TikTok Shop impulsivity

Factors influencing the impulse buying behavior of students on TikTok Shop

NTI: Data Analysis -Class A
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Background

As was required, our team has gone through different data analysis life cycle...

we will go through multiple phases in this presentation

- Get to know our data. (Data Preprocessing)
- Data Processing
- Data Analysis
- Data Visualization
- Key Insights

What is Tiktok Shop?

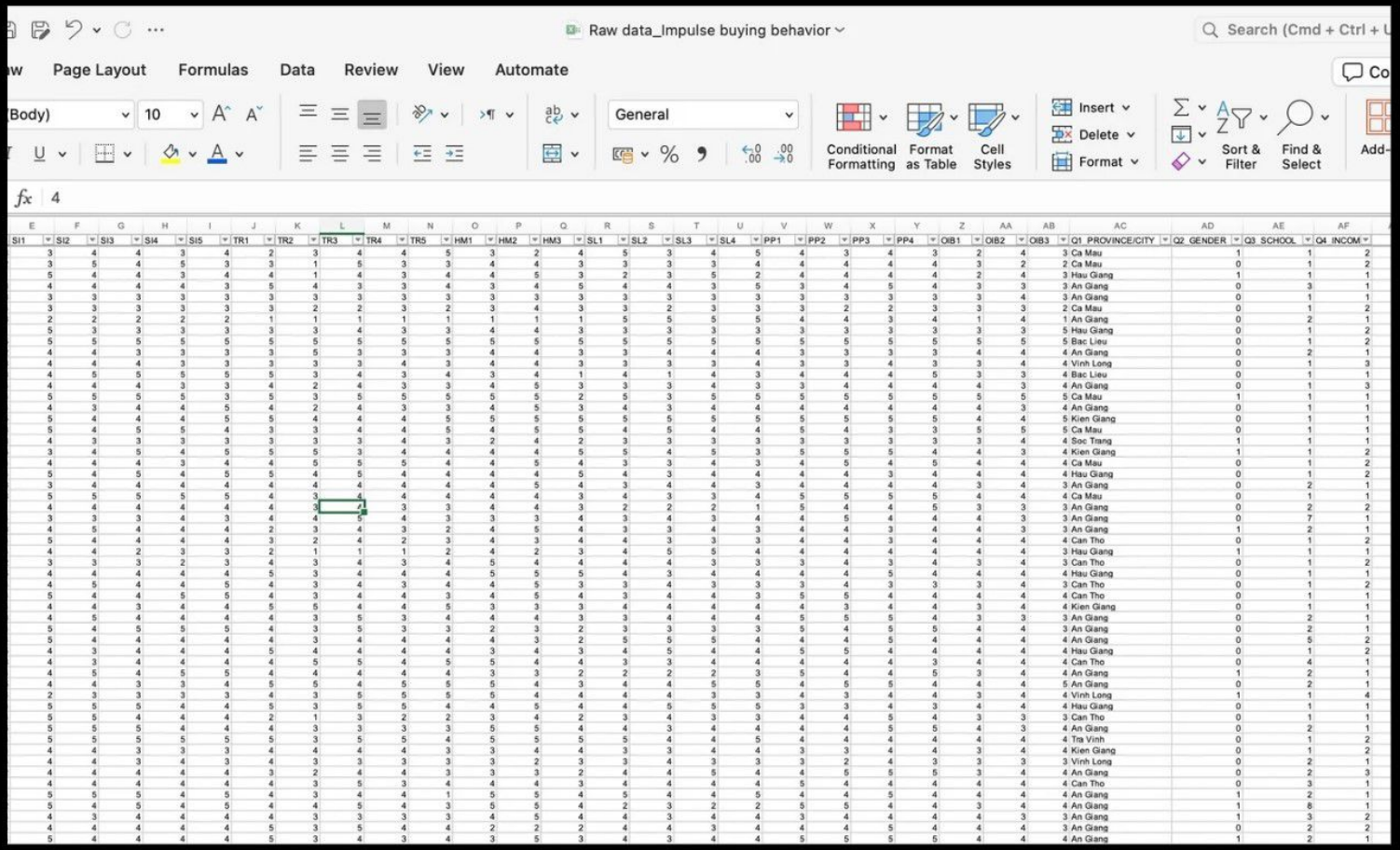
TikTok Shop is a platform that allows sellers to sell products directly on TikTok through in-feed videos, LIVE videos, and the Showcase tab. It's essentially an e-commerce platform integrated into the popular social media app.

Data Review

Screening question

- Please let us know if you have ever shopped on TikTok Shop? Ever (Continue the survey)
- Never (Stop the survey)

Measure the level of evaluation of factors affecting online impulsive buying behavior on TikTok Shop (1: Very disagree → 5: Very agree)



Scarcity:

It focuses on customers' feelings about the limited availability of products or the time constraints of promotions

Questions:

- You think about the deadline for a promotion I can buy on TikTok Shop.
- You are worried about the remaining time of the promotion when shopping on TikTok Shop.
- You think about the limited quantity of that product when shopping on TikTok Shop.
- You are worried about out of stock when shopping on TikTok Shop.

Serendipity Information:

It addresses customer experiences where they feel surprised or delighted when encountering new or unplanned products or information while shopping

Questions:

- You happened to see a product you wanted to buy before, while shopping on TikTok Shop.
- You find things that will surprise you when you shop on TikTok Shop.
- You get more than you expect when you shop on TikTok Shop.
- TikTok Shop gives you fresh information while shopping.
- TikTok Shop gives you information relevant to the product you want to buy in a surprising way

Trust:

This factor evaluates customers' trust in the TikTok Shop platform

Questions:

- You trust that there is no risk when shopping on TikTok Shop.
- You trust that online shopping on TikTok Shop can be trusted.
- You trust that TikTok Shop offers a variety of products that meet my needs.
- You trust that TikTok Shop sells products honestly.
- You trust that the quality of products on TikTok Shop matches the description information.

Hedonic Motivation:

It focuses on emotional motivations that make shopping a pleasurable activity, such as entertainment, stress relief, or taking advantage of discounts and promotions.

Questions:

- Shopping on TikTok Shop helps you relax and reduce stress.
- You will be more motivated to shop if the product is discounted or promoted on TikTok Shop.
- You will be more motivated to shop when you buy products as gifts or for others on TikTok Shop.

Product Presentation:

This factor examines how the way products are presented impacts purchasing decisions.

Questions:

- Products on TikTok Shop are fully described with information to help you make a quick buying decision.
- Product illustrations on TikTok Shop are of high quality, attracting you to make a quick purchase.
- Illustrations of products on TikTok Shop are depicted from many different angles to help you make an easy buying decision.
- Suggested information related to products on TikTok Shop is rich and diverse to help you make buying decisions easily.

Shopping Lifestyle:

It examines how lifestyle-related aspects impact the likelihood of making quick purchasing decisions.

Questions:

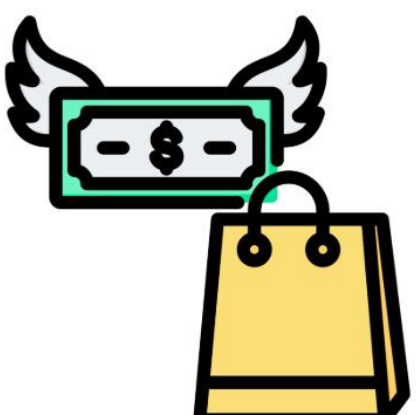
- The product has similarities with products from famous brands, so it makes you buy faster on TikTok Shop.
- Because it is a newly launched product, it makes you buy faster on TikTok Shop.
- Because this is a product from a famous brand, it is easier for you to buy on TikTok Shop.
- Products with differences in design and shape make it easier for you to buy on TikTok Shop.

Online Impulse Buying:

This factor describes purchasing behavior that occurs without prior planning or clear intention.

Questions:

- Before visiting TikTok Shop, you had no plans to buy the product.
- While browsing TikTok Shop, you have no intention of buying this product.
- Buying products on TikTok Shop, comes spontaneous to you.

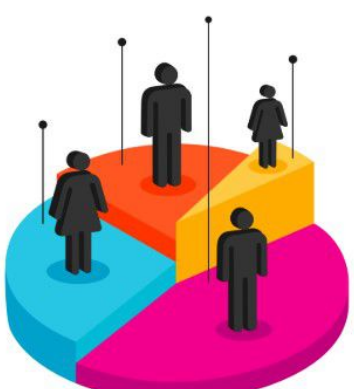


Demographics:

Different attributes to get to know the customer

Questions:

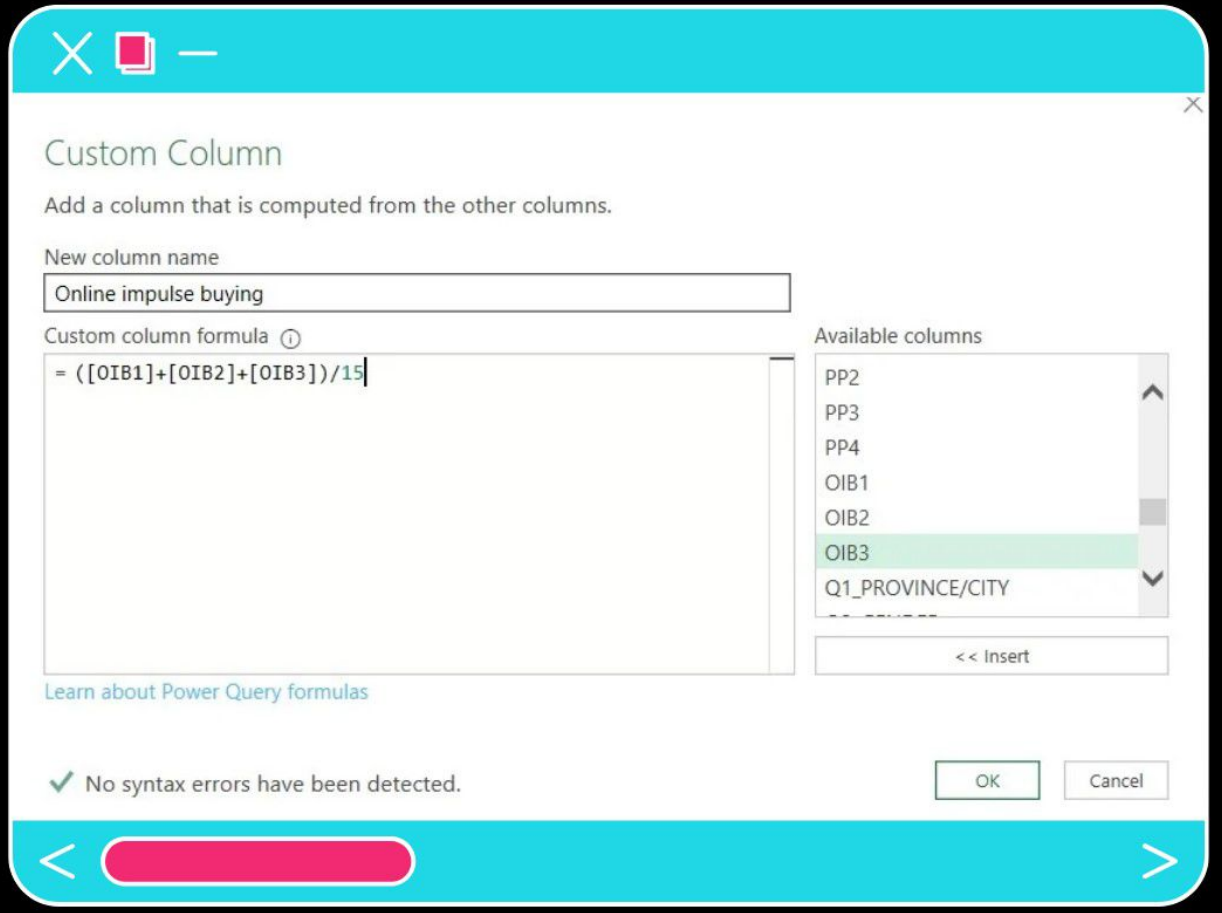
- Gender
- Education
- Income
- Location



Data Processing:

Screening question

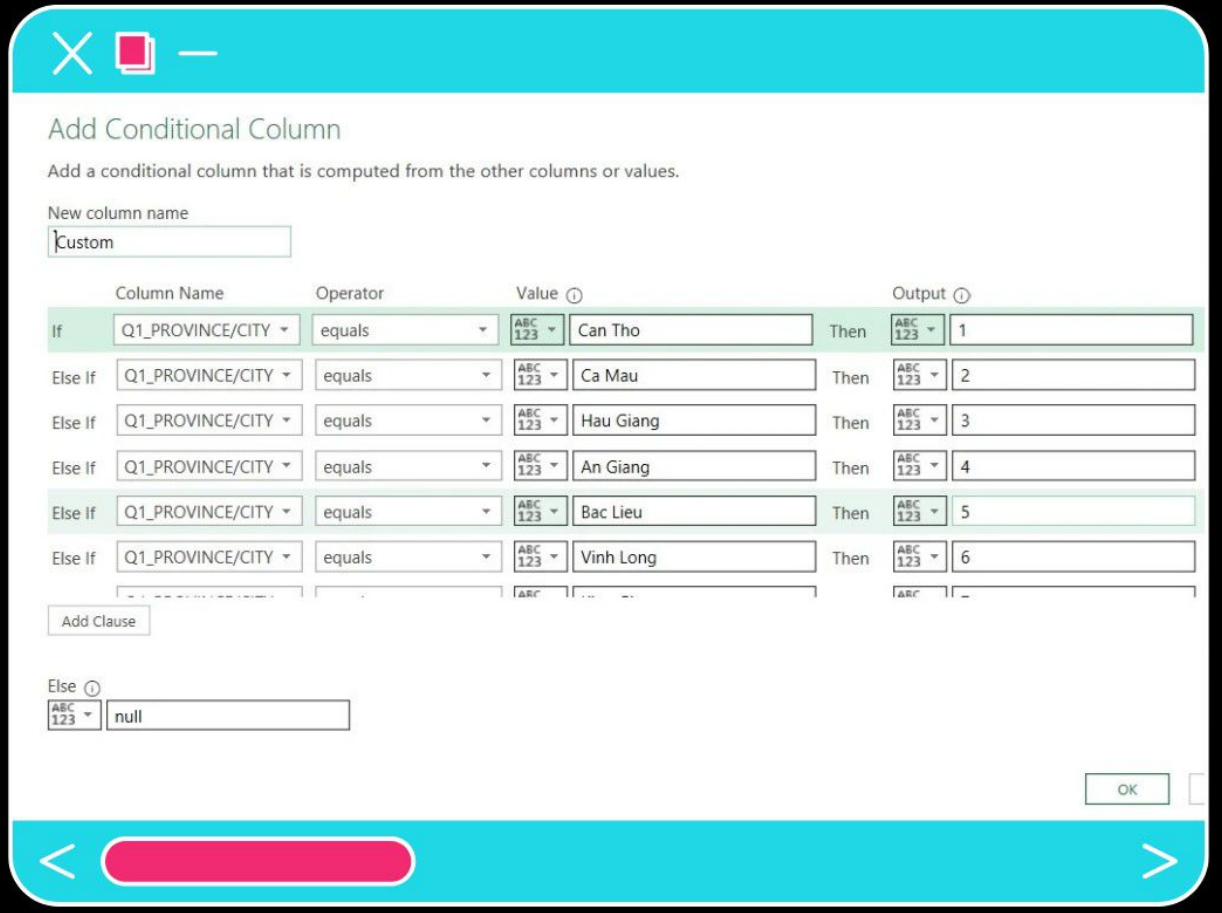
- Data Cleaning
- City Encoding (For the ML model)
- Calculating Normalized Scores For Main Features (For ML Model)



Data Processing:

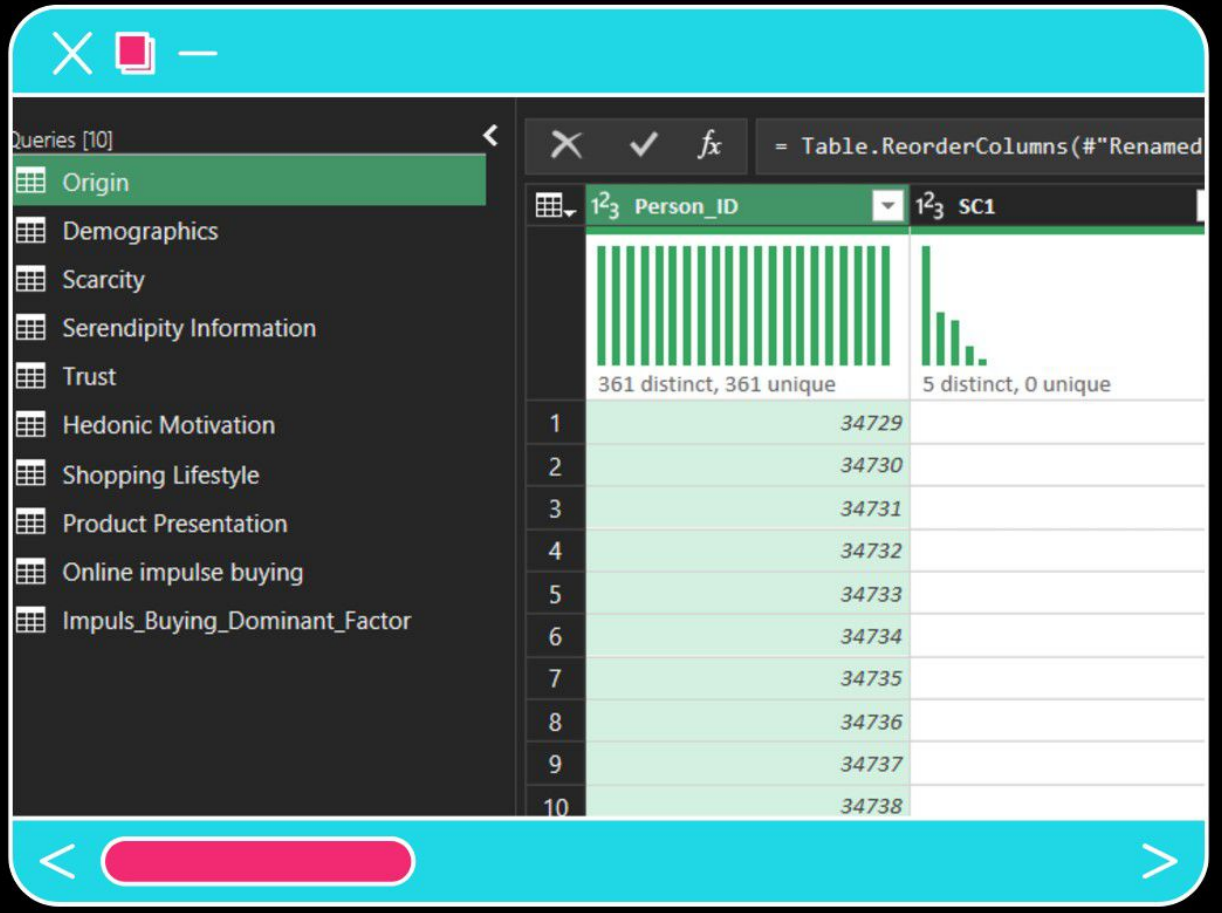
Screening question

- Data Cleaning (Checking Outliers, nulls, and so on..)
- City Encoding (For the ML model)
- Calculating Dominant Features (For ML Model)



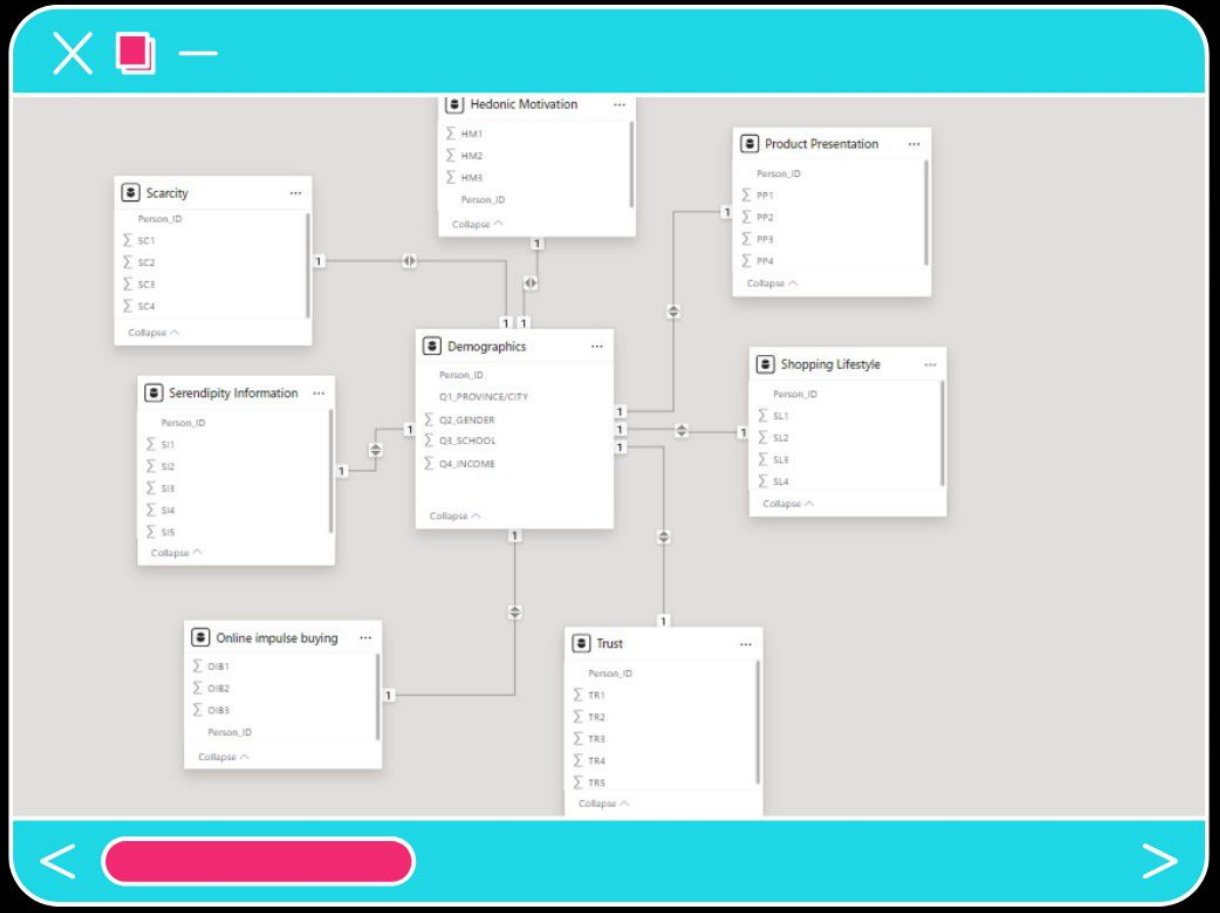
Data Processing:

Creating Dimensions for the Data Model



Data Processing:

Building The Data Model



ML Model

+ Code + Text

RAM
Disk

```
[2] import pandas as pd
    from sklearn.model_selection import train_test_split
    from sklearn.ensemble import RandomForestClassifier
    from sklearn.metrics import classification_report, accuracy_score
```

```
[12] data = pd.read_csv('Impulse buying behavior_Processed.csv')
     data.head()
```

	Person_ID	Q1_PROVINCE/CITY	Q2_GENDER	Q3_SCHOOL	Q4_INCOME	S	SI	T	HM	SL	PP	OIB	City_Encoded
0	34729	Can Tho	0	1	1	1.00	0.76	0.84	0.800000	0.75	0.7	0.733333	1
1	34730	Ca Mau	1	1	2	0.70	0.72	0.72	0.600000	0.85	0.7	0.600000	2
2	34731	Ca Mau	0	1	2	0.50	0.80	0.60	0.733333	0.65	0.8	0.466667	2
3	34732	Hau Giang	1	1	1	0.35	0.80	0.64	0.800000	0.60	0.8	0.600000	3
4	34733	An Giang	0	3	1	0.70	0.76	0.76	0.800000	0.80	0.8	0.600000	4

ML Model

```
[13] factors = ['S', 'SI', 'T',  'HM', 'SL', 'PP', 'OIB']
     data['DominantFactor'] = data[factors].idxmax(axis=1)
```

```
[61] X = data[['Q2_GENDER', 'Q4_INCOME']]
     y = data['DominantFactor']
```

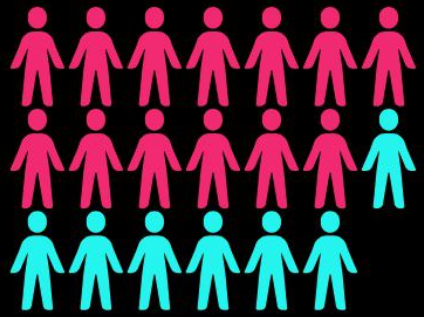
```
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.44, random_state=42)

model = RandomForestClassifier(random_state=42)
model.fit(X_train, y_train)

y_pred = model.predict(X_test)

print("Accuracy:", accuracy_score(y_test, y_pred))
print(classification_report(y_test, y_pred))
```

```
Accuracy: 0.22641509433962265
              precision    recall  f1-score   support

          HM       0.24      0.29      0.26        28
         OIB       0.00      0.00      0.00        12
          PP       0.20      0.05      0.07        22
           S       0.22      0.72      0.34        32
          SI       0.24      0.15      0.18        27
          SL       0.00      0.00      0.00        24
           T       0.00      0.00      0.00        14

    accuracy                           0.23       159
   macro avg       0.13      0.17      0.12       159
weighted avg       0.15      0.23      0.16       159
```

Demographics

01

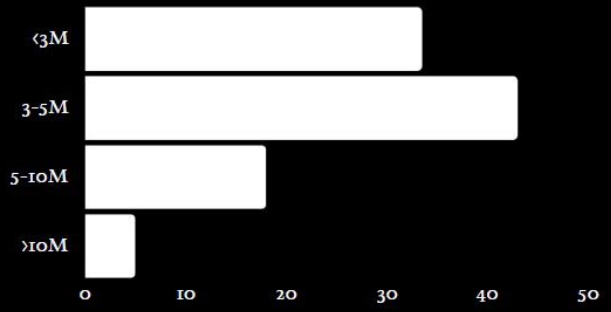
Gender



65.1%% of the sample are Females

02

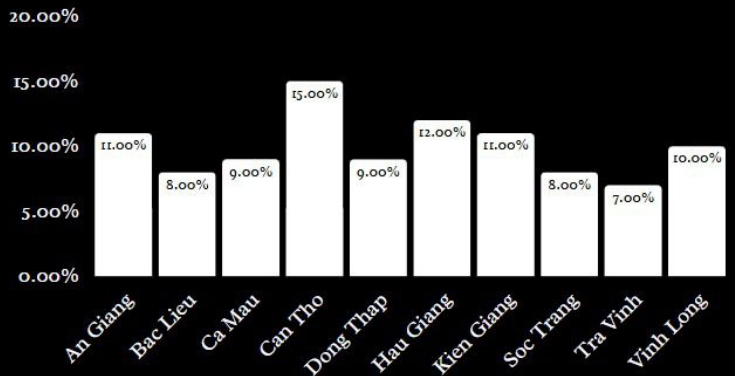
Income



Majority of the responders have income 3-5M Vietnamese dong

03

Home Location



The majority of the responders are fairly distributed along all the cities

Dashboard

TikTok Shop impulsivity

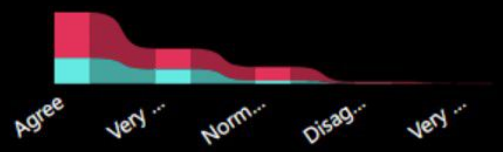
361
No. of Customers

Can Tho
Top City

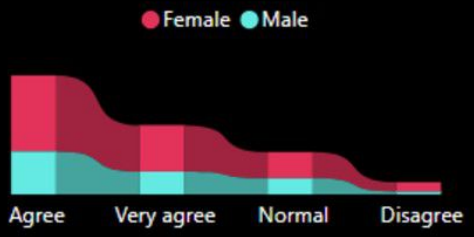
AVG Income VD.
From 3 - 5 million

Added Value

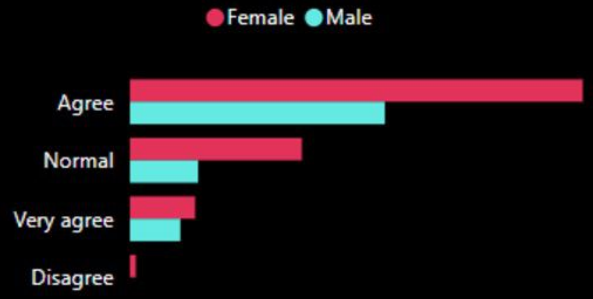
Product Presentation



Fear of Missing Out



Online Impulse



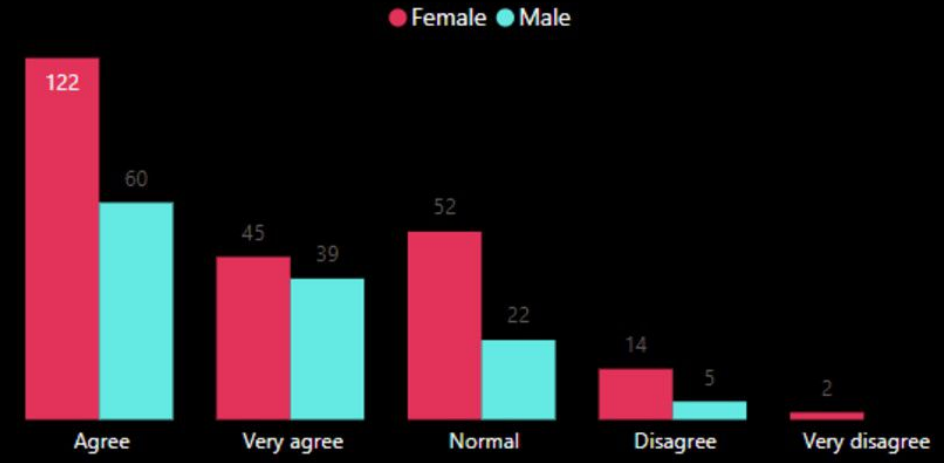
Income

All

Cities

All

Desire to Engage



Key Insights

Based on the Income:

- Under 3 Million VD
  - Hedonic Motivation.
- 3-5 Million VD
  - Serendipity Information.
  - Online impulse Buying.
- 5-10 Million VD
  - Product Presentation.
- Over 10 Million
  - Scarcity
  - Hedonic Motivation.

ThankS
For Reading!