

Myth vs Reality: Online Shopping Behavior Across Different Age Groups

Background & Hypothesis

This study challenges the common belief that younger generations dominate online shopping while middle-aged customers are less active and spend less. Using real-world data, we tested whether age or income meaningfully explains online purchase behavior. We first analyzed the relationship between age and purchase amount, then added income and other factors. The conventional wisdom suggests that middle-aged people shop less online, but our hypothesis proposes that they may shop as much as or even more than younger users, whereas the null hypothesis maintains that they spend and purchase less overall.

Statistical Summary

We used two Kaggle datasets (2024) to see if age or income affects how people shop online. Dataset 1 had 1,000 samples with Age Group and Purchase Amount, and Dataset 2 had 800 samples with Age, Income, and Gender. The samples were chosen randomly so that every group was fairly shown. We used simple statistics and regression to look for patterns, but the graphs showed almost no change in purchase amount as age or income increased. This means that these factors do not clearly explain how much people spend online. Instead, personal reasons such as convenience, trust, or interest in products seem to have a stronger influence.

Interpretation

The regression result showed a very small slope and a high p-value, which means age and income have almost no link with spending. The data suggests that online shopping is now common for every generation, not only for young people. Because of this, we think that behavior and mindset - like how comfortable people feel with technology or how motivated they are to shop - are more important than age or income when understanding consumer habits.

Conclusion

From both datasets, we found no meaningful relationship between age, income, or shopping frequency and the amount people spend online. Middle- and high-income users spent about the same, and younger users only slightly more. These results show that demographic differences no longer matter much. What matters more are personal experiences and convenience, which shape how people buy things online today.