E-commerce Sales Performance Review

Domain: Data Analytics

This report is prepared as part of the internship program and focuses on identifying scams in the education and IT sectors. The study analyzes real-world cases, their effects, and the role of technology and awareness in preventing such scams.

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INTRODUCTION

In recent years, the rapid growth of e-commerce has transformed the way businesses operate and how customers purchase products. Online shopping platforms generate a large amount of data every day in the form of customer orders, transactions, payment details, and delivery information. Analyzing this data is very important for understanding customer behavior, improving business performance, and making better managerial decisions. Data analytics plays a key role in converting raw data into meaningful insights that help organizations increase efficiency and profitability.

This report focuses on the analysis of an Online Store Orders dataset, which contains detailed information about customer purchases over a specific period. The dataset includes attributes such as order ID, customer ID, product details, quantity, unit price, payment method, order status, referral source, and total price. By studying these attributes, we can understand sales trends, customer preferences, popular products, and the effectiveness of different marketing channels.

The main purpose of this study is to perform exploratory data analysis on the given dataset and extract useful insights related to sales performance and customer purchasing patterns. The analysis helps in identifying top-selling products, commonly used payment methods, order fulfillment status, and the impact of discounts and referral sources on customer decisions. Such insights are valuable for online retailers to improve inventory management, enhance customer satisfaction, and optimize marketing strategies.

This project is part of a Data Analytics internship, where practical exposure to real-world datasets is essential. Through this analysis, fundamental concepts of data analytics such as data understanding, data cleaning, and descriptive analysis are applied. The report demonstrates how data-driven decision-making can support business growth in the competitive e-commerce environment.

Overall, this report aims to provide a structured and easy-to-understand analysis of online store order data, highlighting the importance of data analytics in modern business operations.

DATASET DESCRIPTION

The dataset used for this project is titled "Online Store Orders" and represents transactional data collected from an e-commerce platform. Each record in the dataset corresponds to a single customer order placed on the online store. The dataset contains a total of 1,200 records and 14 attributes, providing comprehensive information about customers, products, payments, and order fulfillment details.

This dataset is suitable for data analytics as it includes both numerical and categorical data, allowing detailed analysis of sales performance, customer behavior, and operational efficiency.

Structure of the Dataset

The dataset consists of the following attributes:

OrderID

A unique identification number assigned to each order. It helps in tracking and managing individual transactions.

Date

Represents the date on which the order was placed. This attribute is useful for analyzing sales trends over time.

CustomerID

A unique identifier for each customer. It helps in identifying repeat customers and studying customer purchasing behavior.

Product

Indicates the name of the product purchased by the customer, such as Laptop, Chair, Printer, Tablet, or Monitor.

Quantity

Specifies the number of units of a product purchased in a single order.

UnitPrice

Represents the price of one unit of the product. This attribute is used to calculate the total order value.

ShippingAddress

Contains the delivery location of the customer. It is useful for logistics and shipping analysis.

PaymentMethod

Describes the mode of payment used by the customer, such as Credit Card, Debit Card, Online Payment, Cash, or Gift Card.

OrderStatus
Indicates the current status of the order, including Delivered, Shipped, Pending, Cancelled, or Returned.

TrackingNumber
A unique shipment tracking number assigned to orders that have been shipped, enabling shipment tracking.

ItemsInCart
Shows the total number of items present in the customer's cart at the time of checkout.

CouponCode
Indicates the discount coupon applied to the order, if any. Examples include SAVE10 or FREESHIP.

ReferralSource
Specifies the source through which the customer was referred to the online store, such as Email, Instagram, Facebook, or Direct.

TotalPrice
Represents the final price of the order after considering quantity, unit price, and applicable discounts.

METHODOLOGY

The E-commerce Sales Performance Review dataset was collected in Excel format.

The dataset was studied to understand its structure and attributes.

Data cleaning was performed to remove errors and inconsistencies.

The data was prepared and organized for analysis.

Exploratory Data Analysis (EDA) was conducted using descriptive statistics and charts.

Results were interpreted to identify sales trends and customer behavior.

Microsoft Excel was used as the main tool for analysis.

EXPLORATORY DATA ANALYSIS

The dataset contains 1,200 customer orders with multiple product categories.

Descriptive statistics were used to analyze total sales and average order value.

Product-wise analysis identified top-selling products based on quantity and revenue.

Payment method analysis showed customer preferences for different payment options.

Order status analysis highlighted delivered, cancelled, pending, and returned orders.

Coupon code usage was analyzed to understand the impact of discounts on purchases.

Referral source analysis revealed the effectiveness of marketing channels such as social media and email.

Charts and graphs were used to visually represent patterns and trends in the data.

CUSTOMER AND MARKETING INSIGHTS

Customers show varied purchasing behavior, with some placing bulk orders while others prefer smaller quantities.

Repeat purchases indicate customer loyalty and satisfaction with certain products.

Coupon codes positively influence buying decisions and encourage higher order values.

Multiple payment options improve customer convenience and increase successful transactions.

Social media platforms and email marketing are effective referral sources for customer acquisition.

Direct referrals indicate brand trust and returning customers.

Cancelled and returned orders suggest the need for improved customer support and delivery services.

FINDINGS AND DISCUSSION

The E-commerce sales performance shows strong sales performance with a healthy average order value.

Certain products contribute more to total revenue, indicating popular customer preferences.

Availability of multiple payment methods increases customer satisfaction and successful purchases.

A noticeable number of cancelled and returned orders highlights issues related to delivery, product quality, or customer expectations.

Coupon codes and discounts effectively encourage customers to place orders.

Marketing through social media and email plays a significant role in driving traffic and sales.

The findings suggest that improving order fulfillment and customer support can further enhance business performance.

CONCLUSION

This project analyzed the E-commerce sales performance dataset using basic data analytics techniques to understand sales performance and customer behavior. The analysis revealed key insights related to popular products, payment preferences, and the effectiveness of marketing channels. It was observed that discounts and multiple payment options positively influence customer purchases, while cancelled and returned orders indicate areas for improvement. Overall, the study highlights the importance of data-driven decision-making in enhancing customer satisfaction and improving business performance in an online retail environment.