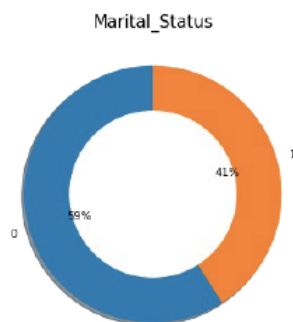
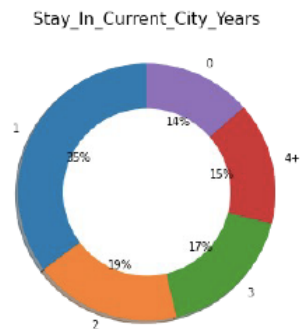
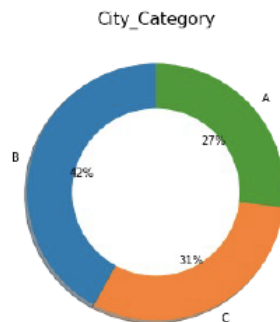
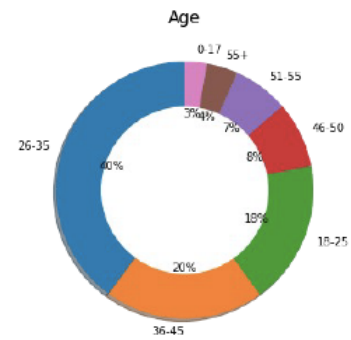
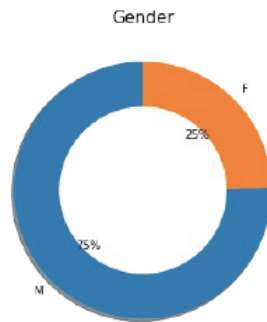


Walmart's Black Friday: Gender-Based Purchase Behavior Insights

Business Problem: Understanding if the spending habits differ between male and female customers.

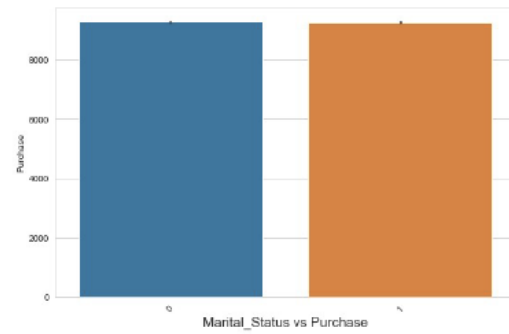
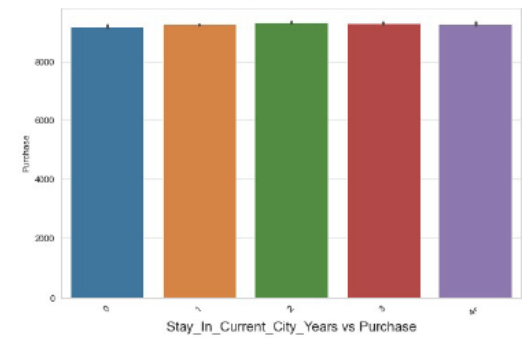
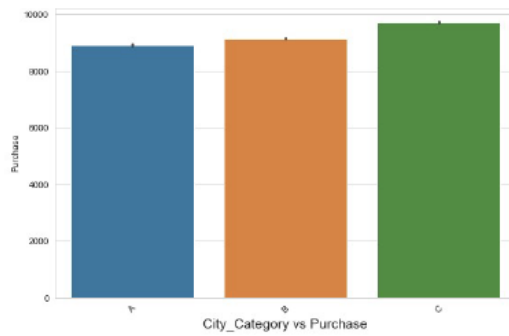
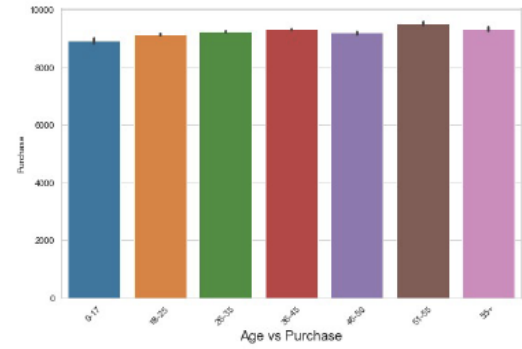
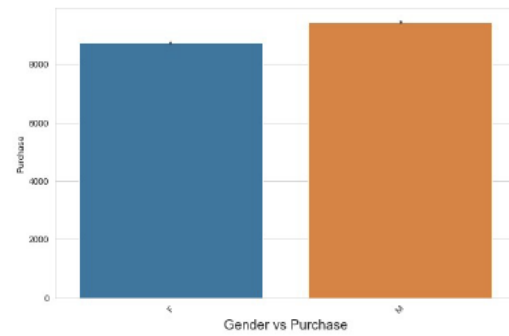
Demographic Insights:

1. **Gender Dominance:** Male customers outnumber females threefold, suggesting the need for gender-specific marketing strategies.
2. **Age Matters:** Adults aged 26-35 contributed for more transactions on Black Friday, while younger customers (0-17) exhibit lower purchase behavior.
3. **Occupation Influence:** Occupation number 4 stands out with the highest product purchases, indicating targeted promotions for specific occupational groups.
4. **City Category Impact:** City Category B experiences a surge in Black Friday purchases, pointing to a geographic market trend.
5. **Residence Duration's Role:** Customers residing in their current city for one year have the highest transaction frequency, an opportunity for loyalty programs.
6. **Marital Status Influence:** Married customers exhibited higher no of purchases compared to unmarried customers during Black Friday shopping.
7. **Popular Product Category:** Product category 5 emerged as the top choice among shoppers, demonstrating its remarkable popularity in Black Friday sales.



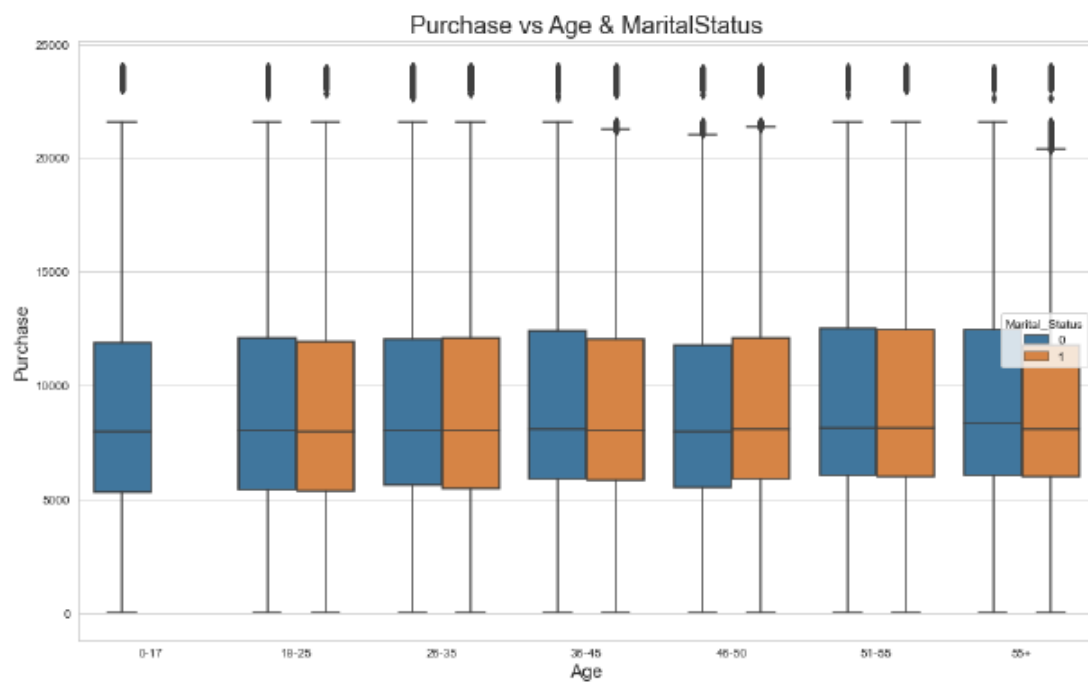
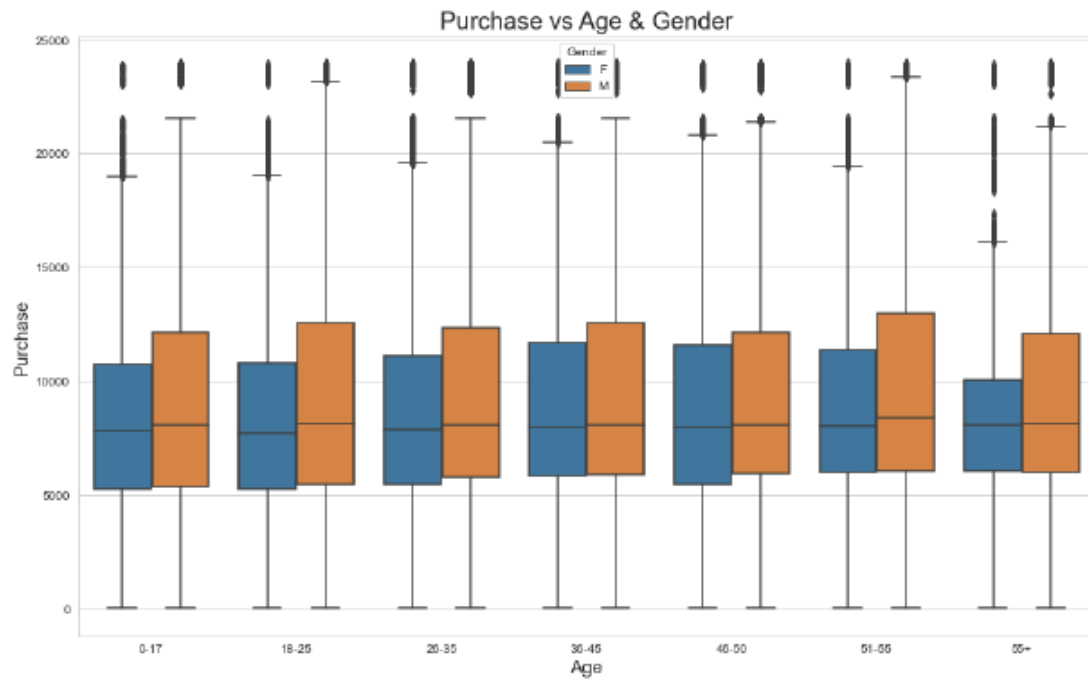
Customer Purchase Behavior Analysis:

- Gender Impact:** Male customers surpassed female customers in their contributions to the total purchase amount on Black Friday.
- Age Group Influence:** Customers aged 51-55 significantly contributed to the highest purchase amount, pointing to this age category's substantial spending.
- City Category Effect:** City category 'C' emerged as the leading contributor to the total purchase amount, indicating a strong shopping presence.
- City Residency and Spending:** Regardless of the duration of their stay in the city, customers from various cities made nearly equal contributions to the overall purchase amount.
- Marital Status Parity:** Both married and unmarried customers made similar contributions in terms of purchase amount, suggesting spending parity between these groups.



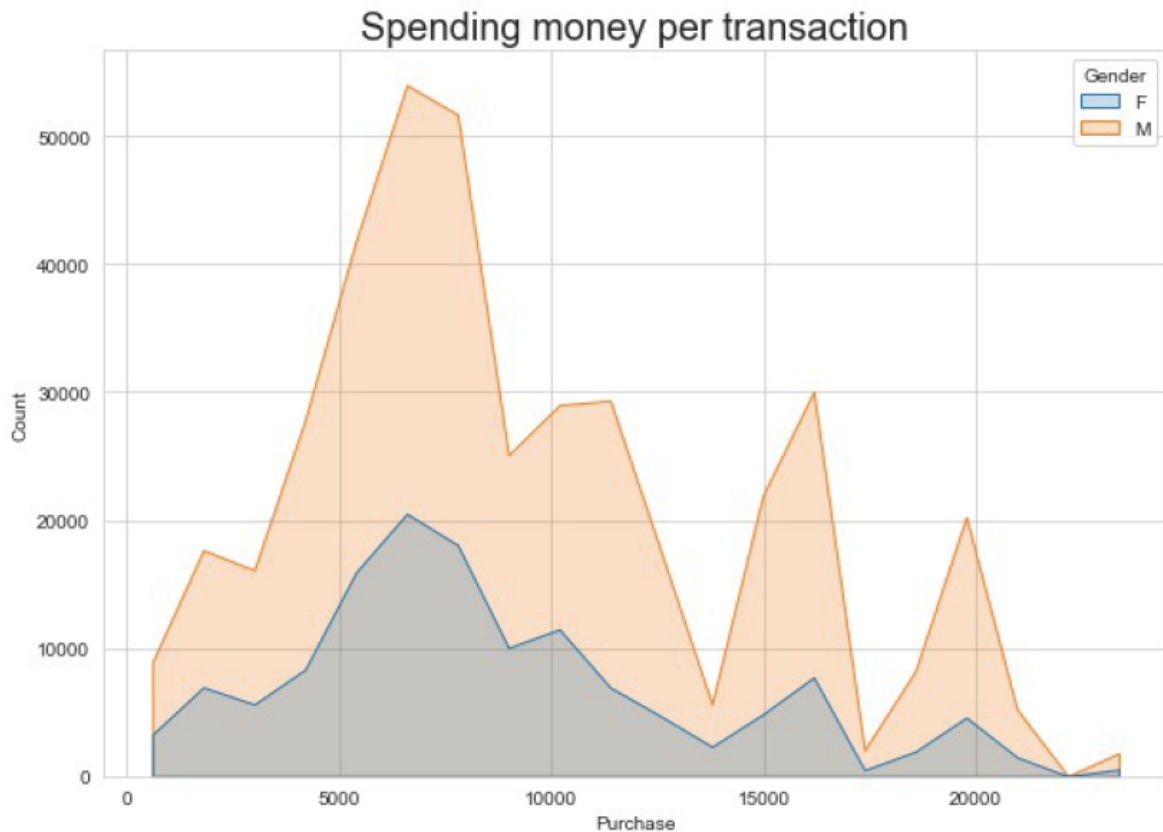
Multivariate Analysis:

Across age groups - gender and marital status purchase amount remains remarkably consistent.



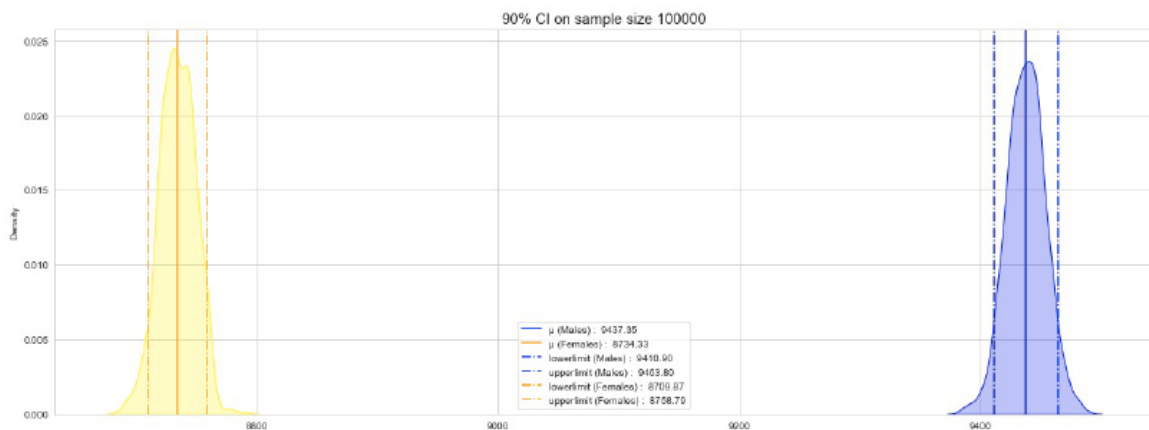
Gender and Purchase Behavior:

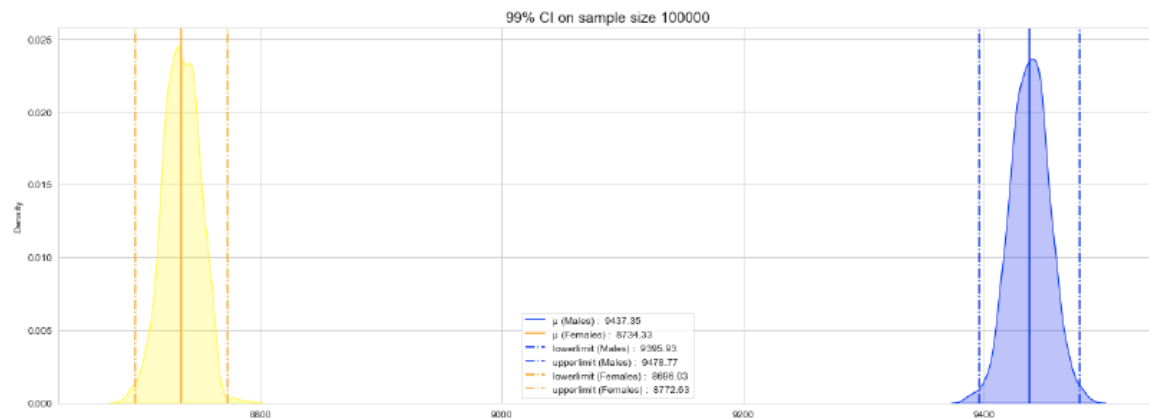
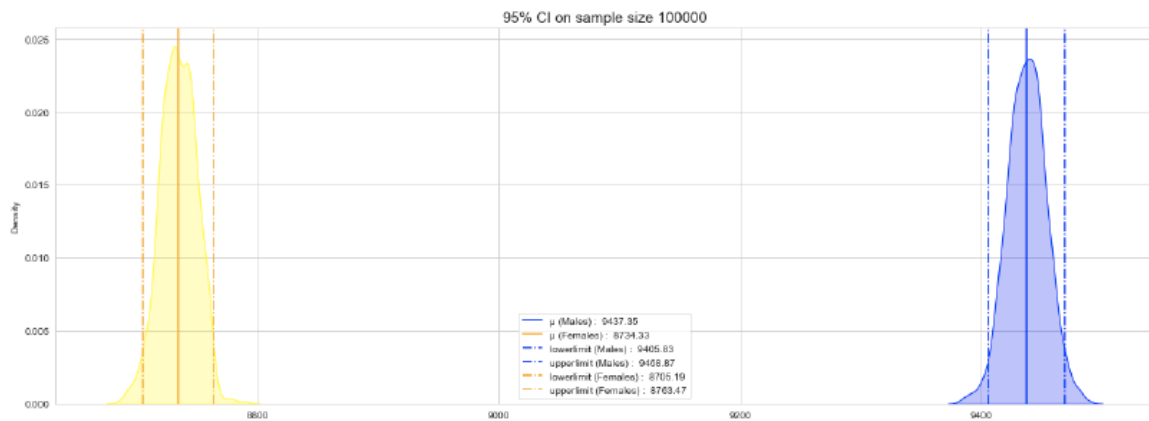
From the below plot, it becomes evident that, on average, women customers spend significantly less per transaction compared to men.



Gender based Purchase Confidence Intervals (CIs):

- Regardless of the sample size and confidence level (90%, 95%, and 99%), the confidence intervals for female customers are consistently narrower than those for males. This suggests that female customers tend to spend less than their male counterparts.





- Overlapping of confidence intervals for mean purchase of male and female customers is increasing,
which can be known from CI's of 90,95 and 99 confidence levels :

Females:

- 90% confidence: [8710.65, 8759.33] and diff in CI : 48.68
- 95% confidence: [8705.98, 8764.00] and diff in CI : 58.02
- 99% confidence: [8696.87, 8773.11] and diff in CI : 76.24

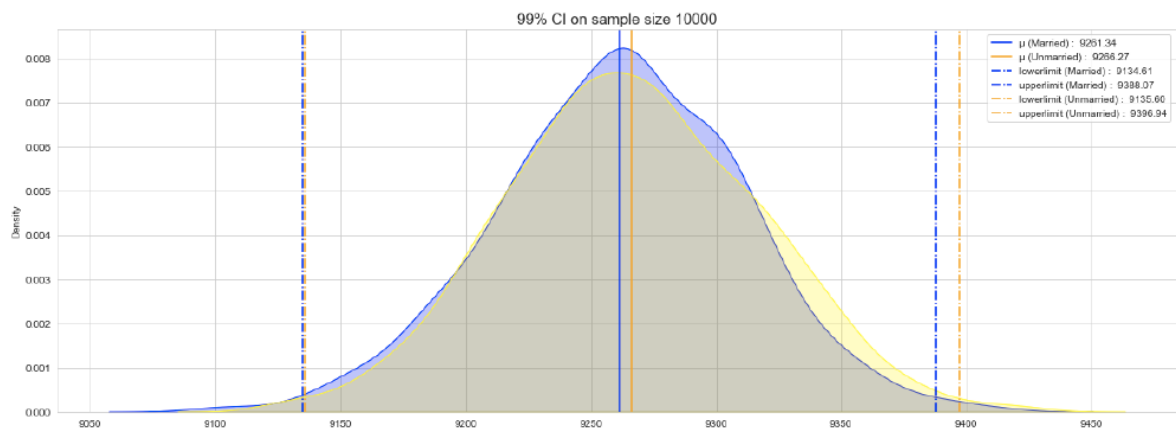
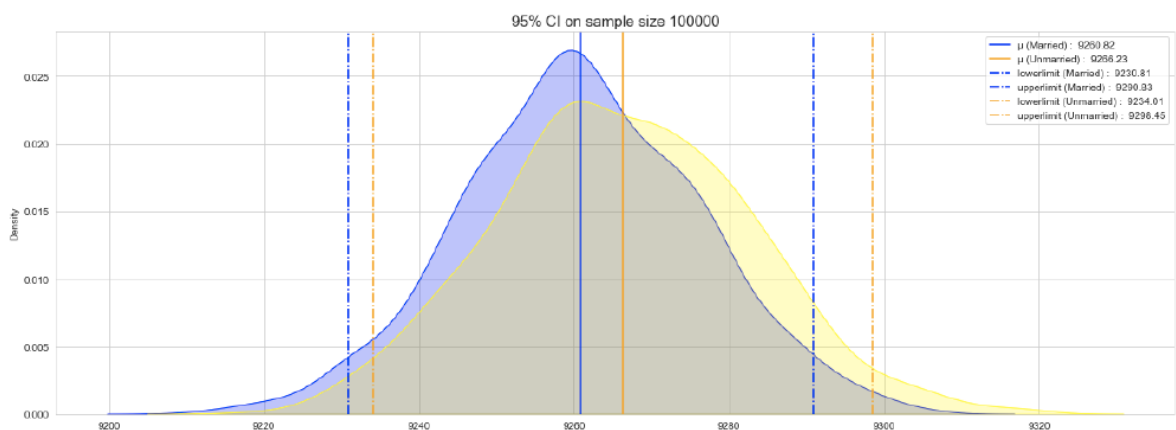
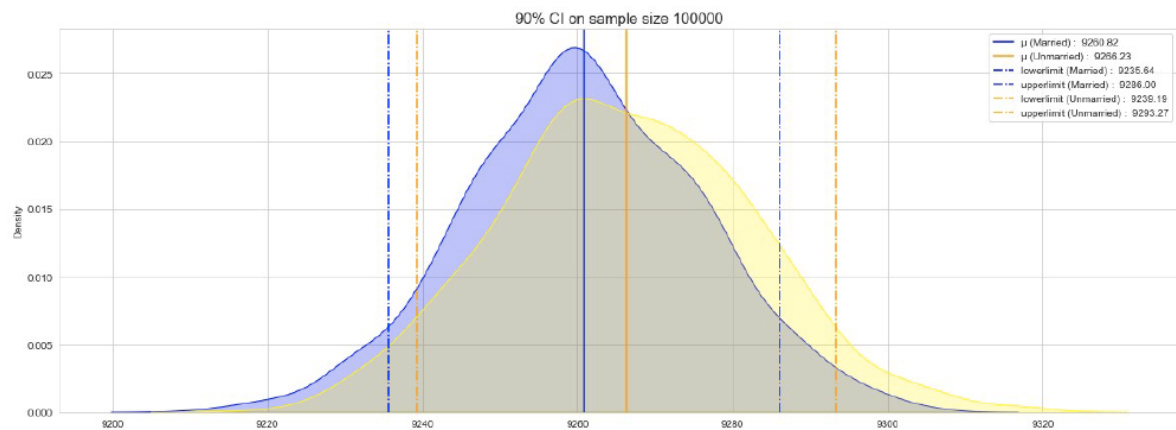
Males:

- 90% confidence: [9410.70, 9463.08] and diff in CI : 52.38
- 95% confidence: [9405.69, 9468.09] and diff in CI : 62.40
- 99% confidence: [9395.88, 9477.90] and diff in CI : 82.02

As we can see the CI's the female purchase is always less than male purchase on average.

Marital status based Purchase Confidence Intervals (CIs):

The confidence intervals for married and unmarried customers are very close in terms of the range. However, married customers tend to have slightly lower confidence intervals at all confidence levels (90%, 95%, and 99%), indicating a slightly lower purchase behavior compared to unmarried customers.



- Overlapping of confidence intervals for mean purchase of married and unmarried customers is increasing,
which can be known from CI's of 90,95 and 99 confidence levels :

Married:

- 90% confidence: [9234.33, 9287.29] and diff in CI : 52.96
- 95% confidence: [9229.25, 9292.37] and diff in CI : 63.12
- 99% confidence: [9219.34, 9302.28] and diff in CI : 82.94

Unmarried:

- 90% confidence: [9239.66, 9290.48] and diff in CI : 50.82

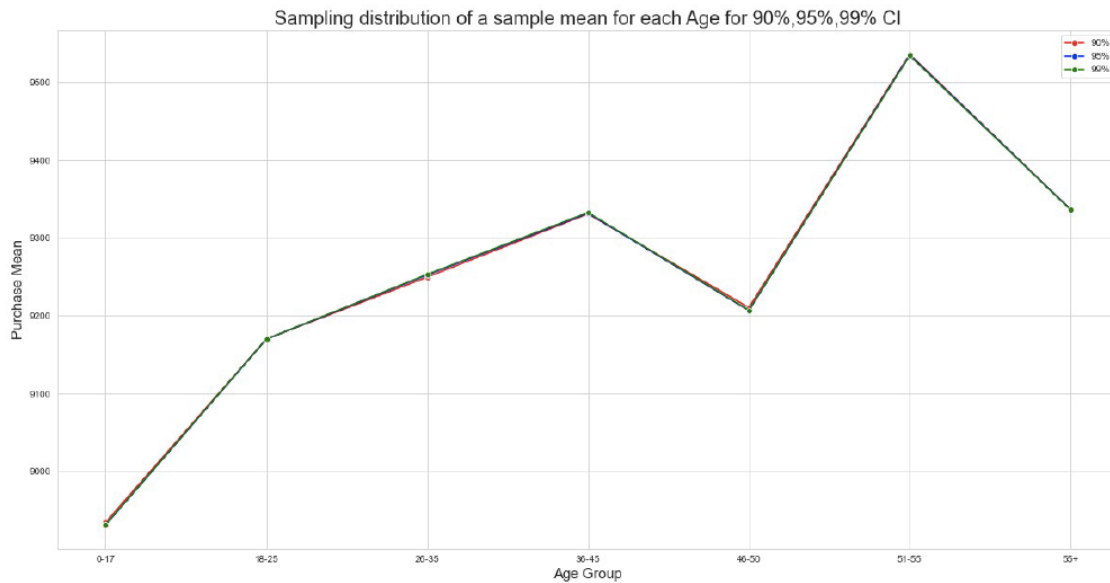
Age Group based Purchase Confidence Intervals (CIs):

The means of purchases with 90%, 95%, and 99% confidence intervals are remarkably close, indicating that the level of confidence doesn't significantly impact the average purchase amount.

Customers within the 51-55 age group exhibit the highest mean CI, suggesting they make more substantial purchases on average.

The 55+ and 36-45 age groups also have relatively high mean CIs, indicating higher spending.

- In contrast, the 0-17 age group shows lower mean CI, signifying lower spending among this demographic.
- Surprisingly, the 26-35 age group, despite having potential for higher spending, shows lower purchases compared to the 0-17 age group.



Recommendations:

1. Targeted Marketing Strategies:

- Tailor marketing campaigns to specifically address gender-based and age-based differences in customer purchasing behavior. Consider promoting products and offers that resonate with each demographic.

2. Engage the 26-35 Age Group:

- Recognize the untapped potential within the 26-35 age group and develop strategies to attract and retain customers in this age range. Analyze the reasons behind their lower purchases.

3. Customer Segmentation:

- Utilize the insights from marital status and age group analyses to create customer segments. Customize product recommendations, discounts, or loyalty programs to suit the unique preferences of each segment.

4. Feedback and Surveys:

- Gather customer feedback through surveys or reviews to better understand their preferences and pain points. Use this feedback to make continuous improvements to the shopping experience.

5. Personalized Shopping Experience:

- Implement a personalized shopping experience for female customers, offering product recommendations and special discounts based on their browsing and purchase history.

Inventory Management:

- | |
|--|
| <ul style="list-style-type: none">• Adjust inventory levels for products in high-demand categories, especially during peak shopping seasons like Black Friday, to meet customer needs efficiently. |
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6. These recommendations aim to help Walmart enhance its understanding of customer behavior, refine marketing strategies, and ultimately improve customer satisfaction and sales.
