



# Analysis of Amazon's Consumer Behavior

Team 3: Vũ Đăng Khoa

Mentor: Mr. Rinez

# amazon



# Table of Contents



1	Company and Dataset Introduction	3
2	Data Preparation and Cleaning	8
3	Customer Analysis	11
4	Experience Analysis	18
5	Recommendation	21
6	References	23

# INTRODUCTION

## COMPANY - DATASET

# ABOUT THE COMPANY

## AMAZON.COM

**Amazon.com, Inc.** is an American multinational technology company focusing on **e-commerce, cloud computing, online advertising, digital streaming, and artificial intelligence**. It is considered one of the Big Five American technology companies, alongside Alphabet, Apple, Meta and Microsoft.



# ABOUT THE DATASET

```
df.info()  
  
-> <class 'pandas.core.frame.DataFrame'>  
RangeIndex: 602 entries, 0 to 601  
Data columns (total 23 columns):  
 #   Column           Non-Null Count  Dtype     
 ---  --  
 0   Timestamp        602 non-null    object    
 1   age              602 non-null    int64    
 2   Gender            602 non-null    object    
 3   Purchase_Frequency 602 non-null    object    
 4   Purchase_Categories 602 non-null    object    
 5   Personalized_Recommendation_Frequency 602 non-null    object    
 6   Browsing_Frequency 602 non-null    object    
 7   Product_Search_Method 600 non-null    object    
 8   Search_Result_Exploration 602 non-null    object    
 9   Customer_Reviews_Importance 602 non-null    int64    
 10  Add_to_Cart_Browsing 602 non-null    object    
 11  Cart_Completion_Frequency 602 non-null    object    
 12  Cart_Abandonment_Factors 602 non-null    object    
 13  Saveforlater_Frequency 602 non-null    object    
 14  Review_Left          602 non-null    object    
 15  Review_Reliability 602 non-null    object    
 16  Review_Helpfulness 602 non-null    object    
 17  Personalized_Recommendation_Frequency 602 non-null    int64    
 18  Recommendation_Helpfulness 602 non-null    object    
 19  Rating_Accuracy 602 non-null    int64    
 20  Shopping_Satisfaction 602 non-null    int64    
 21  Service_Appreciation 602 non-null    object    
 22  Improvement_Areas 602 non-null    object    
  
dtypes: int64(5), object(18)  
memory usage: 108.3+ KB
```



22 COLUMNS

602 ROWS



# ABOUT THE DATASET

**Age****Customer Age****Purchase Frequency**

How frequently do you make purchases on Amazon?

**Gender****Customer Gender****Purchase Categories**

What product categories do you typically purchase on Amazon?

**Add\_to\_Cart Browsing**

Do you add products to your cart while browsing on Amazon?

**Shopping Satisfaction**

How satisfied are you with your overall shopping experience on Amazon?

**Cart Completion Frequency**

How often do you complete the purchase after adding products to your cart

**Service Appreciation**

What aspects of Amazon's services do you appreciate the most?

**Cart Abandonment Factors**

What factors influence your decision to abandon a purchase in your cart?

**Improvement Areas**

Are there any areas where you think Amazon can improve?



In this project, the team utilized the Python programming language along with a set of libraries to filter, preprocess raw data, and generate visualizations.



The data was queried consistently throughout the project using Azure Data Studio software, employing SQL query language.

# DATA PREPARING - CLEANING

# LIBRARIES IMPORT



```
[2]: import pandas as pd  
import numpy as np  
import matplotlib.pyplot as plt  
import seaborn as sns  
%matplotlib inline  
import matplotlib
```

```
[6]: df = pd.read_csv('/content/Amazon Customer Behavior Survey.csv')  
df
```

	Timestamp	age	Gender	Purchase_Frequency	Purchase_Categories	Personalized_Recommendation_Frequency	Browsing_Frequency	Product_Search_Method	Search_Result_Exploration	Customer_Reviews_Importance	.
0	2023/06/04 1:28:19 PM GMT+5:30	23	Female	Few times a month	Beauty and Personal Care	Yes	Few times a week	Keyword	Multiple pages	1	
1	2023/06/04 2:30:44 PM GMT+5:30	23	Female	Once a month	Clothing and Fashion	Yes	Few times a month	Keyword	Multiple pages	1	
2	2023/06/04 5:04:56 PM GMT+5:30	24	Prefer not to say	Few times a month	Groceries and Gourmet Food; Clothing and Fashion	No	Few times a month	Keyword	Multiple pages	2	
3	2023/06/04 5:13:00 PM GMT+5:30	24	Female	Once a month	Beauty and Personal Care; Clothing and Fashion;...	Sometimes	Few times a month	Keyword	First page	5	
4	2023/06/04 5:28:06 PM GMT+5:30	22	Female	Less than once a month	Beauty and Personal Care; Clothing and Fashion	Yes	Few times a month	Filter	Multiple pages	1	
...	...	...	...	...	...	...	...	...	...	...	...

# DUPLICATE CHECK



Duplicate value check

```
[ ] df[df.duplicated()]
```

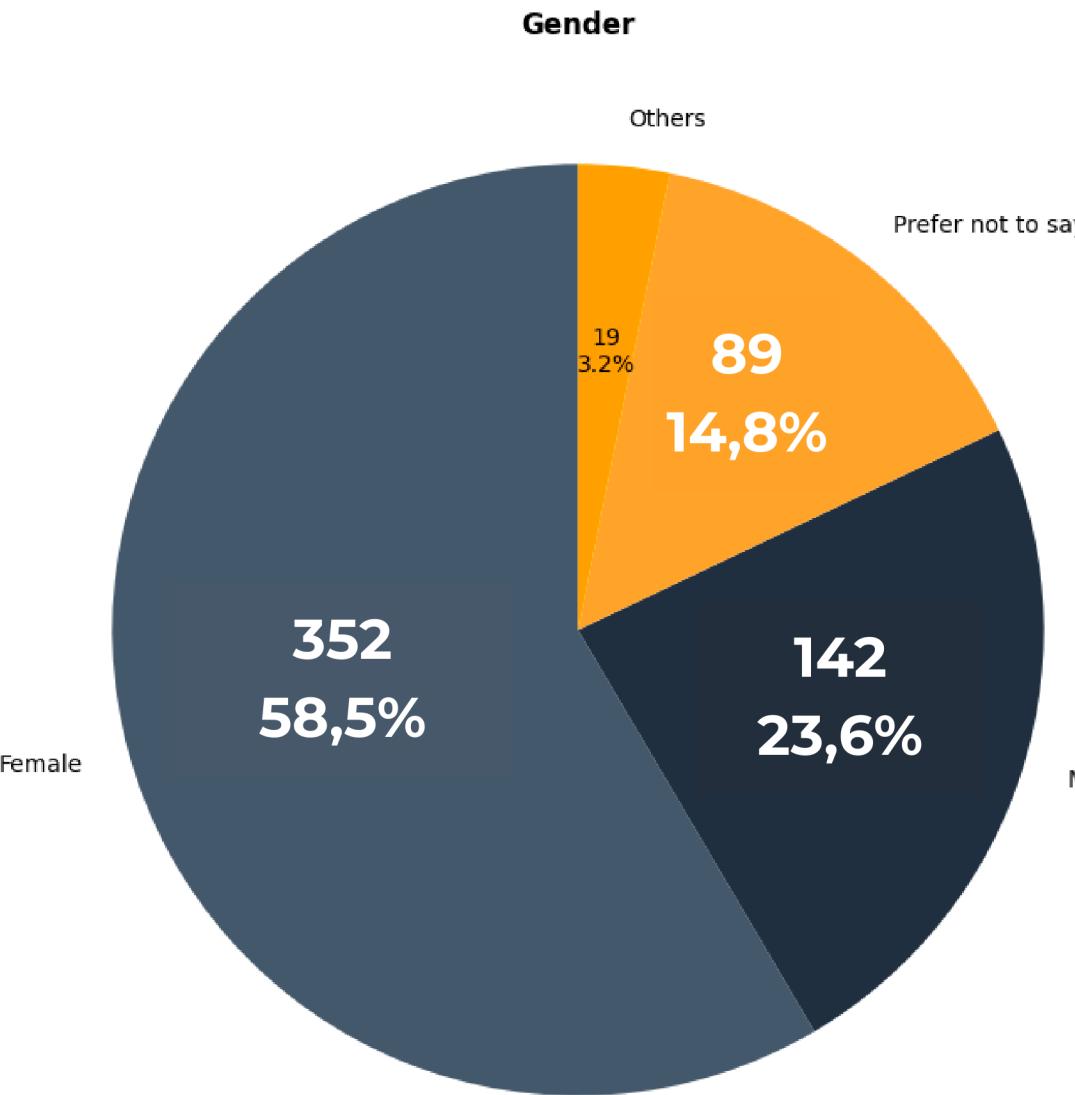
```
Timestamp  age  Gender  Purchase_Frequency  Purchase_Categories  Personalized_Recommendation_Frequency
0 rows × 23 columns
```

● No duplicate value

# WHO ARE AMAZON'S CUSTOMER?

## CUSTOMER ANALYSIS

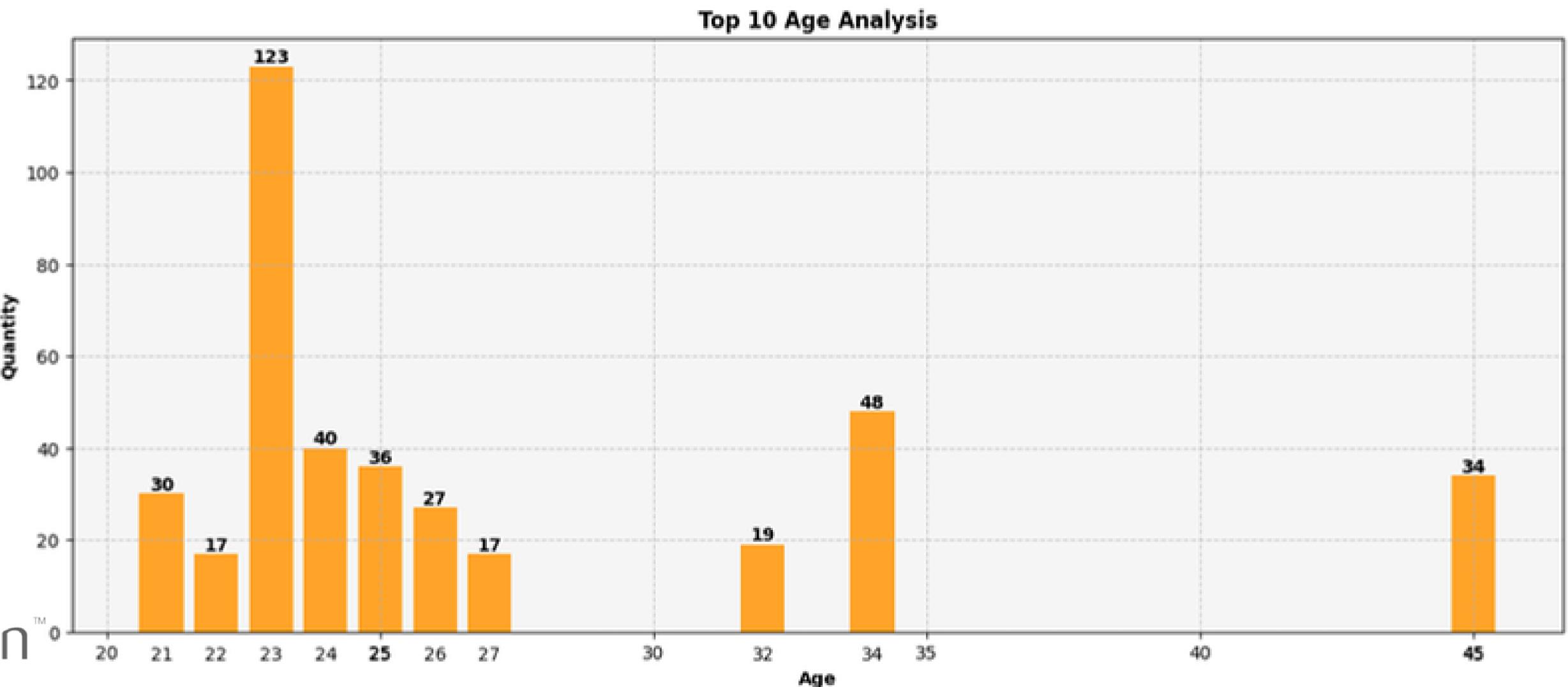


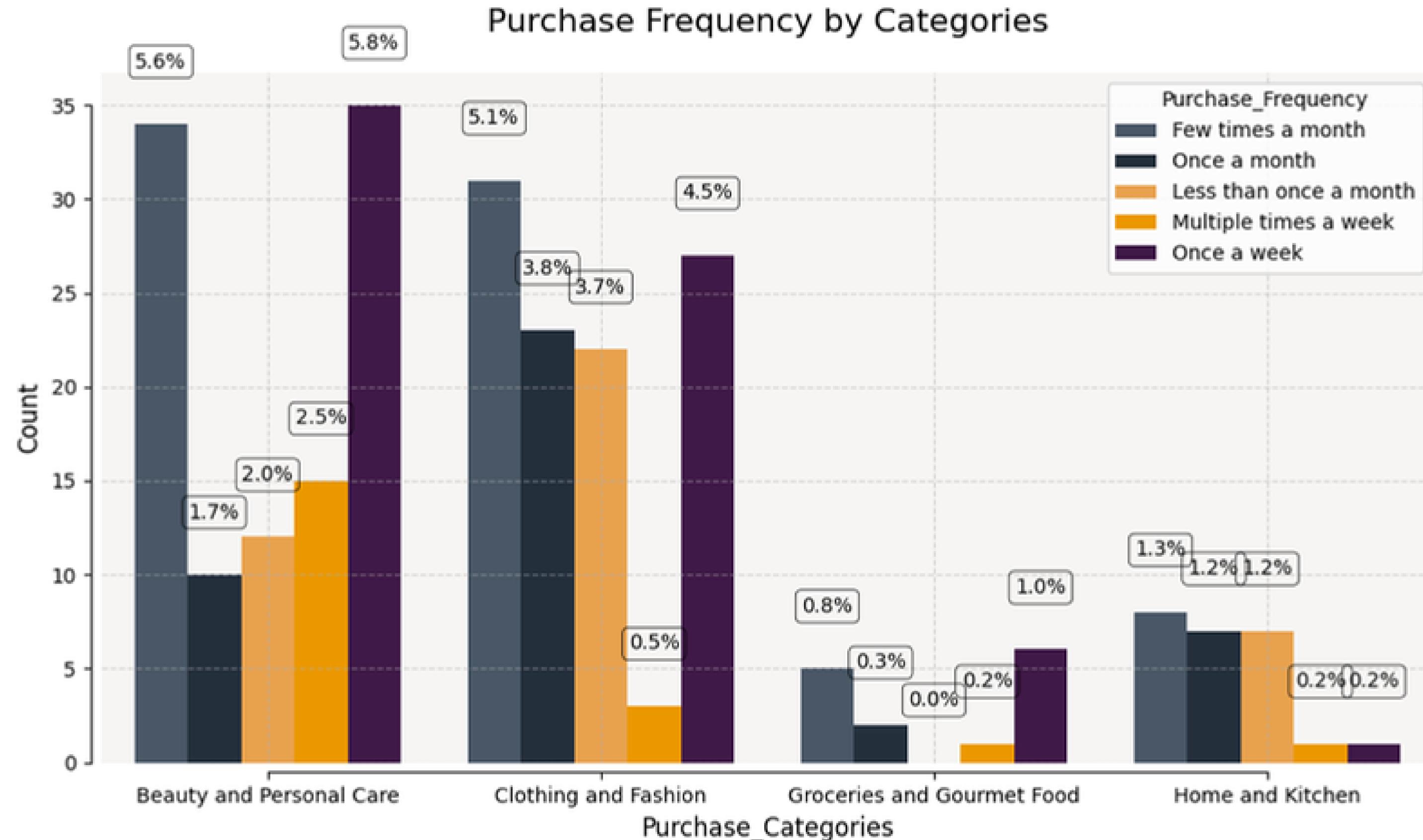
**Age:**

- Age group between **20-50** are the main consumers.
- There's a peak around the age of **23** with **over 120 respondents**.

**Gender:**

- Over **58%** of the shoppers identify as female
- Additionally, nearly **15%** prefer not to be identified with any gender, which could **increase the percentage of female shoppers to over 70%**.



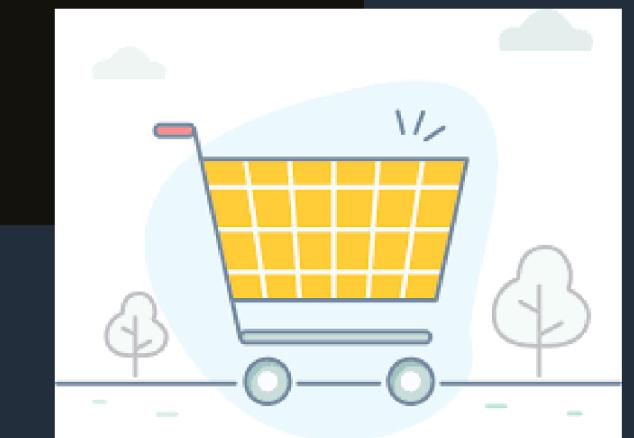


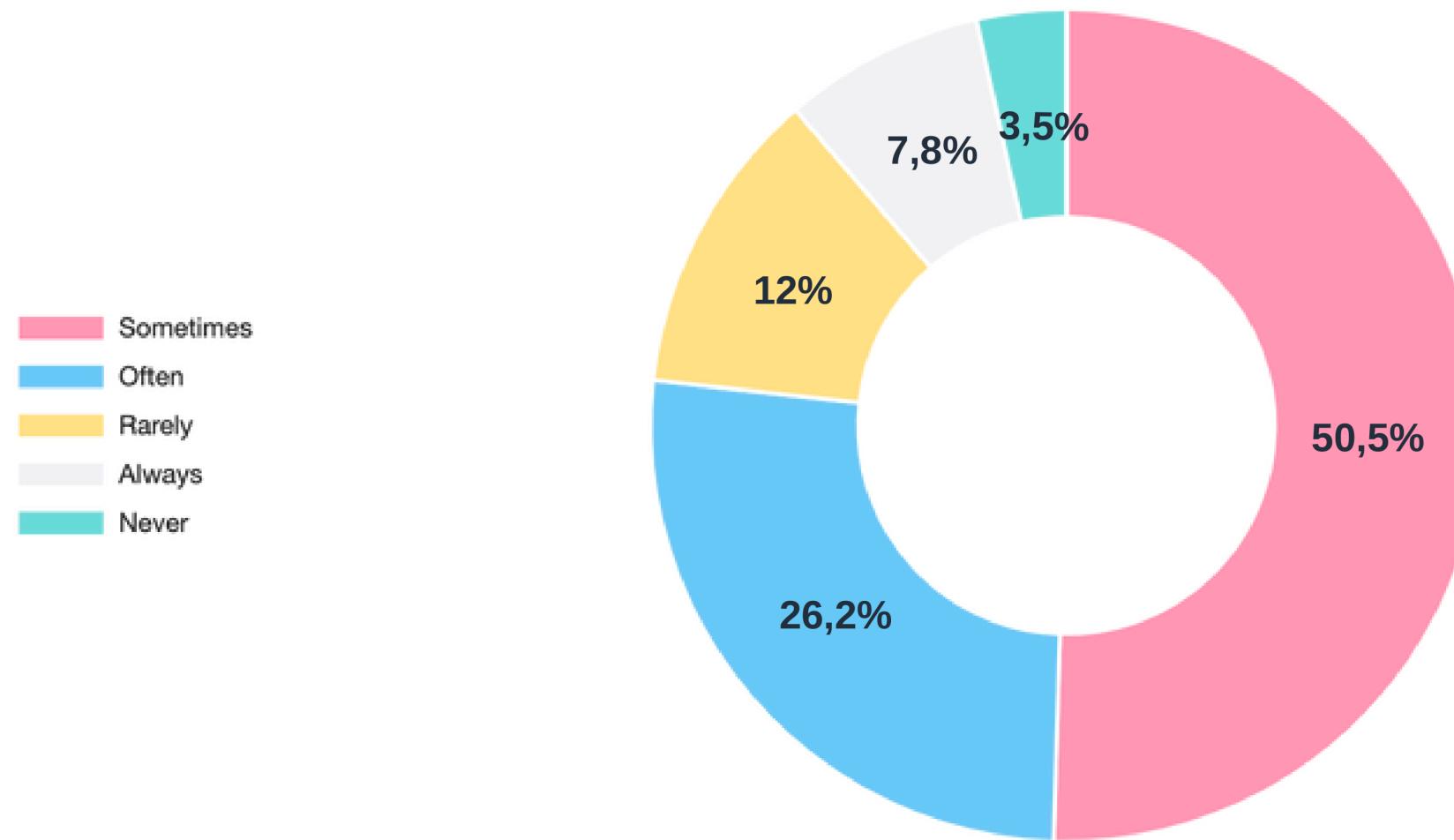


 python™

- **Clothing** and **Fashion** are the categories with the most mentions among favorites
- Following closely are **Beauty** and **Personal Care** items essentials, which also enjoy considerable popularity.

# WHAT FACTORS LEAD TO THE DECISION OF CART ABANDONMENT? SOLUTIONS? BEHAVIOR ANALYSIS





### Cart Completion Frequency

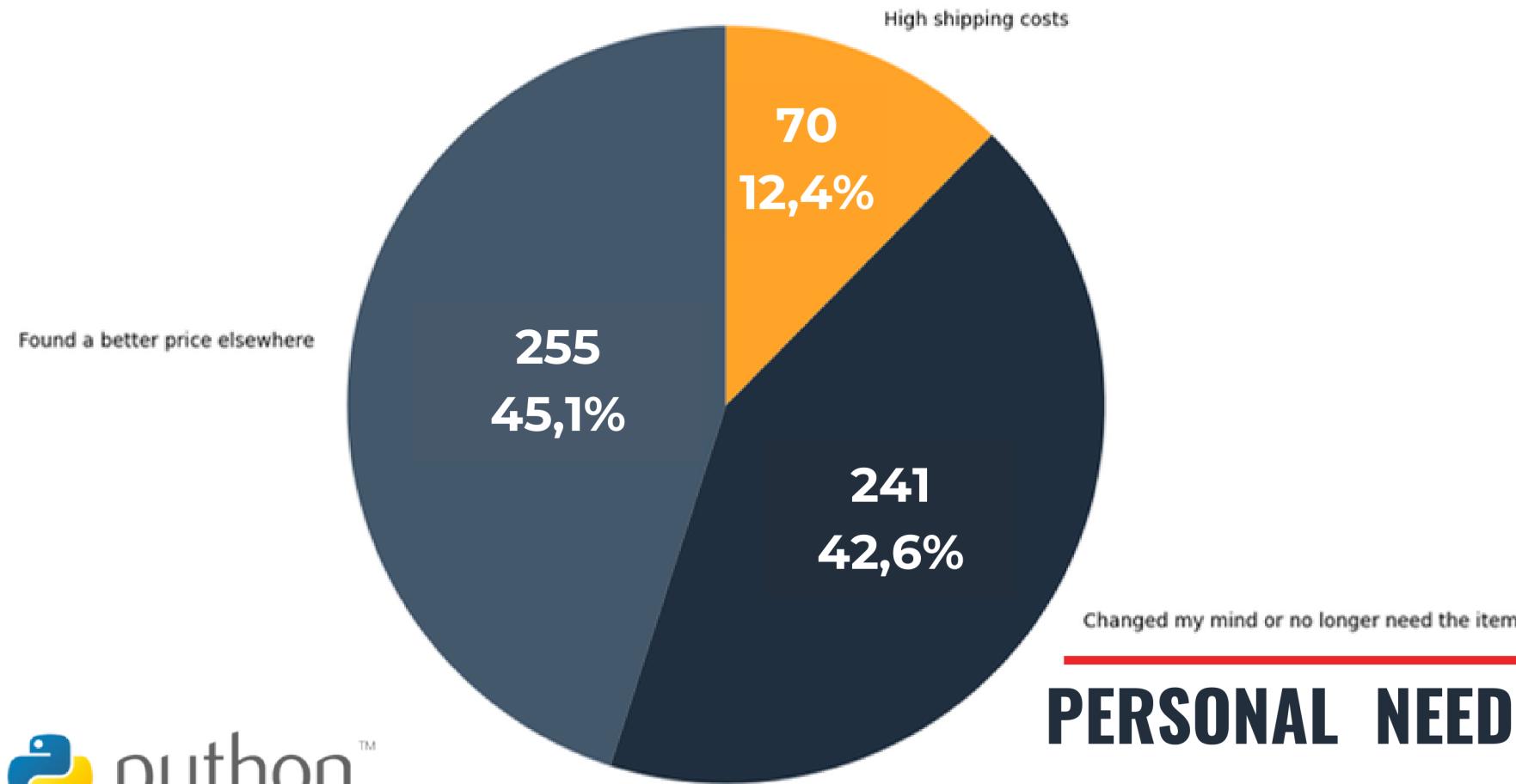


	Cart_Completion_Frequency	Quantity
1	Sometimes	304
2	Often	158
3	Rarely	72
4	Always	47
5	Never	21

In general, it appears that only **8%** of the total respondents completed their carts. The remaining portion **often or rarely** finalized their shopping carts. Therefore, we will delve into the reasons why they make such decisions.



Top 3 Factors Lead To Abandonment



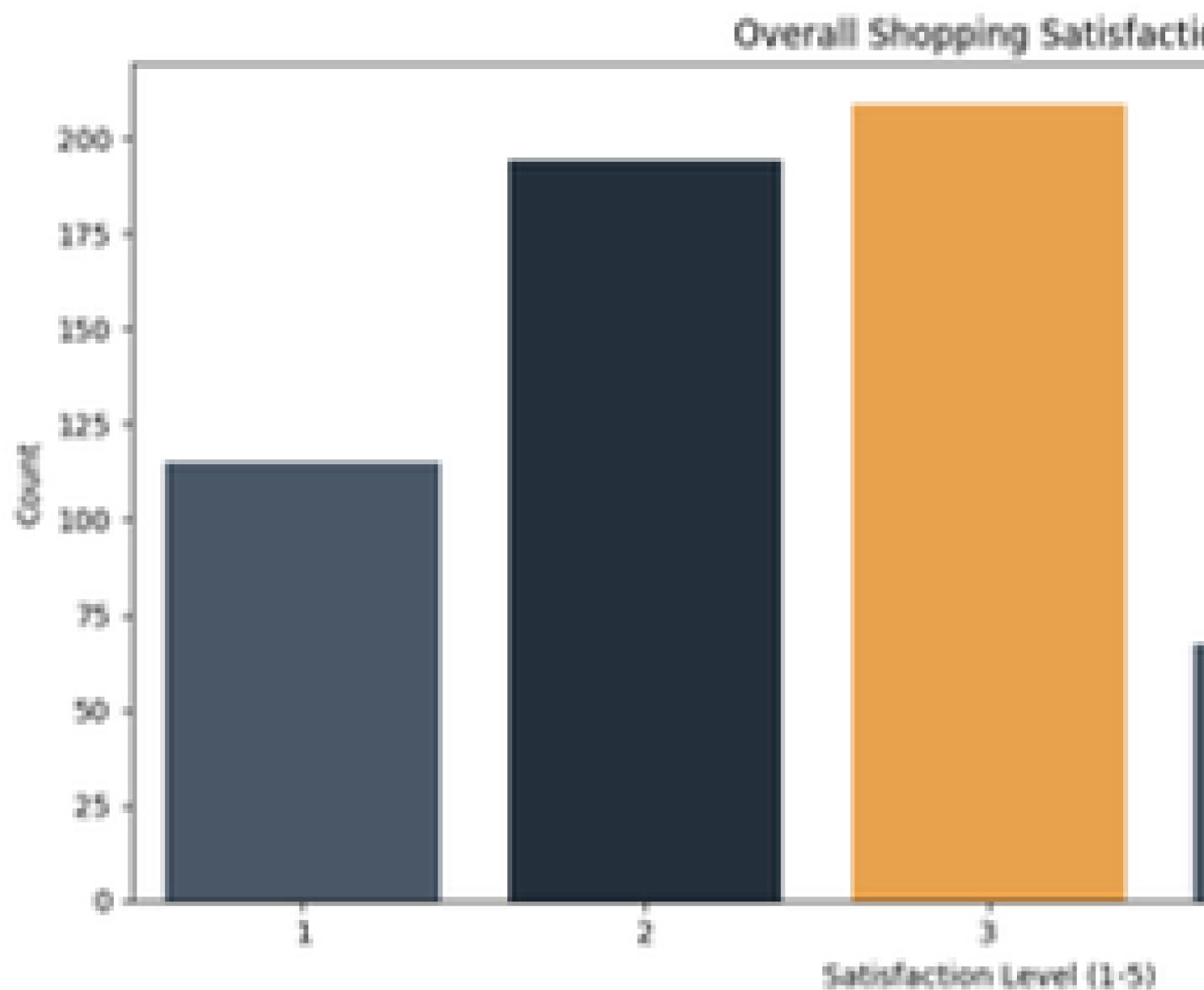
Factors Lead To Abandonment	Quantity
1 Found a better price elsewhere	255
2 Changed my mind or no longer need the item	241
3 High shipping costs	70
4 others	36

## PERSONAL NEEDS

- The primary factor that makes customers decide to abandon their shopping carts is **Finding a better price**, accounting for **45%** of the total votes.
- Following is the issue of high shipping costs, constituting over **12%** of the total votes.

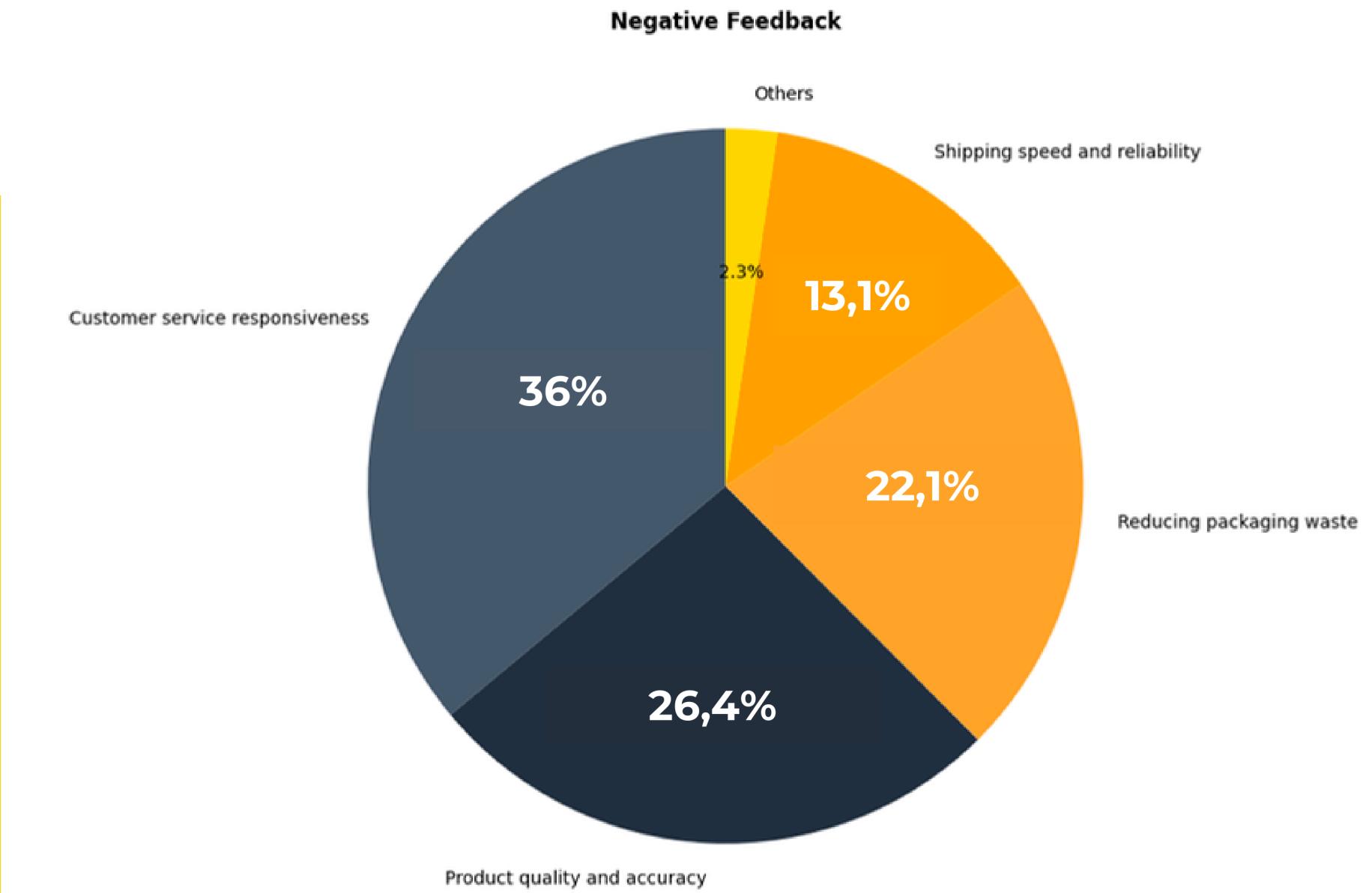
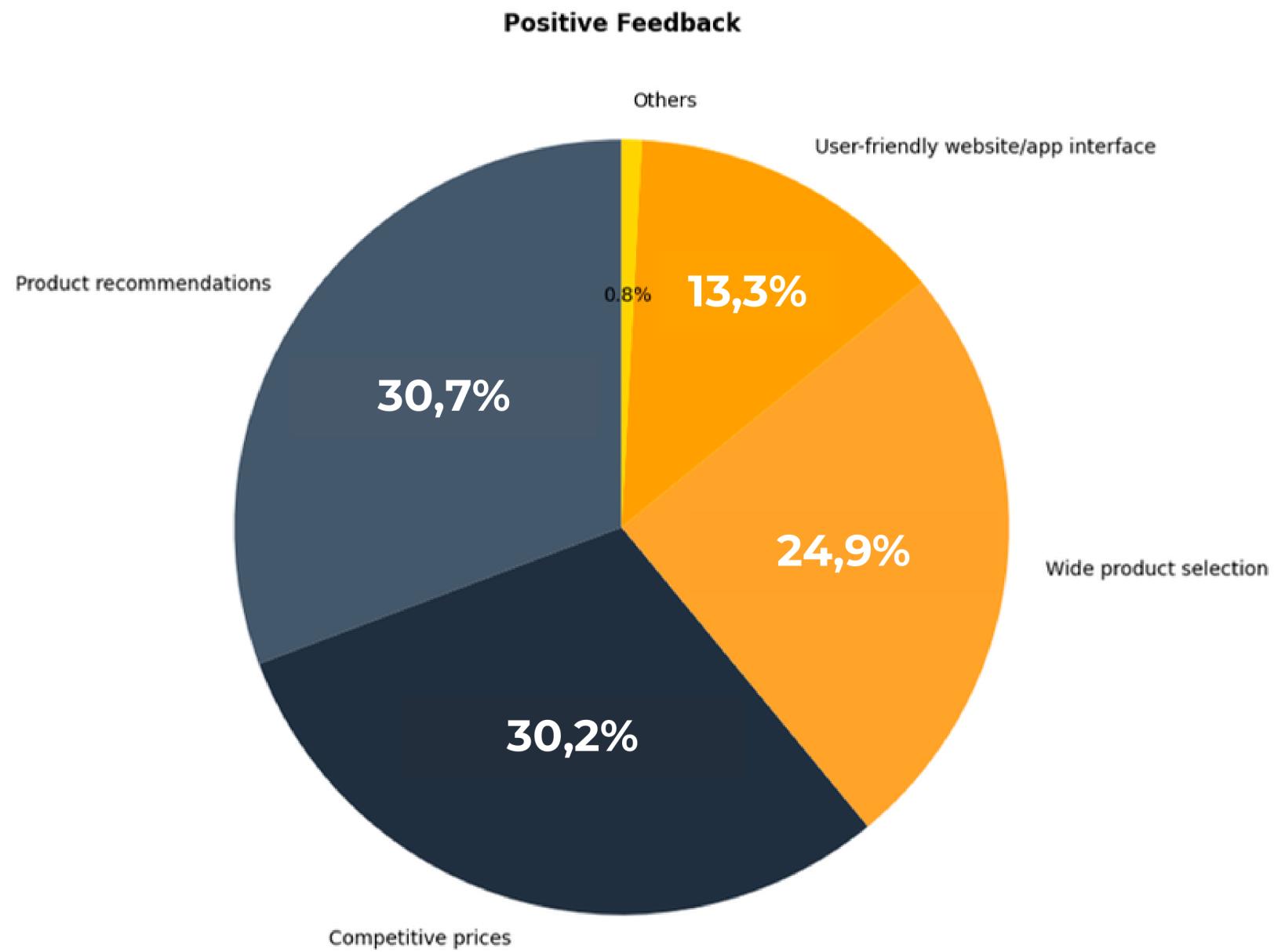
Amazon should consider **offering promotions for popular items**, and **more coupons for the shipping cost** as analyzed, to better persuade customers to complete their purchases.

# WHAT AREAS SHOULD BE IMPROVED? EXPERIENCE ANALYSIS



Level Of Satisfaction	Quantity
1	115
2	194
3	209
4	67
5	17

- In general, **the majority** of customers still express partial satisfaction with their shopping experience on the Amazon platform, as the satisfaction level is predominantly concentrated at **a rating of 3 or below**.
- **More than three-fourths** of the customers exhibit a **neutral satisfaction** level with the service, and they have provided both positive and negative feedback regarding their experiences.



- Amazon excels in **Product Recommendation** and **Competitive Prices**, both earning **over 30%** satisfaction from customers.
- **The diversity of products**, facilitating extensive choices and comparisons, stands as **the third factor** enhancing customer satisfaction.
- Lastly, the platform's **user-friendly interface** has pleased over **13%** of Amazon customers, further contributing to overall satisfaction.

- The most significant improvement aspect for customers is **the responsiveness of the customer service area** with **36%** of total
- **26,4%** of customers are also concerned about **the quality and value of the products**
- The other concerns are **Packaging Waste** and **Shopping Speed Reliability** with the percentage of **22,1%** and **13,1%** respectively

# CONCLUSION

## WHAT SHOULD AMAZON DO AFTER ALL?

Based on the initial purpose of this analysis we helped the Amazon identify:

- Amazon's main customer base consists mostly of **females** and **working individuals** who often buy **fashion and beauty** products.
- Cart abandonment hinges on factors like **product prices**, **customer needs**, and **shipping fees**.
- The shopping experience on Amazon is positive, thanks to helpful **product recommendations**, **competitive pricing**, and a **wide range of items**. However, there are still issues with **customer service**, **order quality** and accuracy, **packaging**, and the **shipping process**.

Based on this, some actions that Amazon can take are for instance

- 1) **Implement marketing and communication strategies** tailored to the **female workforce** to attract them more effectively.
- 2) Concentrate on **expanding the product lines in fashion, personal care, and beauty**.
- 3) **Offer discounts, coupons, and increased promotions** to create favorable conditions for customers.
- 4) To reduce cart abandonment, we can try to give the products at a **competitive price** compared to the other sites or we can **give add-on benefits** while purchasing from our sites (such as **coupons or cashback**)
- 5) Enhance customer service by **implementing responsive online interactions**, efficient issue resolution, and detailed product support.
- 6) Introduce **eco-friendly initiatives**, such as **promoting packaging recycling** and encouraging the exchange of old packaging for shipping discounts.

# REFERENCES

<https://www.kaggle.com/datasets/swathiunni Krishnan/amazon-consumer-behaviour-dataset/data>



**THANK YOU**