



Customer Retention Project

Submitted by -
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Acknowledgement

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Introduction

“We do not need many customers to buy once, we need one customer to buy many times”. That is a very familiar slogan of companies providing products and services. Attracting new customers is important to businesses, but they are not necessarily the best customers. Because if they only buy once and do not come back, the business will not be able to make much profit. That’s why businesses need to keep finding a way to hold them back, make them trust the brand and keep buying. That’s why customer retention arises.

The customer retention definition in marketing is the process of engaging existing customers to continue buying products or services from your business. The best customer retention tactics enable you to form lasting relationships with consumers who will become loyal to your brand. They might even spread the word within their own circles of influence, which can turn them into brand ambassadors.

Successful e-commerce brands are often the ones that focus on their customer retention rate and keep working to improve it. Take the example of a newly launched online store that sells women’s shoes. They launch a social media campaign to get sign-ups from 20,000 women customers. The store then shoots emails and SMS to their list with exclusive discount offers for ‘VIP Members’. 2,500 Women sign-up for the VIP membership to avail of exclusive discounts on the latest shoes. This new ‘VIP Members List’ now becomes valuable retained customers for the store.

Business Problem Framing

Customer satisfaction has emerged as one of the most important factors that guarantee the success of online store; it has been posited as a key stimulant of purchase, repurchase intentions and customer loyalty. A comprehensive review of the literature, theories and models have been carried out to propose the models for customer activation and customer retention. Five major factors that contributed to the success of an e-commerce store have been identified as: service quality, system quality, information quality, trust and net benefit. The research furthermore investigated the factors that influence the online customers repeat purchase intention. The combination of both utilitarian value and hedonistic values are needed to affect the repeat purchase intention (loyalty) positively.

Conceptual Background of Domain Problem

In order to succeed at retaining customers who would otherwise abandon the business, marketers and retention experts must be able to (a) predict in advance which customers are going to churn through churn analysis and (b) know which marketing actions will have the greatest retention impact on each particular customer. Armed with this knowledge, a large proportion of customer churn can be eliminated. Given the type of dataset we have, there are only 269 samples and any Machine Learning model will not be able to generalize itself and will be prone to over-fitting.

Motivation for Problem Undertaken

Customer satisfaction has emerged as one of the most important factors that guarantee the success of online store; it has been posited as a key stimulant of purchase, repurchase intentions and customer loyalty. A comprehensive review of the literature, theories and models have been carried out to propose the models for customer activation and customer retention. Five major factors that contributed to the success of an e-commerce store have been identified as: service quality, system quality, information quality, trust and net benefit. The research furthermore investigated the factors that influence the online customers repeat purchase intention. The combination of both utilitarian value and hedonistic values are needed to affect the repeat purchase intention (loyalty) positively. The data is collected from the Indian online shoppers. Results indicate the e-retail success factors, which are very much critical for customer satisfaction

Mathematical/Analytical Modelling of the problem

- The dataset contains 71 features and 269 rows.
- The dataset contains no NULL values.
- All the attributes are of 'object' type except the PIN code.

```
In [2]: #Loading the dataset
df=pd.read_excel(r"C:\Users\awast\Desktop\Customer_retention_dataset\customer_retention_dataset.xlsx")
df.head()
```

Out[2]:

	1 Gender of respondent	2 How old are you?	3 Which city do you shop online from?	4 What is the Pin Code of where you shop online from?	5 Since How Long You are Shopping Online ?	6 How 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?	10 What is the operating system (OS) of your device?	11 What browser do you run on your device to access the website?	12 Which channel did you follow to arrive at your favorite online store for the first time?	13 After first visit, how do you reach the online retail store?	14 How much time do you explore the e-retail store before making a purchase decision?	15
0	Male	31-40 years	Delhi	110009	Above 4 years	31-40 times	Dial-up	Desktop	Others	Window/windows Mobile	Google chrome	Search Engine	Search Engine	6-10 mins	Fre
1	Female	21-30 years	Delhi	110030	Above 4 years	41 times and above	Wi-Fi	Smartphone	4.7 inches	IOS/Mac	Google chrome	Search Engine	Via application	more than 15 mins	Cre
2	Female	21-30 years	Greater Noida	201308	3-4 years	41 times and above	Mobile Internet	Smartphone	5.5 inches	Android	Google chrome	Search Engine	Via application	11-15 mins	Fre
3	Male	21-30 years	Karnal	132001	3-4 years	Less than 10 times	Mobile Internet	Smartphone	5.5 inches	IOS/Mac	Safari	Search Engine	Search Engine	6-10 mins	Cre
4	Female	21-30 years	Bangalore	530068	2-3 years	11-20 times	Wi-Fi	Smartphone	4.7 inches	IOS/Mac	Safari	Content Marketing	Via application	more than 15 mins	Cre

```
In [3]: # Checking the shape
df.shape
```

```
Out[3]: (269, 71)
```

```
In [4]: # Finding Description of the dataset through statistics
df.describe(include=['O'])
```

	1Gender of respondent	2 How old are you?	3 Which city do you shop online from?	5 Since How Long You are Shopping Online ?	6 How 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?	10 What is the operating system (OS) of your device?	11 What browser do you run on your device to access the website?	12 Which channel did you follow to arrive at your favorite online store for the first time?	13 After first visit, how do you reach the online retail store?	14 How much time do you explore the e-retail store before making a purchase decision?	15 What is your preferred payment Option?
count	269	269	269	269	269	269	269	269	269	269	269	269	269	269
unique	2	5	11	5	6	4	4	4	3	4	3	5	5	3
top	Female	31-40 years	Delhi	Above 4 years	Less than 10 times	Mobile internet	Smartphone	Others	Window/windows Mobile	Google chrome	Search Engine	Search Engine	more than 15 mins	Credit/Debit cards

Data-processing Performed

Not much data cleaning is required as the dataset already seems very clean. So we will proceed to our Analytical modelling.

```
In [20]: df.isnull().sum()
```

```
Out[20]: 1Gender of respondent      0
2 How old are you?              0
3 Which city do you shop online from?  0
4 What is the Pin Code of where you shop online from?  0
5 Since How Long You are Shopping Online ?  0
..
Longer delivery period          0
Change in website/Application design  0
Frequent disruption when moving from one page to another  0
Website is as efficient as before  0
Which of the Indian online retailer would you recommend to a friend?  0
Length: 71, dtype: int64
```

Exploratory Data Analysis

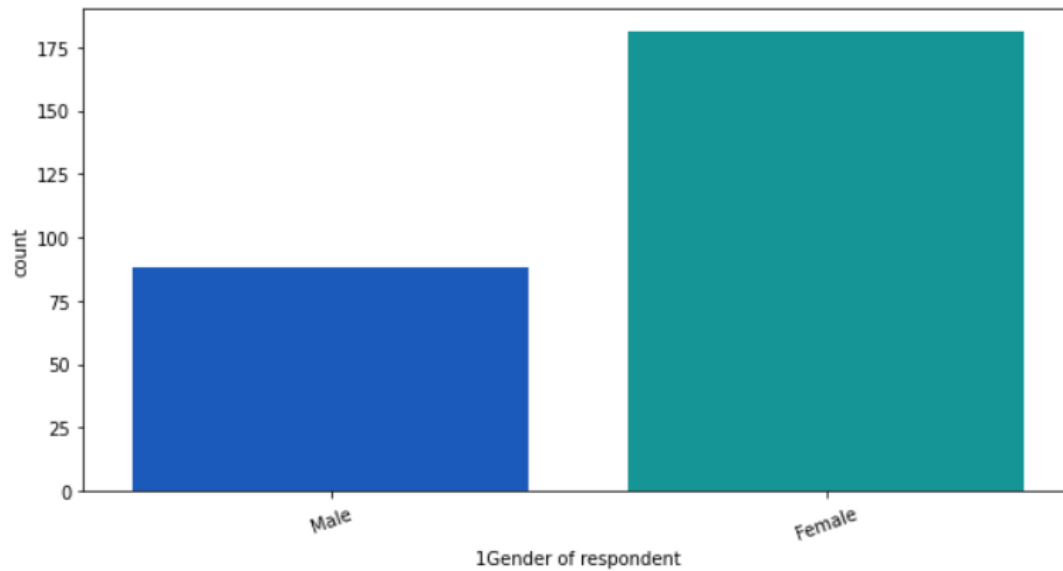
We then create two lists to split the data according numerical and categorical features and further check the length of each of the list.

The data is then deeply analyzed by finding a relationship between each attribute and the Customer according to given details.

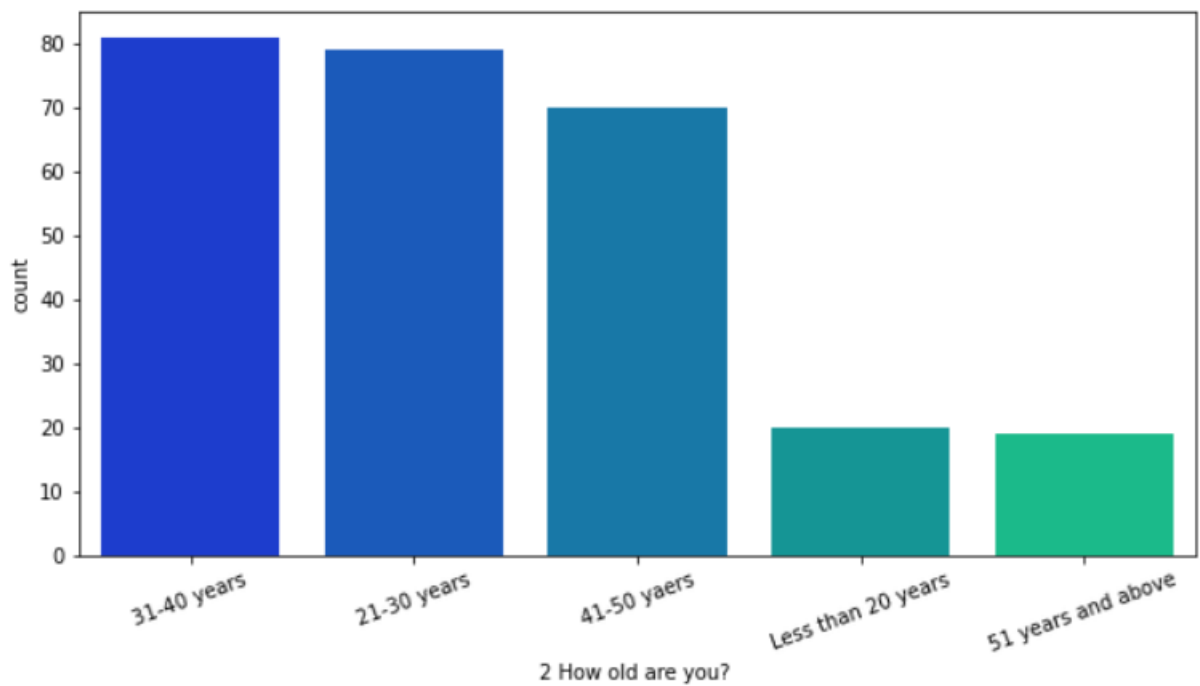
```
#splitting the data into two lists according to numerical and categorical features
Numeric = []
Categoric = []

for i in df:
    if ((df[i].dtypes=='int64')|(df[i].dtypes=='float')):
        Numeric.append(i)
    else:
        Categoric.append(i)
```

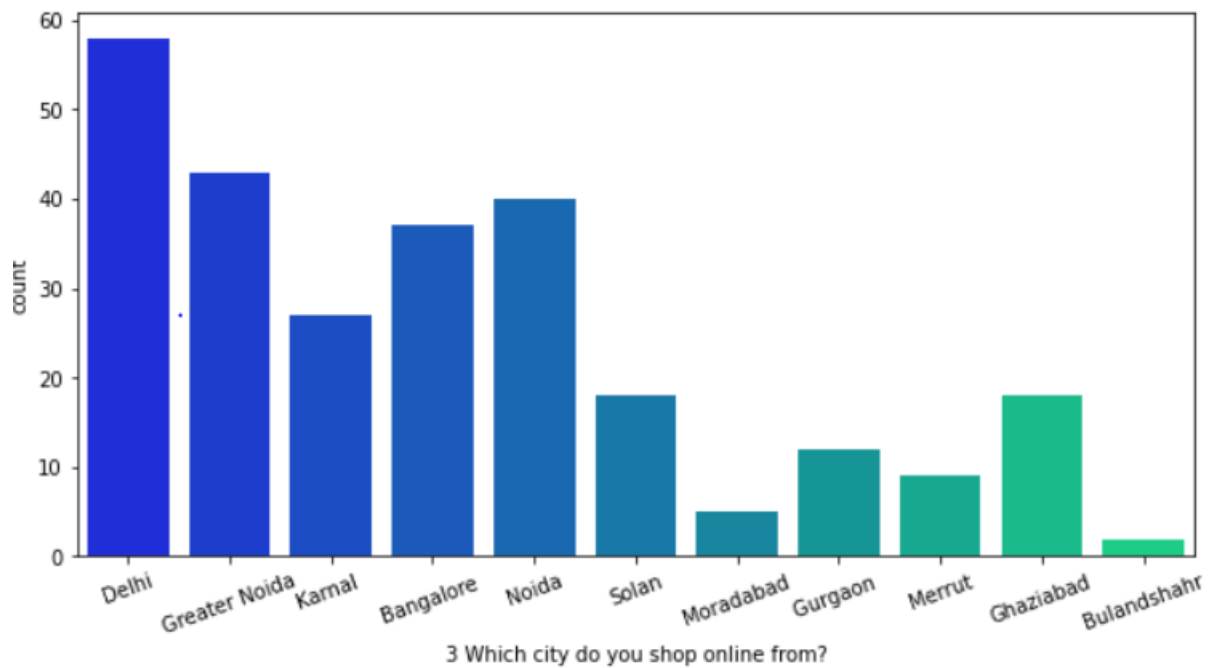
We made the following observations:



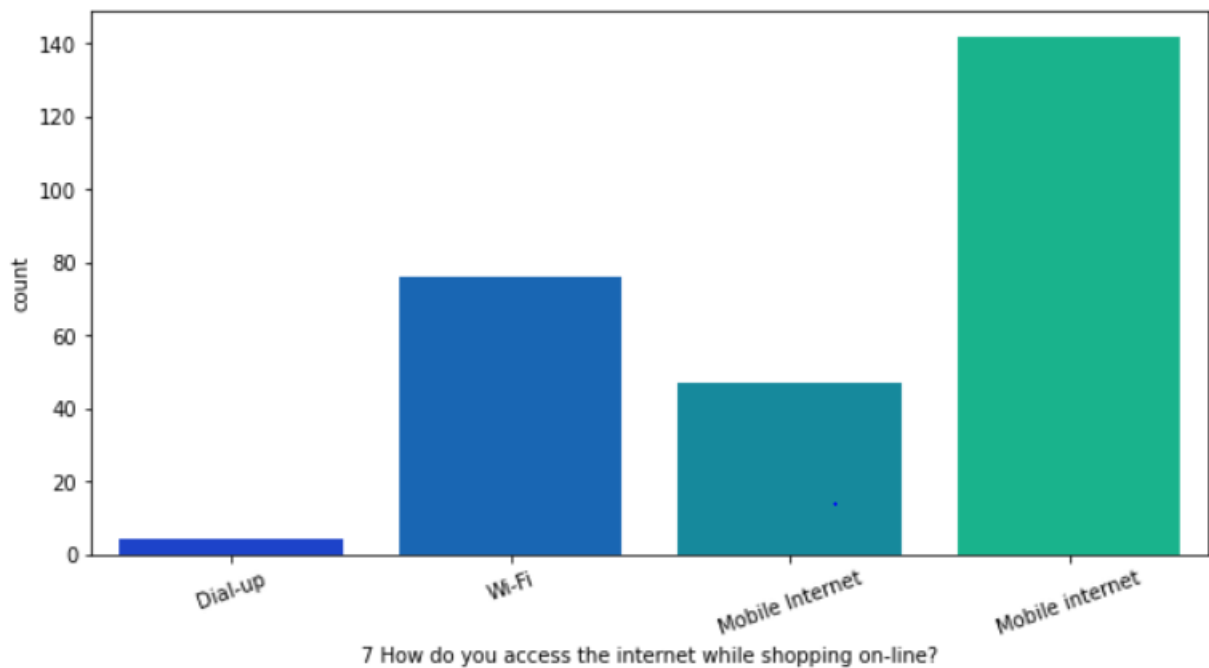
The data has higher number of females. Females are more compulsive shoppers.



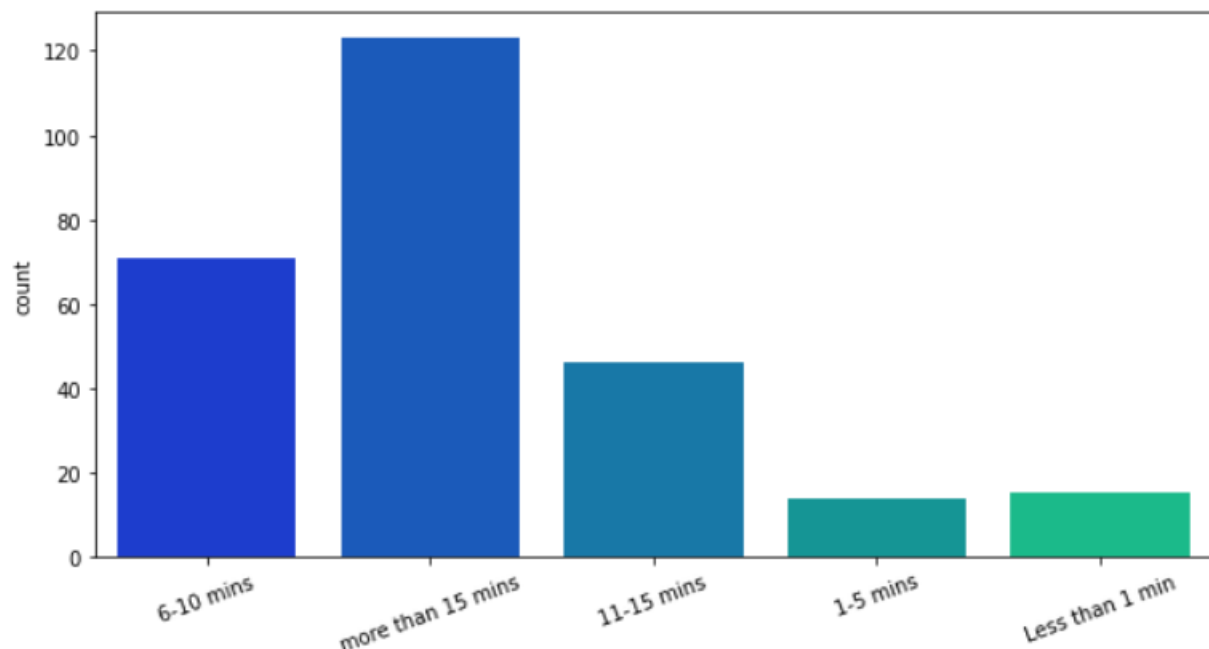
People in age group of 31-40 years do maximum and least is done by 51 years and above



People in metropolitan cities do more online shopping such as Delhi, Greater Noida, Bangalore and Noida.

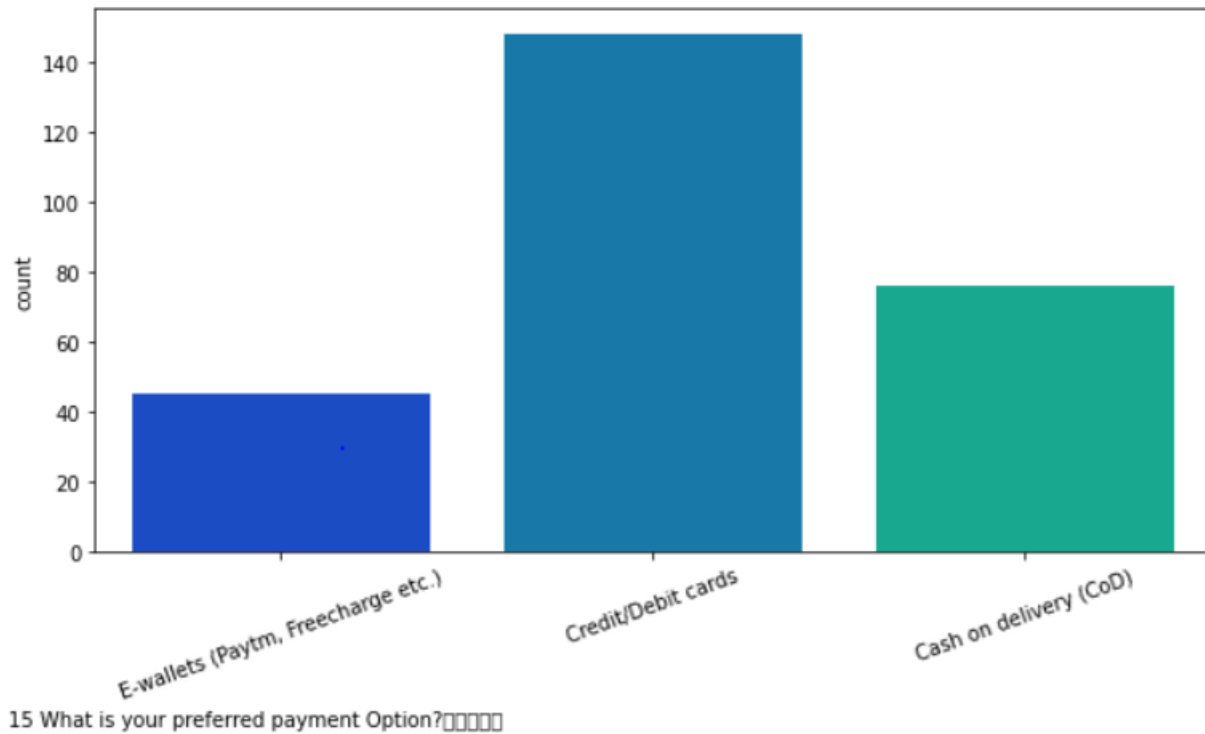


Most shoppers access the shopping sites through mobile internet, hence implying that majority access the shopping sites through mobile applications.

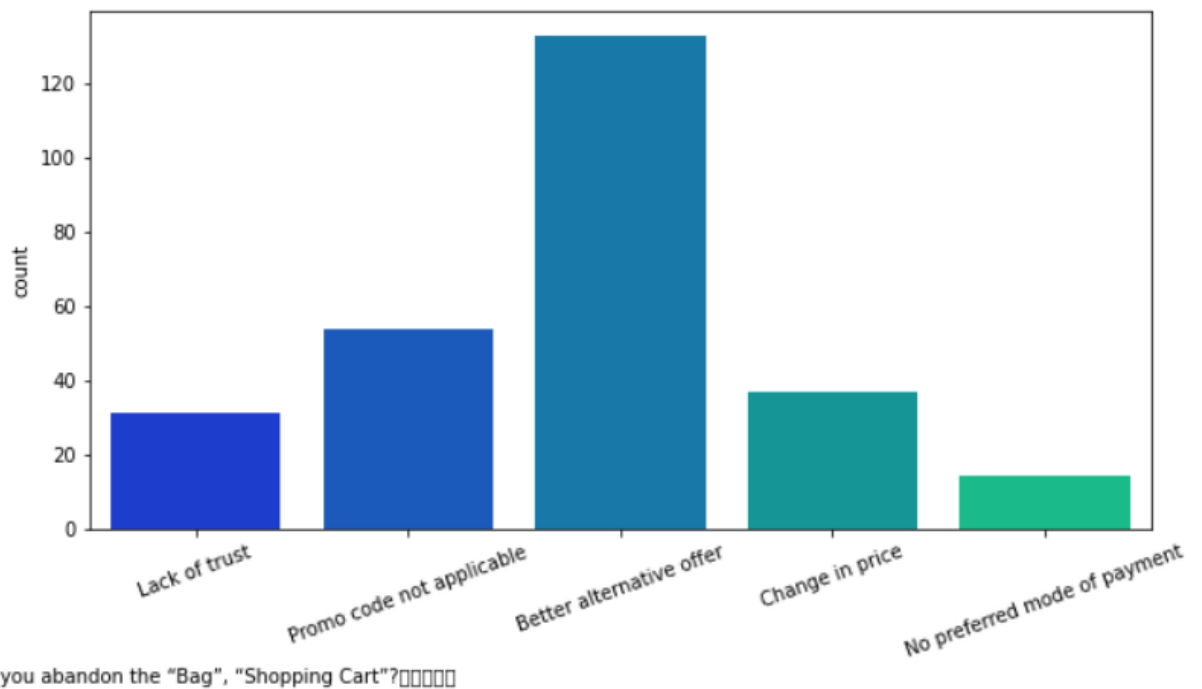


14 How much time do you explore the e- retail store before making a purchase decision?

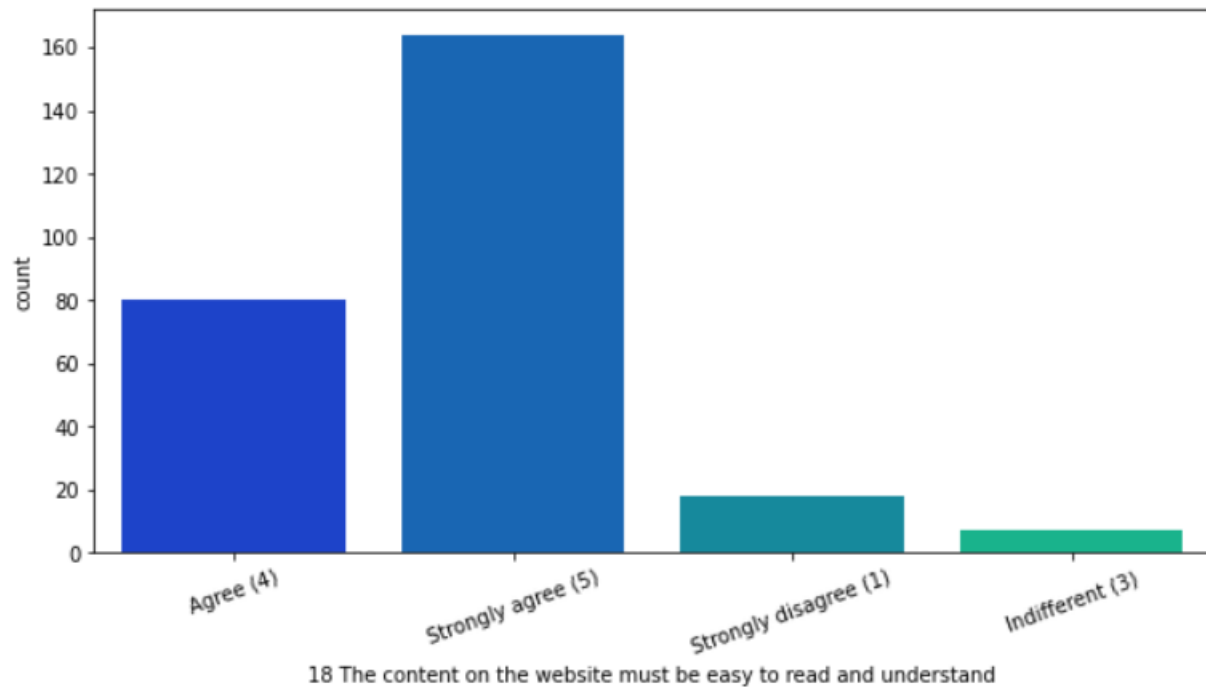
Most of the shoppers spend around more than 15 minutes before purchasing. Very few people are compulsive buyer's.



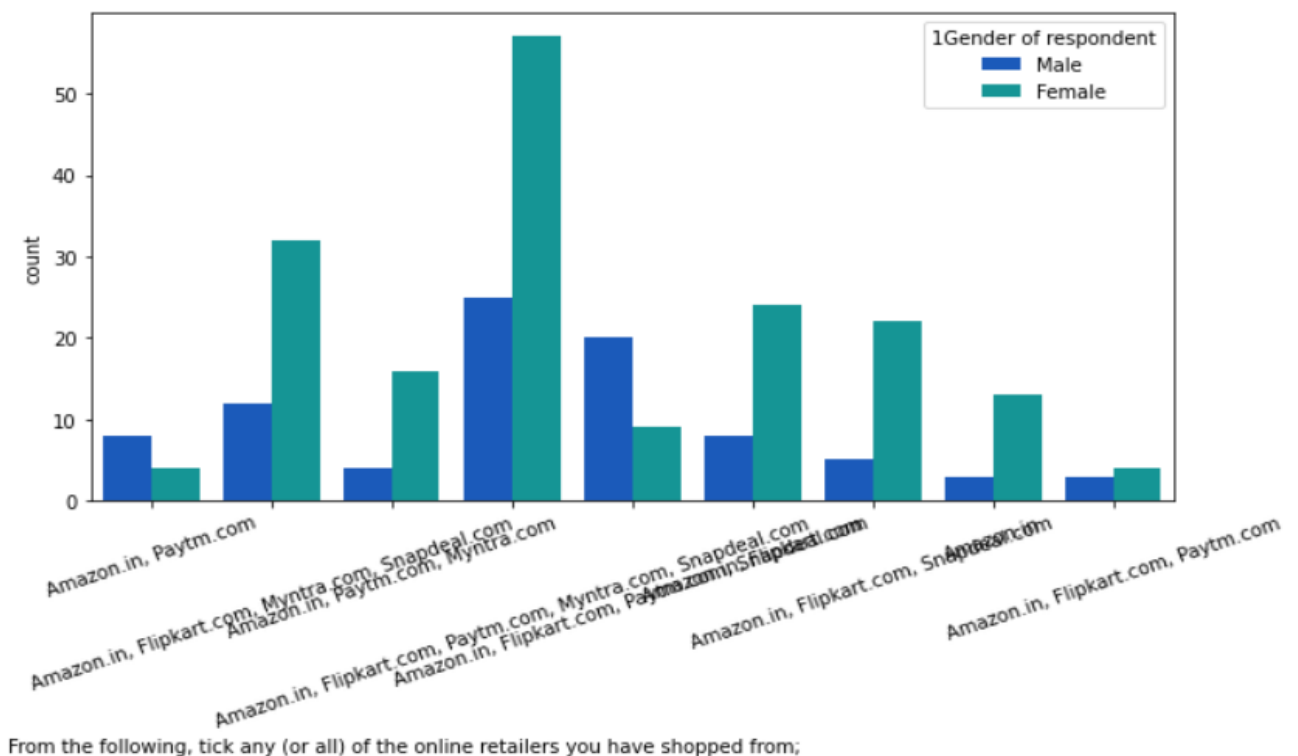
Most people prefer Card payment option followed by COD



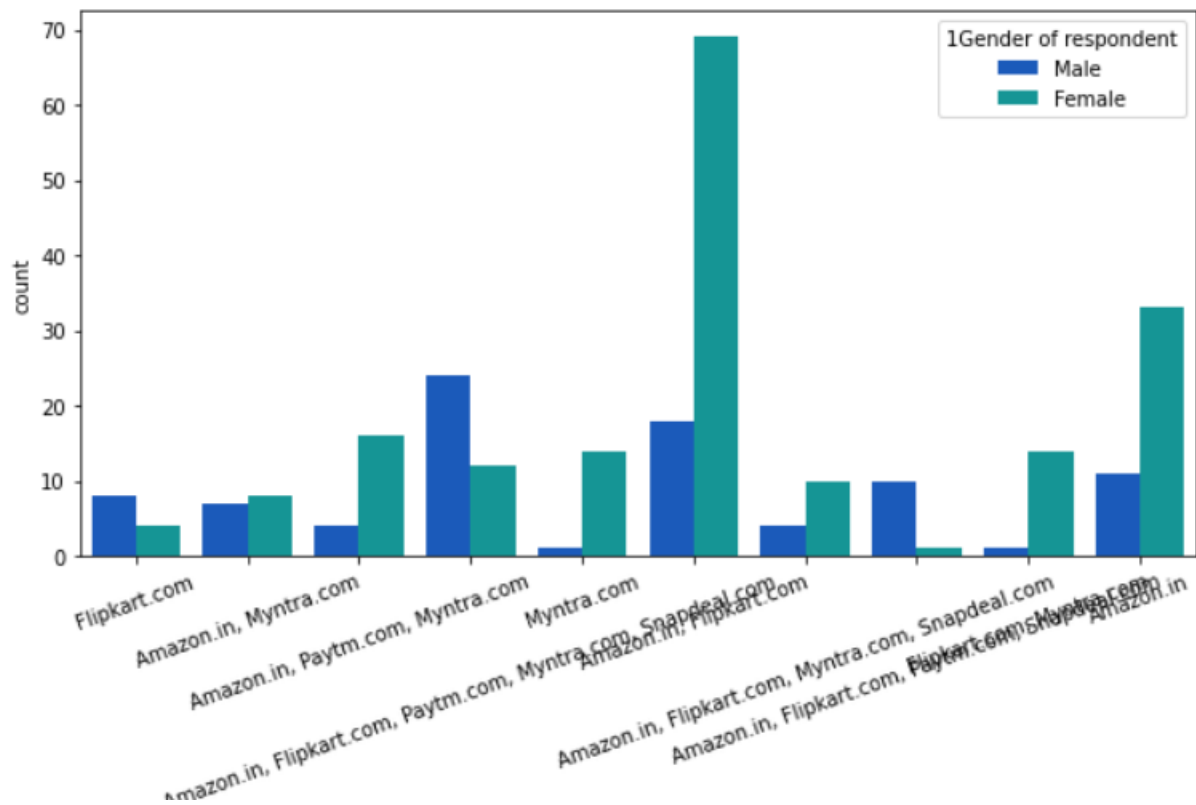
Most of the time people abandon the item in shopping cart because they find better alternative.



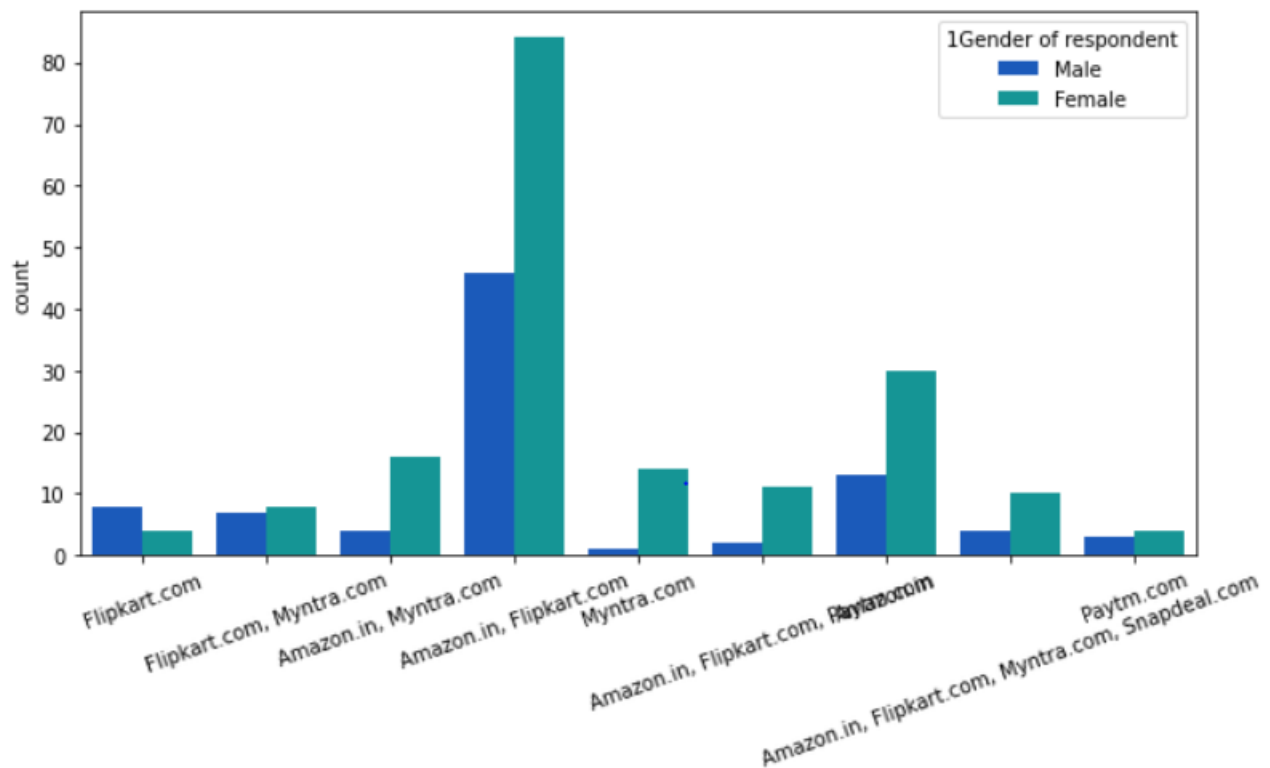
Most of the people strongly agree that content on the website must be easy to read and understand, must have all the information on listed seller and product.



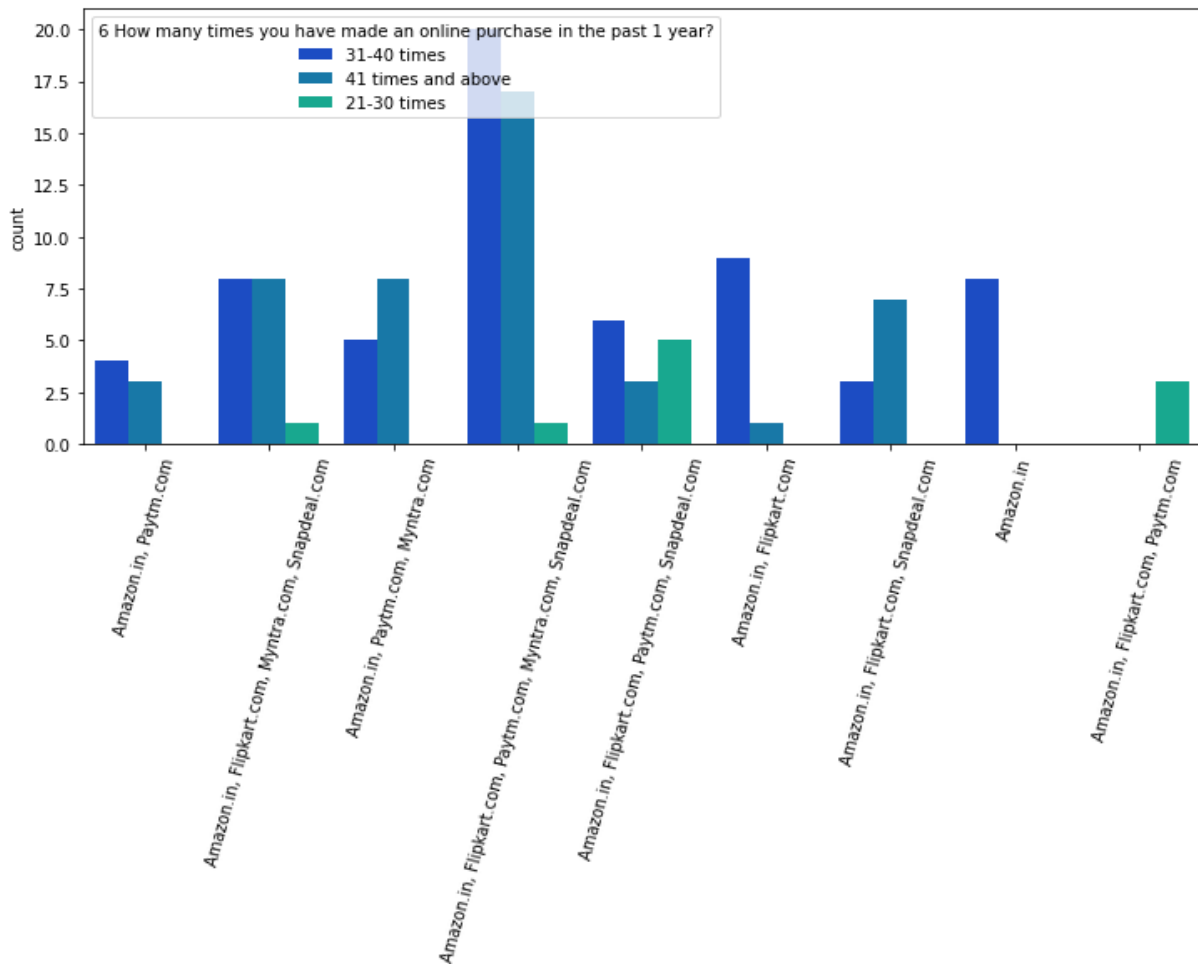
Most people strongly agree that Amazon.in, Paytm.com and Myntra.com are easy to use and maximum shopping has been done from these websites. Also it has complete and relevant information of products



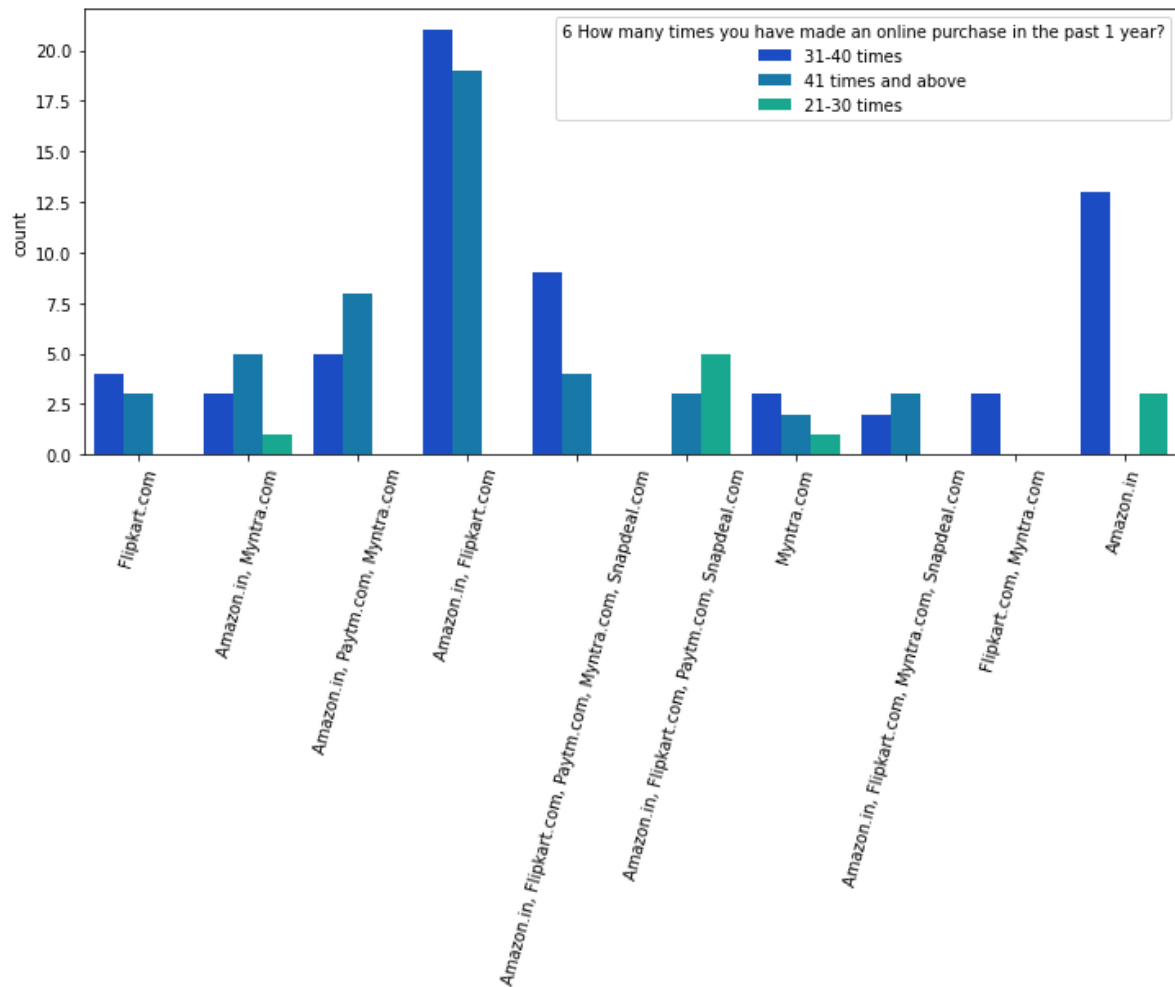
Most people strongly agree that Amazon.in, Flipkart.com, Paytm.com, Myntra.com and Snapdeal.com are visually appealing web page.



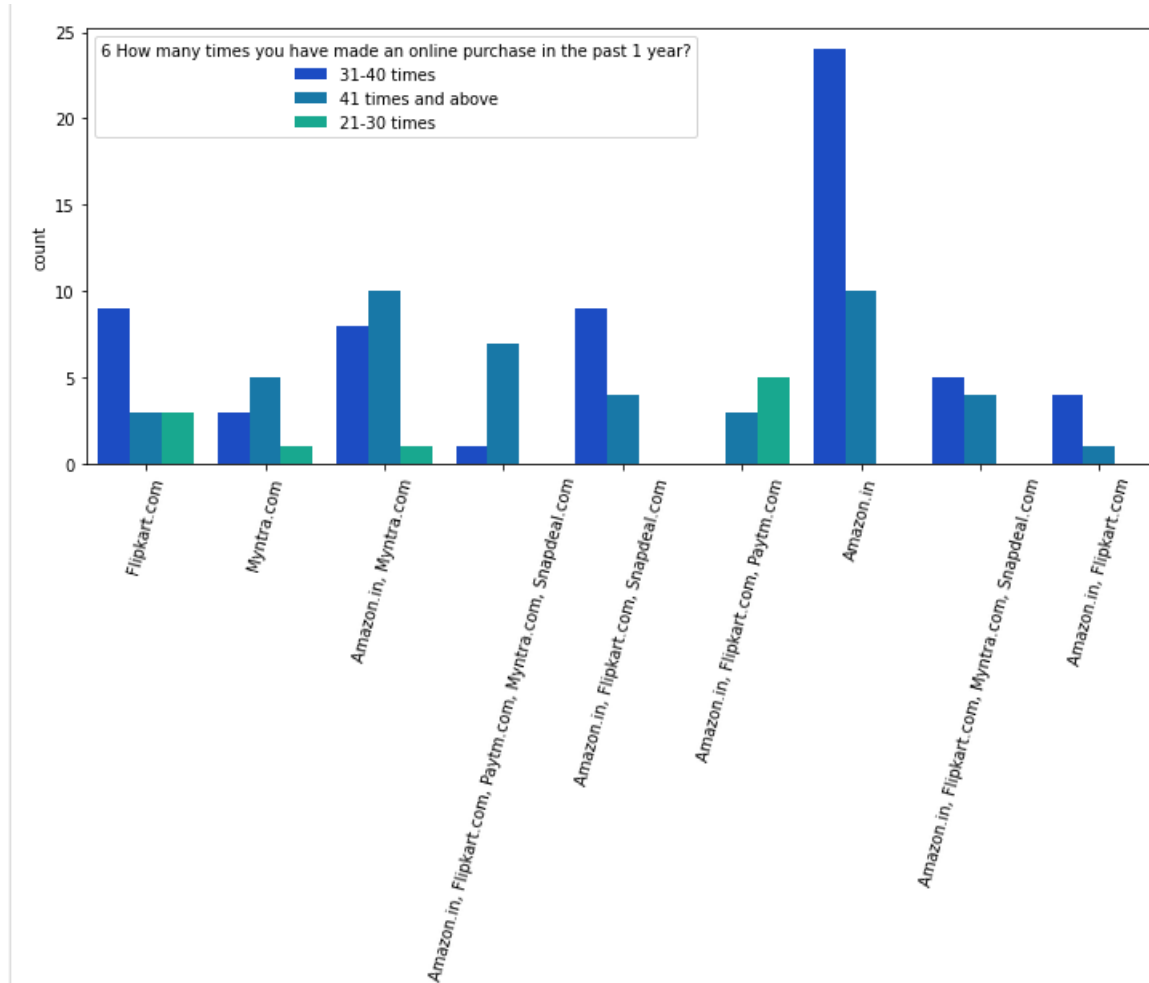
Bi-variate Analysis



We will analyze our data for “How many times have you made an online purchase in the past 1 year” against other features and will analyze only for those customers who have made a purchase more than 20 times in an year.



Highest number of customers have shopped from Amazon.com, Paytm and Myntra. There is no customer who has not shopped from Amazon, making Amazon the market leader in this domain.



when it comes to the trustworthiness, Amazon again has earned a lot of brownie points and have outperformed the other companies.

We can safely conclude that Amazon has outperformed the other portals in all the aspects of the survey and has clearly maintained its image. It has been able to retain its customers successfully as compared to the others in the market.

```

In [14]: df_strongly_agree.sort_values()

Out[14]: 46 Shopping on the website helps you fulfill certain roles      0.141264
44 Shopping on your preferred e-tailer enhances your social status  0.178439
43 Shopping on the website gives you the sense of adventure         0.200743
42 The Convenience of patronizing the online retailer               0.200743
45 You feel gratification shopping on your favorite e-tailer       0.241636
47 Getting value for money spent                                    0.304833
31 Enjoyment is derived from shopping online                       0.319703
20 Complete information on listed seller and product being offered is important for purchase decision. 0.323420
30 Online shopping gives monetary benefit and discounts            0.390335
21 All relevant information on listed products must be stated clearly 0.397770
39 Offering a wide variety of listed product in several category    0.412639
23 Loading and processing speed                                     0.427509
34 Gaining access to loyalty programs is a benefit of shopping online 0.427509
19 Information on similar product to the one highlighted is important for product comparison 0.431227
38 User satisfaction cannot exist without trust                     0.453532
35 Displaying quality Information on the website improves satisfaction of customers 0.494424
40 Provision of complete and relevant product information          0.501859
26 Trust that the online retail store will fulfill its part of the transaction at the stipulated time 0.524164
22 Ease of navigation in website                                   0.524164
32 Shopping online is convenient and flexible                      0.542751
41 Monetary savings                                                0.550186
29 Responsiveness, availability of several communication channels (email, online rep, twitter, phone etc.) 0.553903
25 Convenient Payment methods                                       0.591078
37 Net Benefit derived from shopping online can lead to users satisfaction 0.609665
36 User derive satisfaction while shopping on a good quality website or application 0.650558
28 Being able to guarantee the privacy of the customer            0.687732
24 User friendly Interface of the website                         0.702602
27 Empathy (readiness to assist with queries) towards the customers 0.721190
33 Return and replacement policy of the e-tailer is important for purchase decision 0.736059
Name: Strongly agree (5), dtype: float64

```

Here, we can see the percentage of strongly agree in various attributes of online shopping. We have sorted this in the descending order.

A few insights from this analysis are as follows:

1. Shopping on your preferred e-tailer enhances your social status: This attribute has only 17% of the customers who strongly agree. This is because most of the customers will go to the shopping malls for the social status as ordering online doesn't usually help people in showing off their shopping bags publicly.
2. The Convenience of patronizing the online retailer : This attribute has only 20% of the customers who strongly agree. This means that the customers are not much concerned about patronizing with the retailer.

Conclusion

- 1) Females shop more than males, hence they're the target audience.
- 2) People in age group of 31-40 years shop maximum and least is done by 51 years
- 3) People in metropolitan cities (Delhi, Greater Noida, Bangalore and Noida) exercise more online shopping.
- 4) Shoppers prefer Card payment option followed by COD.
- 5) Most of the shoppers strongly agree that
 - content on the website must be easy to read and understand,
 - Must have all the information on listed seller and product,
 - There must be ease of navigation in website,
 - Must have convenient payment method,
 - must have empathy towards the customers
 - online shopping gives monetary benefit and discounts
 - There must be return and replacement policy of the e-tailer for purchasing
- 6) Shoppers agree that they are Getting value for money spent
- 7) They also strongly agree that Amazon.in, Paytm.com and Myntra.com are easy to use and maximum shopping has been done from these websites, also they have complete and relevant information of products
- 8) Amazon and flipcart offer wide variety of products Amazon has fastest delivery followed by flipcart and myntra. Also they are highly satisfactory in terms of privacy of customer information.

9) Moreover Amazon website is best since its extremely efficient. Snapdeal provides limited mode of payment and has fequent disruption on moving from one page to other. Most of the people would refer Amazon to others.

10) Females in age group 21-30 years do maximum shopping

11) Females from greater noida and males from delhi do maximum shopping

12) Most of the females shop from amazon,flipcart,paytm,myntra,snapdeal as they find it easy to use and find amazon reliable

13) Males find amazon,flipcart and paytm to be equally reliable.

14) Both male and female agree that amazon is as efficient as before.

15) Moreover they both would recommend amazon to a friend.

16) Shopping on your preferred e-tailer enhances your social status: This attribute has only 17% of the customers who strongly agree. This is because most of the customers will go to the shopping malls for the social status as ordering online doesn't usually help in showing off.

17) The Convenience of patronizing the online retailer : This attribute has only 20% of the customers who strongly agree. This means that the customers are not much concerned about patronizing with the retailer.

18) Return and replacement policy of the e-tailer is important for purchase decision: It has whopping 73% of the customers who strongly agree to it. It is evident from the fact that people cannot actually try, touch and feel the products that they are purchasing before they reach home and they would want to return or replace in case of dissatisfaction. Online shopping websites should make strategies around easy return and replacement policy if they want to retain their customers. It also reveals that touch and feel is an important aspect of shopping.

19) Empathy (readiness to assist with queries) towards the customers: This also has a high percentage of 72. The reason is insecurity amongst the customers. If they have a provision of a helpline number associated with the website, that sense of insecurity vanishes and the customer can trust the website more. A 24X7 support is a must for these online retail stores.

20) User friendly Interface of the website: Just like the navigation in a physical store should be easy, same is the case with the online retail store so that the customers do not have to work around much and the overall shopping experience is smooth. The retail stores should invest heavily in creating user friendly apps and websites.

21) Being able to guarantee the privacy of the customer: This also got 68% strongly agree. Everyone is concerned of their privacy. If there is a website that posts about your recent purchase on its social media and tags you without your consent can be a breach of privacy. Imagine buying underwears and being tagged by amazon on facebook for doing so.

22) Convenient Payment methods: This also had 59% people strongly agreeing. Cash on delivery, online cards and upi, all the methods should be available for the customers to make the transaction.

23) Responsiveness, availability of several communication channels (email, online rep, twitter, phone etc.): In case one channel is not available, customers can reach out to multiple channels which again is an important factor. We have recently seen customers reaching out to Amazon and Flipkart's Twitter handles and raising issues over there which are readily resolved.

