Unlocking the Secrets of Mall Shopping:

A Data-Driven Analysis of Customer Spending Patterns

Introduction:

Working on Mall shopping Data to understand customers shopping patterns for the retail business to optimize their marketing strategies, and overall customer experience. In this project, I aimed to analyze the relationship between various customer attributes and their spending behavior at a local mall.

The dataset used in this analysis was obtained from [Absent Data](#) and contains information about 200 customers, including their age, gender, annual income, and spending score (on a scale of 1 to 100). My primary focus was to investigate the differences in shopping patterns between male and female customers and explore the correlations between customer attributes and their spending behavior.

By leveraging the power of Python, Pandas, Matplotlib, and Seaborn libraries, I conducted a comprehensive data analysis to uncover valuable insights that can help the mall management make informed decisions to enhance customer satisfaction and drive business growth.

The key objectives of this project were:

Understanding the demographic composition of the customer base, including the distribution of age, annual income, and gender.

Analyzing the correlation between customer age, annual income, and spending score.

Exploring the differences in spending patterns between male and female customers.

Identifying potential opportunities for the mall to better cater to the needs and preferences of its customer segments.

By addressing these objectives, the findings of this analysis can provide valuable guidance for the mall's marketing strategies, product assortment, and to other retail businesses using this sample dataset.

Data Overview:

The average age of customers is 38 years.

The average annual income of customers is $60.56k.

The customer base is comprised of (112) 56% females and 88 (44%) males.

Key Findings:

Age vs. Annual Income (k$):

There is a very weak negative correlation (-0.012398) between age and annual income.

This suggests that as age increases, annual income tends to decrease slightly, or vice versa. However, the relationship is negligible and not statistically significant.

Age vs. Spending Score (1-100):

There is a moderately negative correlation (-0.327227) between age and spending score.

As age increases, the spending score tends to decrease. Older individuals may have a lower spending score compared to younger ones.

Annual Income (k$) vs. Spending Score (1-100):

There is a very weak positive correlation (0.009903) between annual income and spending score.

As annual income increases, the spending score tends to increase slightly, but the relationship is almost negligible.

Gender-based Spending Patterns:

Male customers end more than female customers.

However, Female customers have a higher spending score compared to male customers.

This suggests that if the annual income of female customers increases, their spending score is likely to increase as well.

Summary:

The analysis reveals that while age and annual income have a negligible relationship, age has a moderately negative correlation with spending score.

Additionally, the data suggests that male customers end more, but female customers have higher spending scores, and an increase in their annual income could lead to a corresponding increase in their spending.

This analysis provides valuable insights for the mall's marking and customer segmentation strategies department, potentially allowing them to better cater to the needs and preferences of both male and female customers.