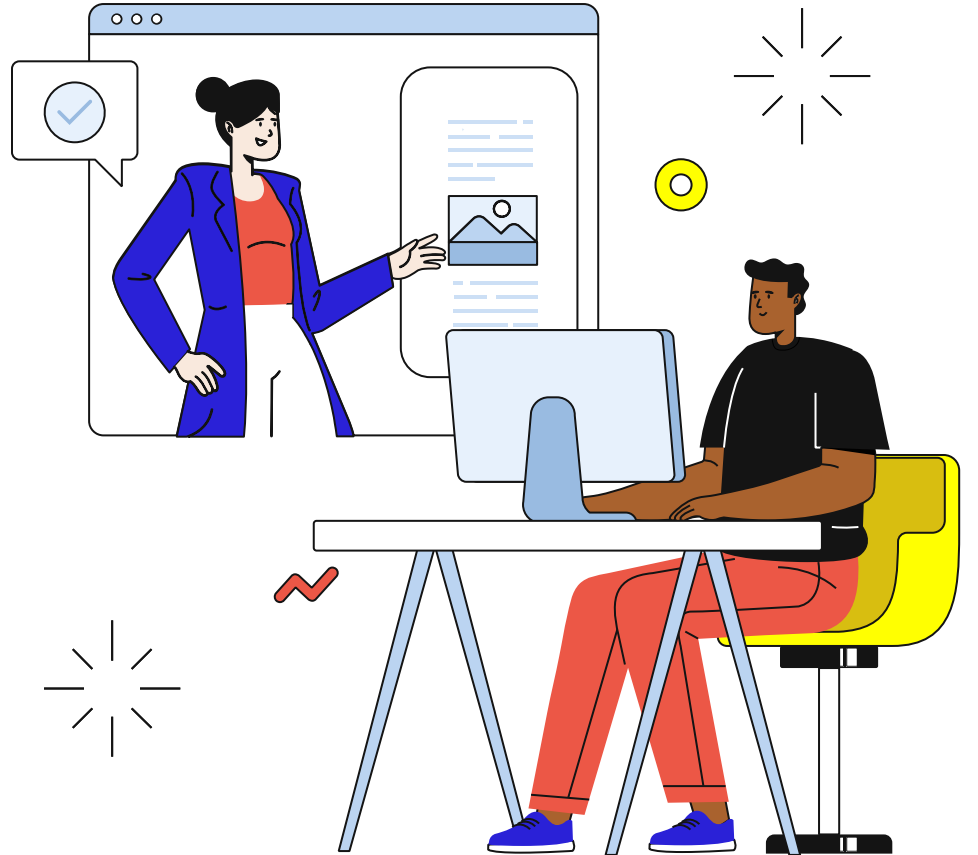
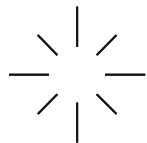


Business Insight





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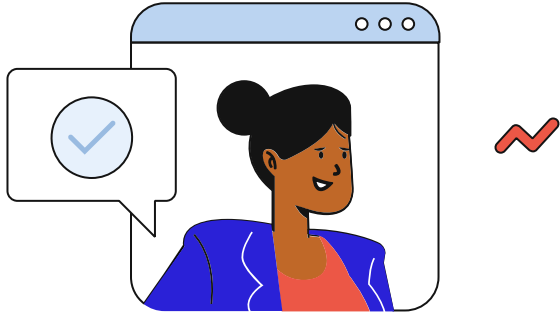
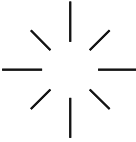


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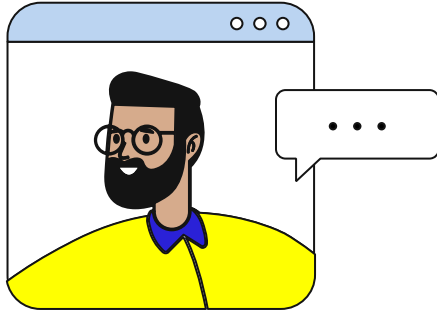
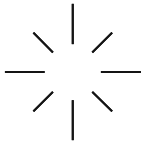
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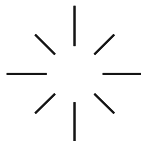
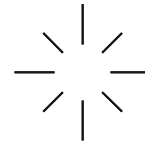
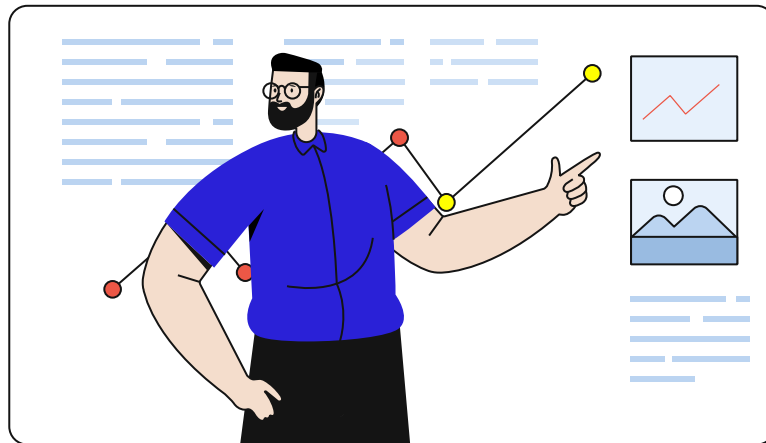
01 About Dataset

02 Exploratory
Data Analysis

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MUHAMMAD IFZAL ASRIL

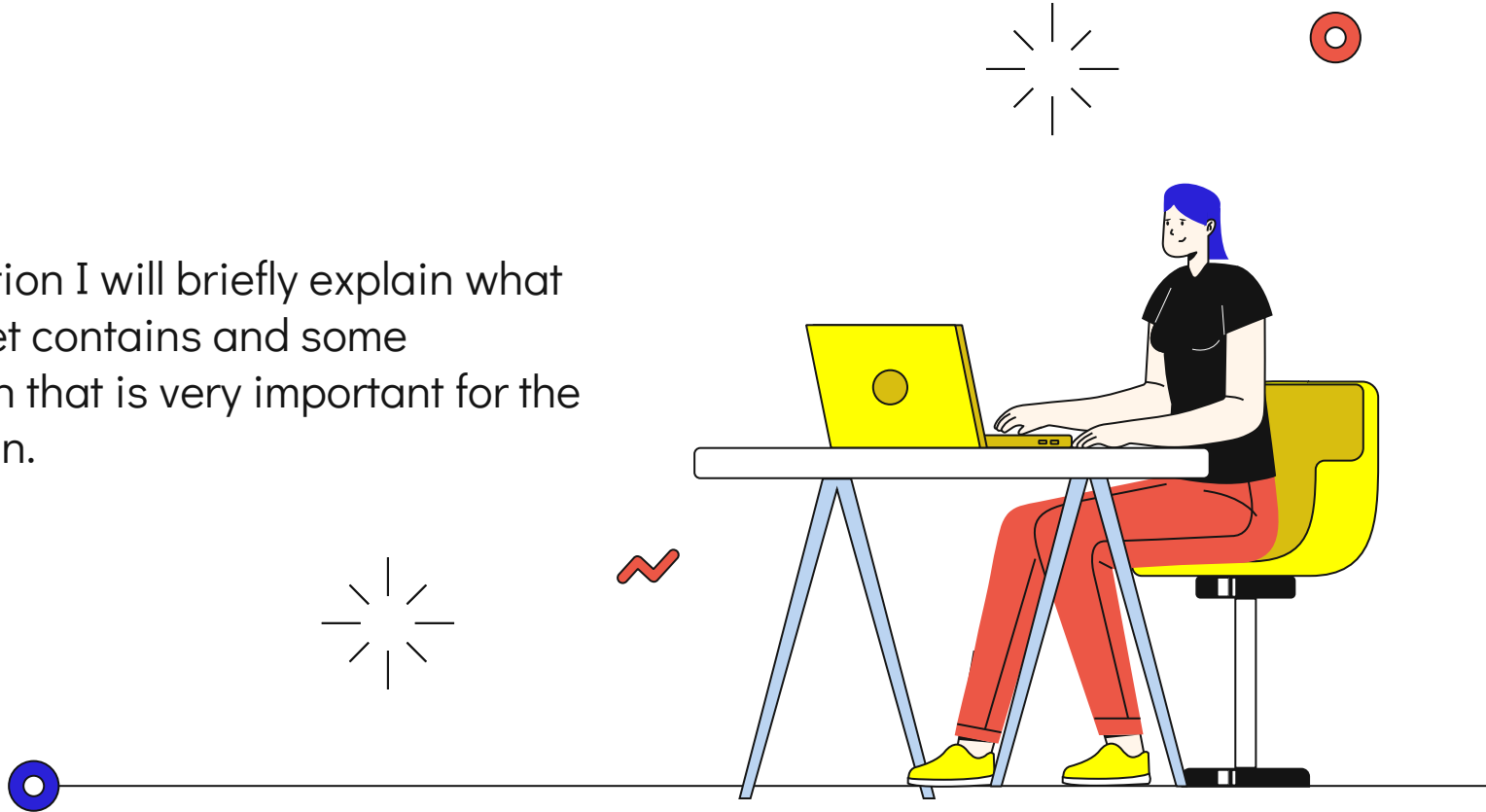




O1

About Dataset

In this section I will briefly explain what this dataset contains and some information that is very important for the next section.



what's in the dataset?



Dataset Description:

The training dataset contains 2240 samples.

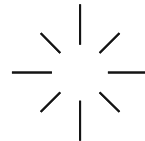
Contains 28 features and 1 target boolean variable "Response" :

1. Accepted/Responses Campaign

- AcceptedCmp1 - 1 if customer accepted the offer in the 1st campaign, 0 otherwise
- AcceptedCmp2 - 1 if customer accepted the offer in the 2nd campaign, 0 otherwise
- AcceptedCmp3 - 1 if customer accepted the offer in the 3rd campaign, 0 otherwise
- AcceptedCmp4 - 1 if customer accepted the offer in the 4th campaign, 0 otherwise
- AcceptedCmp5 - 1 if customer accepted the offer in the 5th campaign, 0 otherwise
- Response (target) - 1 if customer accepted the offer in the last campaign, 0 otherwise
- Complain - 1 if customer complained in the previous 2 years

2. Customer Information

- ID - Customer's id
- Year_Birth - Customer's year of birth
- Education - customer's level of education
- Marital - customer's marital status
- Kidhome - number of small children in customer's household
- Teenhome - number of teenagers in customer's household
- Income - customer's yearly household income
- DtCustomer - date of customer's enrolment with the company
- Recency - number of days since the last purchase



3. Sales Product Type

- MntFishProducts - amount spent on fish products in the last 2 years
- MntMeatProducts - amount spent on meat products in the last 2 years
- MntFruits - amount spent on fruits products in the last 2 years
- MntSweetProducts - amount spent on sweet products in the last 2 years
- MntCoke - amount spent on coke products in the last 2 years
- MntGoldProds - amount spent on gold products in the last 2 years

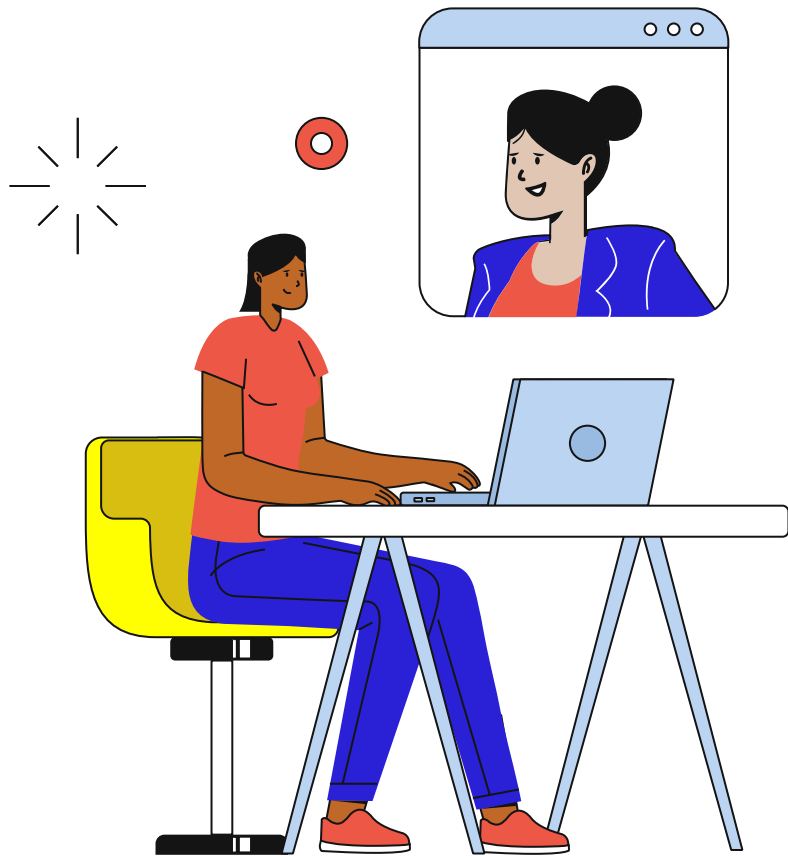
4. Number of Purchases per Type

- NumDealsPurchases - number of purchases made with discount
- NumCatalogPurchases - number of purchases made using catalogue
- NumStorePurchases - number of purchases made directly in stores
- NumWebPurchases - number of purchases made through company's web site
- NumWebVisitsMonth - number of visits to company's web site in the last month

5. Cost and Revenue

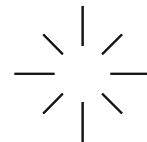
- Z_CostContact = 3 (Cost to contact a customer)
- Z_Revenue = 11 (Revenue after client accepting campaign)





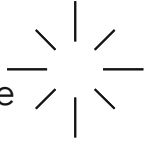
02

Exploratory Data Analysis



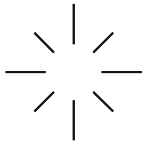
Univariate Analysis

Univariate analysis explores each variable in a data set, separately. It looks at the range of values, as well as the central tendency of the values.

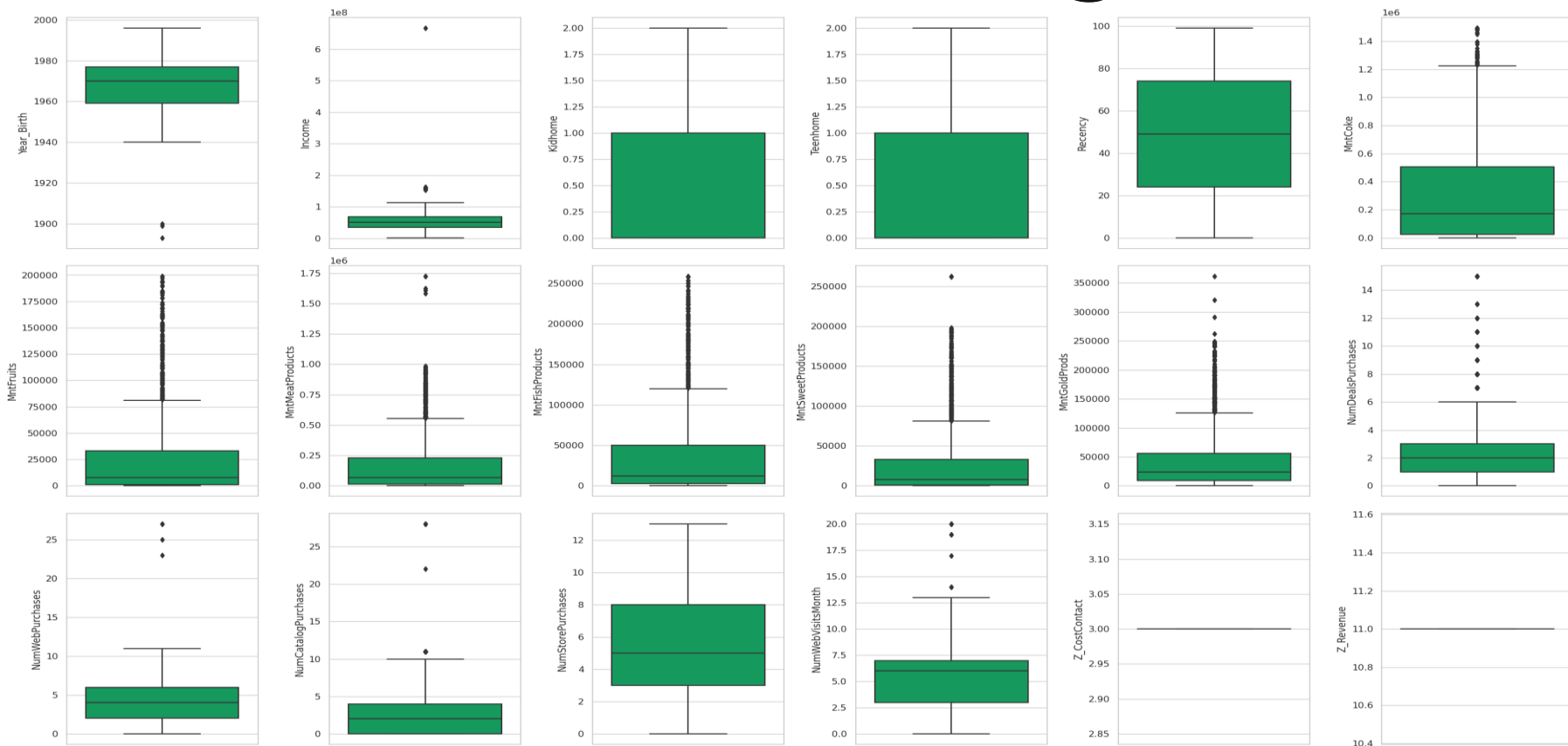


Multivariate Analysis

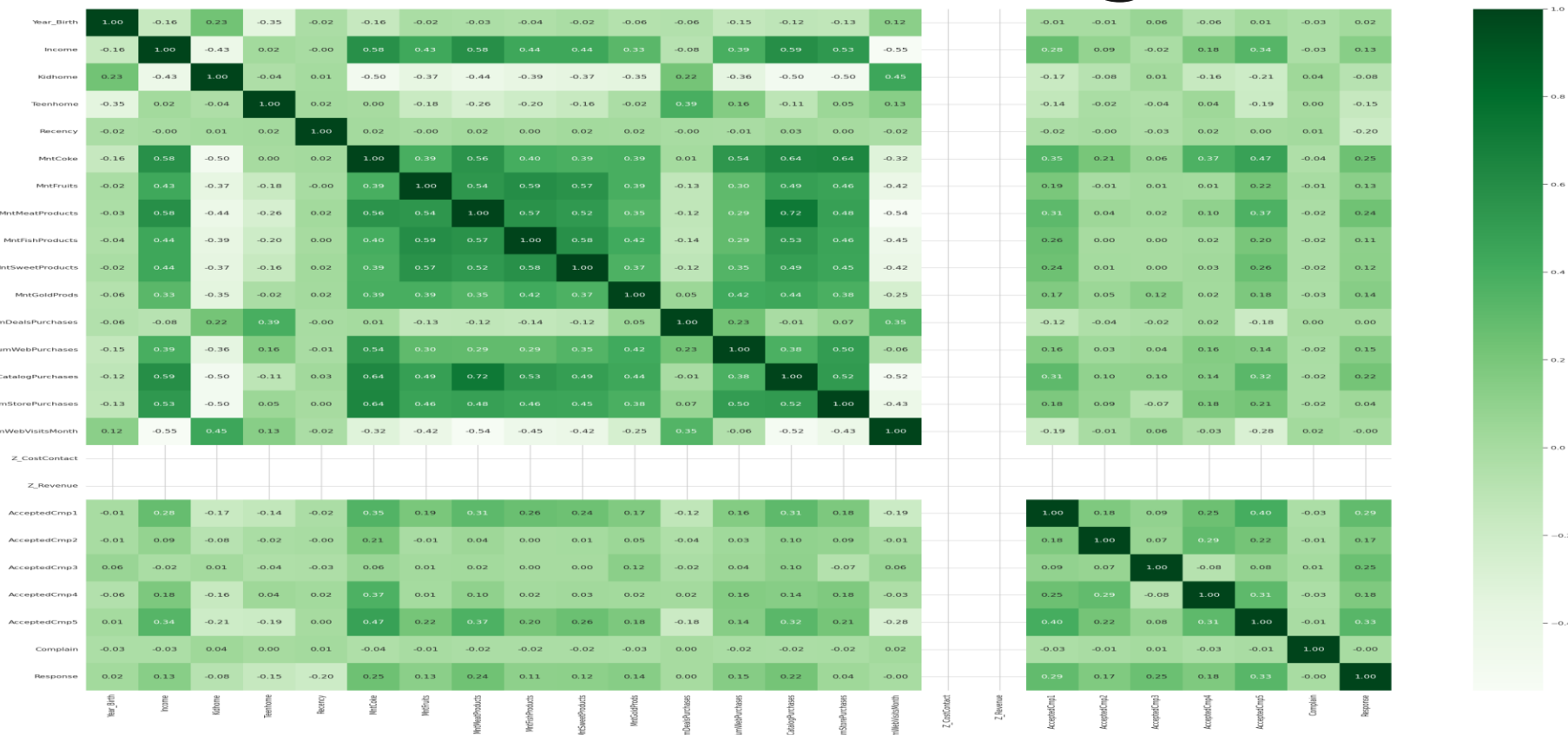
Multivariate analysis (MVA) involves evaluating multiple variables (more than two) to identify any possible association among them. Key takeaways: Multivariate analysis offers a more complete examination of data by looking at all possible independent variables and their relationships to one another.



Univariate Analysis



Multivariate Analysis

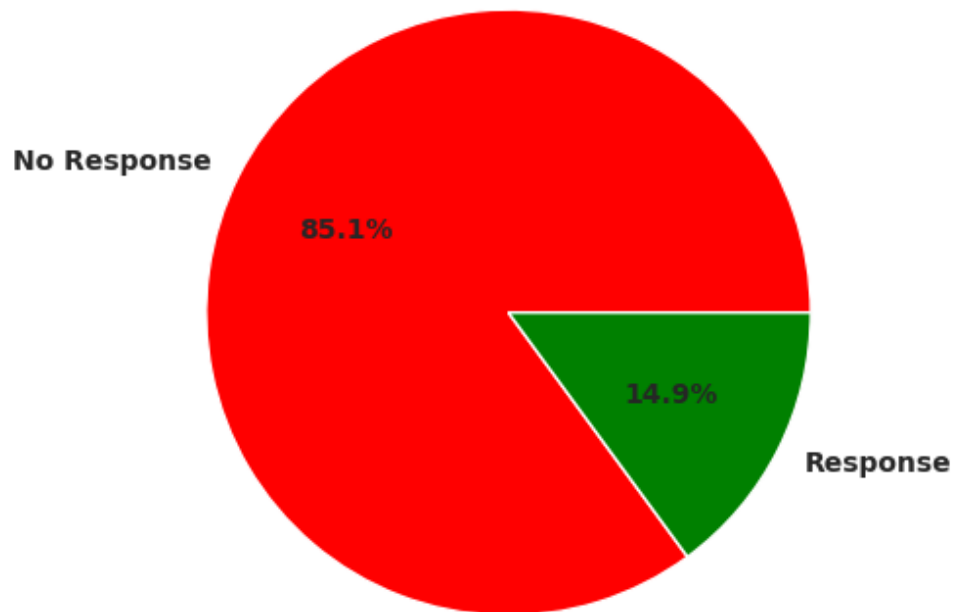


03

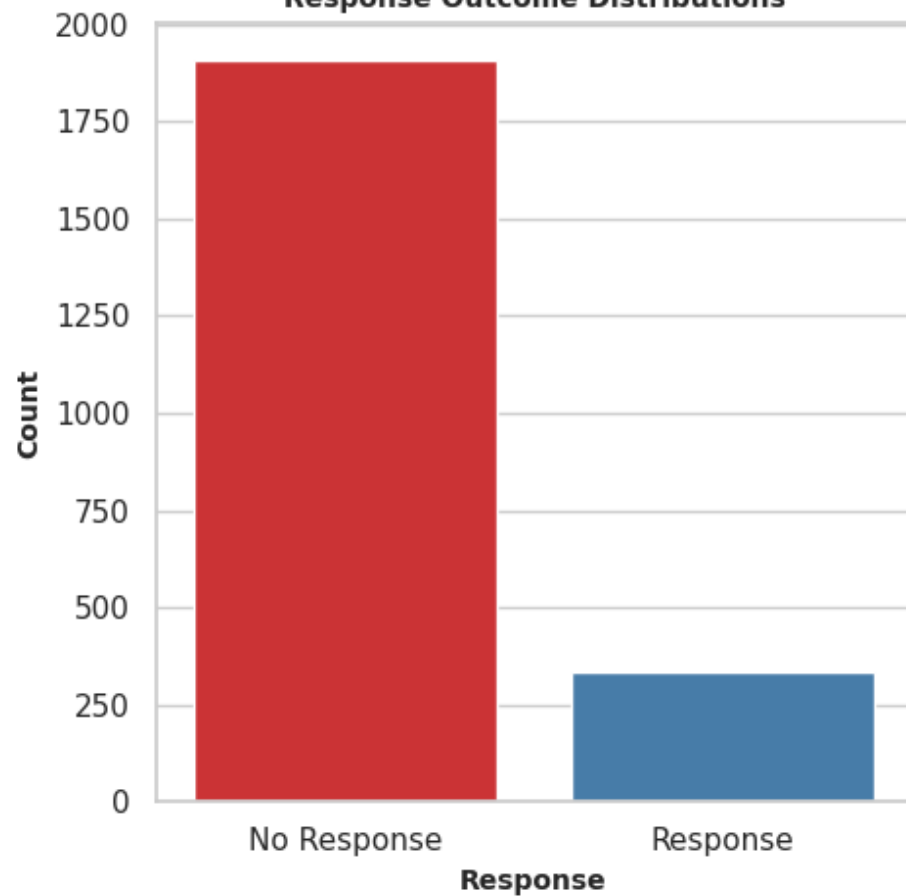
Business Insight



Response Outcome Pie Chart



Response Outcome Distributions



what's going on?

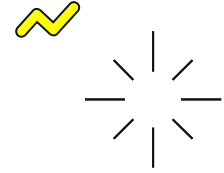
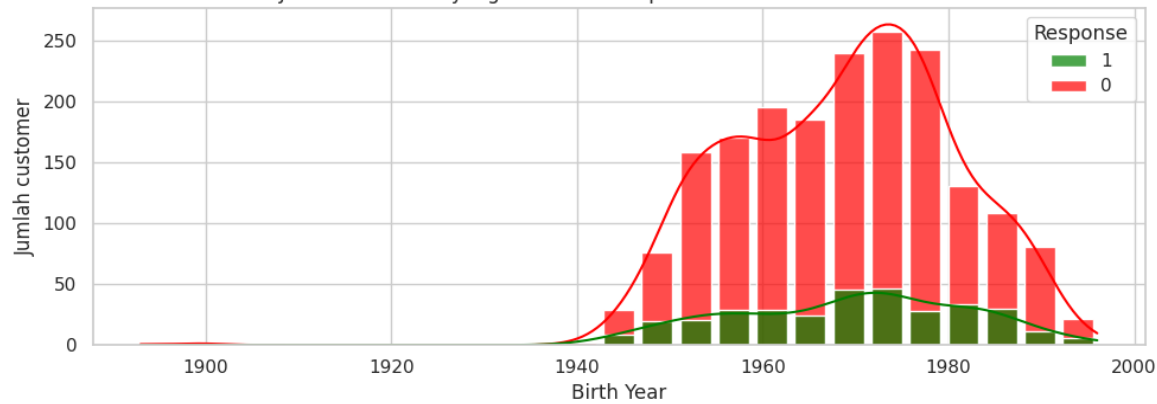


Out of a total of more than 2000 customers, it is unfortunate that the marketing team's offer campaign has only a few respondents.

So the data analytics team is tasked with predicting customer shopping habits to increase sales, and working with the marketing team to provide attractive offers to customers.



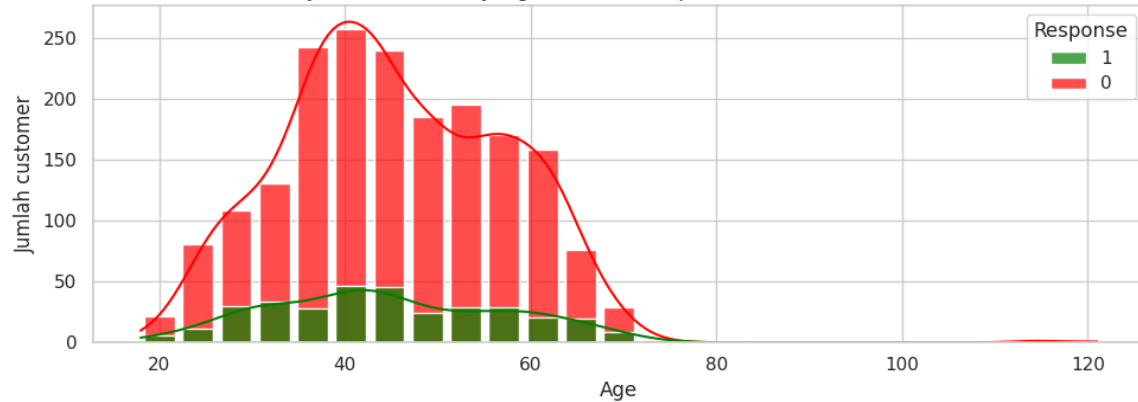
Jumlah customer yang menerima Response berdasarkan Tahun Lahir



1975 & 40

that's the number that responded here

Jumlah customer yang menerima Response berdasarkan Umur



Birth Year / Age vs Response





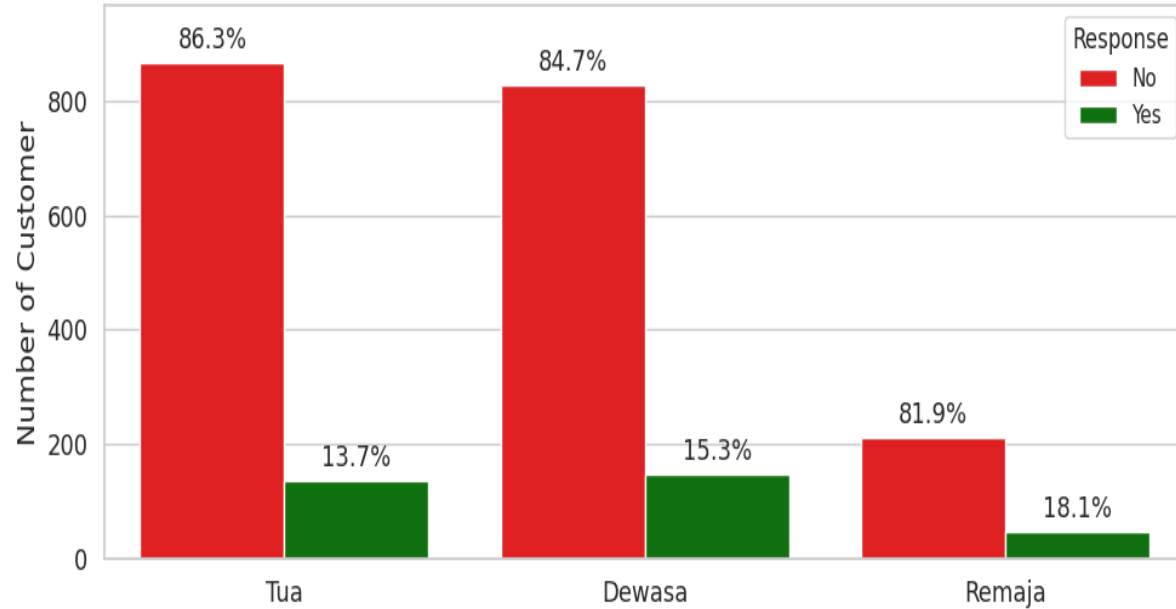
Tua	No	867	1005	86.269
Tua	Yes	138	1005	13.731
Dewasa	No	827	976	84.734
Dewasa	Yes	149	976	15.266
Remaja	No	212	259	81.853
Remaja	Yes	47	259	18.147

for the percentage of how many customers respond the most is in the 'Remaja' data but the actual data is in the 'Dewasa' data even though the percentage is below the 'Remaja' data but the actual number is like this:

- 'Tua' = 13.7% = 138 customers
- 'Dewasa' = 15.3% = 149 customers
- 'Remaja' = 18.1% = 47 customers

Comparison of Response Users in Age Group

The older a person is, the higher the response value

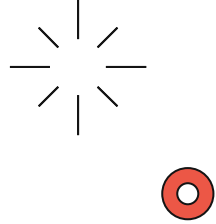
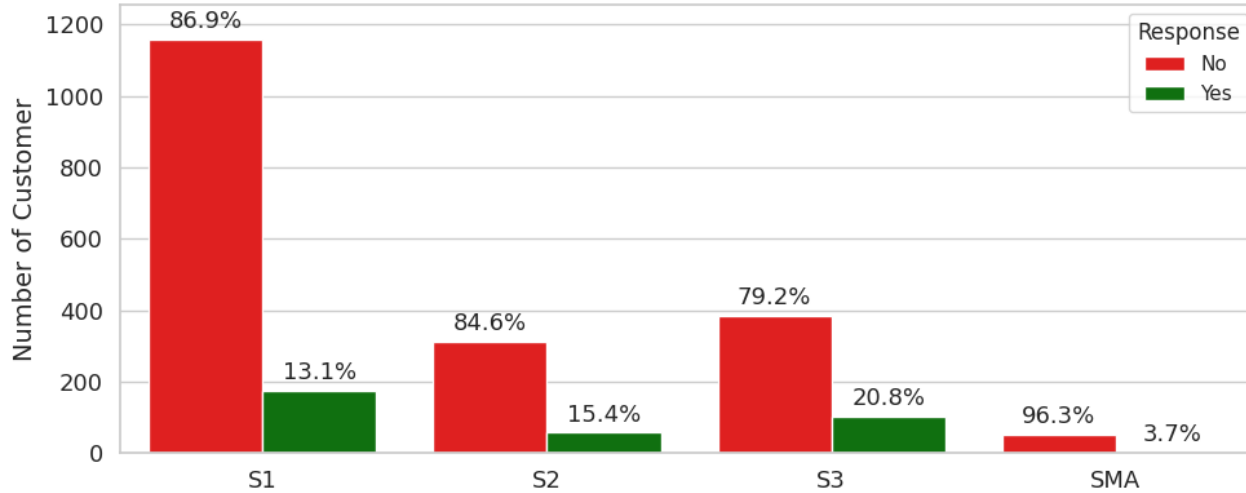


Age Group vs Response



Comparison of Response Users in Education

S1 has the Highest Number Customer Response

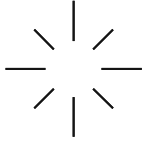


It can be seen that the average customer has an 'S1' education, but for the percentage of customers who respond, there are customers with a 'S3' education, which is 20.8%, but the actual data is like this:

- SMA = 3.7% = 2 customers
- S1 = 13.0% = 174 customers
- S2 = 15.4% = 57 customers
- S3 = 20.8% = 101 customers

Education vs Response



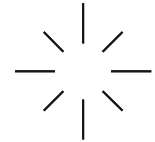
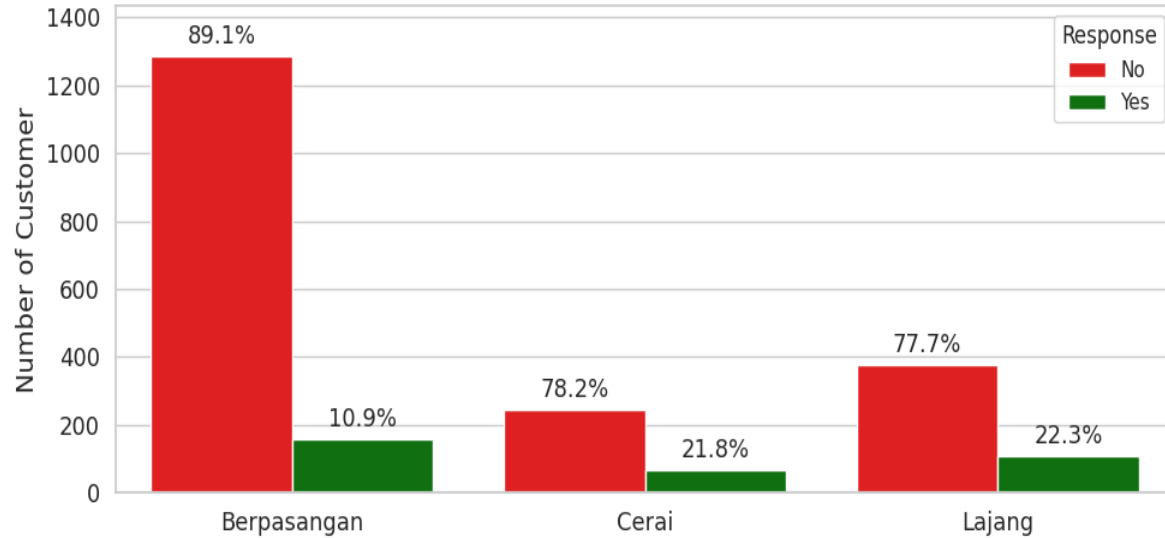


customers with the status 'single', which has the highest percentage of 22.3%, but the actual data is like this:

- Lajang = 22,3% = 108 customers
- Berpasangan = 10,9% = 158 customers
- Cerai = 21,8% = 68 customers

Comparison of Response Users in Marital Status

The older a person is, the higher the response value

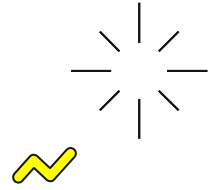
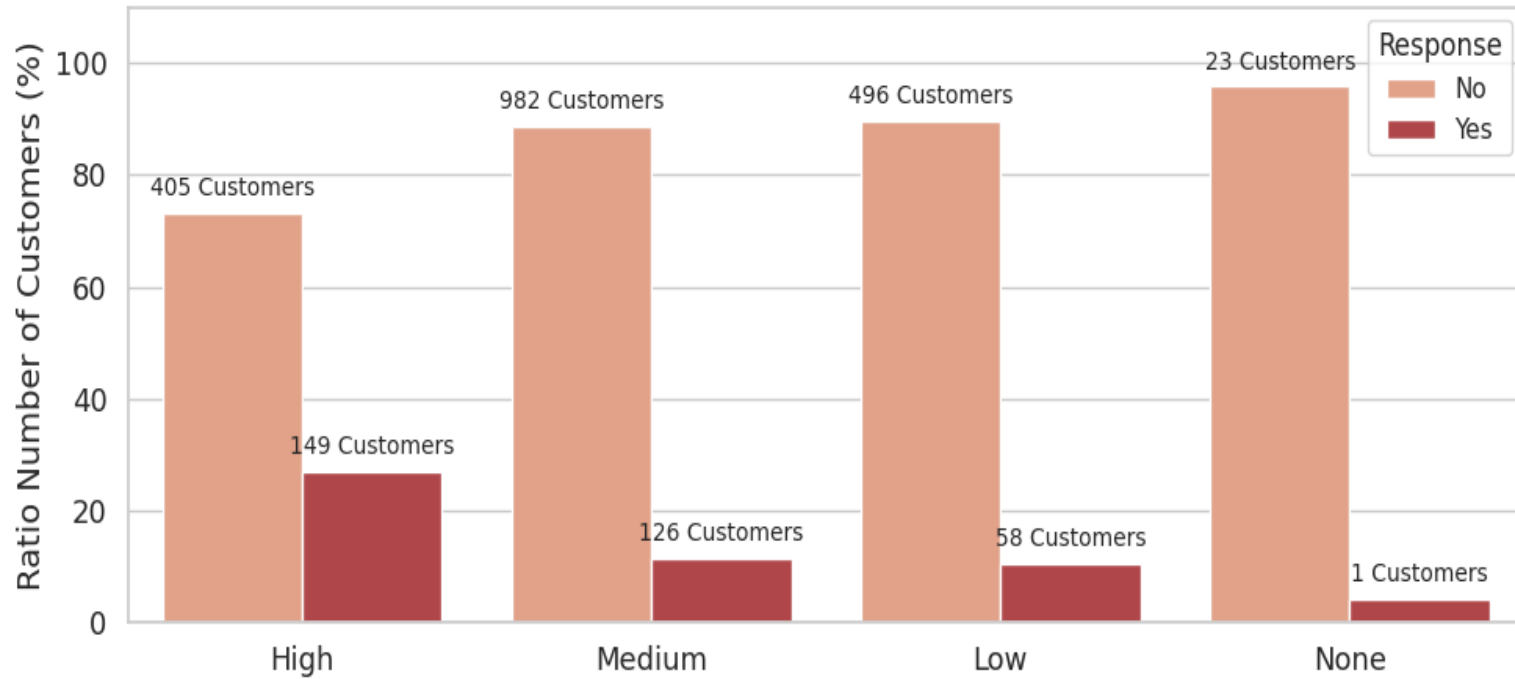


Marital Status vs Response



Comparison of Response Users in Income Segmentation

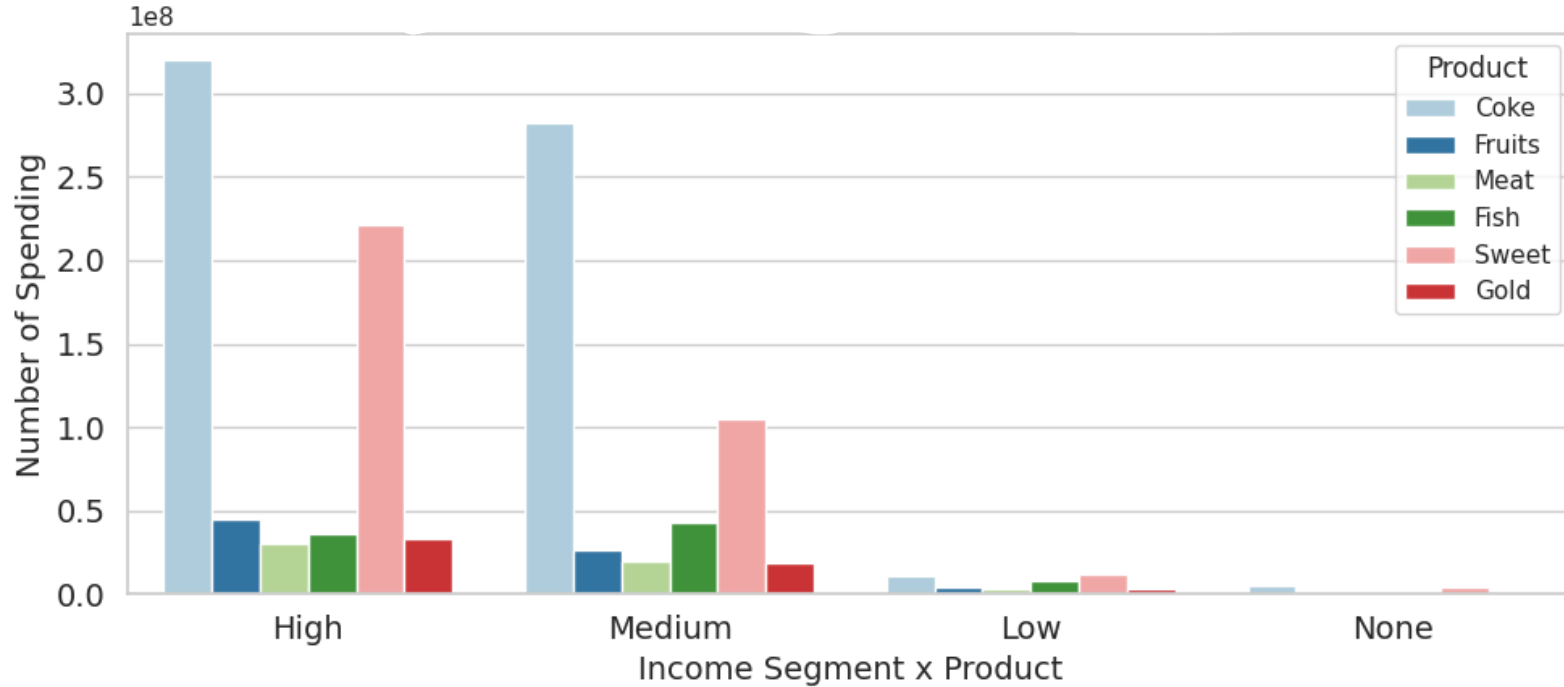
Higher the income, more likely to give response for campaign



Income Segment vs Response



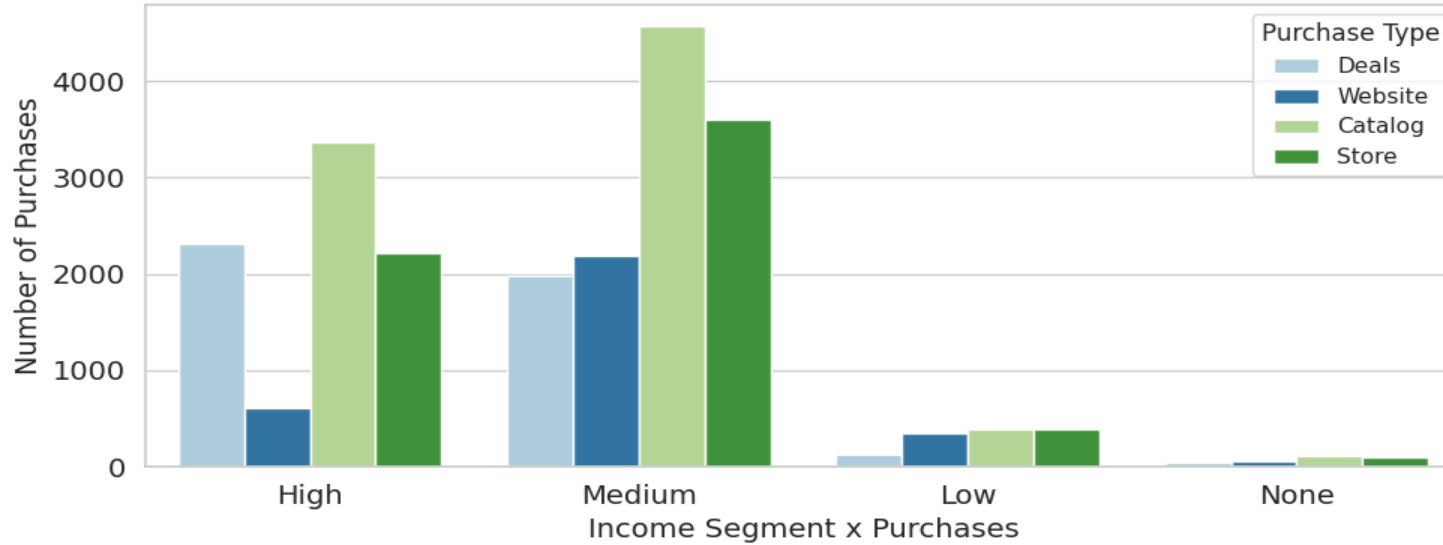
Comparison of Income Segment in Product



for products that are often purchased there are 2 products are coke and sweet products

Comparison of Income Segment in Purchase Type

Customers who have in High on average use Purchases Discount and Catalog

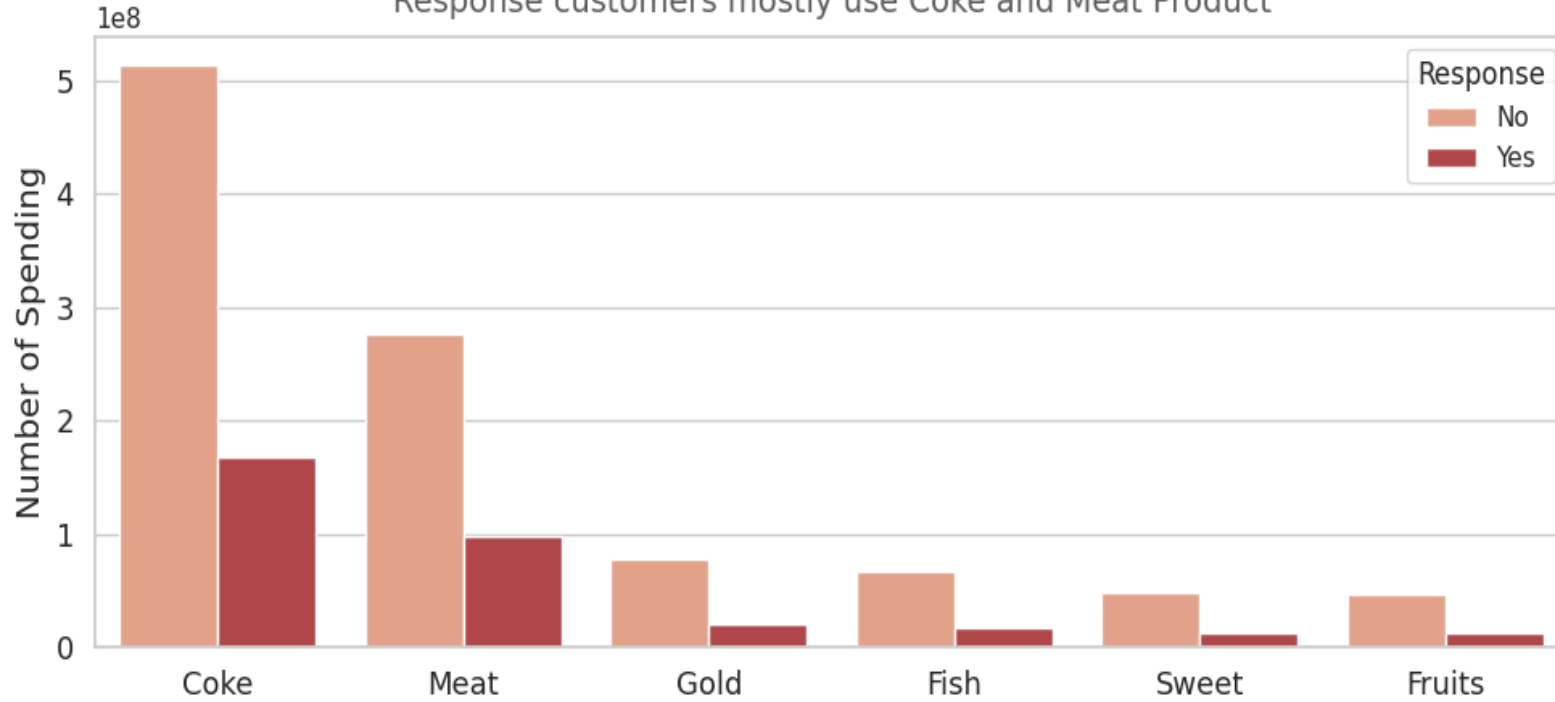


in the data, it can be concluded that customers prefer purchases using catalogs and direct purchases at the store.

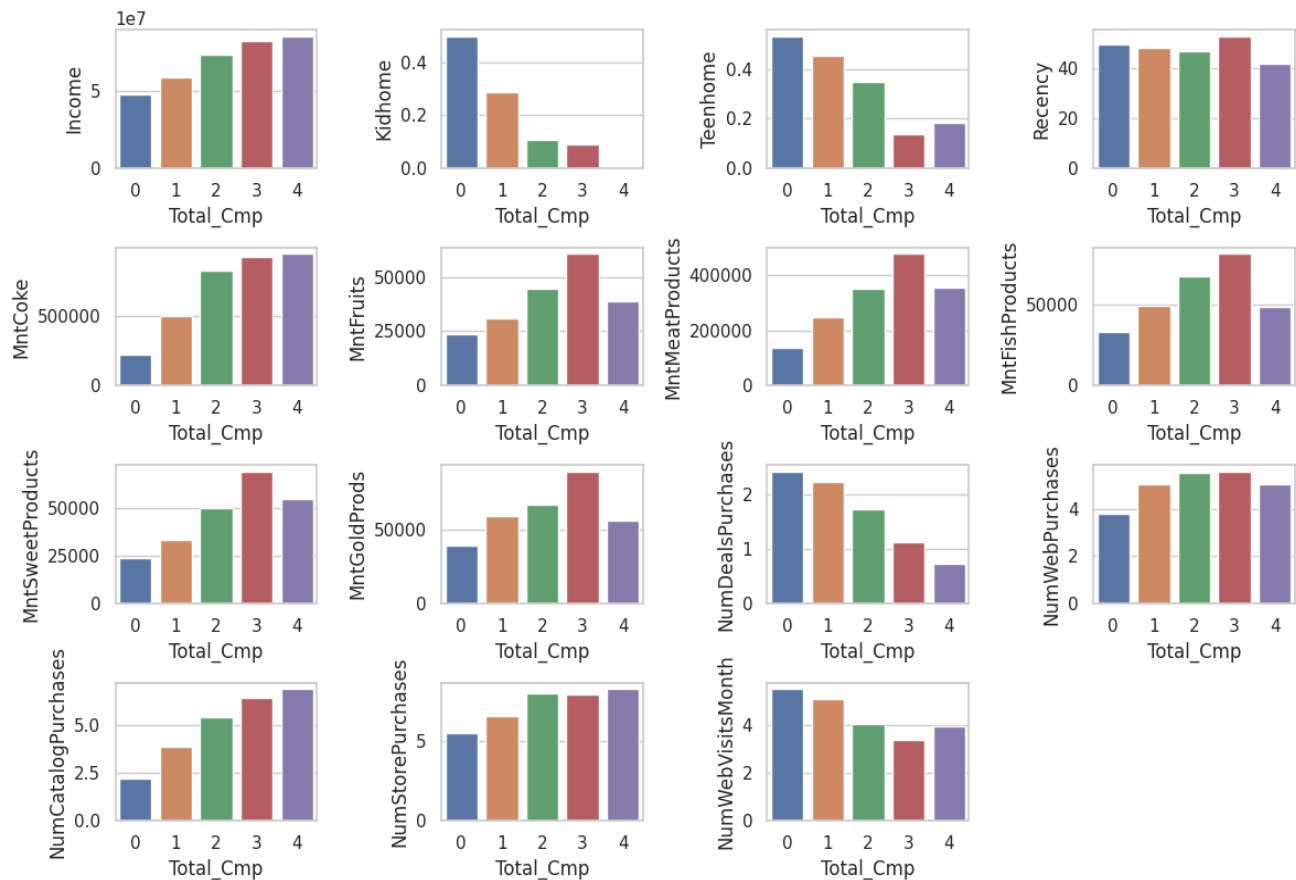
Income Segment vs Purchase Type

Comparison of Response Users in Spending Product

Response customers mostly use Coke and Meat Product



Product vs Response



Total Campaign vs Num Values

Conclusions

Business Insight 1



The older the customer, the greater the need, it has been proven that most customers who make transactions are adults and old.

Therefore, I would recommend making the store more comfortable so that customers who are a little older can feel comfortable while shopping.

Conclusions

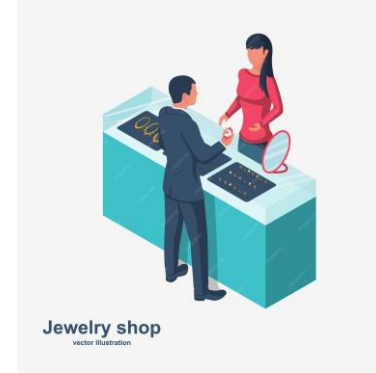
Business Insight 2



Since the most purchased products are Coke and Sweet products, we will offer these 2 products to customers who are Remaja and Dewasa with discounts such as buy 2 get 1 free.

Conclusions

Business Insight 3



The customers who shop at the store are mostly middle-class customers, as evidenced by the top 3 products that are frequently purchased are coke, meat, and gold.

In order to attract customers' attention and increase sales, the marketing team will offer attractive discounts, such as a 5% discount on each purchase of meat combined with a purchase of gold, or we can recommend store membership to high-end customers by offering special prices on gold purchases.



Thanks!

