**EXCEL PROJECT REPORT ON SHOPPINGTRENDS**

Ngozi Bridget Okoronkwo Women Techsters ID: 2024/WTF/DS/0489

INTRODUCTION

The Consumer Behavior and Shopping Habits Dataset provides comprehensive insights into consumers' preferences, tendencies, and patterns during their shopping experiences. This dataset encompasses a diverse range of variables, including demographic information, purchase history, product preferences, shopping frequency, and online/offline shopping behavior. With this rich collection of data, analysts and researchers can delve into the intricacies of consumer decision-making processes, aiding businesses in crafting targeted marketing strategies, optimizing product offerings, and enhancing overall customer satisfaction.

DATA SOURCE

* Kaggle

DATA DESCRIPTION

**Dataset Glossary (Column-wise)**

**Customer ID:** A unique identifier assigned to each individual customer, facilitating tracking and analysis of their shopping behavior over time.

**Age:** The age of the customer, providing demographic information for segmentation and targeted marketing strategies.

**Gender:** The gender identification of the customer, a key demographic variable influencing product preferences and purchasing patterns.

**Item Purchased:** The specific product or item selected by the customer during the transaction.

**Category:** The broad classification or group to which the purchased item belongs (e.g., clothing, electronics, groceries).

**Purchase Amount (USD):** The monetary value of the transaction, denoted in United States Dollars (USD), indicates the cost of the purchased item(s).

**Location:** The geographical location where the purchase was made, offering insights into regional preferences and market trends.

**Size:** The size specification (if applicable) of the purchased item, relevant for apparel, footwear, and certain consumer goods.

**Color:** The color variant or choice associated with the purchased item, influencing customer preferences and product availability.

**Season:** The seasonal relevance of the purchased item (e.g., spring, summer, fall, winter), impacting inventory management and marketing strategies.

**Review Rating:** A numerical or qualitative assessment provided by the customer regarding their satisfaction with the purchased item.

**Subscription Status**: Indicates whether the customer has opted for a subscription service, offering insights into their level of loyalty and potential for recurring revenue.

**Shipping Type:** Specifies the method used to deliver the purchased item (e.g., standard shipping, express delivery), influencing delivery times and costs.

**Discount Applied:** Indicates if any promotional discounts were applied to the purchase, shedding light on price sensitivity and promotion effectiveness.

**Promo Code Used:** Notes whether a promotional code or coupon was utilized during the transaction, aiding in the evaluation of marketing campaign success.

**Previous Purchases:** Provides information on the number or frequency of prior purchases made by the customer, contributing to customer segmentation and retention strategies.

**Payment Method:** Specifies the mode of payment employed by the customer (e.g., credit card, cash), offering insights into preferred payment options.

**Frequency of Purchases:** Indicates how often the customer engages in purchasing activities, a critical metric for assessing customer loyalty and lifetime value.

DATA CLEANING

The data wasn’t arranged properly so we had to expand some of the rows, adjust the column heads to fit into the width of the column, remove duplicate values, add monetary sign($) to the row that has purchase amount for easier understanding, aligning the contents of each row to the center by highlighting the entire row cells and clicking on the center align icon.

QUESTIONS I TRIED ANSWERING FROM THE DATASET

1. Which Gender had the most and least purchase?
2. Are there gender-based preferences in terms of items purchased, categories or colors.
3. What is the age grade that spent the most amount of money.
4. Is there a correlation between review ratings given by customers and the corresponding purchase amounts.
5. Is there a correlation between season and shipping type preferred.
6. Is there a correlation between Gender and Size preference for the different categories.
7. The categories that are ordered most and least during the different seasons.
8. The category that had the highest frequency of the least rating and the category with the lowest frequency of the least rating.

**RESULT ANALYSIS**

|  |  |  |
| --- | --- | --- |
| **Table 1: POPULATION ANALYSIS** |  |  |
| **Gender** | **Count of Gender** | Percentage |
| Female | 1248 | 32 |
| Male | 2652 | 68 |
| **Grand Total** | **3900** |  |

Total population- 3900

Number of Males- 1248

Number of Females-2652

Percentage of Males=2652 /3900 \* 100= 68%

Percentage of Females= 1248/3900 \* 100 = 32%

From this result, it can be deduced that the population of males that patronized this shopping outlet is higher than that of Females.

**Recommendation**

I’d advice that the shop stocks more of male wears than female wears so that they don’t run out of stock of male wears to ensure they make more sales.

Table 2:

|  |  |  |  |
| --- | --- | --- | --- |
| **TOTAL EXPENSES BY EACH GENDER** | |  |  |
| **Sum of Purchase Amount (USD)** | **Column Labels** |  |  |
| **Category** | **Male** | **Female** | **Grand Total** |
| Accessories | $ 50,381.00 | $ 23,819.00 | $ 74,200.00 |
| Clothing | $ 70,628.00 | $ 33,636.00 | $ 104,264.00 |
| Footwear | $ 24,258.00 | $ 11,835.00 | $ 36,093.00 |
| Outerwear | $ 12,623.00 | $ 5,901.00 | $ 18,524.00 |
| **Grand Total** | **$ 157,890.00** | **$ 75,191.00** | **$ 233,081.00** |

Total Purchase by each Gender

Total Amount spent by Male- $157,890

Total Amount spent by Female- $75,191

Category with the total maximum purchase amount by both genders- Clothing($104,264)

Category with the total minimum purchase amount by both genders- Outerwear.($18,524)

From the result, it can be deduced that Male spent more than females and this could be because they had a higher population. Therefore ,the owner of the shop should restock more on male wears than since they’re his major customers.

Also, the category with the highest purchase amount by both genders is clothing and the least purchase amount is Outerwear. This was probably as a result of a higher demand for clothing compared to outerwear.

This would help the shop owner know the Category that yields more sales and profit and restock it more.

**Table 3- Age grade total purchasing power Analysis**

Using a pivot table I grouped the ages for easy analysis.

From the the visualization, it can be deduced that as age increased ,the purchasing amount reduced

Age grade that spent the highest- 48-57years

Age grade that spent the second highest- 28-37years.

Age grade that spent the lowest- 68-77years

There could be several reasons why the age group of 48-57 spent more than the age group of 68-77. Here are some possible factors to consider:

1. Income Levels:
   * The 48-57 age group might have higher average incomes compared to the 68-77 age group, leading to increased spending capacity.
2. Lifestyle and Responsibilities:
   * Individuals in the 48-57 age range may have different lifestyle needs, such as supporting children's education or paying off mortgages, which could drive higher spending.
3. Technology Adoption:
   * The younger age group might be more tech-savvy and inclined towards purchasing high-tech gadgets or products, contributing to increased spending.
4. Health and Leisure Activities:
   * The older age group (68-77) might focus more on healthcare and leisure activities, while the 48-57 age group might spend on a broader range of products and experiences

This analysis would help the shopping outlet to know it’s target audience and this would help them know how to strategize their marketing campaign such as ads.It would also help them have an idea of the size of categories to stock up on.

**Table 4- Relationship between Category and Frequency of Purchases**

From the bar chart,

Clothing has the highest frequency of Purchase

Accessories has the 2nd highest frequency of Purchase probably because people buy accessories alongside clothings.

Outerwear has the lowest frequency of Purchase

Clothing are purchased mostly every 3months

Accessories are mostly purchased quarterly and least purchased weekly.

**For Footwears**

Highest frequency- Fortnightly(96 footwears)

Lowest frequency- Monthly(75 footwears)

This shows that footwears are mostly purchased Fortnightly ,that is twice a week and least purchased monthly.

Therefore, the shopping outlet is adviced to restock footwears very often or buy a large amount of footwears so that they don’t run out of stock.

**For Outerwears**

Highest Frequency- Fortnightly(53 Outer wears)

Least Frequency- Bi weekly(40 Outer wears)

From this, it can be deduced that more Outer wears are purchased twice a week(fortnightly) and the least number of Outer wears are purchased every two weeks(bi weekly).This would help the owners of the shop have an idea on the quantity of Outer wears to restock and the purchase frequency to expect.

**Recommendation**

Clothing has the highest frequency therefore should be given more priority while restocking while Outerwear has the lowest frequency and should be stocked less.

**Table 4- Size Analysis**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sum of Previous Purchases** | **Column Labels** |  |  |  |  |
| **Size/Gender** | **Accessories** | **Clothing** | **Footwear** | **Outerwear** | **Grand Total** |
| **L** | **24.92%** | **28.08%** | **29.95%** | **28.51%** | **27.38%** |
| Female | 7.27% | 8.92% | 10.20% | 7.57% | 8.47% |
| Male | 17.65% | 19.16% | 19.74% | 20.94% | 18.91% |
| **M** | **45.13%** | **44.93%** | **44.00%** | **45.72%** | **44.92%** |
| Female | 14.93% | 14.20% | 14.52% | 13.02% | 14.39% |
| Male | 30.20% | 30.73% | 29.48% | 32.70% | 30.53% |
| **S** | **18.81%** | **15.50%** | **15.07%** | **16.91%** | **16.62%** |
| Female | 5.08% | 4.86% | 4.06% | 4.37% | 4.77% |
| Male | 13.72% | 10.64% | 11.00% | 12.54% | 11.85% |
| **XL** | **11.14%** | **11.49%** | **10.99%** | **8.87%** | **11.09%** |
| Female | 3.34% | 3.46% | 4.29% | 1.84% | 3.42% |
| Male | 7.80% | 8.03% | 6.70% | 7.02% | 7.67% |

Code:

S- Small

M- Medium

L- Large

XL- Extra Large

**Analyzing Size preference based on Category**

**For Large(L),**

Footwear had the highest order (29.95%)

Accessories had the least order(24.92%)

**For Medium(M),**

Outerwear had the highest order(45.72%)

Footwear had the least order(44.00%)

**For Small(S),**

Accessories had the highest order(18.81%)

Footwear had the least order(15.07%)

**For Extra Large(XL)**

Clothing had the highest order(11.49%)

Outwear had the least order(8.87%)

Generally, Medium Size(M) had the highest demand while Extra Large(XL) had the lowest demand.

**Analysing the Size preference based on Gender**

For Females

|  |  |  |
| --- | --- | --- |
| Size | Most preferred Category | Least preferred Category |
| S | Accessories (5.08%) | Footwear(4.06%) |
| M | Accessories (14.93%) | Outerwear(13.02%) |
| L | Footwear(10.20%) | Accessories (7.27%) |
| XL | Footwear(4.29%) | Outerwear(1.84%) |

For Males

|  |  |  |
| --- | --- | --- |
| Size | Most preferred Category | Least Preferred Category |
| S | Accessories(13.72%) | Clothing(10.64%) |
| M | Outerwear(32.70%) | Footwear(29.48%) |
| L | Outerwear(20.94%) | Accessories (17.65%) |
| XL | Clothing(8.03%) | Footwear(6.70%) |

From the analysis above, the shopping outlet would know the preferences for each gender and restock more quantity of their most preferred choice and less quantity of their least preferred choice in order to make more sales and maximize profit.

**Table 5- Rate review Analysis Based on Category**

From the Chart,

Review Rating with the highest frequency of 642 = 3.7-4.1

Review Rating with the lowest frequency of 234 = 4.9-5.3

From this result, it can be deduced that the customers satisfaction is average.

**Recommendation**

I’d advice the owner of the shopping outlet to do a survey asking their customers what they’d love to be improved about their products and services. This would help the owner improve the quality of their products and services and increase customer satisfaction which in turn would increase sales.

**Table 6 - Relationship between Shipping Type and Season**

|  |  |  |
| --- | --- | --- |
| Season | Most preferred Shipping Type | Least Preferred Shipping Type |
| Fall | Next Day Air | Store pick up |
| Spring | 2-Day Shipping | Next Day Air |
| Summer | Express Free Shipping | 2-Day Shipping |
| Winter | Next-Day Air | 2-Day Shipping |

For Fall, the most preferred shipping type is Next Day Air and least preferred Shipping Type is Store pick up .This is because Next Day Air ensures a rapid delivery, which can be crucial during this season. On the other hand, Store Pickup might be less preferred as people might prioritize convenience and time-saving, and going to a physical store may be perceived as less convenient than having items delivered directly to their doorstep.

During spring, customers might find 2-Day Shipping to be the most preferred option over Next Day Air due to a balance between speed and cost. In spring, there may be fewer urgent needs for immediate delivery compared to certain occasions or weather-sensitive situations. 2-Day Shipping strikes a balance by providing relatively fast delivery while being more cost-effective than the expedited Next Day Air option. Customers may prioritize the cost savings while still receiving their orders within a reasonable timeframe.

For Summer, the most preferred shipping Type is Express Free Shipping while the least preferred shipping type is 2-Day Shipping. This could be because Express free shipping b is often faster and ensures their orders arrive promptly, especially when they want items quickly due to travel plans or seasonal activities.

During winter, Next Day Air may be the most preferred shipping option compared to 2-Day Shipping due to various factors. The winter season often brings about weather challenges, such as snowstorms and delays in transportation. Customers may prioritize the reliability and speed of Next Day Air to ensure their orders arrive promptly, minimizing the risk of weather-related disruptions. The urgency associated with the holiday season and gift-giving may also contribute to the preference for Next Day Air, ensuring timely delivery for special occasions.

**Fig 7- Relationship between Category and Season.**

|  |  |  |
| --- | --- | --- |
| Category | Most preferred Season | Least preferred Season |
| Clothing | Spring | Summer |
| Accessories | Fall | Spring |
| Footwear | Summer | Winter |
| Outerwear | Fall | Summer |

From the result, we can deduce the seasons that each category are most preferred and less preferred. This would help the shop owner make better decisions as regards the quantity of each category to restock more or less per season.

Clothing is mostly preferred during Spring and least preferred during Summer. This could be because during summer, the weather is usually hot.

Accessories are mostly preferred during Fall and least preferred during Spring.

Recommendations for Analysis Results

1. Gender-Based Stocking Strategy:

- Observation: Males account for 68% of total purchases, with a higher expenditure than females.

- Recommendation: Increase stock of male-oriented products, especially clothing, to cater to the dominant customer base and ensure sufficient inventory.

2. Product Category Focus:

- Observation: Clothing is the highest grossing category, while outerwear is the least.

- Recommendation: Prioritize stocking clothing and assess demand fluctuations to optimize inventory levels. Consider reducing outerwear inventory or running targeted promotions to boost its sales.

3. Age Group Targeting:

- Observation: Customers aged 48-57 spend the most, while those aged 68-77 spend the least.

- Recommendation: Develop targeted marketing campaigns for the 48-57 age group. Offer loyalty programs or promotions that appeal to their spending habits and needs.

4. Purchase Frequency Insights:

- Observation: Clothing has the highest purchase frequency, and accessories are often bought alongside clothing.

- Recommendation: Maintain a high stock level of clothing and offer bundled deals with accessories to boost overall sales.

5. Size Preference Management:

- Observation: Medium-sized items are in highest demand across categories.

- Recommendation: Ensure a larger stock of medium-sized items, particularly in outerwear. Adjust inventory for other sizes based on specific category preferences.

6. Customer Satisfaction Improvement:

- Observation: Average customer satisfaction is reflected in the most common review rating range of 3.7-4.1.

- Recommendation: Conduct customer surveys to identify areas for improvement. Enhance product quality and customer service to increase satisfaction and potentially boost higher review ratings.

7. Seasonal Inventory Planning:

- Observation: Different categories have varying demand across seasons (e.g., clothing peaks in spring, outerwear in fall).

- Recommendation: Adjust inventory levels seasonally. Stock more clothing in spring and increase outerwear availability in fall. Align marketing strategies with seasonal preferences to maximize sales.

8. Shipping Preferences by Season:

- Observation: Preferences for shipping methods vary by season, with next-day air preferred in fall and winter.

- Recommendation: Offer promotional shipping options tailored to seasonal preferences. Ensure logistics can handle increased demand for faster shipping during peak seasons like fall and winter.

By implementing these recommendations, the shopping outlet can better cater to its customers' needs, optimize inventory management, enhance customer satisfaction, and ultimately drive higher sales and profitability.