CUSTOMER-RETENTION-DATASET

A CASE STUDY

DATA SOURCES AND INFO:

- 1.There are two sheets one is detailed and second is encoded in the excel.
- 2.Using data.shape()we get dimensions i.e. 269 Rows and 71 Columns.
- 3.Using data.head()we display the first five rows of the dataset.
- 4.Using data.info()we get info of the features of the dataset and we get “70” object type features and 1 “int 64” type features.

Load the dataset from excel

/hat is the operating m (OS) of ır device? \t\t\t\t	...	Longer time to get logged in (promotion, sales period)	Longer time in displaying graphics and photos (promotion, sales period)	Late declaration of price (promotion, sales period)	Longer page loading time (promotion, sales period)	Limited mode of payment on most products (promotion, sales period)	Longer delivery period	Change in website/Application design	Frequent disruption when moving from one page to another	Website is as efficient as before	Which of the Indian online retailer would you recommend to a friend?
ı/windows Mobile	...	Amazon.in	Amazon.in	Flipkart.com	Flipkart.com	Amazon.in	Paytm.com	Flipkart.com	Amazon.in	Amazon.in	Flipkart.com
IOS/Mac	...	Amazon.in, Flipkart.com	Myntra.com	snapdeal.com	Snapdeal.com	Snapdeal.com	Snapdeal.com	Amazon.in	Myntra.com	Amazon.in, Flipkart.com	Amazon.in, Myntra.com
Android	...	Myntra.com	Myntra.com	Myntra.com	Myntra.com	Amazon.in	Paytm.com	Paytm.com	Paytm.com	Amazon.in	Amazon.in, Paytm.com, Myntra.com
IOS/Mac	...	Snapdeal.com	Myntra.com, Snapdeal.com	Myntra.com	Paytm.com	Paytm.com	Paytm.com	Amazon.in, Flipkart.com	Amazon.in, Flipkart.com	Amazon.in, Flipkart.com, Paytm.com	Amazon.in, Flipkart.com
IOS/Mac	...	Flipkart.com, Paytm.com	Paytm.com	Paytm.com	Paytm.com	Snapdeal.com	Paytm.com	Amazon.in	Snapdeal.com	Paytm.com	Amazon.in, Myntra.com

DATASET INFO:(269 Rows And 71 Columns

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 269 entries, 0 to 268
Data columns (total 71 columns):
 #   Column
Non-Null Count  Dtype
---  ------
--------------  -----
 0   1Gender of respondent
269 non-null    object
 1   2 How old are you?
269 non-null    object
 2   3 Which city do you shop online from?
269 non-null    object
 3   4 What is the Pin Code of where you shop online from?
269 non-null    int64
 4   5 Since How Long You are Shopping Online ?
269 non-null    object
 5   6 How many times you have made an online purchase in the past 1 year?
269 non-null    object
```

Only extrct top 5Rows:data.head()

	1Gender of respondent	2 How old are you?	3 Which city do you shop online from?	is the Pin Code of where you shop online from?	5 Since How Long You are Shopping Online ?	many times you have made an online purchase in the past 1 year?	7 How do you access the internet while shopping on-line?	8 Which device do you use to access the online shopping?	9 What is the screen size of your mobile device? \t\t\t\t\t\t	10 What is the operating system (OS) of your device? \t\t\t\t	...	Longer time to get logged in (promotion, sales period)	Longer time in displaying graphics and photos (promotion, sales period)	Late declaration of price (promotion, sales period)	
0	Male	31-40 years	Delhi	110009	Above 4 years	31-40 times	Dial-up	Desktop	Others	Window/windows Mobile	...	Amazon.in	Amazon.in	Flipkart.com	
1	Female	21-30 years	Delhi	110030	Above 4 years	41 times and above	Wi-Fi	Smartphone	4.7 inches	IOS/Mac	...	Amazon.in, Flipkart.com	Myntra.com	snapdeal.com	S
2	Female	21-30 years	Greater Noida	201308	3-4 years	41 times and above	Mobile Internet	Smartphone	5.5 inches	Android	...	Myntra.com	Myntra.com	Myntra.com	
3	Male	21-30 years	Karnal	132001	3-4 years	Less than 10 times	Mobile Internet	Smartphone	5.5 inches	IOS/Mac	...	Snapdeal.com	Myntra.com, Snapdeal.com	Myntra.com	
4	Female	21-30 years	Bangalore	530068	2-3 years	11-20 times	Wi-Fi	Smartphone	4.7 inches	IOS/Mac	...	Flipkart.com, Paytm.com	Paytm.com	Paytm.com	

5 rows × 71 columns

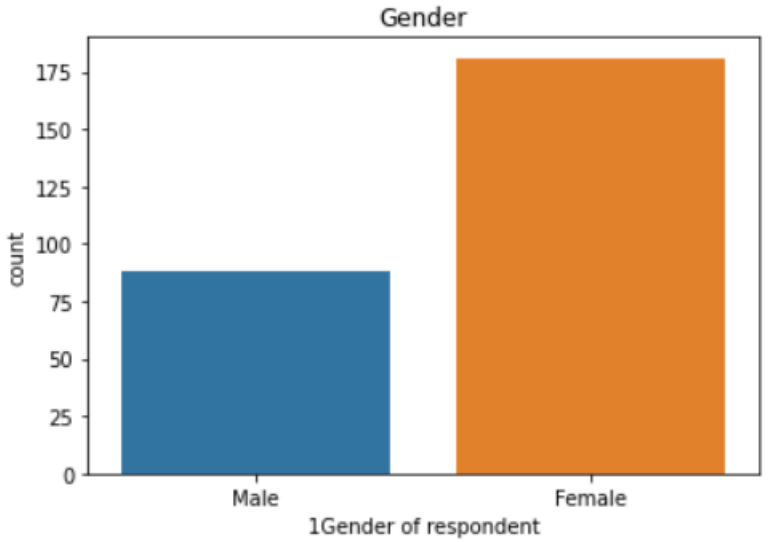
There are a huge no of features,it makes sense to devide the data into three categories:-

```
# categorical_columns can be located from column index 0 to 16
categorical_columns=data.iloc[:,:17].columns
categorical_columns=categorical_columns.to_list()

# rating_columns can be located from column index 17 to 46
rating_columns=data.iloc[:,17:47].columns
rating_columns=rating_columns.to_list()

# ecommerce_columns can be located from column index 47 and above
ecommerce_columns=data.iloc[:,47:].columns
ecommerce_columns=ecommerce_columns.to_list()
```

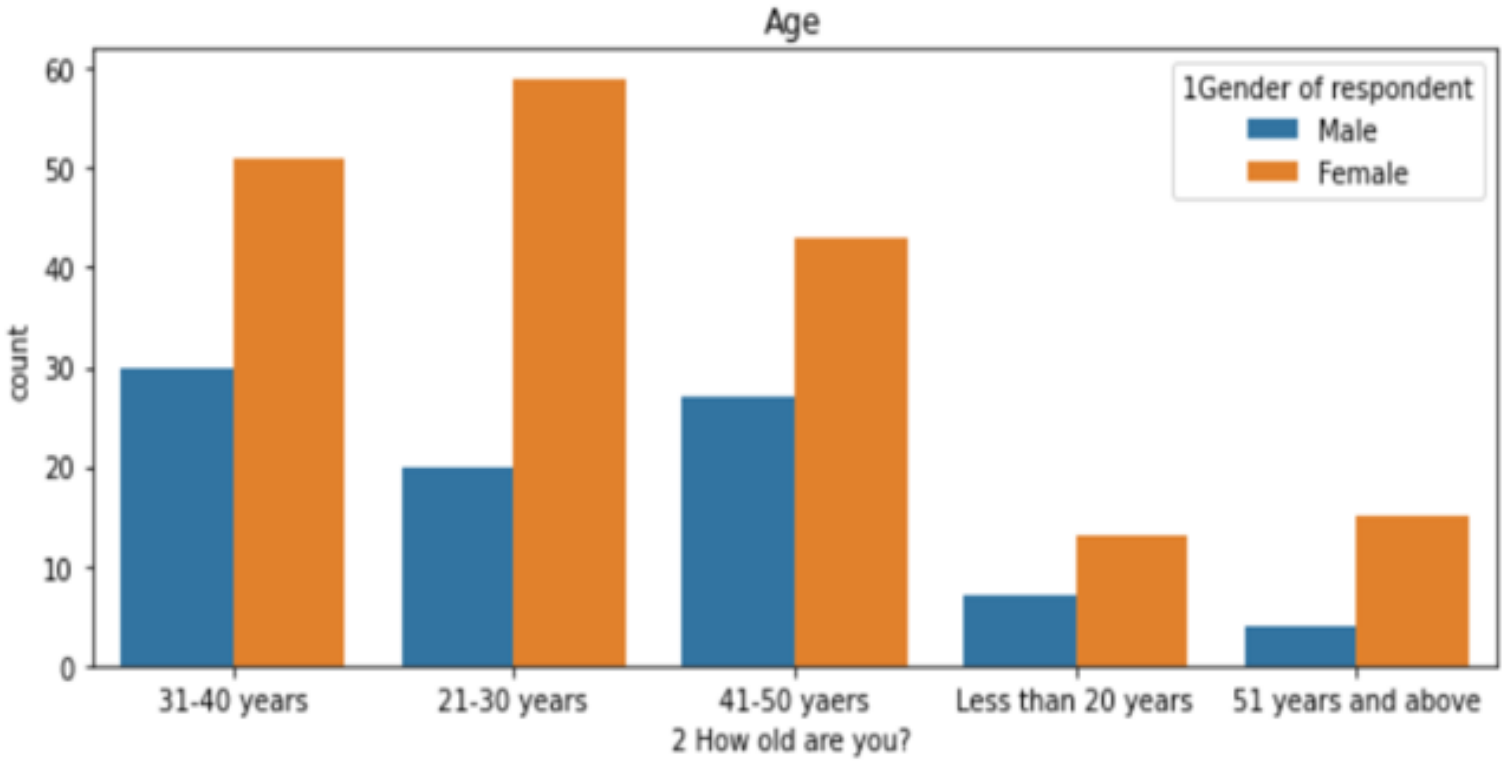
CHECKING FOR THE NULL VALUES:-
From the plot we can see there are no null values present in the Dataset

```
# Identifying null values
sns.heatmap(data.isnull())
plt.axis('off')
plt.show()
```

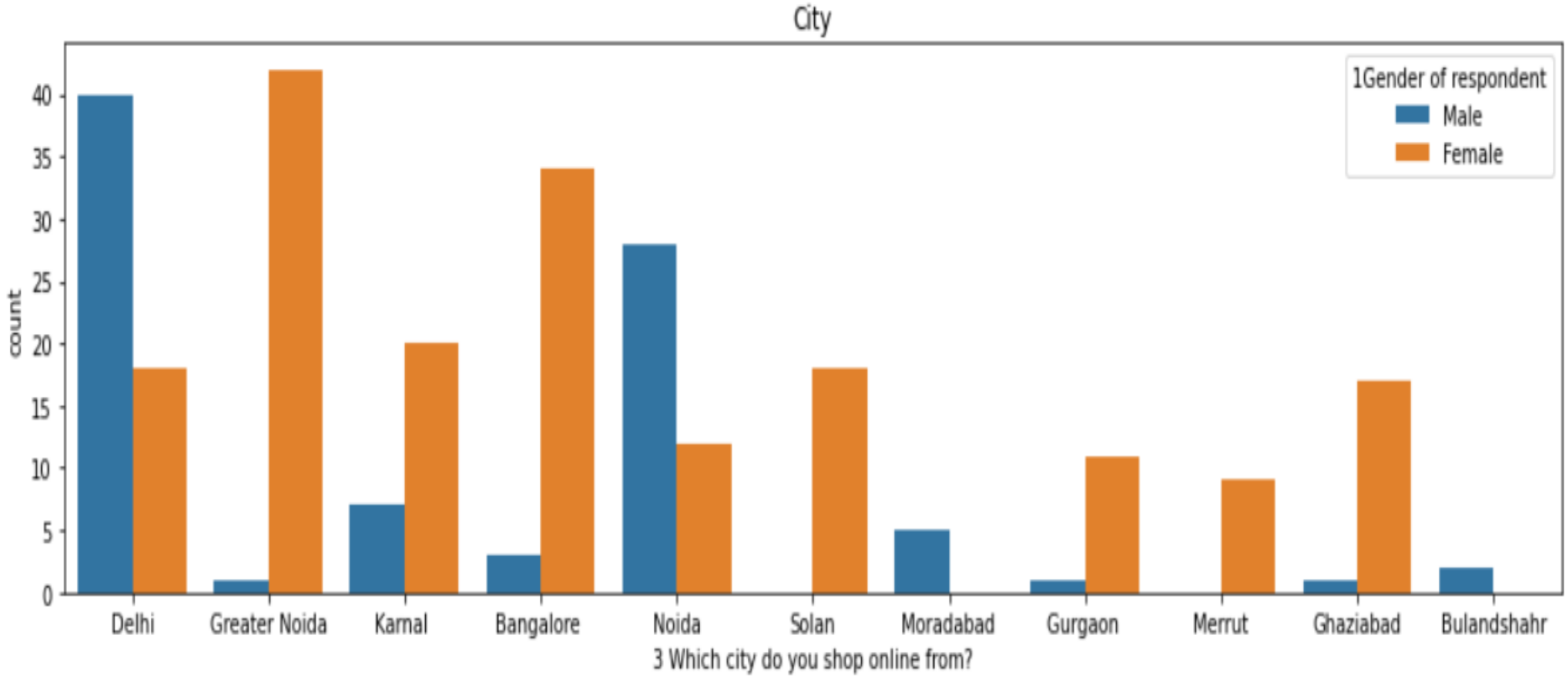
DATA VISUALIZATION:



From the plot we can say that gender column has more Female(181) as compared to Male(88).

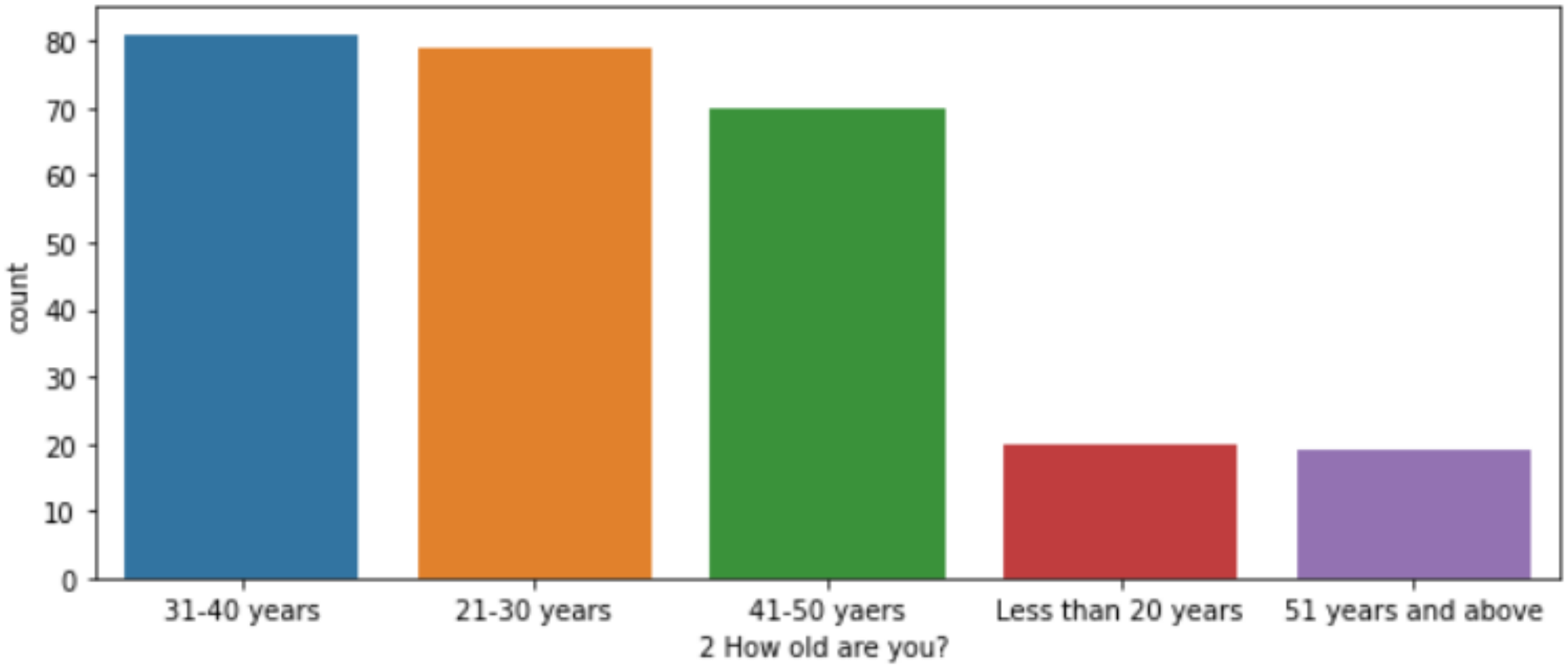


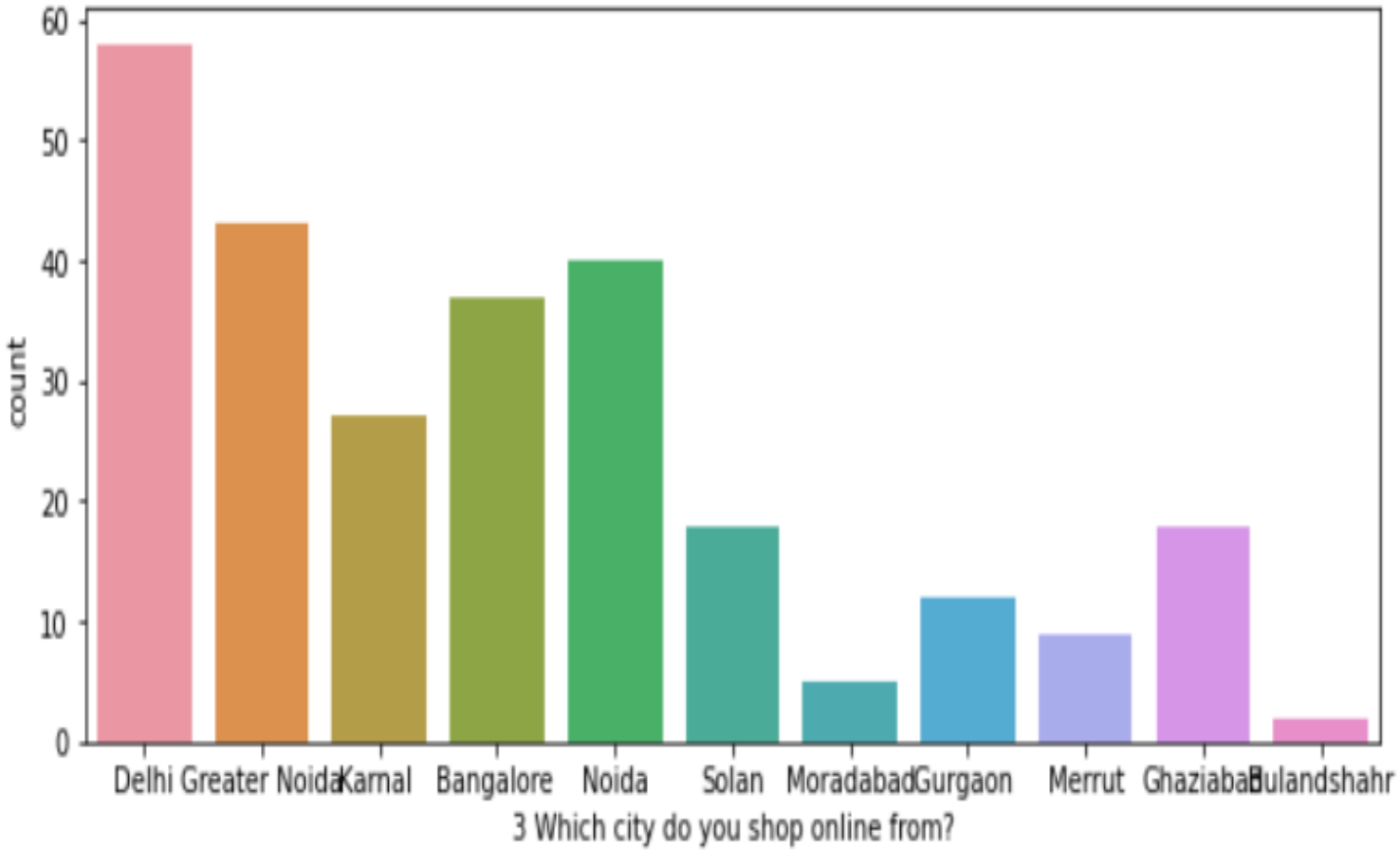
From the plot we can see that females are more compared to male in every age group.

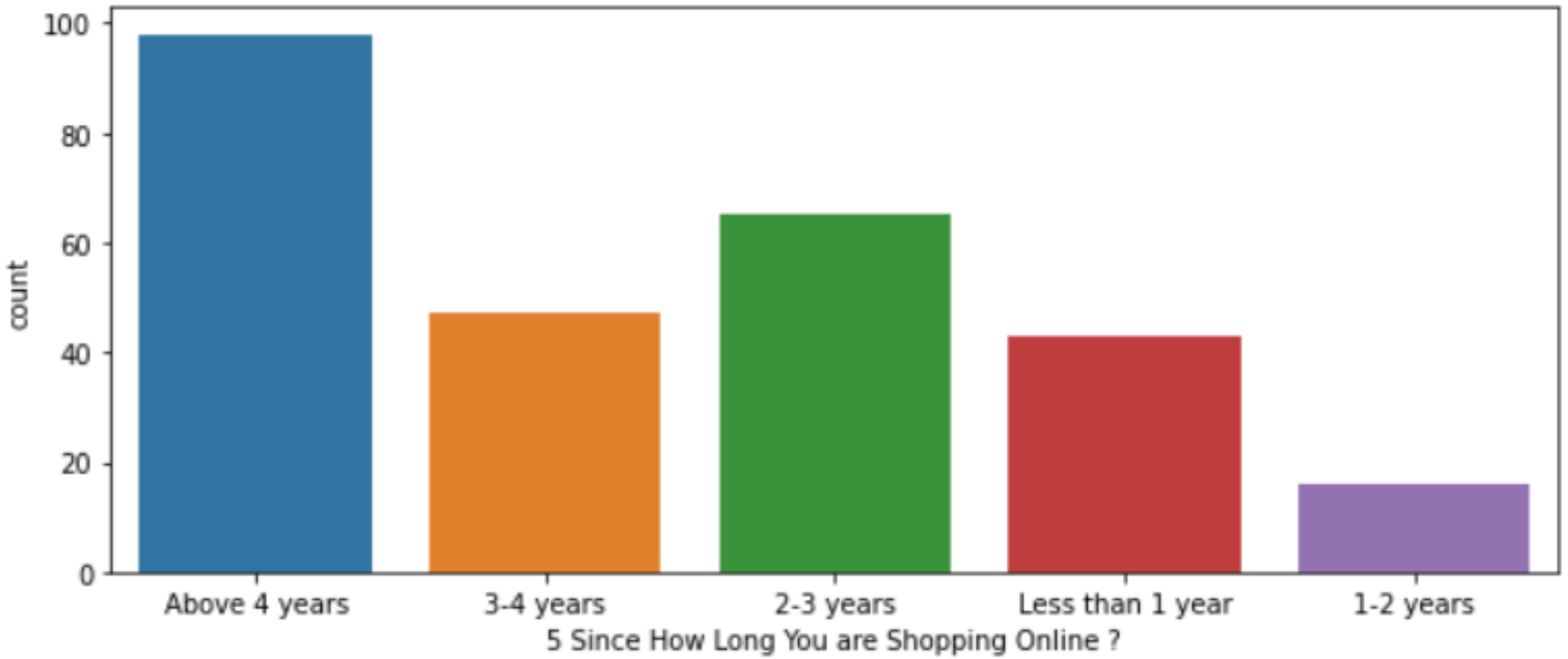


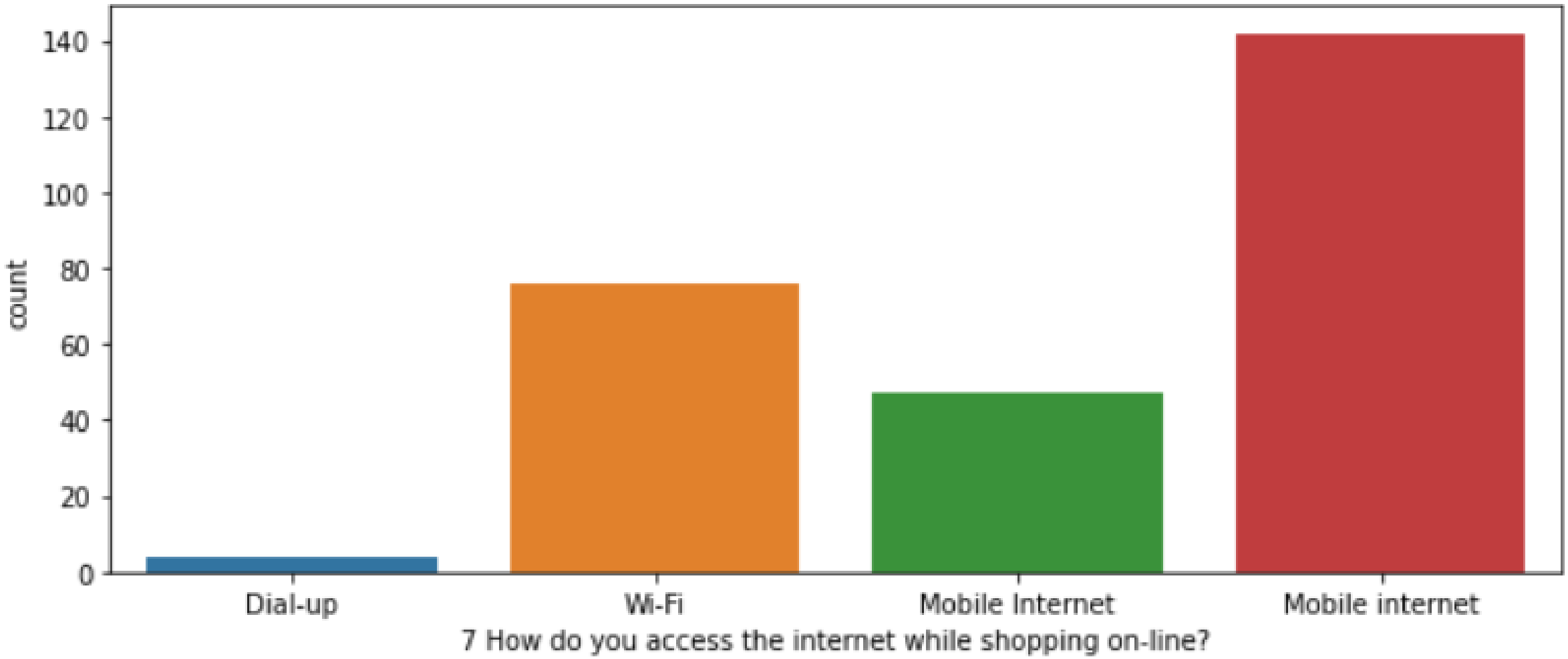
Cities like Delhi, Noida, Moradabad and Bulandshahr has more male shoppers. where as cities like GreaterNoida, karnal, Bangalore,solan,gurgaon,meerut, ghaziabad has more female shoppers.

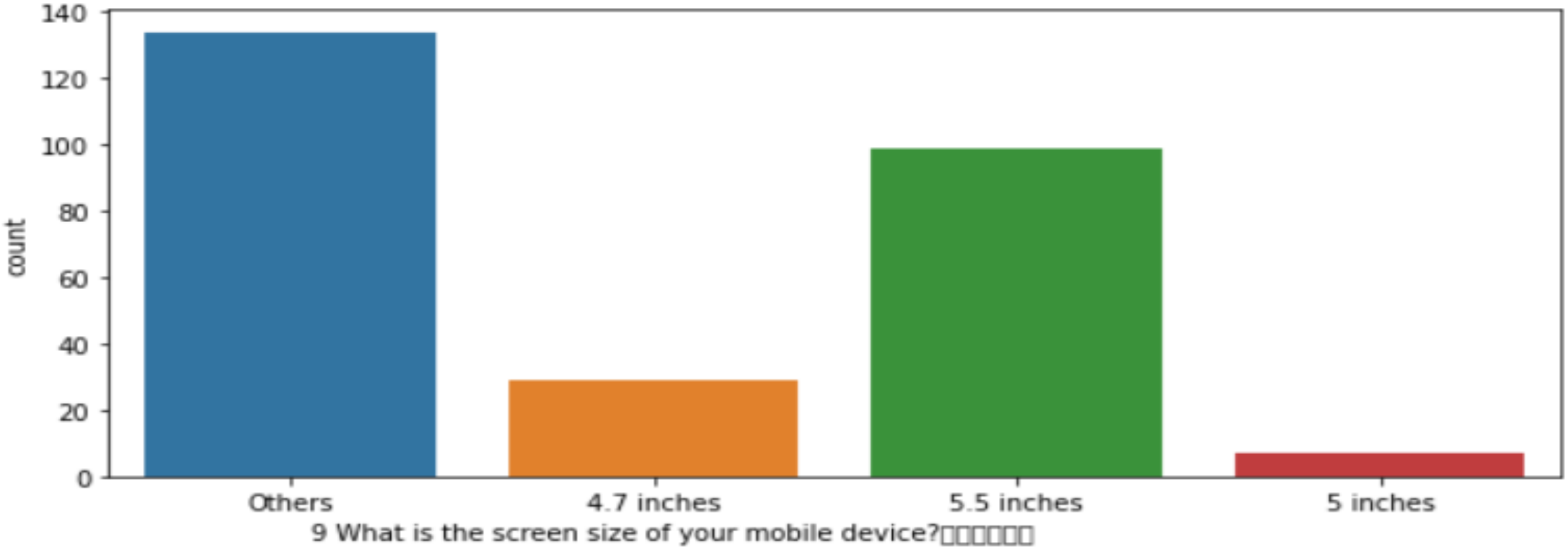
UNIVARIATE ANALYSIS:

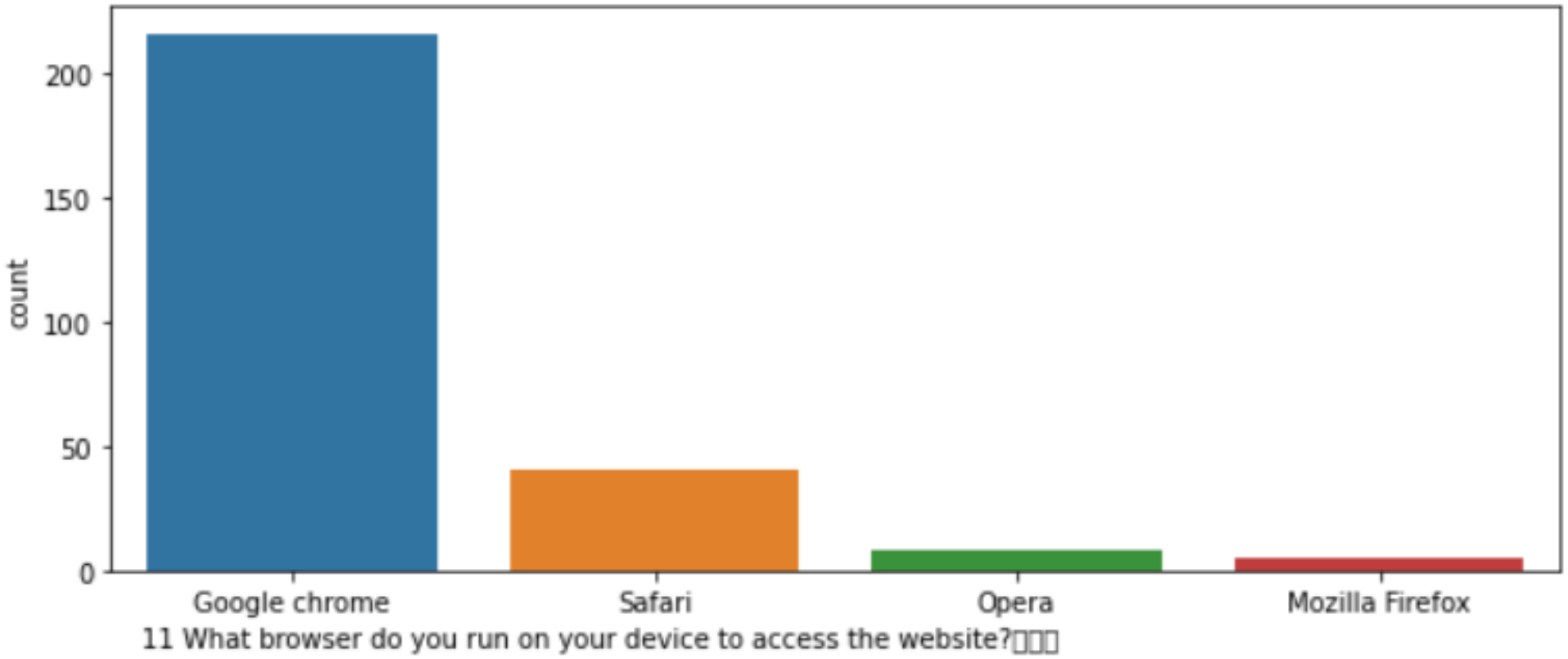


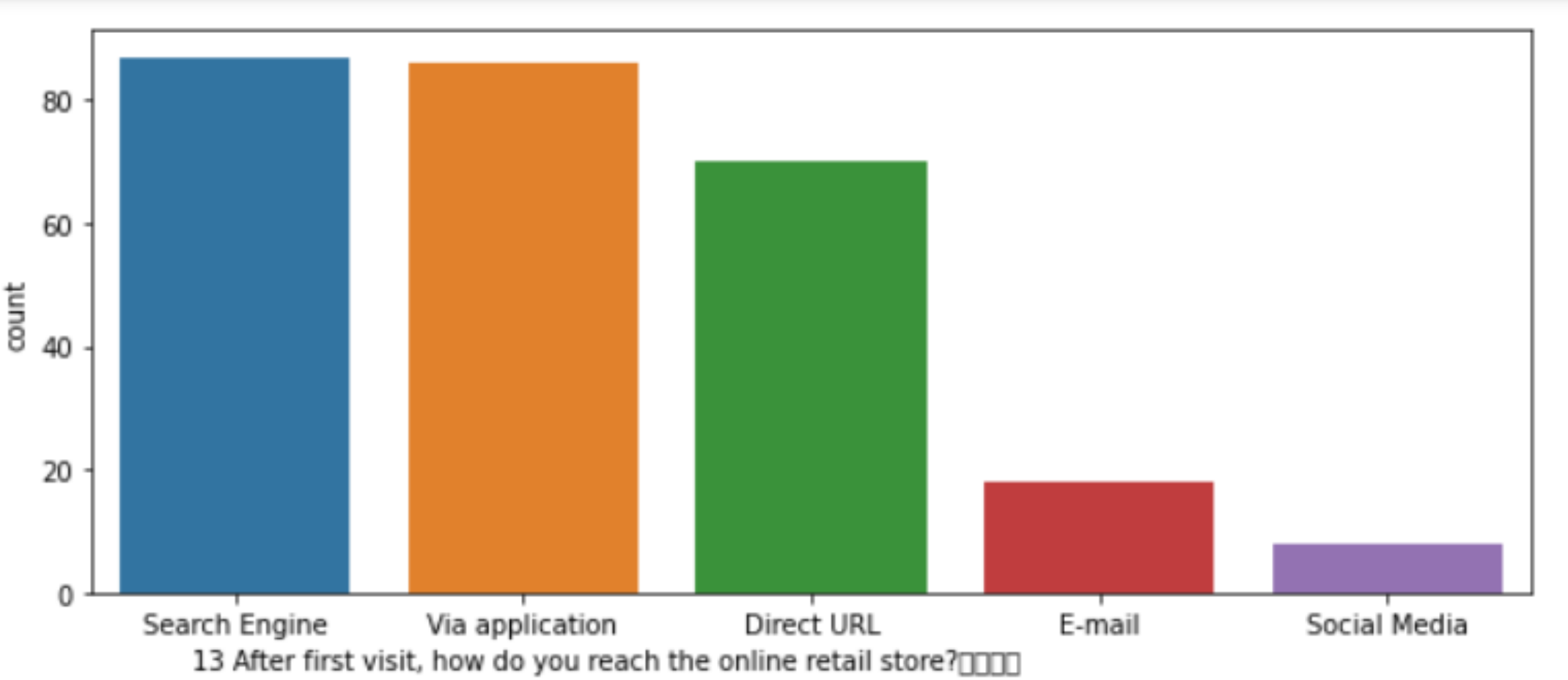

60
50
40
30
20
10
0
count
Delhi
Greater Noida
Karnal
Bangalore
Noida
Solan
Moradabad
Gurgaon
Merrut
Ghaziaba
Bulandshahr
3 Which city do you shop online from?

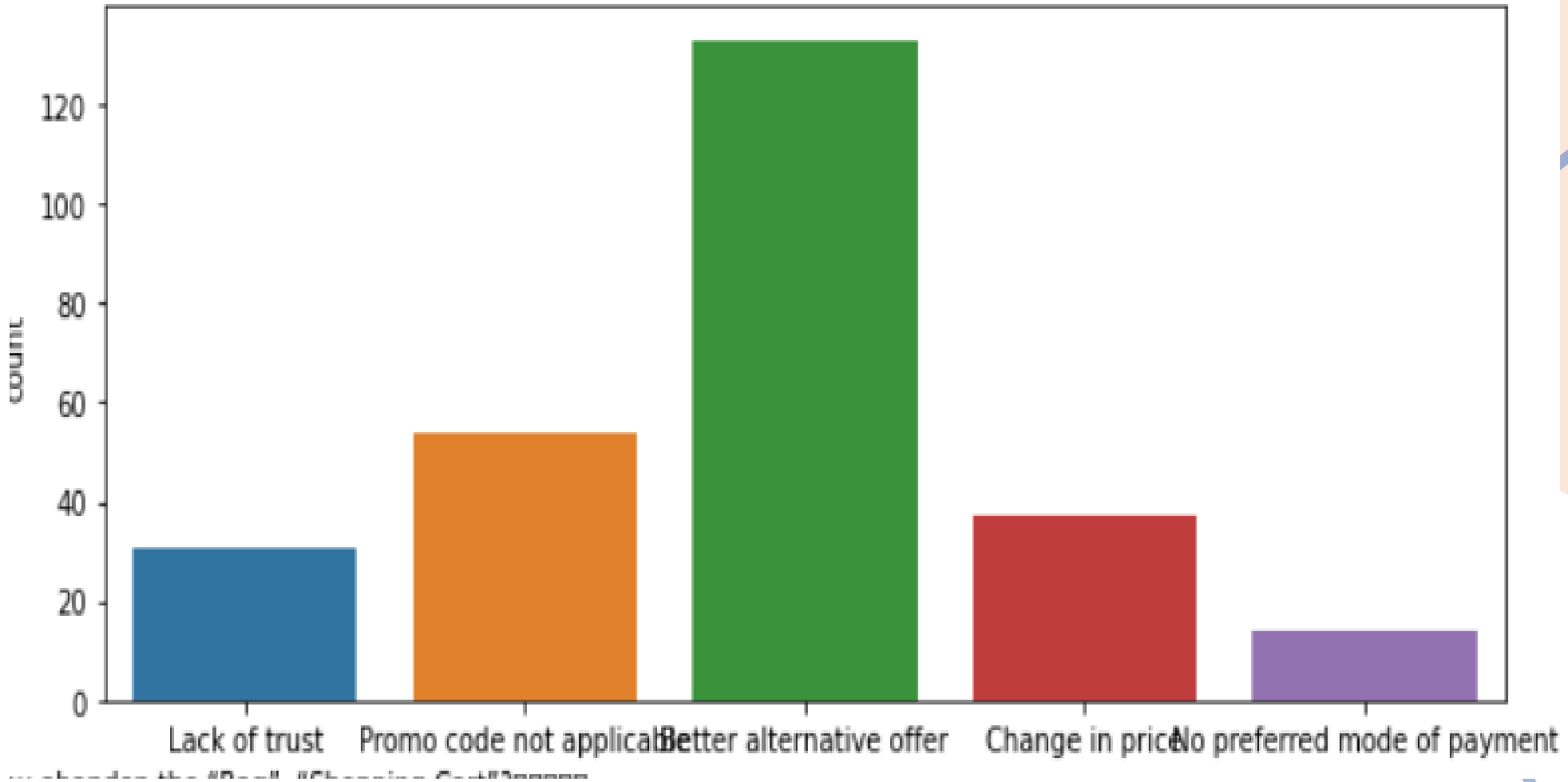

100
80
60
40
20
0
count
Above 4 years
3-4 years
2-3 years
Less than 1 year
1-2 years
5 Since How Long You are Shopping Online ?

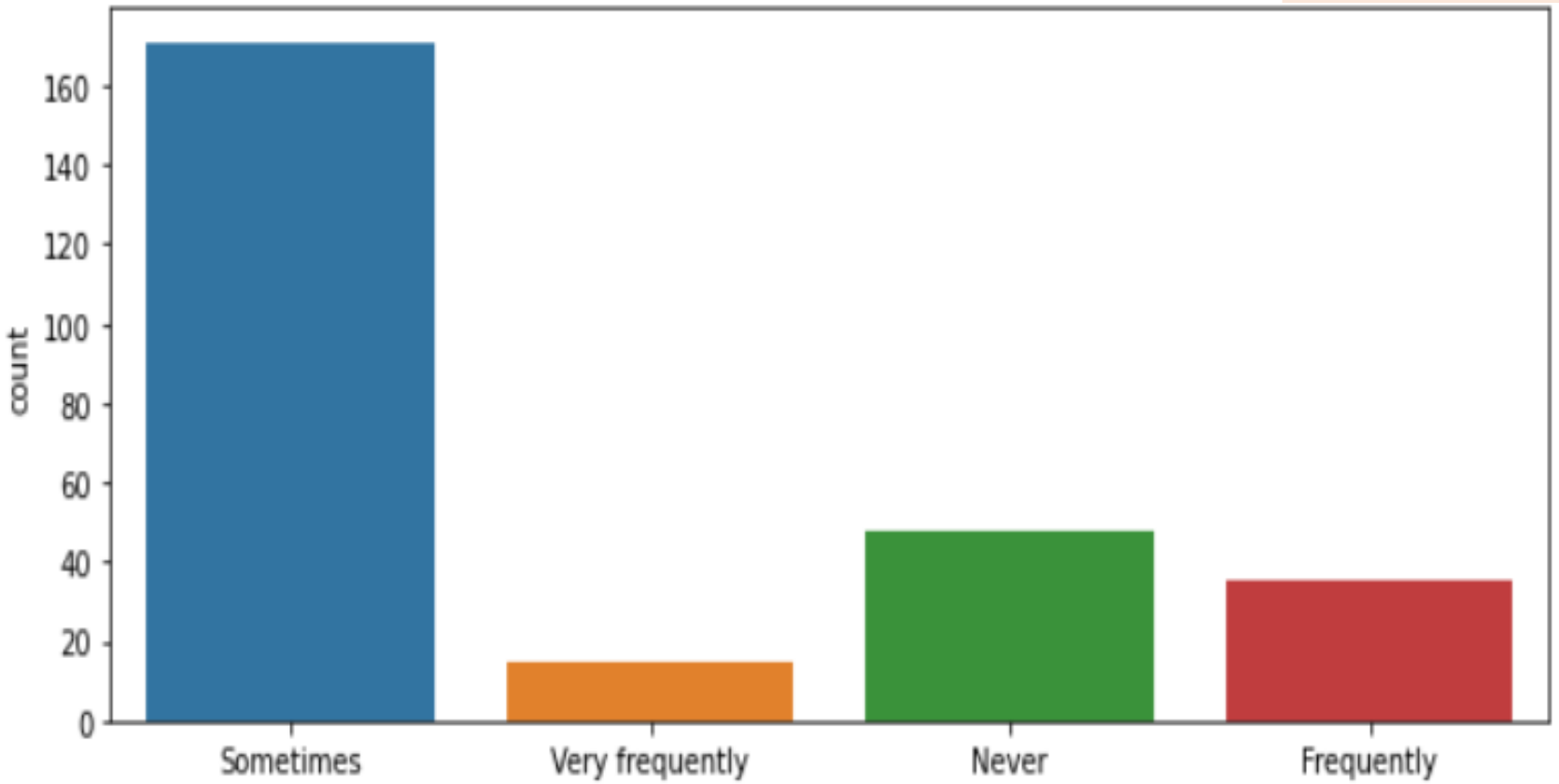

140
120
100
80
60
40
20
0
count
Dial-up
Wi-Fi
Mobile Internet
Mobile internet
7 How do you access the internet while shopping on-line?


140
120
100
80
60
40
20
0
count
Others
4.7 inches
5.5 inches
5 inches
9 What is the screen size of your mobile device?□□□□□□


200
150
100
50
0
count
Google chrome
Safari
Opera
Mozilla Firefox
11 What browser do you run on your device to access the website?□□□


count
80
60
40
20
0
Search Engine
Via application
Direct URL
E-mail
Social Media
13 After first visit, how do you reach the online retail store?□□□□


count
120
100
80
60
40
20
0
Lack of trust
Promo code not applicable
Better alternative offer
Change in price
No preferred mode of payment



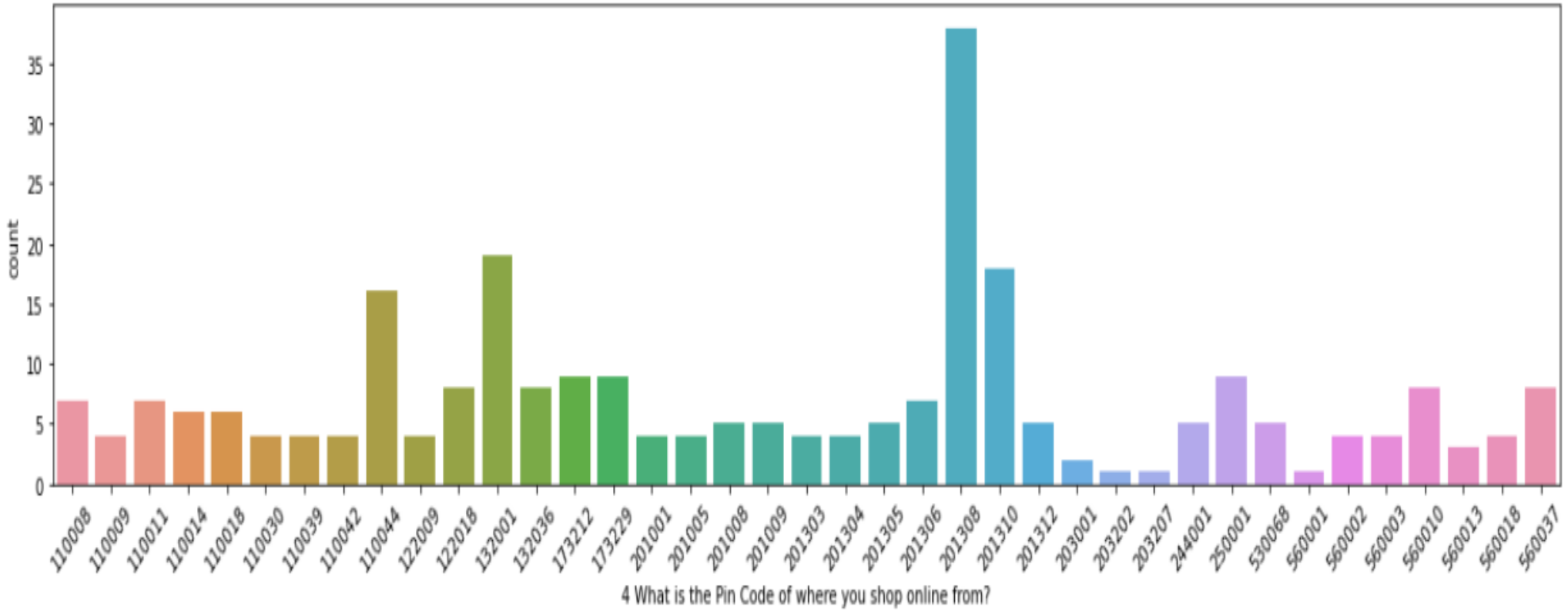
16 How frequently do you abandon (selecting an items and leaving without making payment) your shopping cart?□□□□□□□

OBSERVATIONS:

Conclusions:

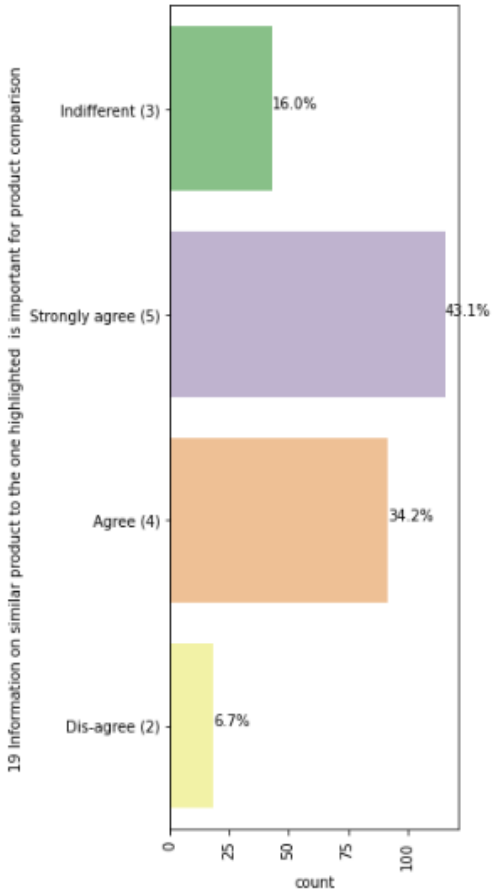
1.80% of the people are within age group 31-40 years,80%(approx.) of the people are within age group 21-30 years and 72%(approx.) of people are within age group 41-50 years.so we can say that 70-80%(approx.) people lies with in age group of 21-50 years.20%(approx.) of people lies with in range of less than 20 years or more than 50 years old. 2.Cities like Delhi, Greater Noida, Noida and Bangalore have the maximum number of online shoppers. 3.Maximum number of customers have been using Online Shopping platforms for more than 4 years. 4.The maximum purchases made in past 1 year by the customers are less than 10 times as compared to 31-40 times and 41 times and above. 5.The maximum customers(142) use Mobile internet for online shopping. 6.Maximum customers are using Smartphones and then some are using laptops but very few people are using tablets for shopping. 7.most of customer screen size of mobile lies in others range and then customers use 5.5 screen size mobile for shopping. 8.The maximum nu,ber of customers are using Window/window Mobile as operating system for online shopping. 9.Maximum customers use Google Chrome as the browser for onine shopping. 10.Search Engines are the most used channel which they follow to arrive at their favourite online store for first time. 11.After the first visit, most of customer reach the online store through search engine. 12.Most people take purchase decision after spending more than 15 minutes. 13.Credit/Debit cards are the most used mode of payment option. 14.Maximum people abondon the items in cart 'sometimes' as opposed to never or frequently. 15.The biggest reason to abandon the "bag"."Shopping Cart" is that they get a 'Better alternative offer'.

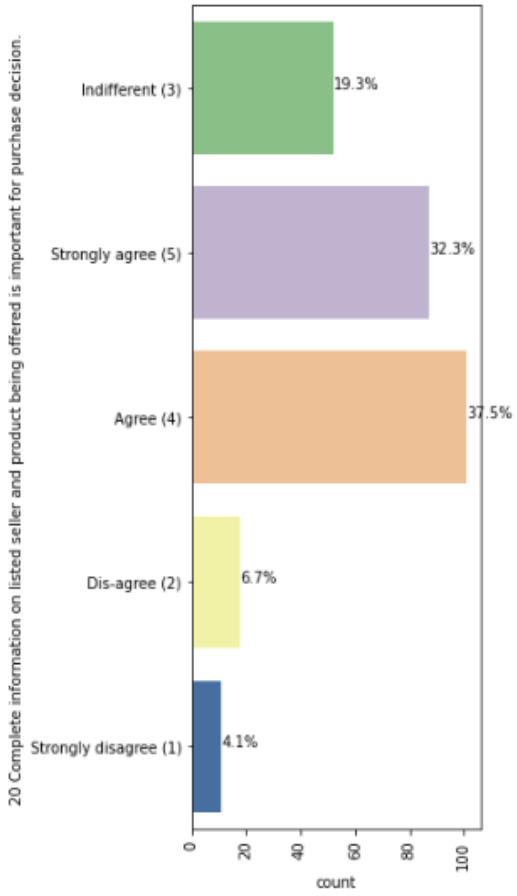
VALUE COUNT FOR PINCODE COLUMN:

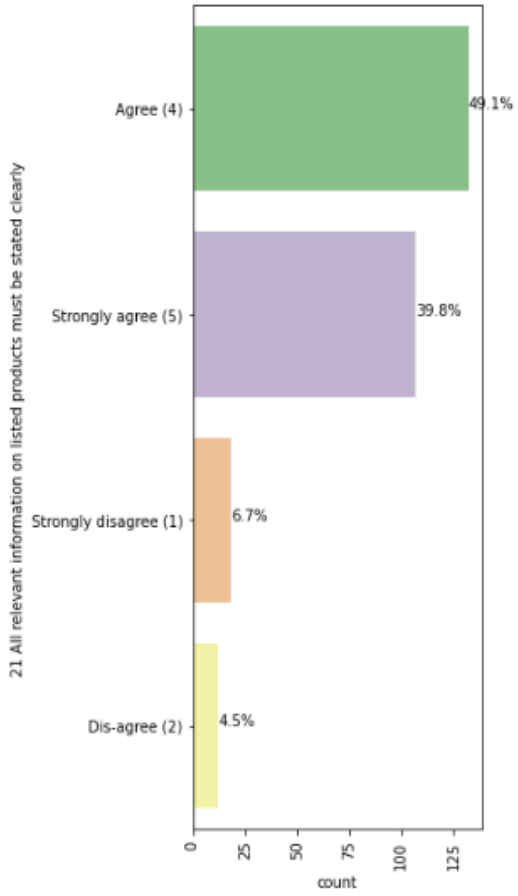


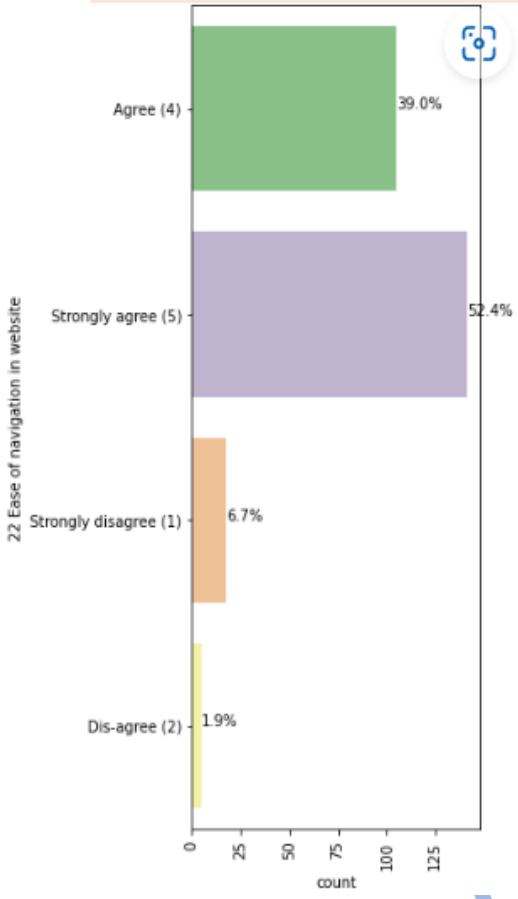
CHECKING HOW MANY TIMES MADE AN ONLINE PURCHASE IN THE PAST 1 YEAR:

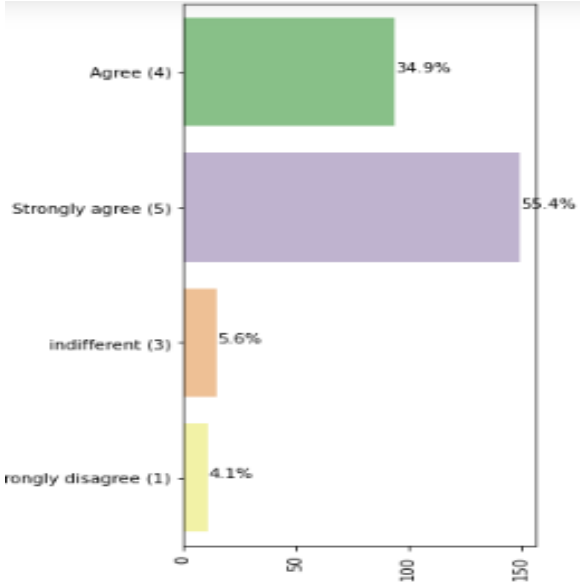
OBSERVATION:

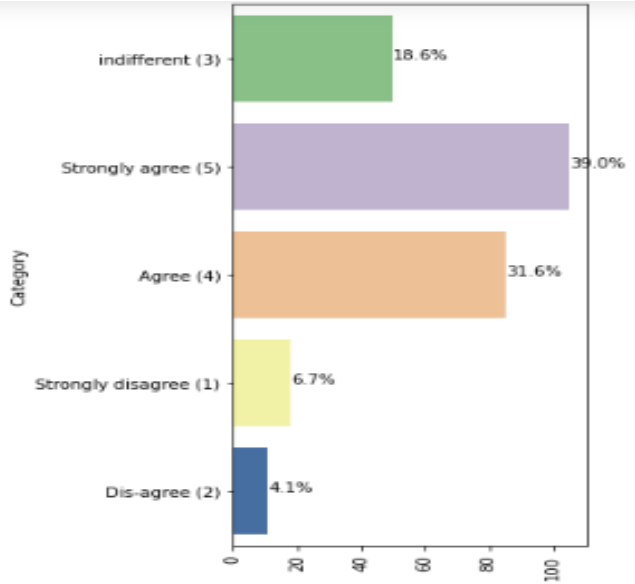






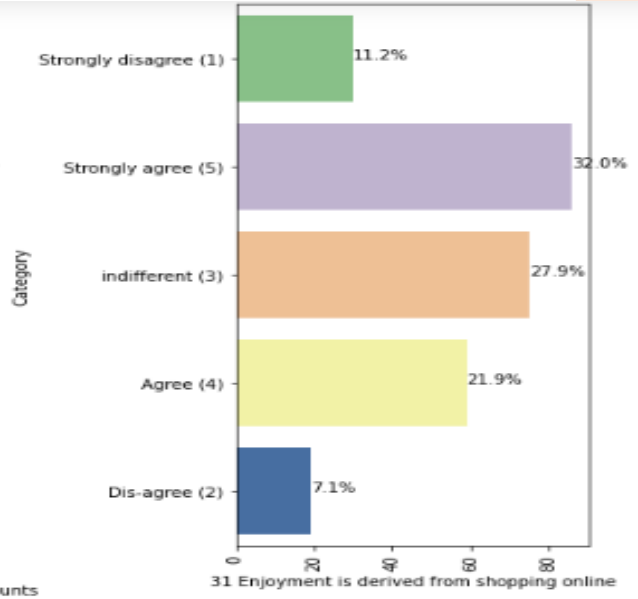




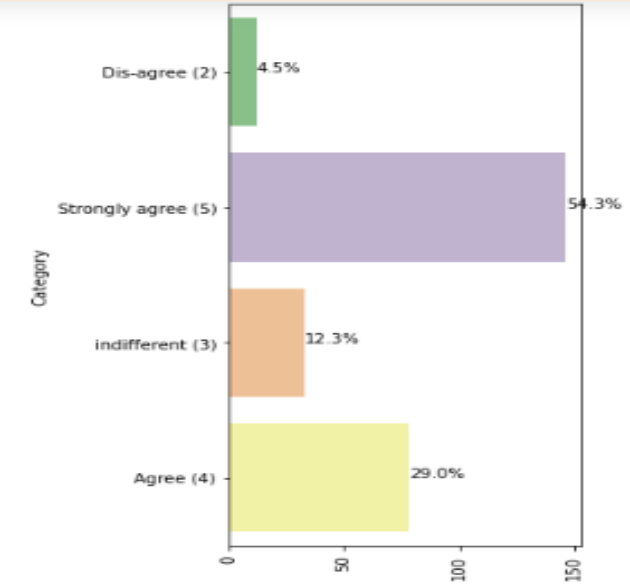


reness, availability of several communication channels (email, online rep, twitter, pla

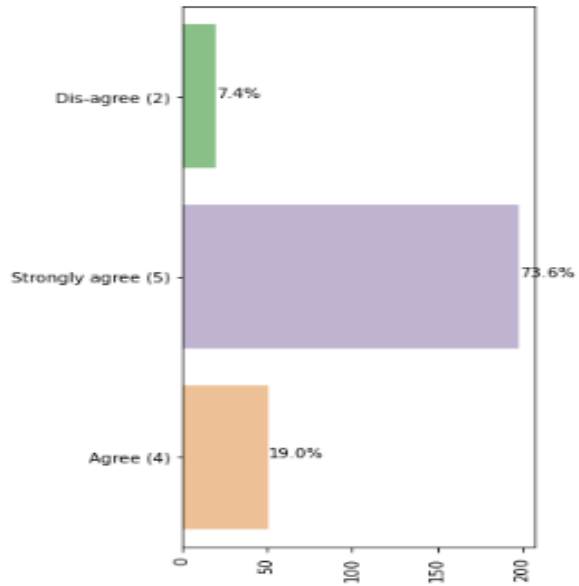
shopping gives monetary benefit and discounts



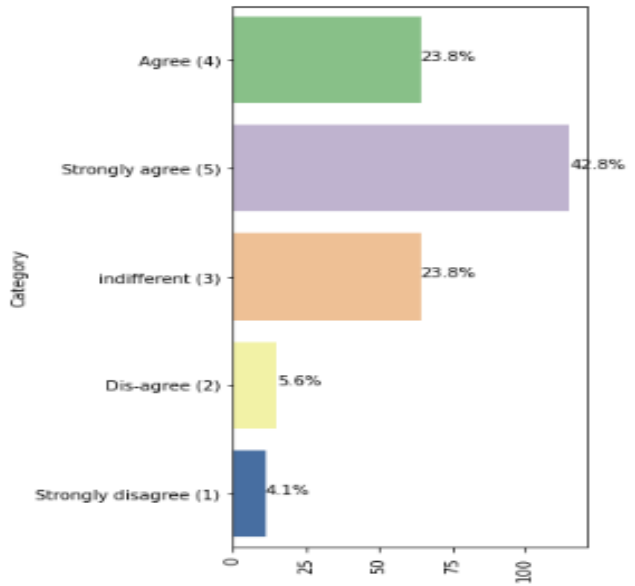
31 Enjoyment is derived from shopping online



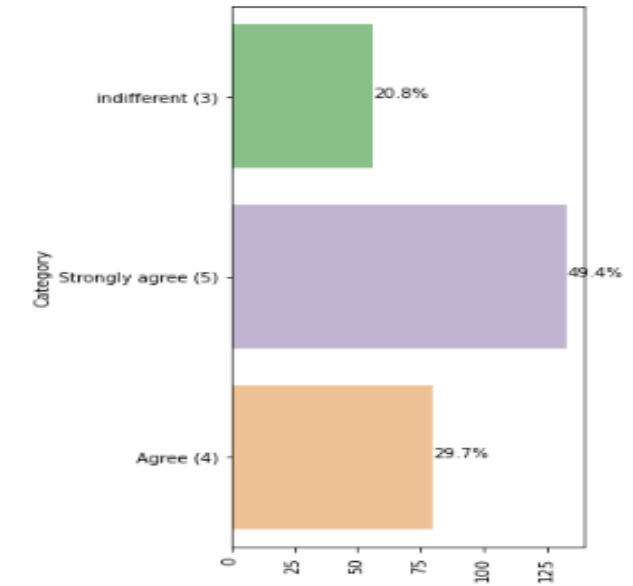
32 Shopping online is convenient and flexible



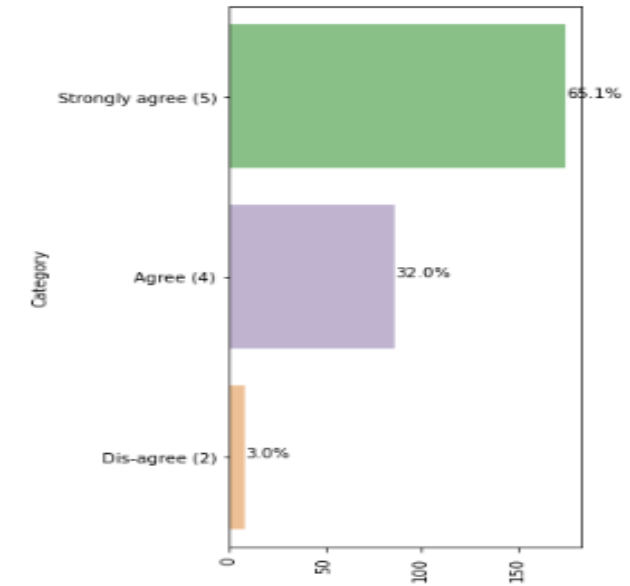
3 Return and replacement policy of the e-tailer is important for purchase deci



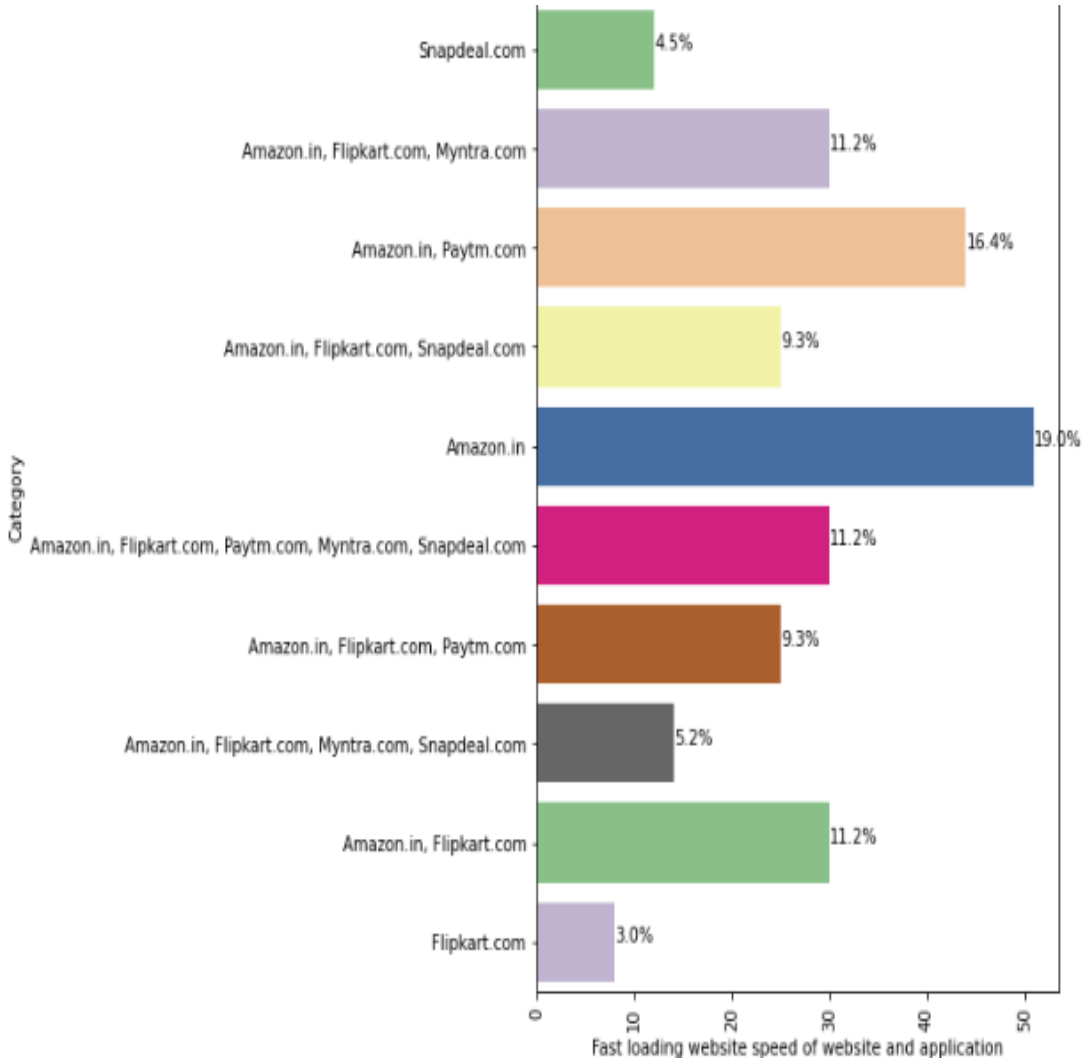
gaining access to loyalty programs is a benefit of shopping o

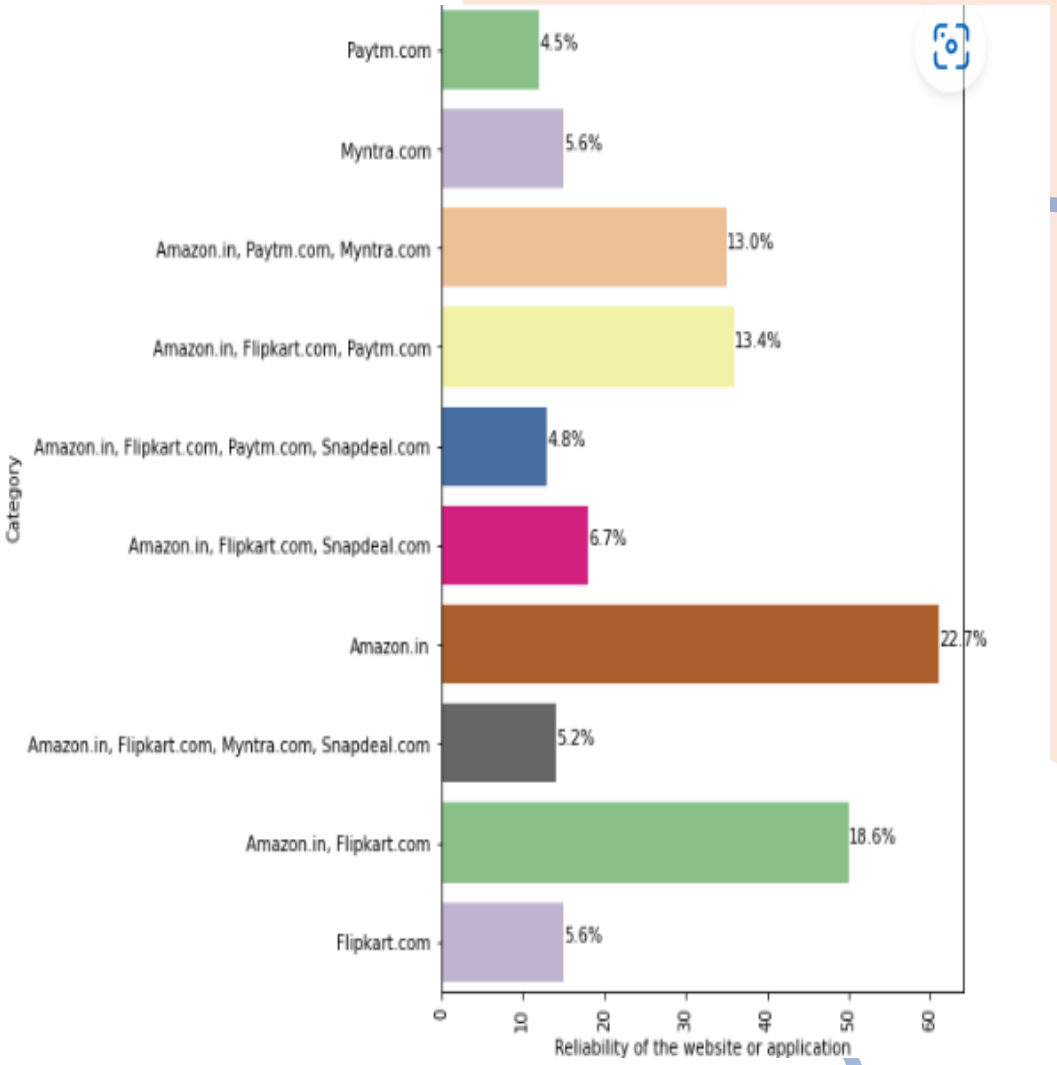


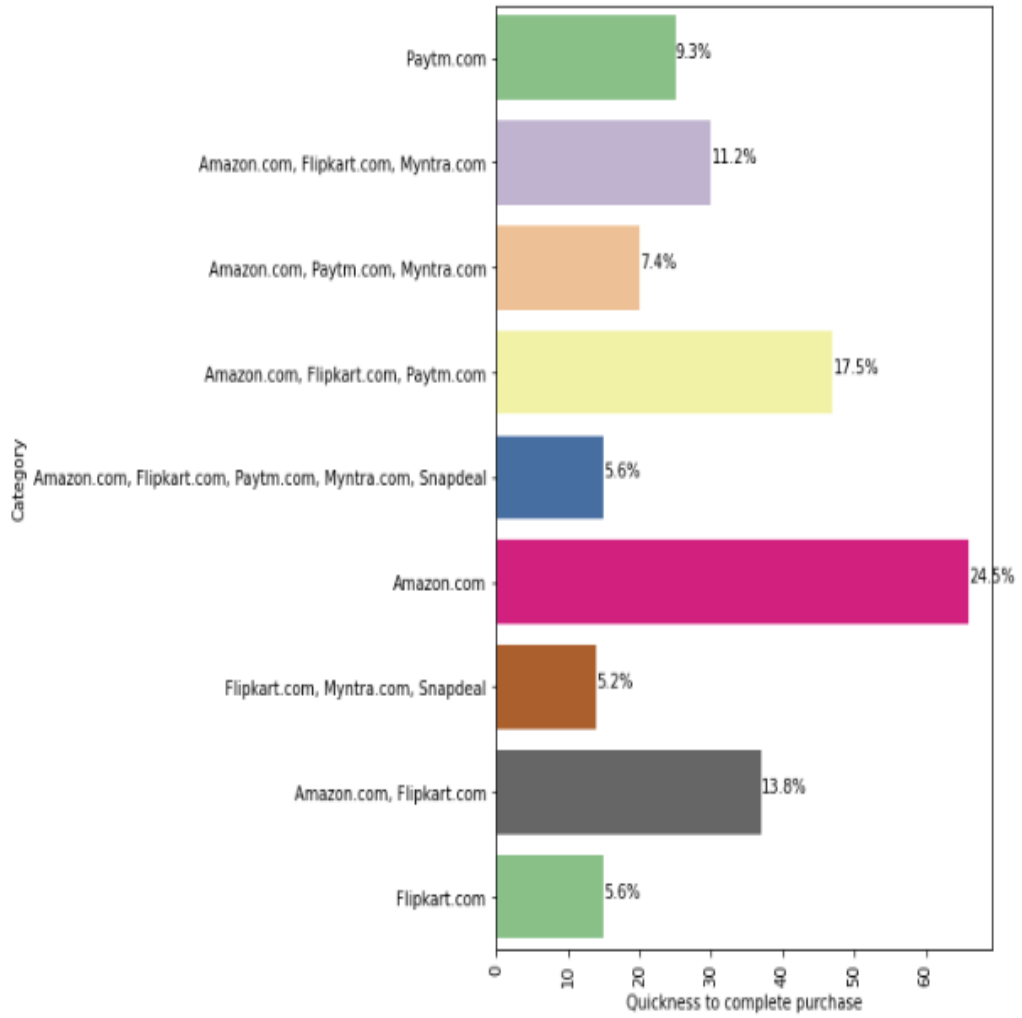
displaying quality Information on the website improves satisfaction of

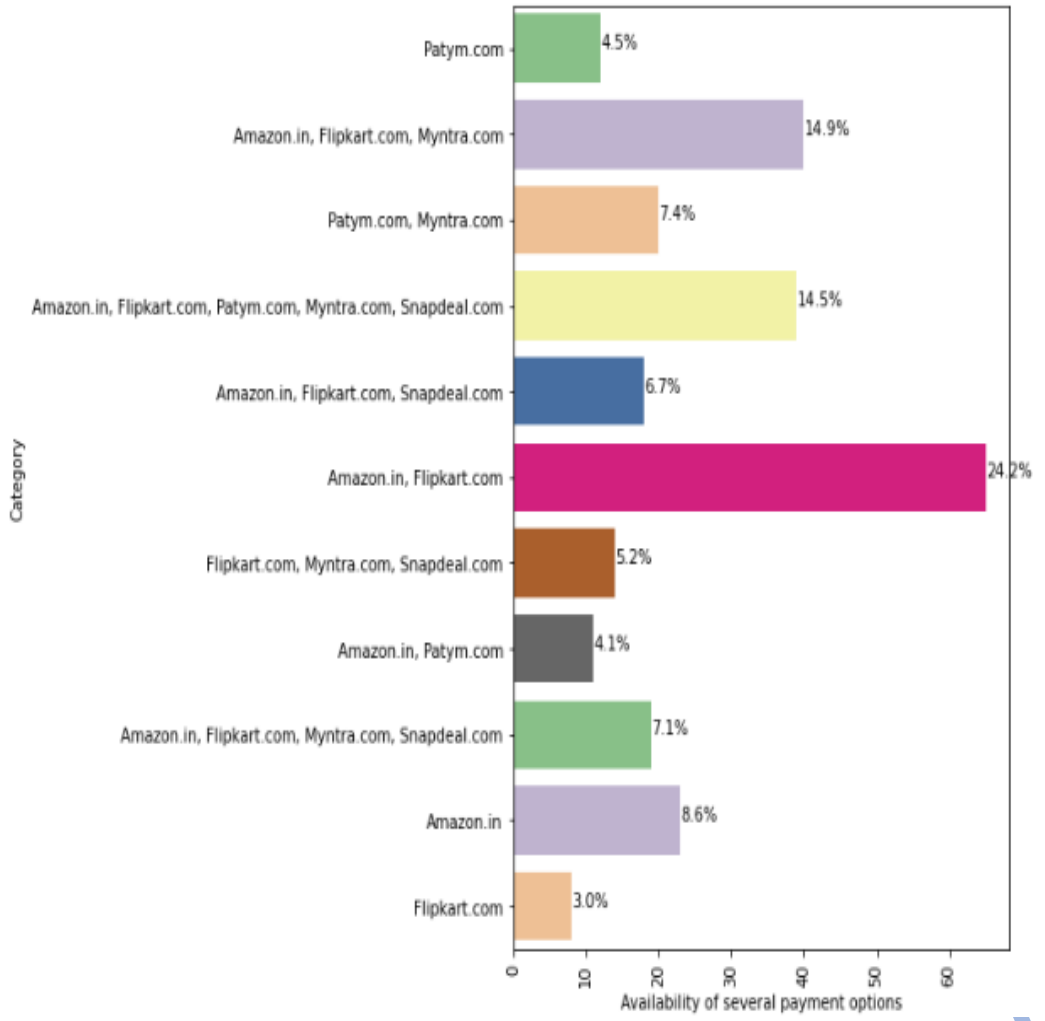


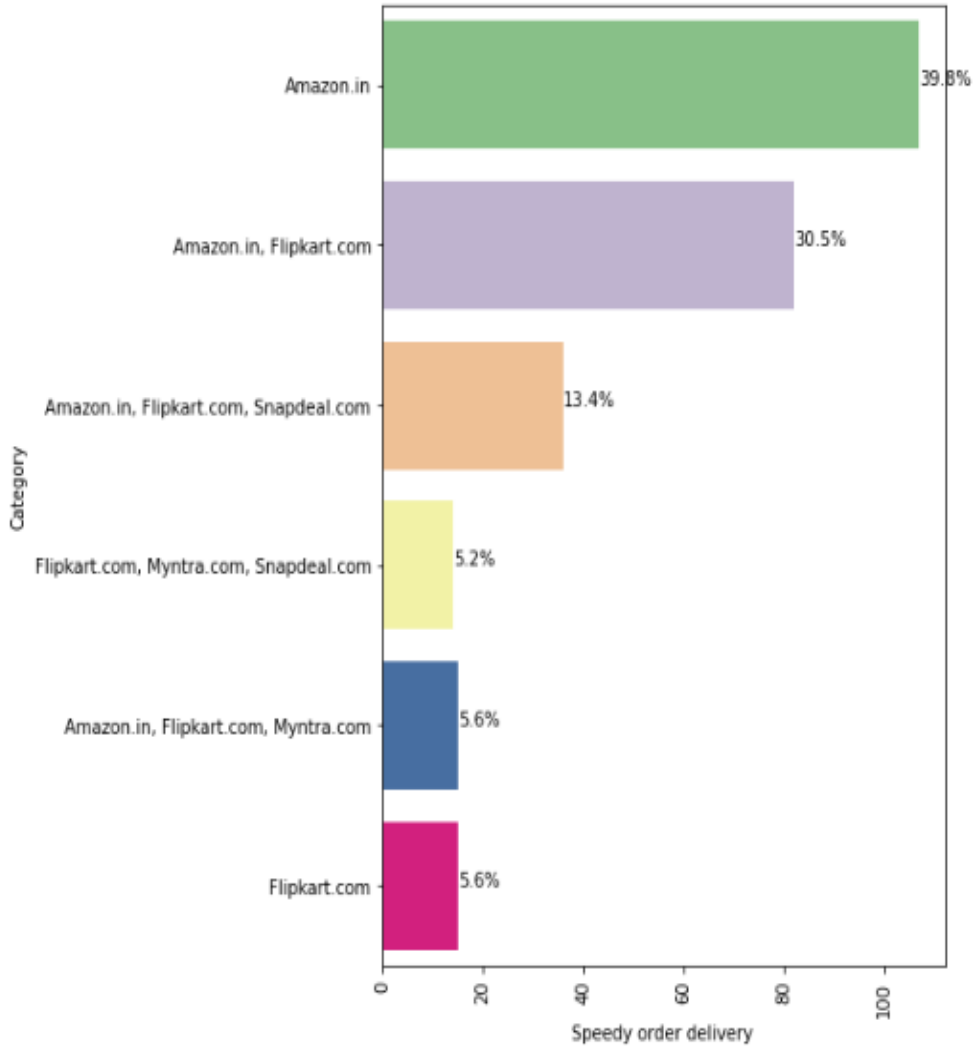
ive satisfaction while shopping on a good quality websi

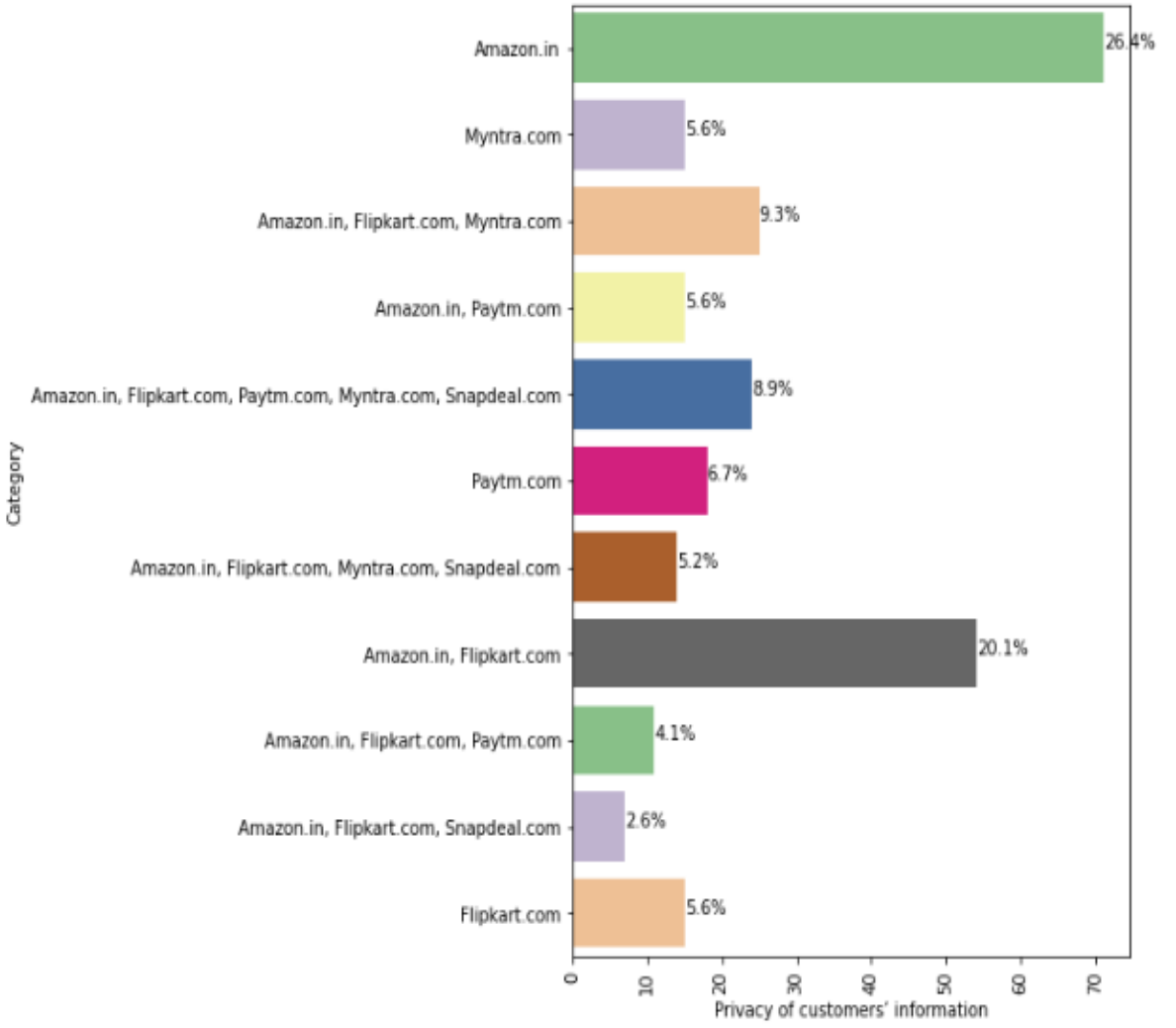

Snapdeal.com
4.5%
Amazon.in, Flipkart.com, Myntra.com
11.2%
Amazon.in, Paytm.com
16.4%
Amazon.in, Flipkart.com, Snapdeal.com
9.3%
Amazon.in
19.0%
Amazon.in, Flipkart.com, Paytm.com, Myntra.com, Snapdeal.com
11.2%
Amazon.in, Flipkart.com, Paytm.com
9.3%
Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com
5.2%
Amazon.in, Flipkart.com
11.2%
Flipkart.com
3.0%
Category
0
10
20
30
40
50
Fast loading website speed of website and application

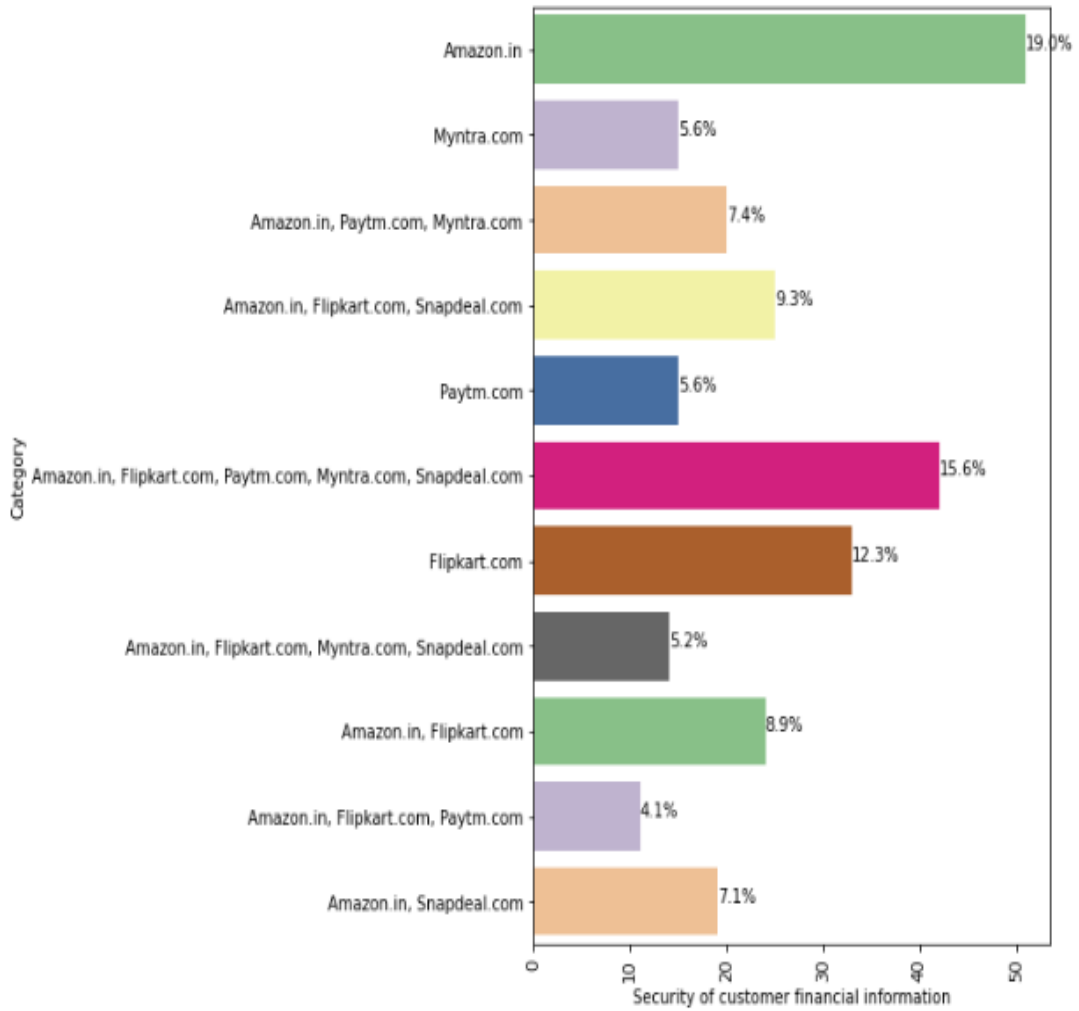

Paytm.com
4.5%
Myntra.com
5.6%
Amazon.in, Paytm.com, Myntra.com
13.0%
Amazon.in, Flipkart.com, Paytm.com
13.4%
Amazon.in, Flipkart.com, Paytm.com, Snapdeal.com
4.8%
Amazon.in, Flipkart.com, Snapdeal.com
6.7%
Amazon.in
22.7%
Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com
5.2%
Amazon.in, Flipkart.com
18.6%
Flipkart.com
5.6%
Category
0
10
20
30
40
50
60
Reliability of the website or application

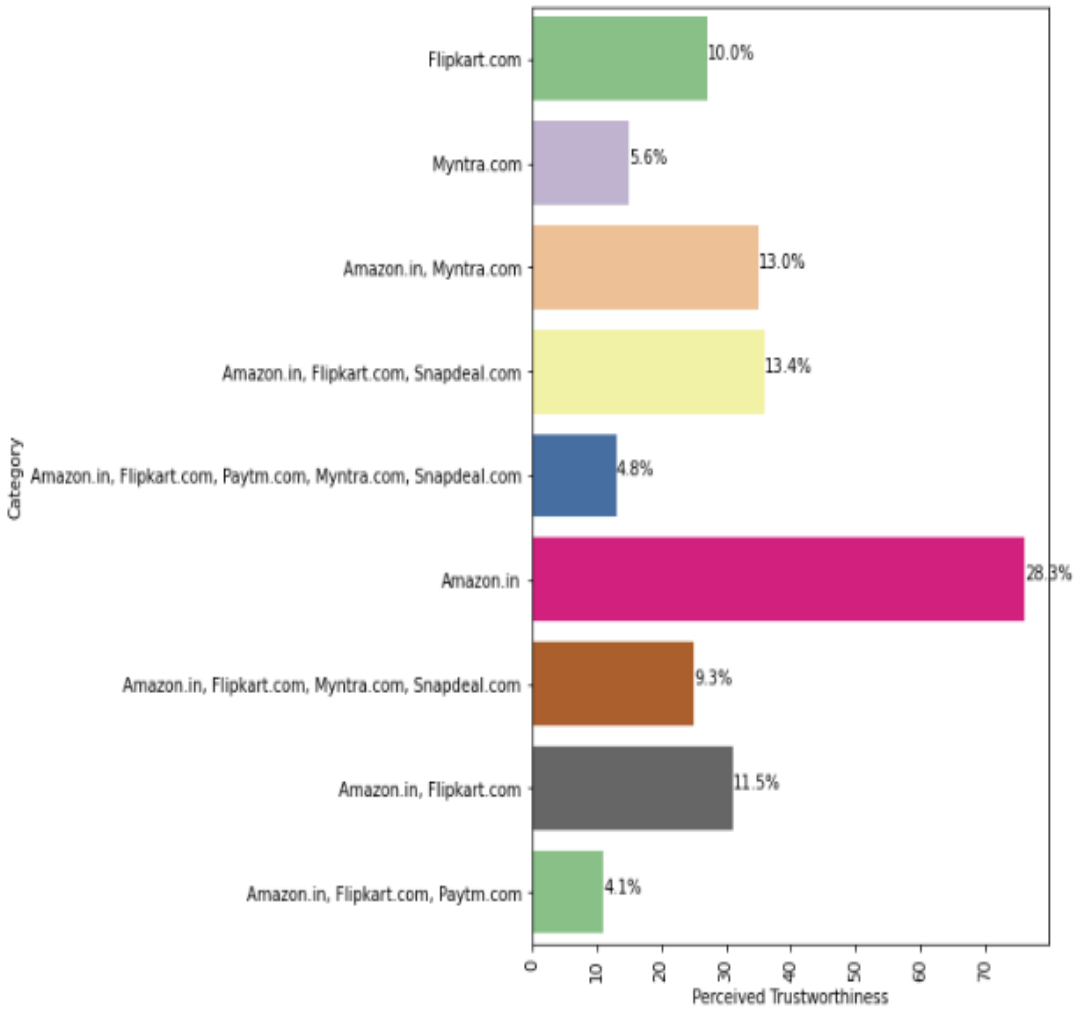

Paytm.com
Amazon.com, Flipkart.com, Myntra.com
Amazon.com, Paytm.com, Myntra.com
Amazon.com, Flipkart.com, Paytm.com
Amazon.com, Flipkart.com, Paytm.com, Myntra.com, Snapdeal
Amazon.com
Flipkart.com, Myntra.com, Snapdeal
Amazon.com, Flipkart.com
Flipkart.com
9.3%
11.2%
7.4%
17.5%
5.6%
24.5%
5.2%
13.8%
5.6%
Category
0
10
20
30
40
50
60
Quickness to complete purchase


Patym.com
Amazon.in, Flipkart.com, Myntra.com
Patym.com, Myntra.com
Amazon.in, Flipkart.com, Patym.com, Myntra.com, Snapdeal.com
Amazon.in, Flipkart.com, Snapdeal.com
Amazon.in, Flipkart.com
Flipkart.com, Myntra.com, Snapdeal.com
Amazon.in, Patym.com
Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com
Amazon.in
Flipkart.com
4.5%
14.9%
7.4%
14.5%
6.7%
24.2%
5.2%
4.1%
7.1%
8.6%
3.0%
Category
0
10
20
30
40
50
60
Availability of several payment options


Amazon.in
Amazon.in, Flipkart.com
Amazon.in, Flipkart.com, Snapdeal.com
Flipkart.com, Myntra.com, Snapdeal.com
Amazon.in, Flipkart.com, Myntra.com
Flipkart.com
39.8%
30.5%
13.4%
5.2%
5.6%
5.6%
Category
0
20
40
60
80
100
Speedy order delivery


Amazon.in
Myntra.com
Amazon.in, Flipkart.com, Myntra.com
Amazon.in, Paytm.com
Amazon.in, Flipkart.com, Paytm.com, Myntra.com, Snapdeal.com
Paytm.com
Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com
Amazon.in, Flipkart.com
Amazon.in, Flipkart.com, Paytm.com
Amazon.in, Flipkart.com, Snapdeal.com
Flipkart.com
26.4%
5.6%
9.3%
5.6%
8.9%
6.7%
5.2%
20.1%
4.1%
2.6%
5.6%
Category
0
10
20
30
40
50
60
70
Privacy of customers' information


Amazon.in
Myntra.com
Amazon.in, Paytm.com, Myntra.com
Amazon.in, Flipkart.com, Snapdeal.com
Paytm.com
Amazon.in, Flipkart.com, Paytm.com, Myntra.com, Snapdeal.com
Flipkart.com
Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com
Amazon.in, Flipkart.com
Amazon.in, Flipkart.com, Paytm.com
Amazon.in, Snapdeal.com
19.0%
5.6%
7.4%
9.3%
5.6%
15.6%
12.3%
5.2%
8.9%
4.1%
7.1%
Category
0
10
20
30
40
50
Security of customer financial information


Flipkart.com
Myntra.com
Amazon.in, Myntra.com
Amazon.in, Flipkart.com, Snapdeal.com
Amazon.in, Flipkart.com, Paytm.com, Myntra.com, Snapdeal.com
Amazon.in
Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com
Amazon.in, Flipkart.com
Amazon.in, Flipkart.com, Paytm.com
10.0%
5.6%
13.0%
13.4%
4.8%
28.3%
9.3%
11.5%
4.1%
Category
0
10
20
30
40
50
60
70
Perceived Trustworthiness

CONCLUSION:

HIGH CUSTOMER SATISFACTION AND RETENTION: 1.Amazon.com 2.Flipkart.com

HIGH RISK OF CUSTOMER CHURN: 1.Myntra.com 2.Snapdeal.com