

Remote Data Analytics Internship

Report on Customer personality Analysis

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Report on My Second Task as a Data Analyst Intern

Introduction:

Customer Personality Analysis is a detailed analysis of a company's ideal customers. It helps a business to better understand its customers and makes it easier for them to modify products according to the specific needs, behaviors and concerns of different types of customers.

Step 1: Data Exploration:

The initial step in the process was to explore the dataset. This involved familiarizing myself with the structure of the data, understanding the various columns and their significance.

This was the dataset I had to analyze: [Customer Personality Analysis \(kaggle.com\)](https://www.kaggle.com/datasets/abhishekthakur/customer-personality-analysis)

Step 2: Data Cleaning and Formatting:

The next step was to perform data cleaning and formatting. This phase was crucial to ensure that the data was accurate, consistent, and ready for analysis.

The following tasks were performed:

Removing Duplicates: Identified and removed duplicate entries to prevent skewed results and ensure data integrity.

Handling Errors: Corrected errors in the dataset, such as incorrect data entries or outliers that could distort the analysis.

Data Formatting: Reformatted the data to a consistent structure, including standardizing date formats and aligning numerical values for better readability and analysis.

After ensuring that the data was clean and properly formatted, I used pivot tables to draw preliminary insights from the data. Pivot tables allowed me to summarize and analyze the data efficiently, providing a clearer understanding of the unemployment trends in India.

Step 3: Data Visualization:

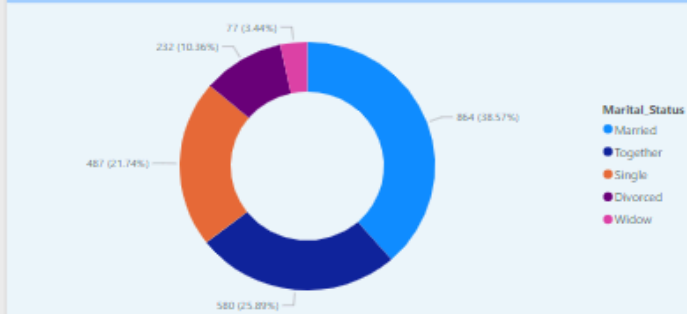
Once the data was prepared, I moved on to the data visualization phase. I used Power BI, a powerful data visualization tool, to create multiple dashboards. These dashboards provided visual insights into the unemployment trends, highlighting key patterns and relationships within the data.

The Dashboards I created includes:

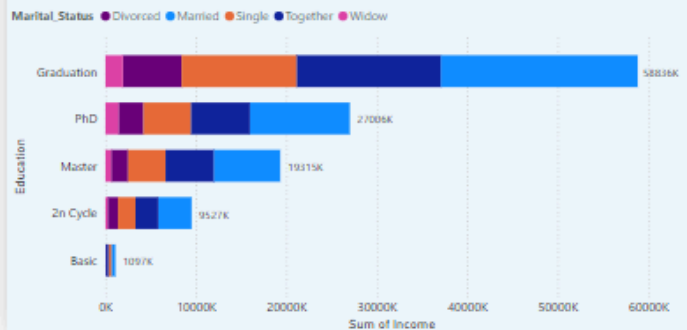
Customer demographics dashboard:

Customer Demographics Dashboard

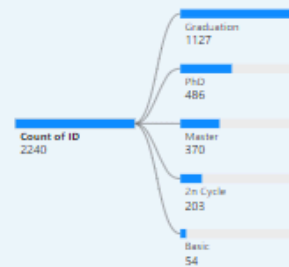
Customer segmentation by Marital_Status



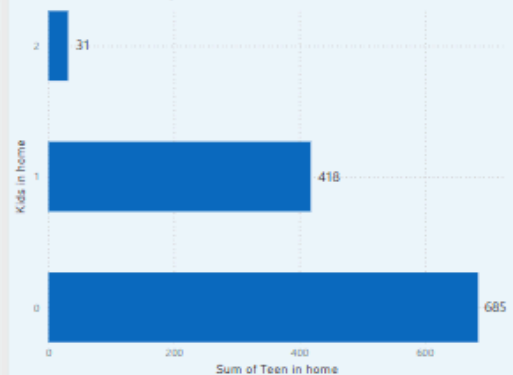
Sum of Income by Education and Marital_Status



Education



Sum of Teen in home by Kids in home



Key Insights and Recommendations:

1. Customer Segmentation by Marital Status (Donut Chart):

Observation: The majority of customers are Married (38.57%) followed by Together (21.74%) and Single (21.43%). Divorced (10.36%) and Widow (8.89%) are the least represented groups.

Insight: The data suggests a strong presence of married or partnered individuals, who may have specific spending behaviors or preferences.

2. Sum of Income by Education and Marital Status (Bar Chart):

Observation:

- Graduation level customers contribute the highest income across all marital statuses, particularly among the Married group.
- PhD holders also show significant income, followed by those with Master's degrees.

Unexpected Discovery: Although Single individuals with a PhD show less income compared to their Married counterparts, it is notable that their income is still substantial, suggesting that education plays a critical role in income, but marital status adds another layer of complexity.

3. Count of Customers by Education (Horizontal Bar Chart):

Insight: The higher number of customers with advanced degrees (PhD, Graduation) might indicate a more educated and potentially affluent customer base.

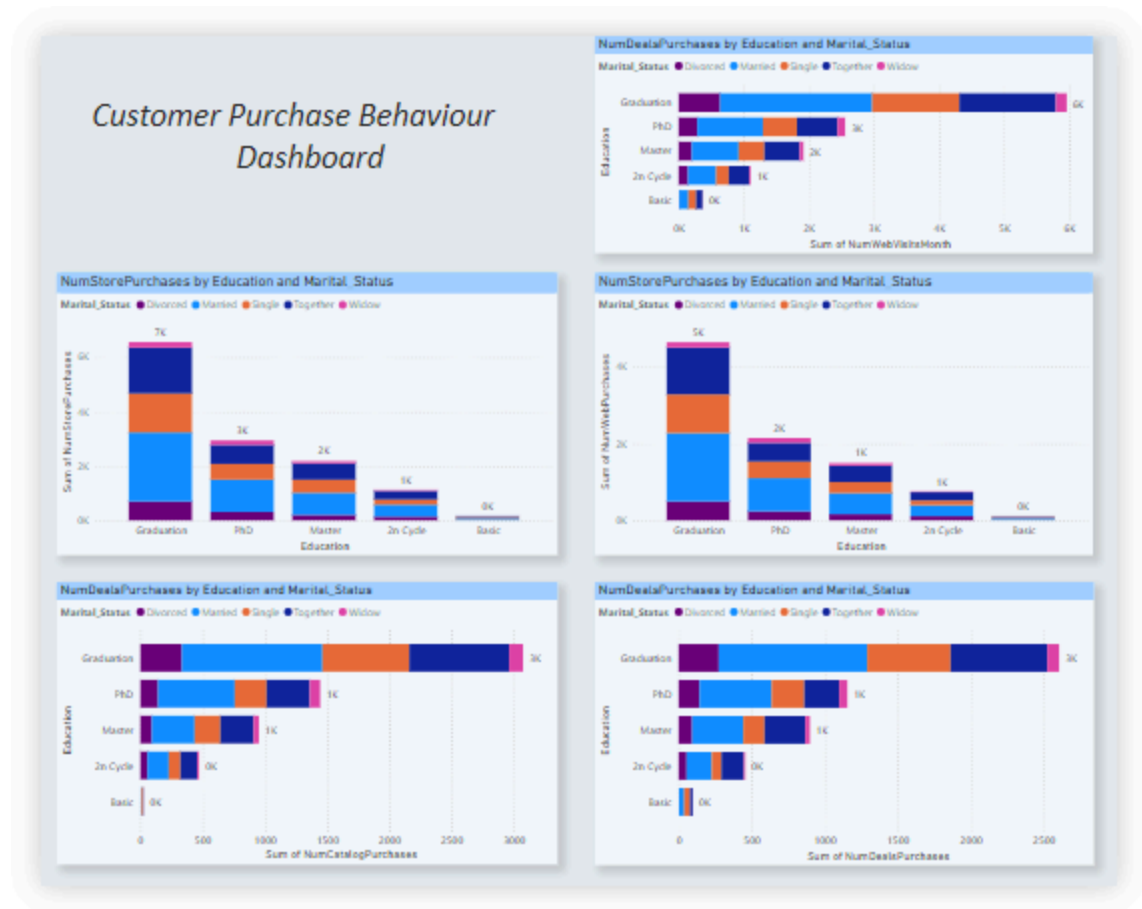
Recommendations:**1. High Proportion of Married Individuals:**

A significant portion of customers are married, which may affect purchasing behaviors. The company should explore specific products or services targeted at families.

2. Underrepresentation of Less Educated Groups:

Customers with only basic education are a minority, suggesting the company's demographic skews towards a more educated population. This could guide communication strategies, such as focusing on digital platforms that appeal to professionals.

Customer purchase behavior Dashboard:



Channel Preferences and Web Engagement:

Observation: A high number of web visits (`NumWebVisitsMonth`) does not directly translate into web purchases (`NumWebPurchases`). In fact, there are several customers who visit the website frequently but make purchases in-store or via catalog.

This discrepancy suggests an opportunity to optimize the website for conversions, perhaps by enhancing the user experience, improving product presentation, or offering online-exclusive promotions.

Unexpected Insight: Customers with the highest website visits but low online purchases might benefit from targeted digital marketing campaigns or retargeting strategies to convert browsing into buying.

Conclusion:

The analysis reveals valuable insights into customer segmentation, purchasing behaviors, and channel preferences. Understanding these patterns can guide strategic decisions on targeted marketing, customer engagement, product offerings, and service improvements. By focusing on these key areas, businesses can enhance their customer acquisition, retention, and overall profitability.

These insights can be leveraged to refine marketing strategies, improve customer segmentation, and tailor offerings to meet the needs and preferences of different customer groups, thereby driving business growth and customer satisfaction.
