

Study of Customer Shopping Trends Analysis

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Abstract - The research is conducted to study the latest shopping trends of the customers specifically for the clothing industry. In this research paper, to derive the results and perform the analysis we have used advanced data analysis techniques to understand the patterns and preferences of the customer's shopping trends. This explores various factors influencing customer choices, such as demographic variables, socioeconomic status, technological advancements, and cultural influences. Here we are using a large dataset sourced from retail transactions and online platforms. This research uses statistical methods and machine learning algorithms to understand patterns, identify correlations, and forecast future customer shopping trends.

Key Words: Shopping, Customer Shopping, Customer satisfaction, Customer preference, Digital world, Advanced Technology.

1. INTRODUCTION

This research paper aims to understand customer shopping trend analysis, adopting a new approach that combines traditional market research methodologies with cutting-edge data analytics techniques.

In the current global marketplace, understanding customer shopping trends has become important for businesses that are aiming to stay competitive and relevant. The advantage of digital technologies, combined with shifting socio-economic dynamics, has transformed the way consumers browse, purchase, and engage with products and services. Consequently, businesses are increasingly depending on data-driven insights to understand the patterns of customer behaviors.

The sudden increase in the number of online retail platforms and the integration of artificial intelligence has provided unlimited opportunities to collect vast amounts of data regarding consumer preferences, purchase histories, and browsing habits. However, the challenge persists in transforming this huge data into meaningful insights that can inform strategic decision-making processes. By using statistical analysis, machine learning algorithms, and data mining techniques, this study aims to understand the complex relation of each factor that affects customer shopping trends.

While dealing with a large population and considering factors like gender, age, and location. It plays an important role in understanding consumer preferences. Additionally, considering cultural influences, economic conditions, and technological advancements significantly impact the way individuals make purchasing decisions. Understanding these factors in detail is important for businesses that are aiming to decide their

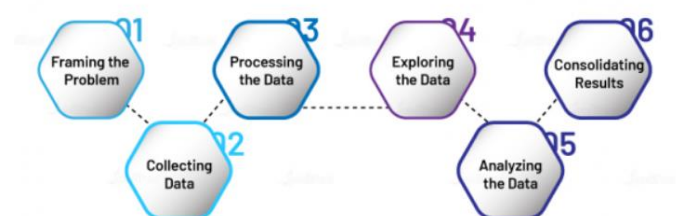
marketing strategies and offerings to specific target people. Moreover, the rise of e-commerce and mobile shopping apps has made it difficult to see the lines between online and offline retail experiences, necessitating a holistic approach to customers and their shopping trends analysis.

In these circumstances, the primary objective of this research paper is to bridge the gap between raw data and actionable insights. By exploring the relationship between various demographic, economic, and technological factors, this study helps us to provide a clear understanding of customer shopping behaviors and patterns.

By examining the patterns of customer shopping trends, this research paper aims to empower businesses with the knowledge that is necessary to acquire and apply in a market.

2. METHODOLOGY

The methodology section outlines the approach taken to conduct the research, including data collection, analysis, and tools used. The methodologies provide a framework to continuously track and model customer shopping patterns for future purchase behavior. This can assist clothing retailers to optimize customer value.



1. Problem Statement:

Finding customer shopping trends, latest patterns, Age groups, and preferences.

2. Data Collection

To study customer shopping trends, the transaction data of 4,000 customers was obtained from the clothing retailer for their online and brick-and-mortar sales. The parameters included customer demographics like Age, Gender, Item Purchased, Category, Purchase Amount (USD), Location, Size, Color, Season, Review, Rating, Subscription Status, Payment Method, Shipping Type, Discount Applied, Promo Code Used, Previous Purchases, Preferred Payment Method, Frequency of Purchases.

3. Data Preprocessing

The raw transaction data was pre-processed to handle missing values, duplicates, and outliers.

4. Exploratory Analysis

Summary statistics of all transaction parameters were computed to gain preliminary insights. Visualizations like histograms, heat maps, and pie charts were generated to assess correlations, themes, and anomalies in the data.

5. Analysis of results

Statistical tests were conducted to determine the significance of different attributes in driving customer purchases by value and volume. Hypothesis testing methods like t-tests, ANOVA, and regression analysis were utilized. Trends across various cohorts and periods were established through time series analysis.

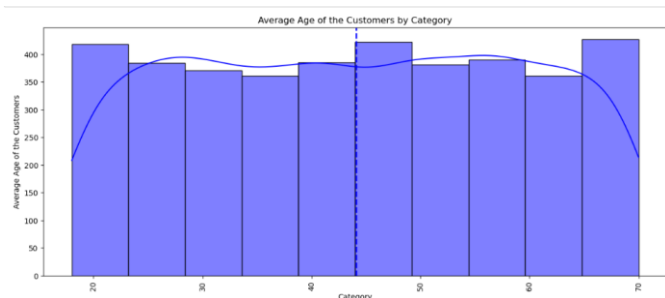
6. Results Visualization

Interactive dashboards, charts, and plots were created to compare trends and surface key insights on what influences clothing purchase decisions across customer profiles, products, seasonal collections, and channel preferences. The analysis provides data-backed recommendations to realign the retailer's offerings.

3. Research Questions and Results

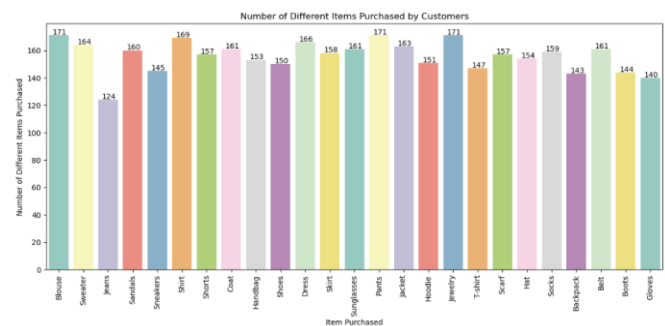
Q. What is the average age of the customers in the dataset?

Result: The average age of the customers is: 44.07.



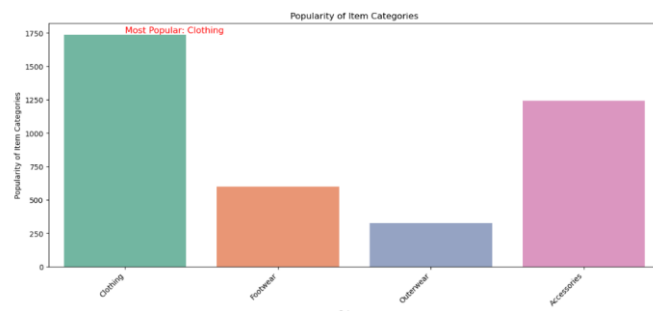
Q. How many different items have been purchased by customers?

Results: The number of unique items is: 25.



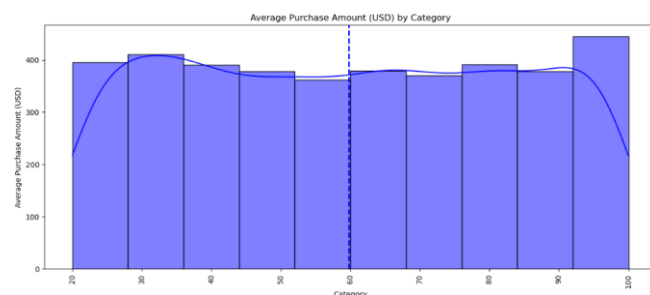
Q. What is the popular category of items purchased by customers?

Results: A popular category of items purchased by customers is: Clothing.



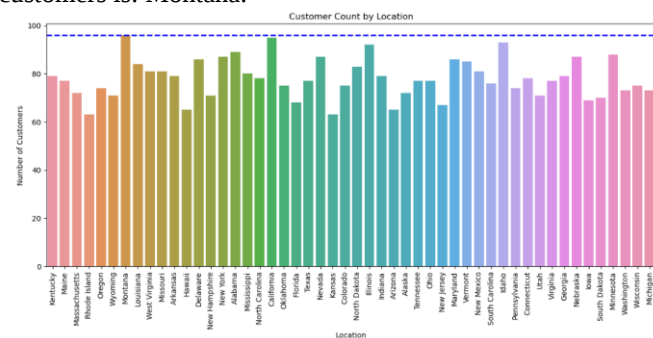
Q. What is the average purchase amount (USD) in the dataset?

Results: The average purchase amount (USD) is: 59.76.



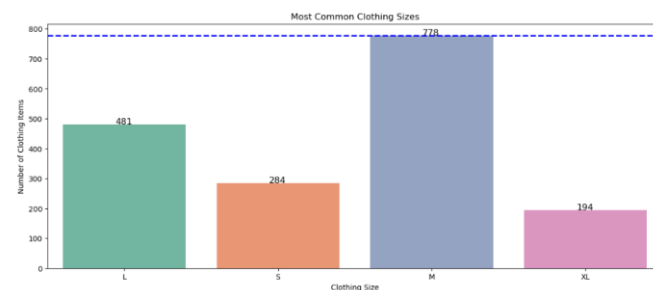
Q. What location has the highest number of customers?

Results : Results: The location with the highest number of customers is: Montana.



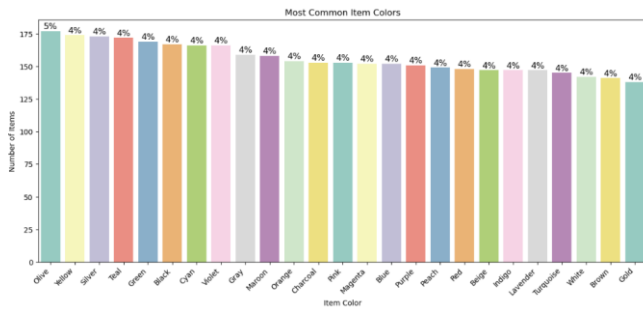
Q. What is the most common size for clothing items purchased?

Results: the most common size for clothing items purchased is: M.



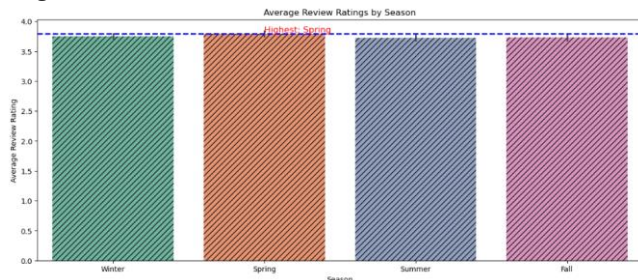
Q. What is the most common color of items purchased?

Results: the most common color of items purchased is: Olive.



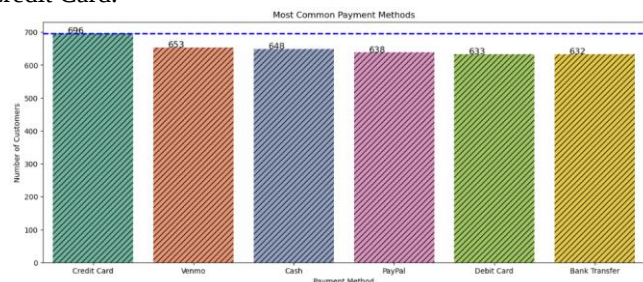
Q. Which season is associated with the highest review rating on average?

Results: The season with the highest average review rating is: Spring.



Q. What is the popular payment method used by customers?

Results: The popular payment method used by customers is: Credit Card.

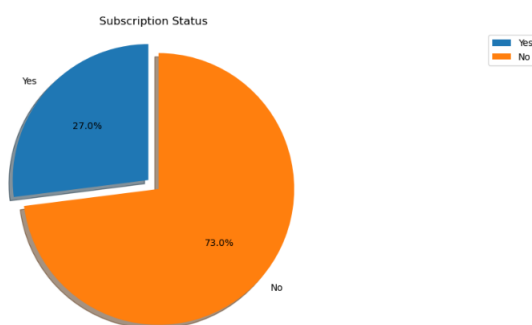


The percentage of customers who used the payment method is 17.85%.

Q. How many customers have taken subscriptions, visualize with the status of "Yes" and "NO"?

Results: The percentage of customers with a subscription status of "Yes" is: 27.0%

The percentage of customers with a subscription status of "No" is 73.0%.



4. CONCLUSIONS

In conclusion, by knowing the customer's shopping behaviors, businesses can significantly enhance their marketing strategies, also optimize inventory management, and offer personalized customer experiences. The findings of this research provide valuable implications for retailers, enabling them to stay ahead in the competitive market by aligning their products and services with the ever-changing demands and expectations of consumers.

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