

CUSTOMER SEGMENTATION ANALYSIS USING POWER BI

SHOPPING TRENDS

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What is power bi?

- Power BI is a business analytics tool by Microsoft for transforming raw data into insights.
- Enables interactive dashboards and visual reports to support decision-making.
- Integrates data from multiple sources for a unified view of metrics.
- Simplifies data analysis, uncovers trends, and presents insights effectively.

Steps in Data Analytics

- **Data Collection** - Gather raw data from multiple sources like databases, APIs, and files to ensure a comprehensive dataset.
- **Data Preprocessing** - Prepare data by handling missing values, removing duplicates, and ensuring consistency for further analysis.
- **Data Cleaning** - Eliminate errors, outliers, and inconsistencies while standardizing formats to improve data quality and reliability.
- **Data Transformation** - Convert data into a suitable format, such as aggregating, filtering, or normalizing, to make it ready for analysis.
- **Data Visualization** - Create charts, graphs, and dashboards to represent insights visually and simplify data interpretation for decision-making.

Dataset and highlights

Dataset contains 23 columns and 3,900 rows

Tool used : power BI

- **Customer ID:** Unique identifier.
- **Age/Gender:** Demographics.
- **Item Purchased/Category/Color/Size:** Product details.
- **Purchase Amount USD Price.Location/Season:** Where and when bought.
- **Review Rating:** Customer feedback.
- **Subscription Status:** Subscription info.
- **Shipping Type/Discount Applied/Promo Code Used:** Purchase benefits.
- **Previous Purchases/Frequency of Purchases:** Shopping habits.

Customer ID	Age	Gender	Item Purchased	Category	Purchase Amount USD	Location	Size	Color	Season	Review Rating	Subscription Status
51	49	Male	Blouse	Clothing	28	Maryland	M	Red	Spring	3.7	Yes
125	44	Male	Sweater	Clothing	86	Nevada	M	Gray	Spring	3.1	Yes
126	49	Male	Shorts	Clothing	54	California	M	Indigo	Winter	3.6	Yes
137	39	Male	Blouse	Clothing	86	South Carolina	M	White	Winter	3.3	Yes
150	38	Male	Pants	Clothing	76	Delaware	M	White	Summer	3.2	Yes
155	41	Male	Dress	Clothing	98	Oklahoma	M	Charcoal	Fall	3.6	Yes
189	50	Male	Hoodie	Clothing	53	Arkansas	M	Pink	Spring	3.1	Yes
238	50	Male	Dress	Clothing	90	Iowa	M	Beige	Summer	3	Yes
263	37	Male	Pants	Clothing	40	Hawaii	M	Teal	Summer	3.7	Yes
302	46	Male	Skirt	Clothing	95	Pennsylvania	M	Green	Spring	3.8	Yes
305	40	Male	Dress	Clothing	84	Oregon	M	Green	Winter	3.4	Yes
314	42	Male	Dress	Clothing	77	Vermont	M	Pink	Spring	3.7	Yes
331	46	Male	Sweater	Clothing	51	North Dakota	M	Beige	Winter	3.7	Yes
340	40	Male	Shorts	Clothing	33	Pennsylvania	M	Teal	Spring	3.8	Yes
422	38	Male	Shirt	Clothing	40	Kentucky	M	Violet	Winter	3.5	Yes
423	47	Male	Pants	Clothing	59	Minnesota	M	Purple	Fall	3.1	Yes
434	49	Male	Skirt	Clothing	92	Alabama	M	Orange	Fall	3.2	Yes
453	45	Male	Pants	Clothing	45	Missouri	M	Violet	Summer	3.3	Yes
478	42	Male	Sweater	Clothing	56	North Dakota	M	Green	Summer	3.7	Yes
490	49	Male	Socks	Clothing	85	South Dakota	M	Green	Summer	3.2	Yes
493	50	Male	Shirt	Clothing	62	Michigan	M	Black	Fall	3.9	Yes
541	49	Male	Dress	Clothing	37	South Carolina	M	Lavender	Spring	3.1	Yes
642	47	Male	Blouse	Clothing	78	Alaska	M	Red	Winter	3.9	Yes
Store Pickup	Yes	Yes	21	Venmo	Quarterly	36-50	Returning	75.6			
Express	Yes	Yes	5	Bank Transfer	Bi-Weekly	36-50	Returning	15.5			
Store Pickup	Yes	Yes	36	Debit Card	Fortnightly	36-50	Returning	108			
Next Day Air	Yes	Yes	6	Debit Card	Annually	36-50	Returning	22.2			
Standard	Yes	Yes	25	Credit Card	Every 3 Months	36-50	Returning	95			
Next Day Air	Yes	Yes	45	Credit Card	Bi-Weekly	36-50	Returning	153			
Express	Yes	Yes	50	Credit Card	Every 3 Months	36-50	Returning	185			
Express	Yes	Yes	43	Venmo	Bi-Weekly	36-50	Returning	159.1			
2-Day Shipping	Yes	Yes	21	Credit Card	Every 3 Months	36-50	Returning	79.8			
Standard	Yes	Yes	48	Cash	Bi-Weekly	36-50	Returning	168			
Store Pickup	Yes	Yes	32	Debit Card	Annually	36-50	Returning	99.2			
Store Pickup	Yes	Yes	23	Credit Card	Fortnightly	36-50	Returning	73.6			
Express	Yes	Yes	39	PayPal	Fortnightly	36-50	Returning	128.7			
Free Shipping	Yes	Yes	49	Debit Card	Weekly	36-50	Returning	181.3			
Standard	Yes	Yes	40	PayPal	Annually	36-50	Returning	128			
Standard	Yes	Yes	11	Debit Card	Weekly	36-50	Returning	42.9			
Next Day Air	Yes	Yes	33	Cash	Every 3 Months	36-50	Returning	102.3			
2-Day Shipping	Yes	Yes	23	Credit Card	Every 3 Months	36-50	Returning	89.7			

Shopping dataset

Shopping Trends Dashboard

233K

Total Purchase Amount

3900

Total Customers

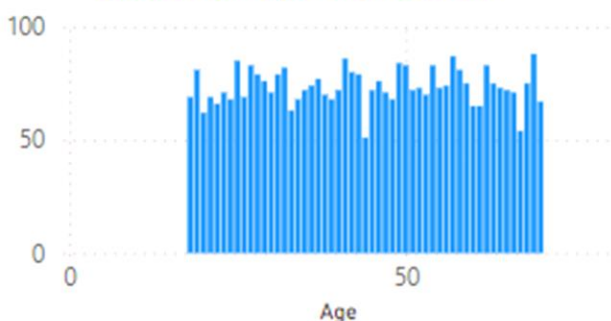
Annually

Purchase Value

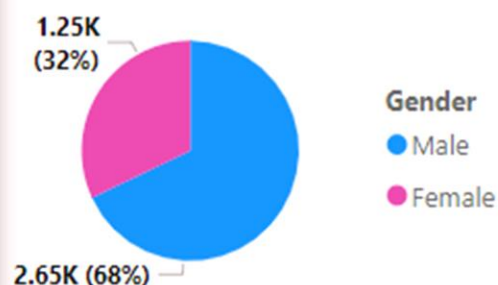
3.75

Average of Review Rating

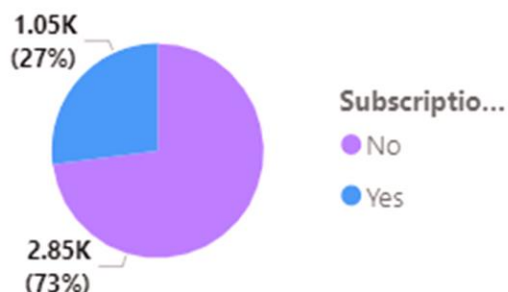
Customer Age Distribution



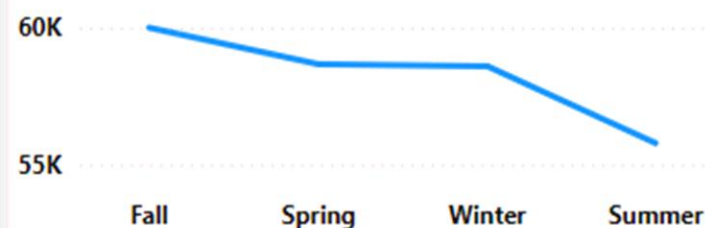
Gender Distribution



Subscription Status



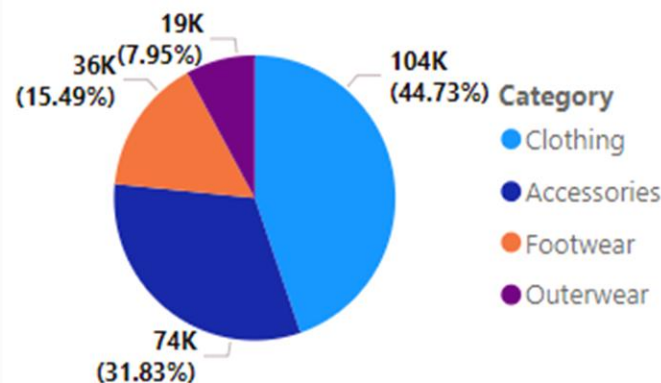
Purchase Trends Over Time



Most Purchased items



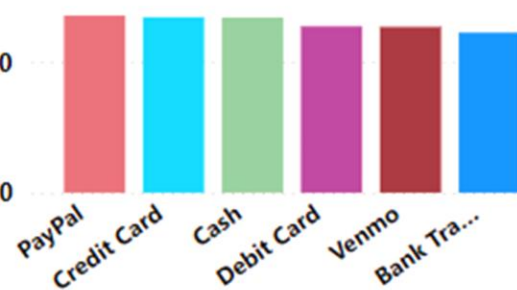
Sales by Category



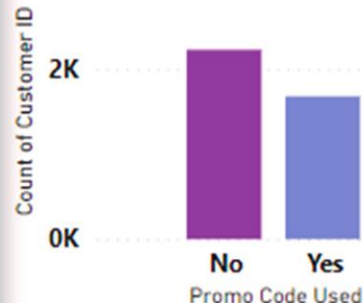
Sales by Location



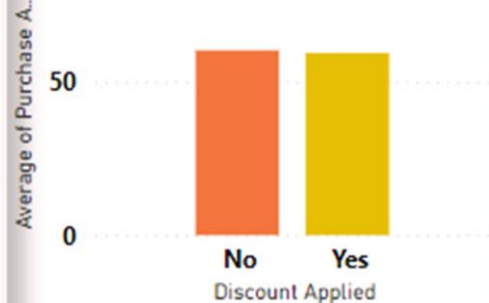
Payment Method Popularity



Promo code Usage



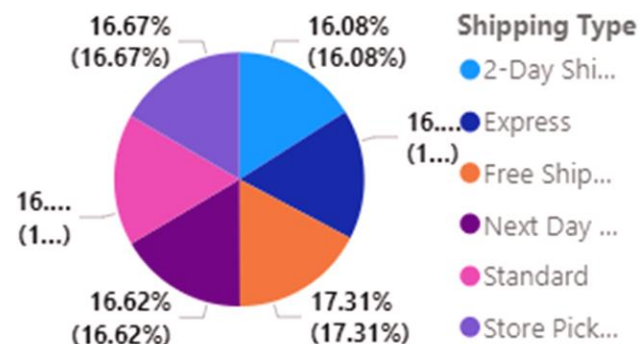
Effectiveness of Discounts



Item category

- ☐ Select all
- ☒ Accessori...
- ☒ Clothing
- ☒ Footwear
- ☒ Outerwear

Shipping Type Analysis



Overview of the Dashboard

The primary goal of this dashboard is to provide a detailed understanding of customer shopping trends by analyzing key data metrics. It helps businesses and stakeholders to:

- **Identify customer demographics:** Understand the age, gender, and subscription status of the customers.
- **Track shopping patterns:** Observe how purchase behaviors vary across seasons, locations, and product categories.
- **Optimize sales strategies:** Use insights to make informed decisions on product offerings, discounts, and promotions.
- **Enhance customer engagement:** Evaluate customer loyalty and the effectiveness of subscription models in driving repeat purchases.

By leveraging this data, businesses can tailor their marketing efforts, improve customer retention, and increase overall profitability.

Key Highlights

1. Customer Demographics:

- Distribution of customers by age and gender is analyzed to understand the primary target audience.
- Insights into the subscription status, showing the influence of subscriptions on purchasing behavior.

2. Purchase Behaviors:

- Insights into the most purchased items and their seasonal trends.
- Analysis of payment methods and the impact of discounts or promo codes on customer spending.

3. Sales Patterns:

- Visualization of sales across locations, highlighting regions with high demand.
- Category-wise sales distribution showing the dominance of specific product types, like clothing and accessories.

Why This Matters:

This dashboard empowers businesses to make data-driven decisions, ensuring they can adapt to customer needs, identify untapped markets, and optimize their inventory and marketing strategies for maximum returns.

Most purchased items

Chart Type: Treemap

Insights:

- Top-selling items include blouses, jewelry, sweaters, and pants.
- Clothing items dominate customer purchases.

Analysis:

- Invest in stocking and marketing clothing items that are high in demand.
- Use insights to diversify product categories for broader appeal.



Shipping Type Analysis

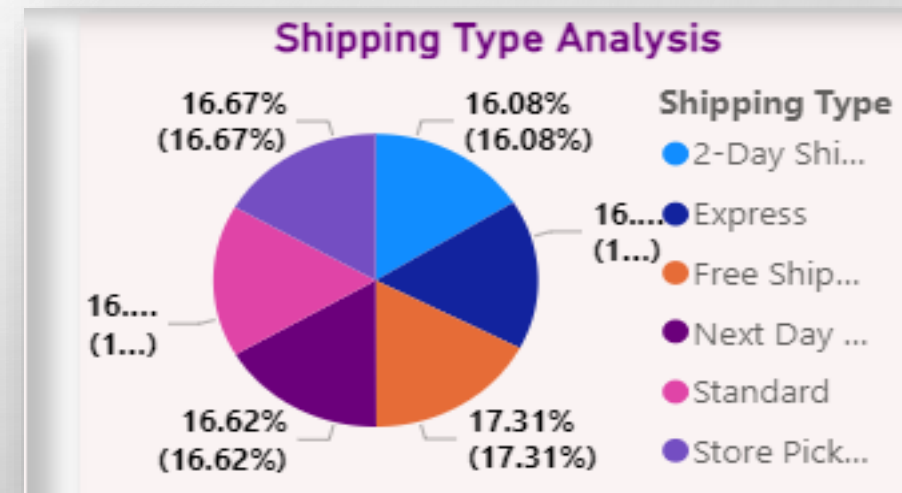
Chart Type: Pie chart

Insights:

- Popular shipping methods include **Next Day Air (16%)** and **Standard Shipping (17%)**.

Analysis:

- Fast shipping methods are preferred; consider expanding express and next-day options.
- Emphasize promotions offering free or discounted shipping to attract more customers.



Insights and Trends

Key Findings

1. Returning Customers Dominate the Dataset

- A large majority of customers in the dataset are returning shoppers, highlighting strong brand loyalty and repeat purchases. This indicates that the business is successful in retaining customers over time.

2. Bi-Weekly Purchases Are Common

- The most frequent purchase interval is bi-weekly, suggesting that customers prefer to shop at regular intervals. This pattern can help businesses plan promotions and inventory to align with these cycles.

3. Discounts and Promo Codes Are Widely Used

- Discounts and promotional codes are consistently utilized by customers, indicating that price incentives significantly influence purchase decisions. Businesses can leverage this insight to drive more sales by offering competitive deals and discounts.

4. Most Items Purchased Are Clothing, Often Rated 3.5 or Higher

- The clothing category constitutes the majority of purchases, with items generally receiving high review ratings (3.5+ out of 5). This suggests that customers are satisfied with the quality of clothing products, and this category remains a key revenue driver for the business.

Conclusion

1. Clothing Dominates Sales:

- Insight: Sales data reveals that clothing products contribute the most to overall revenue. This indicates a high demand and consumer interest in apparel. Retailers should continue to focus on offering a wide range of clothing items and perhaps prioritize this category for promotions and stock.

2. Discounts and Promo Codes Improve Engagement:

- Insight: Customers are more likely to engage with the brand when there are discounts and promo codes available. These incentives can drive higher foot traffic, website visits, and conversions. Offering targeted discounts can be a powerful strategy to boost sales and increase brand loyalty.

3. Subscription Status Correlates with Higher Sales:

- Insight: Customers who have subscribed to a service or membership tend to make more purchases. Subscription status is linked to repeat business, indicating that loyal customers who opt into subscription models spend more over time. This suggests that subscription services create a sense of exclusivity and value.

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Thank
you!