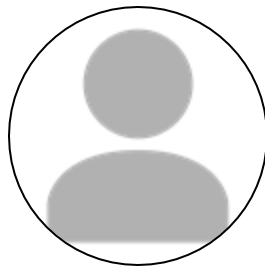


Predict Customer Personality to boost marketing campaign by using Machine Learning

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Career Acceleration School
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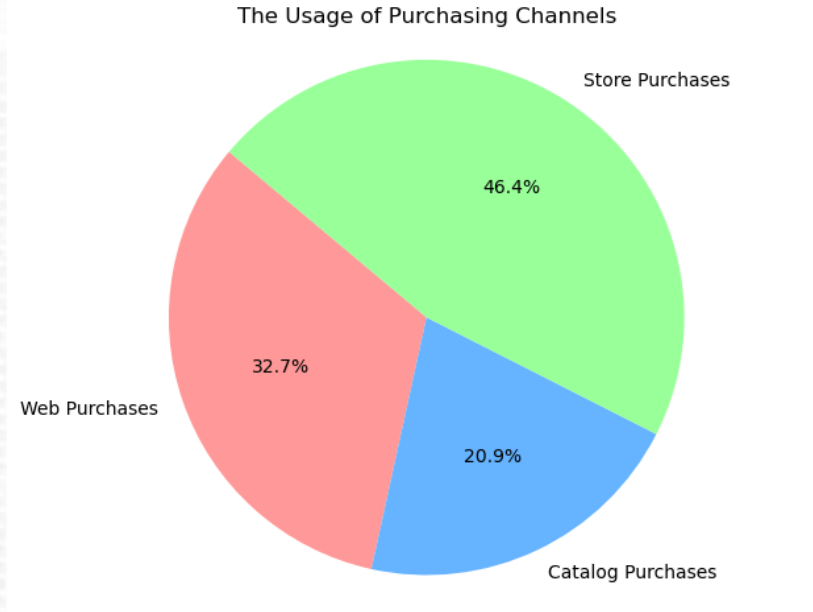
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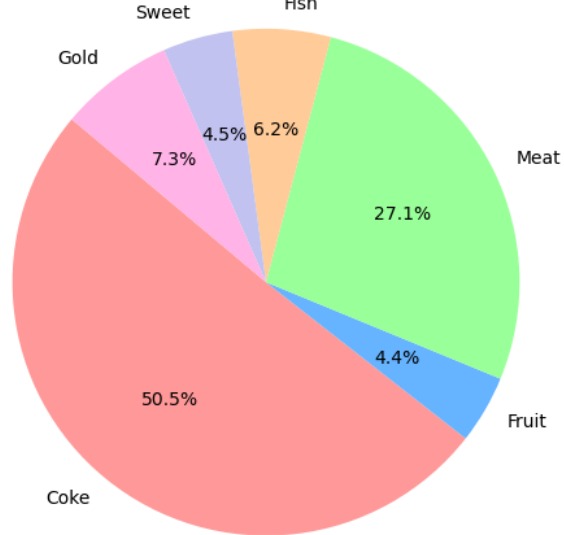
“With a track record of success in both logistics and sales, Ghulam is poised to leverage his unique blend of skills and experiences to bring a dynamic perspective to the world of data. His ability to adapt and excel in various roles showcases his versatility and determination. Eager to embrace new challenges and drive meaningful insights through data, Ghulam is a valuable asset for any team seeking innovative solutions and growth-oriented expertise.”

“Sebuah perusahaan dapat berkembang dengan pesat saat mengetahui perilaku customer personality nya, sehingga dapat memberikan layanan serta manfaat lebih baik kepada customers yang berpotensi menjadi loyal customers. Dengan mengolah data historical marketing campaign guna menaikkan performa dan menyasar customers yang tepat agar dapat bertransaksi di platform perusahaan, dari insight data tersebut fokus kita adalah membuat sebuah model prediksi kluster sehingga memudahkan perusahaan dalam membuat keputusan ”

Despite the increasing popularity of online shopping through websites, many people still prefer the hands-on experience of shopping in physical stores. Both of these options surpass shopping through catalogs or email, which may be less preferred due to the lack of convenience or a preference for a more interactive shopping experience.

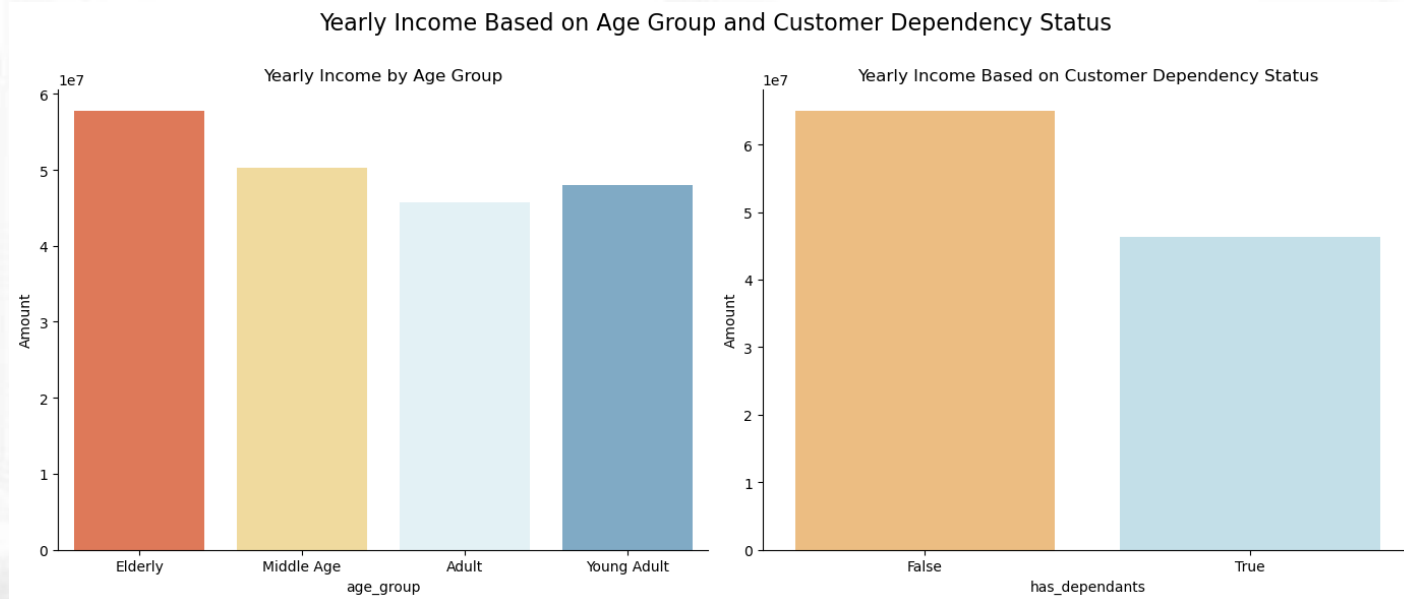


Percentage of products purchased by customers



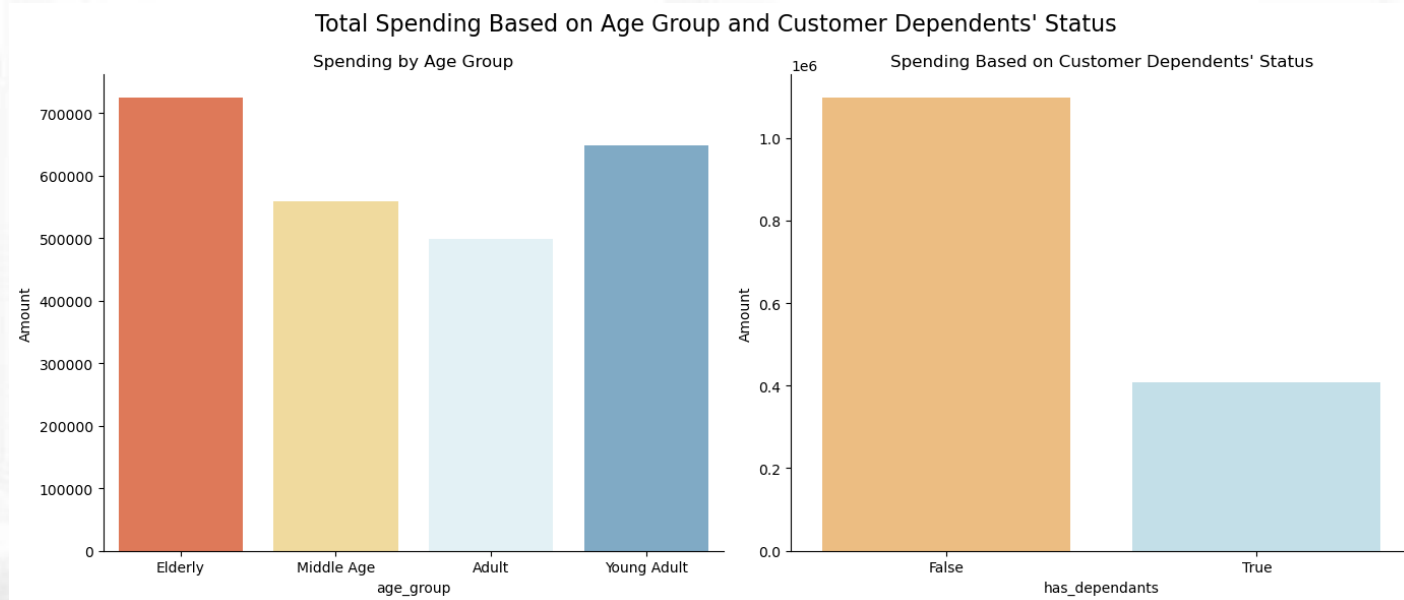
The graph highlights the significant popularity of cola among customers, with meat products also making up a substantial portion of their spending, while other product categories lag behind in terms of customer preferences, with fruit products being the least favored option.

EDA: Yearly Income Based on Age Group and Dependency Status



On average, the elderly have a more substantial income compared to younger adults, potentially due to factors like pension plans and retirement income sources. Additionally, there is a correlation between income and the presence of dependents, with customers without dependents generally having higher incomes. This may be influenced by the composition of dependents, which mainly consist of small children and teenagers in the dataset. The observation is further supported by the fact that the elderly, who have the highest income, are less likely to have dependents.

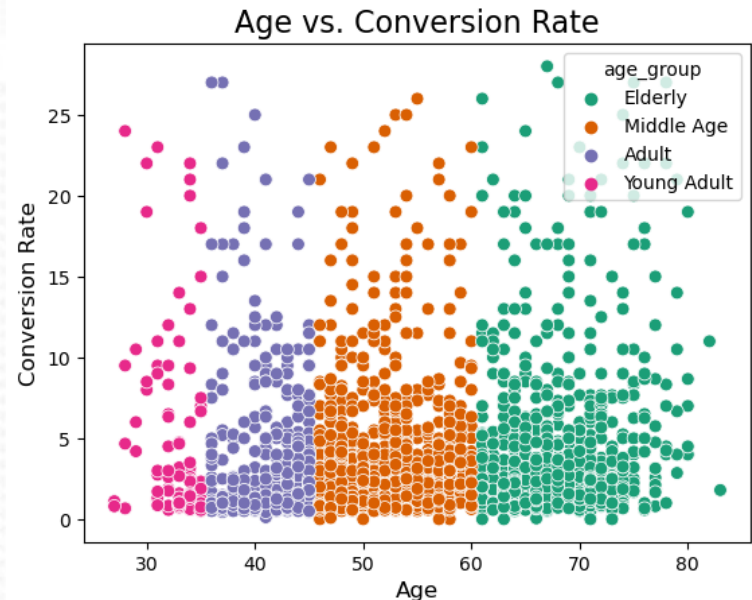
EDA: Total Spending Based on Age Group and Dependency Status



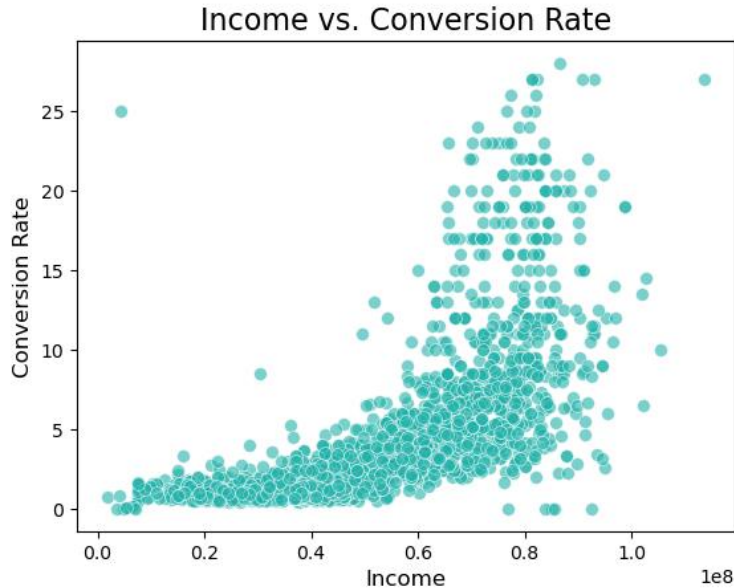
Elderly and young adults are the main contributors to consumer spending. Conversely, adults exhibit the lowest total spending, potentially due to factors like financial responsibilities such as mortgages and education costs. Additionally, individuals without dependents tend to have significantly higher spending levels compared to those with dependents, indicating that they allocate a larger portion of their financial resources towards purchases.

EDA: Age vs. Conversion Rate

The graph shows that there is no apparent linear correlation between age and conversion rates. This means that as a customer's age increases or decreases, it does not necessarily result in a proportional change in the probability of conversion.



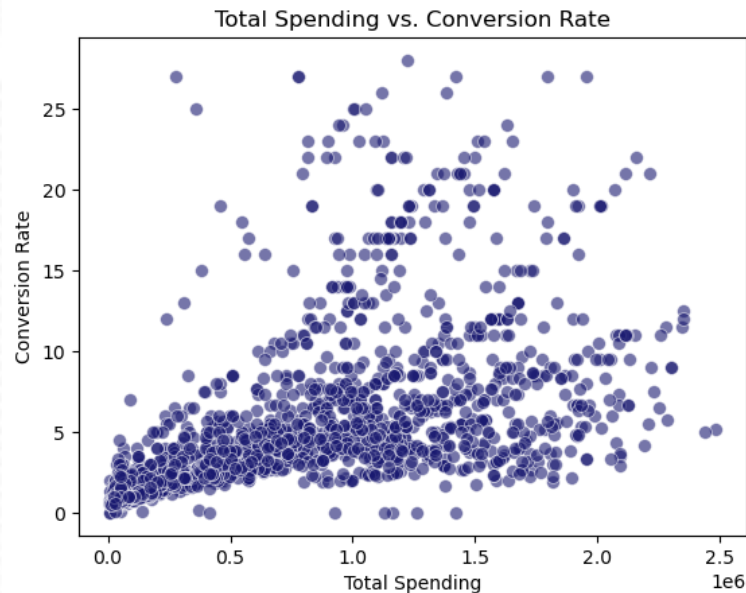
EDA: Income vs. Conversion Rate



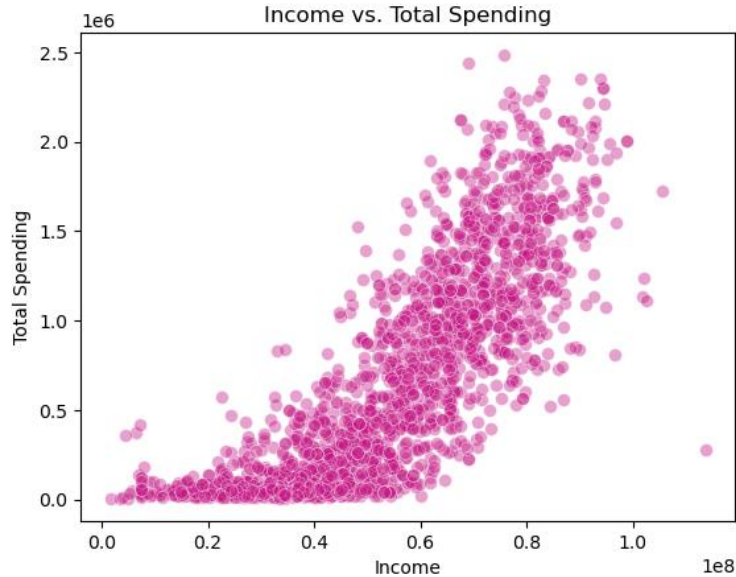
The observed graph depicting the relationship between income and conversion rate reveals a distinctive trend, which notably leans towards an exponential pattern. This suggests that the increments in income levels can lead to substantial changes in the conversion rate, indicating a potentially exponential growth pattern in conversion rate relative to income.

EDA: Total Spending vs. Conversion Rate

Despite the wide dispersion in the data, a discernible pattern emerges, showing that as the total spending increases, there is a corresponding increase in the conversion rate. This positive correlation between total spending and conversion rate implies that customers who spend more tend to have a higher conversion rates.

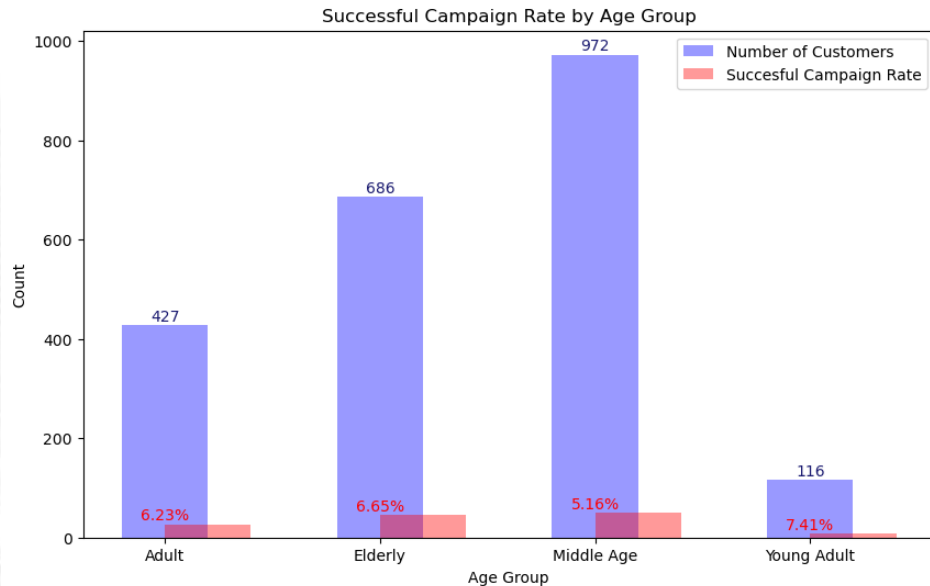


EDA: Income vs. Total Spending



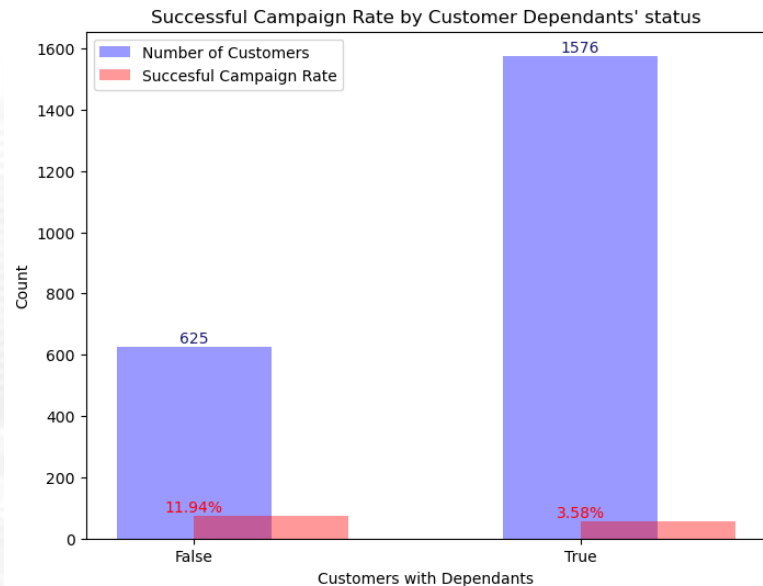
There is a noticeable trend in the relationship between income and total spending, leans towards an exponential pattern. This suggests that as income levels rise there is an exponential increase in total spending. In essence, even small increments in income can result in significant changes in total spending.

EDA: Successful Campaign Rate by Age Group



The young adult group, with the fewest members, demonstrates the highest success rate for campaigns. On the other hand, the middle-aged group, with the largest number of members, shows the lowest success rate. This implies that focusing on young adults, despite their smaller population, may lead to more successful campaign outcomes compared to the larger but less responsive middle-aged group.

EDA: Successful Campaign Rate by Age Group



Campaign success rate of customers without dependents is more than three times higher than that of customers with dependents. This stark contrast underscores the importance of tailoring marketing strategies to different customer segments, recognizing that those without dependents may be more responsive to campaigns compared to their counterparts with dependents.