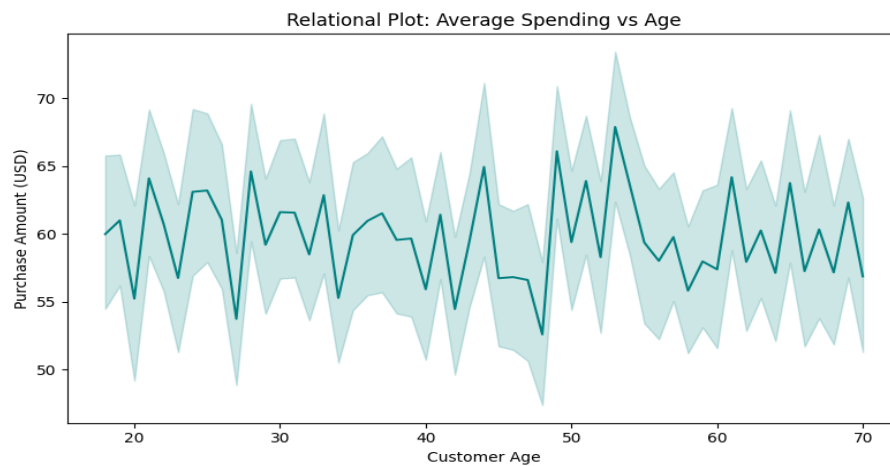


1. Introduction

In this report, a concise study of consumer shopping behaviours is conducted based on Customer Shopping Trends data on Kaggle. It investigates the patterns and relationships of spending using three plots, a line plot, pie plot, and box plot, which are supported by statistical moment analysis. Duplicates and missing values were excluded, and dataset was analyzed.

2. Average Spending vs Age

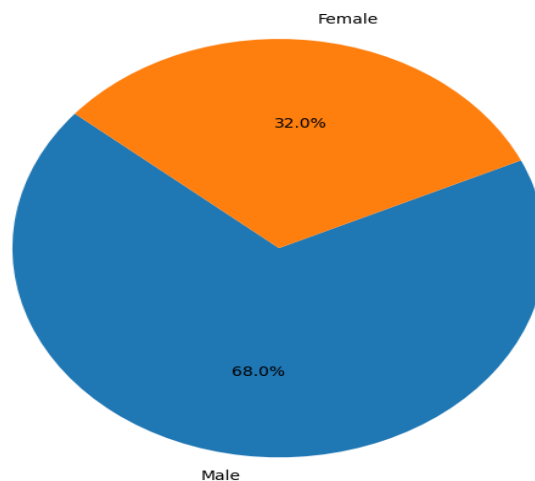
The line plot indicates the correlation that exists between the age of customers and the amount they purchase. The across-age volatility indicates that there is no close relation which means that the spending is dependent on factors such as income and product type and not only on age.



3. Gender Distribution

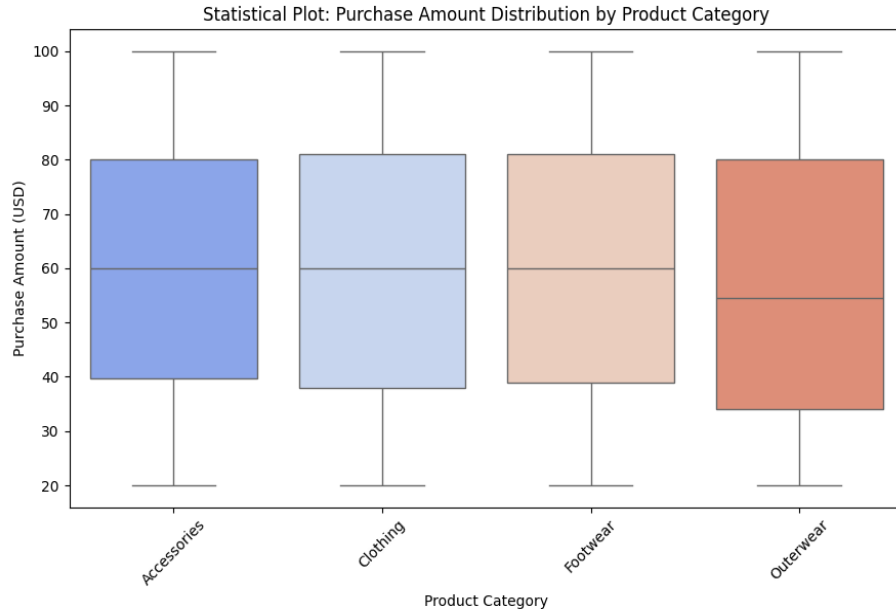
The pie chart reflects the gender distribution where men are 68% and women 32% of the customers. This shows a predominantly male sample, perhaps because of product or territorial demographic preference.

Categorical Plot: Gender Distribution of Customers



4. Purchase Amount by Category

The boxplot is used to make comparisons between the spending in categories like Clothing, Footwear, Accessories and outerwear. The median is 55-60 USD, and the outliers are quite low, with a high purchase expressed in footwear.



5. Statistical Summary

The four statistical moments reveal:

Mean: Avg. purchase \approx 58 USD.

Variance: Moderate, showing steady spending.

Skewness: Slightly positive (few high-value purchases).

Kurtosis: Moderate, which implies the occasional extremities.

6. Conclusion

The trend of expenditure, both by age and by product, is found to be even, and gender distribution is skewed. Generally, the exercise shows that its data cleaning, descriptive statistics, and visualization methods are in line with the Applied Data Science 1 outcomes.

References

1. Kaggle (2022). Customer Shopping Trends Dataset. Available at: <https://www.kaggle.com/datasets/iamsouravbanerjee/customer-shopping-trends-dataset>
2. Cao, S., Zeng, Y., Yang, S., & Cao, S. (2021). Research on Python data visualization technology. In Journal of physics: Conference series (Vol. 1757, No. 1, p. 012122). IOP Publishing.