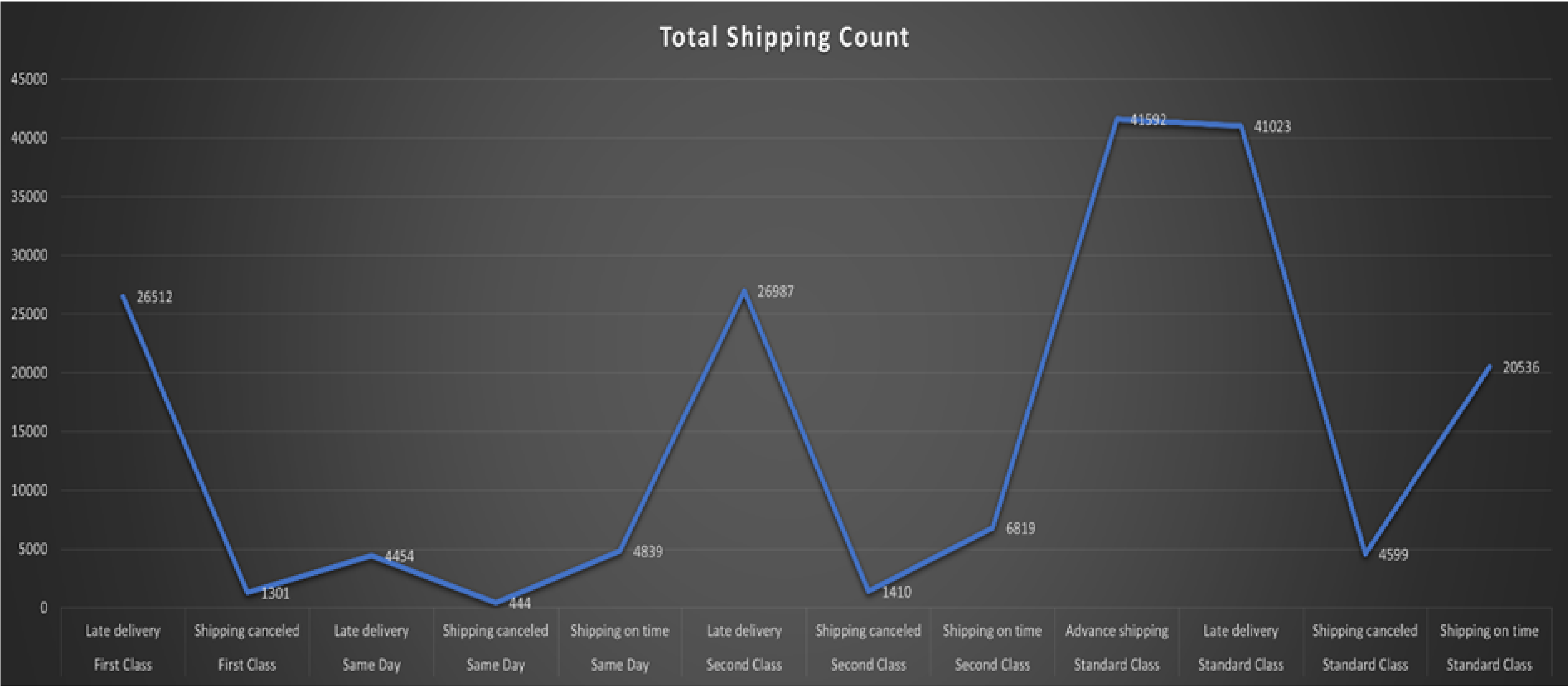
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## Shipping Modes Analysis

### Total Shipping Count

Out of the 180516 orders, 7,754 (4.3%) were cancelled and 172,762 (95.7%) were shipped through different modes. Among the shipped orders 57.29% were late, 8.22% were on time and 24% were advance shipments. In the first class all the shipping were either late or cancelled whereas advance shipping happened only in standard class.

# Total Shipping Count





## 2

## Shipping Modes Analysis

### Total Shipping Count and Profit

The profit value generated by the completed orders is 13,751,824.52 out of which only 5.17% is generated by class same day. Whereas the maximum profit is generated from standard class making up to 59.597% of the total.

# Total Shipping Count and Profit







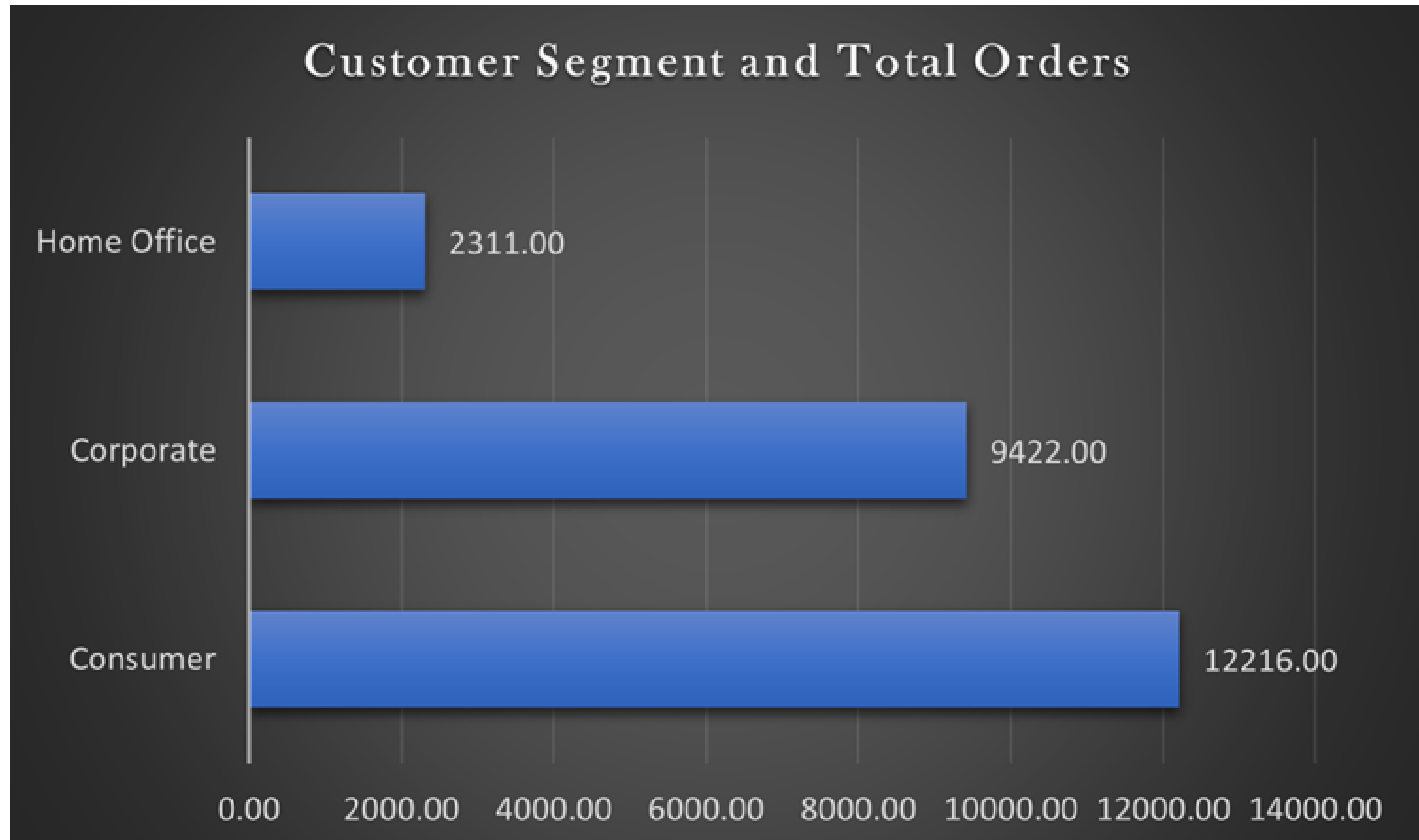
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## Customer Segments

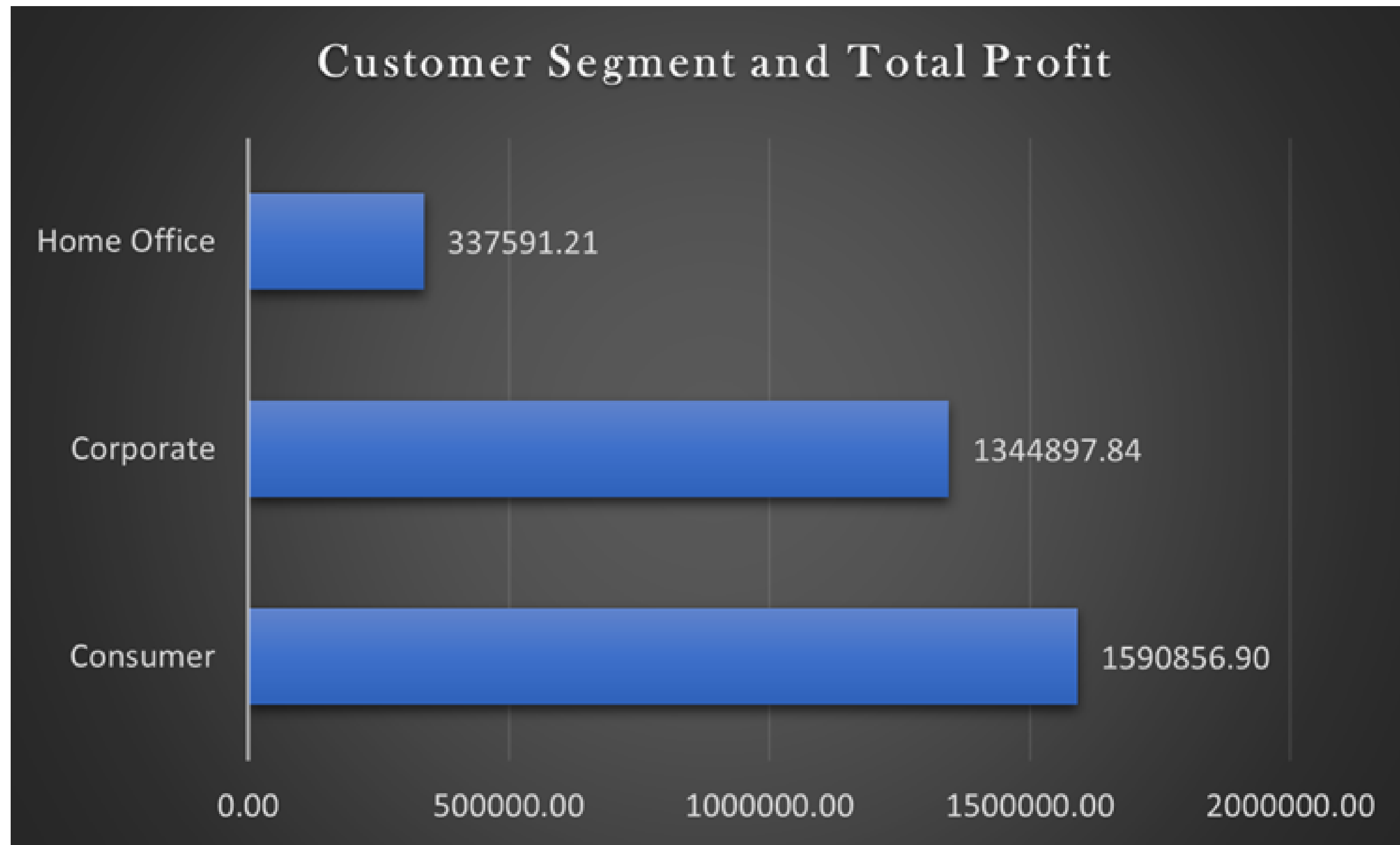
### Customer Segment and Total Orders

Majority orders were placed by consumers. And home office has the minimum number of orders. Consequently, consumer is the customer segment that has generated maximum profit and sales.

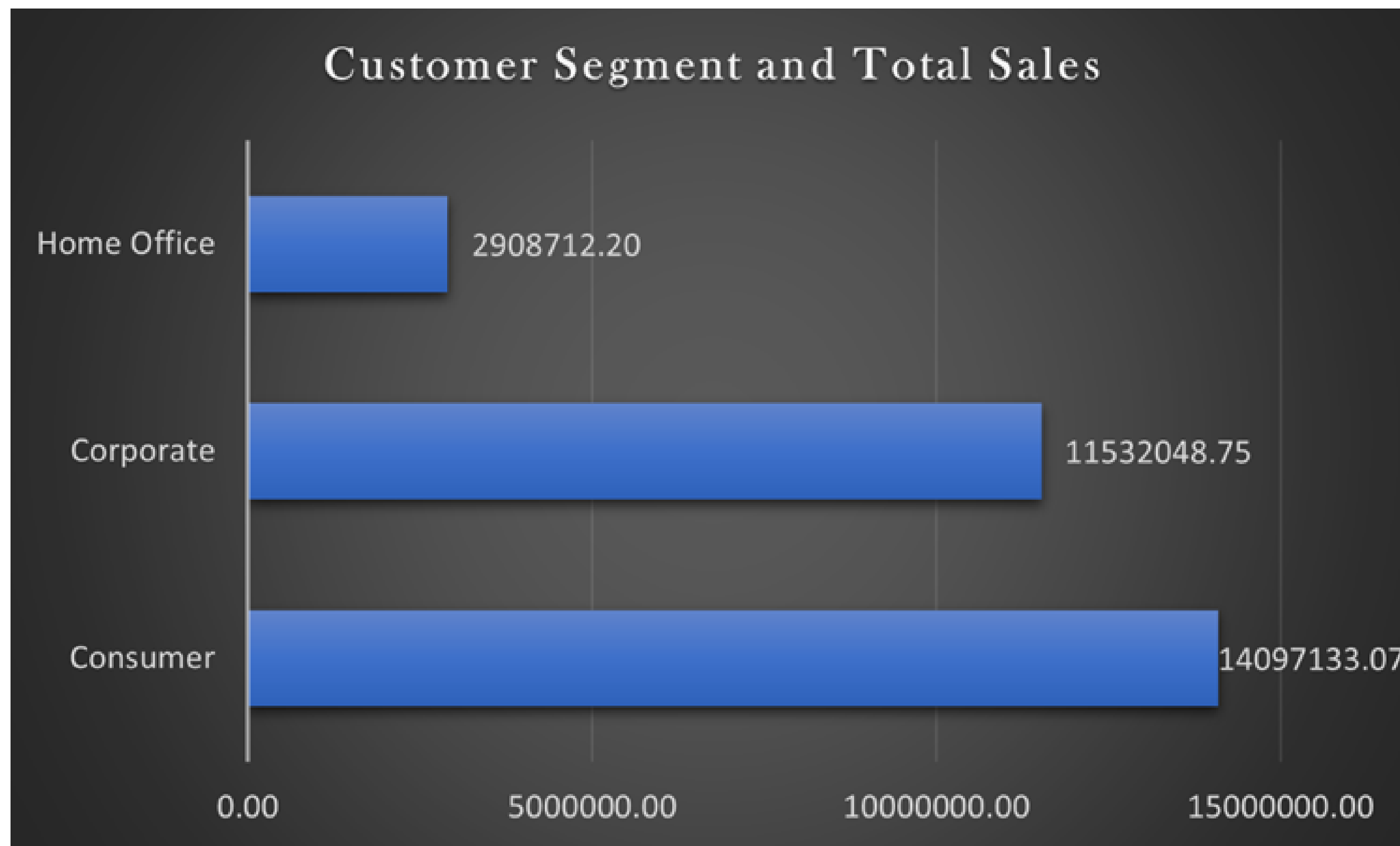
# Customer Segment and Total Orders



# Customer Segment and Total Profit



# Customer Segment and Total Sale



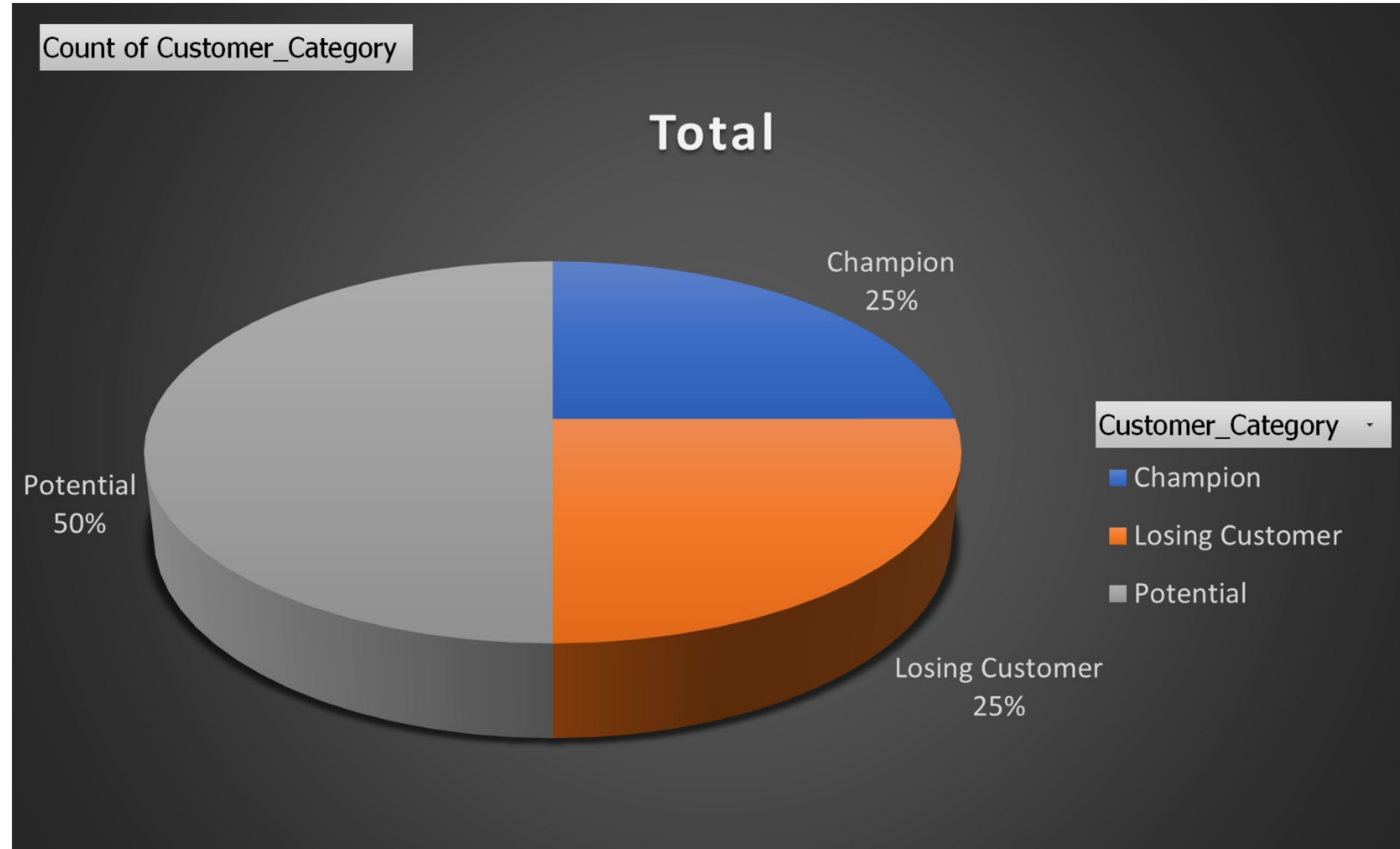
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## RFM Analysis

This category was introduced after RFM Analysis which represents the frequent orders made by customers. Champion represents customers who have recently placed order and losers are those who haven't made any recent order. Whereas Potential shows people who have made orders in the near past but not very recently.



# RFM Analysis





# Recommendations

1

## Improve Supply Chain Efficiency

Streamline shipping processes and reduce late delivery risks to enhance customer satisfaction and sales. Products should be delivered on time.



## 2

## Tailor Marketing Strategies

Customize marketing efforts based on customer segments identified through RFM analysis to boost sales. Marketing Campaigns should be consumers focused.



3

## Enhance Product Offering

Identify underperforming products or categories and strategize improvements or discontinuation.



4

## Optimize Regional Focus

Concentrate resources on high-profit regions and markets to maximize profitability.



# 5

## Continuous Monitoring and Adaptations

Implement a continuous improvement process to regularly review and adjust strategies based on data-driven insights.

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THANK YOU