

# **Project Report on Analysis of sales trend on Walmart.**

## **1)Introduction**

### **1.1 Background:**

Walmart is one of the world's largest retail corporations, with a significant global presence. Analyzing the sales trends at Walmart can provide valuable insights into the company's performance, market dynamics, and consumer behaviour. This project aims to analyze the sales trends at Walmart and provide actionable recommendations for improving sales.

### **1.2 Objectives:**

- Analyze the overall sales performance of Walmart.
- Identify and understand the yearly and monthly sales trends.
- Identify any seasonal patterns in sales.
- Perform a detailed analysis of sales by product category.
- Investigate factors that may affect sales, such as economic conditions, consumer behavior, and competition.
- Develop a sales forecasting model to predict future sales.
- Provide recommendations based on the analysis and forecasting results.

### **1.2 Scope:**

The scope of this project focuses on analyzing the sales trends at Walmart, primarily based on historical data. It does not delve into specific operational aspects of Walmart or its internal strategies. The analysis will be based on aggregated sales data, and the recommendations provided will be general in nature.

## **2)Methodology**

### **2.1 Data Collection:**

Data for this project will be collected from various sources, including Walmart's internal sales records, market research reports, and publicly available datasets related to retail sales and consumer behavior. The data will cover a specific period, preferably multiple years, to capture long-term trends.

### **2.2 Data Analysis Techniques:**

The analysis will employ various statistical and data visualization techniques to uncover meaningful insights. These techniques may include exploratory data analysis, time series analysis, regression analysis, clustering, and other relevant methods.

### **2.3 Tools and Technologies Used:**

The project will utilize statistical software such as Python or R for data analysis and modeling. Additionally, data visualization tools like Tableau or Matplotlib will be used to create informative and visually appealing charts and graphs.

### 3)Data Collection

#### 3.1 Sources of Data:

The primary sources of data will include:

- Walmart's internal sales records
- Market research reports on the retail industry
- Publicly available datasets related to retail sales and consumer behavior

#### 3.2 Variables Collected:

The collected data will include:

- Sales revenue
- Date and time of sales
- Product categories
- Store locations
- Economic indicators (e.g., GDP, inflation rate)
- Competitor sales data (if available)
- Consumer behavior metrics (e.g., demographics, purchasing habits)

#### 3.3 Data Preprocessing:

Before analysis, the collected data will undergo preprocessing steps, including data cleaning, data integration (if necessary), handling missing values, and transforming the data into a suitable format for analysis. Outliers and anomalies will also be addressed to ensure the integrity and accuracy of the analysis.

### 4)Sales Trend Analysis

#### 4.1 Overall Sales Performance:

This analysis will focus on understanding the overall sales performance of Walmart over the selected period. Key metrics such as total revenue, growth rates, and profit margins will be examined to assess the company's financial health.

#### 4.2 Yearly Sales Trend:

Analyzing the yearly sales trend will help identify any long-term patterns or growth trends. It will involve examining year-over-year sales growth rates, identifying peak sales periods, and assessing the impact of external factors such as economic conditions.

#### 4.3 Monthly Sales Trend:

The monthly sales trend analysis will reveal any recurring patterns or seasonality in Walmart's sales. By analyzing monthly sales data over multiple years, the project will identify the most profitable months, peak sales periods, and any month-to-month variations.

#### 4.4 Seasonal Sales Patterns:

This analysis will focus on understanding seasonal sales patterns at Walmart. It will involve techniques such as seasonal decomposition, where the sales data will be decomposed into trend, seasonal, and residual components to identify the underlying seasonal patterns.

#### 4.5 Product Category Analysis:

Analyzing sales by product categories will provide insights into which product categories are the most profitable for Walmart. It will involve segmenting sales data by product categories and examining their respective growth rates, market share, and contribution to overall sales.

### 5) Factors Affecting Sales

#### 5.1 Economic Factors:

This analysis will investigate the relationship between economic indicators and Walmart's sales performance. It will assess the impact of factors such as GDP growth, inflation rates, unemployment rates, and consumer confidence on sales.

#### 5.2 Consumer Behaviour:

Understanding consumer behaviour is crucial for analyzing sales trends. This analysis will explore factors such as demographics, purchasing habits, customer preferences, and customer satisfaction to identify patterns and correlations with sales performance.

#### 5.3 Competitor Analysis: Analyzing

the sales trends of Walmart's competitors will provide insights into the competitive landscape. It will involve comparing Walmart's sales performance with that of its major competitors and assessing market share dynamics.

### 6) Forecasting Sales

#### 6.1 Time Series Analysis:

Time series analysis techniques, such as moving averages, exponential smoothing, and ARIMA models, will be employed to forecast future sales based on historical data. These models will capture the underlying trends, seasonality, and other relevant patterns.

## 6.2 Predictive Modeling Techniques:

Advanced predictive modeling techniques, such as regression analysis or machine learning algorithms, may be used to build more accurate sales forecasting models. These models can incorporate additional variables such as promotional activities, pricing strategies, and economic indicators.

## 6.3 Accuracy and Confidence Levels:

The accuracy and confidence levels of the sales forecasting models will be evaluated using appropriate metrics and statistical tests. The forecasted results will be compared against the actual sales data to assess the model's performance and reliability.

7. Recommendations: Based on the analysis and forecasting results, the project will provide actionable recommendations to improve sales at Walmart. These recommendations may include strategies for boosting sales, identifying market expansion opportunities, and optimizing pricing and promotional activities.
8. Conclusion: The project will conclude by summarizing the key findings from the analysis of Walmart's sales trends. It will emphasize the identified sales patterns, factors affecting sales, and the accuracy of the sales forecasting models. The conclusion will also reiterate the recommendations for enhancing sales performance.
9. References :The project report will include a comprehensive list of references, citing all the sources of data, research papers, and relevant literature used during the analysis and forecasting process.