E-retail factors for customer activation and retention: A case study from Indian e-commerce customers

Submitted by:

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ACKNOWLEDGMENT

This includes mentioning of all the references, research papers, data sources, professionals and other resources that helped me and guided me in completion of the project.

I wish to express my sincere gratitude to Miss. Swati Mahaseth, SME for providing me an opportunity to do my internship and project work in "FLIP ROBO Technologies".

It gives me immense pleasure in presenting this project report on "CUSTOMER RETENTION CASE STUDY". It has been my privilege to have a team of project guide who have assisted me from the commencement of this project. The success of this project is a result of sheer hard work, and determination put in by me with the help of You Tube videos, references taken from skikit-learn.org. To know more about micro finance, I read

https://www.geeksforgeeks.org/

https://github.com/

https://www.counterpointresearch.com/

I hereby take this opportunity to add a special note of thanks for to Miss. Swati Mahaseth, who undertook to act as my mentor despite her many other professional commitments. Her wisdom, knowledge and commitment to the highest standards inspired and motivated me. Without his insight, support this project wouldn't have reached fruitfulness.

The project is dedicated to all those people of Fliprobo Technologies, Datatrained who helped me while doing this project.

INTRODUCTION

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.

Customer retention refers to the ability of a company or product to retain their customers over some specified period. High customer retention means customers of the product or business tend to return to, continue to buy or in some other way not defect to another product or business, or to non-use entirely. Selling organizations generally attempt to reduce customer defections.

Customer retention starts with the first contact an organization has with a customer and continues throughout the entire lifetime of a relationship and successful retention efforts take this entire lifecycle into account. A company's ability to attract and retain new customers is related not only to its product or services, but also to the way it services its existing customers, the value the customers actually perceive as a result of utilizing the solutions, and the reputation it creates within and across the marketplace.

Successful customer retention involves more than giving the customer what they expect. Generating loyal advocates of the brand might mean exceeding customer expectations. Creating customer loyalty puts customer value rather than maximizing profits and shareholder value at the centre of business strategy'. The key differentiation in a competitive environment is often the delivery of a consistently high standard of customers' services. Furthermore, in the emerging world of Customer Success, retention is a major objective.

Analytical Problem Framing

Mathematical/ Analytical Modeling of the Problem

The dataset is being provided by Flip Robo Technologies in .xlsx (Microsoft Excel) format and contains 269 records with 71 features.

We began with loading the dataset and reading the dataset from the xlsx file using the read_excel() function from the Pandas Python package. Next, we performed Non-Graphical Exploratory Data Analysis (EDA) such as checking the data types and missing values using pandas info() function.

Later, we performed graphical EDA to get more insights from our dataset.

	1Gender 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? \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)	Longer pa loading ti (promoti sales peri
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	Flipkart.c
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	Snapdeal.c
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	Myntra.c
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	Paytm.c
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	Paytm.c
...	...	...	...	...	...	...	...	...	...	...	... ...	...	...	...	
264	Female	21-30 years	Solan	173212	1-2 years	Less than 10 times	Mobile Internet	Smartphone	5.5 inches	Android	...	Amazon.in	Amazon.in	Amazon.in	Amazo
265	Female	31-40 years	Ghaziabad	201008	1-2 years	31-40 times	Mobile Internet	Smartphone	Others	Android	...	Flipkart.com	Flipkart.com	Flipkart.com	Flipkart.c
266	Female	41-50 yaers	Bangalore	560010	2-3 years	Less than 10 times	Mobile internet	Laptop	Others	Window/windows Mobile	...	Amazon.in	Snapdeal.com	Amazon.in	Snapdeal.c
267	Female	Less than 20 years	Solan	173229	2-3 years	Less than 10 times	Wi-Fi	Smartphone	5.5 inches	Android	...	Amazon.in	Amazon.in, Myntra.com, Snapdeal.com	Amazon.in	Amazo Snapdeal.c
268	Female	41-50 yaers	Ghaziabad	201009	2-3 years	31-40 times	Mobile Internet	Smartphone	5.5 inches	Android	...	Amazon.in	Amazon.in	Amazon.in	Amazo

269 rows × 71 columns

```
In [5]:  ▶| df.info()
```

```
     17  18 The content on the website must be easy to read and understand
269 non-null    object
     18  19 Information on similar product to the one highlighted  is important for product comparison
269 non-null    object
     19  20 Complete information on listed seller and product being offered is important for purchase decision.
269 non-null    object
     20  21 All relevant information on listed products must be stated clearly
269 non-null    object
     21  22 Ease of navigation in website
269 non-null    object
     22  23 Loading and processing speed
269 non-null    object
     23  24 User friendly Interface of the website
269 non-null    object
     24  25 Convenient Payment methods
269 non-null    object
     25  26 Trust that the online retail store will fulfill its part of the transaction at the stipulated time
269 non-null    object
     26  27 Empathy (readiness to assist with queries) towards the customers
269 non-null    object
```

There are 269 rows and 71 columns

```
In [6]:  ▶| df.shape
Out[6]:  (269, 71)
```

```
In [7]:  ▶| df.dtypes
Out[7]:  1Gender of respondent                                                object
         2 How old are you?                                                    object
         3 Which city do you shop online from?                                 object
         4 What is the Pin Code of where you shop online from?                  int64
         5 Since How Long You are Shopping Online ?                            object
                                                                                ...
         Longer delivery period                                              object
         Change in website/Application design                                object
         Frequent disruption when moving from one page to another            object
         Website is as efficient as before                                   object
         Which of the Indian online retailer would you recommend to a friend? object
         Length: 71, dtype: object
```

These are the data types of dataset

Data Pre-processing Done

After loading of dataset in jupyter notebook, I first checked the shape of the dataset then I moved further in next step for checking any null values present in the dataset.

State the set of assumptions (if any) related to the problem under consideration

The main assumption is that there is no selection bias in the data which we have.

Data Inputs- Logic- Output Relationships

The input data for the processing and getting the output is converted in to the numerical forms or data words, in to the numerical form. It feed to the model in the form of series (one by one) which analyses by the model providing the certain score through the medium of performance metrics.

Hardware and Software Requirements and Tools Used

Data Science task should be done with sophisticated machine with high end machine configuration. The machine which I'm currently using is powered by Intel core i3 processor with 4 GB of RAM. With this above-mentioned configuration, I managed to work with the data set in Jupyter Notebook which helps me to write Python codes. As I'm using low configuration machine so it took more time than usual to execute codes. The library used for the assignment are Numpy, Pandas, Matplotlib, Seaborn and Scikit learn

```python
#Import libraries
import pandas as pd #Data processing
import numpy as np #Linear algebra
import matplotlib.pyplot as plt #data visualization
import seaborn as sns  #data visualization
import warnings
warnings.filterwarnings("ignore")
```

Identification of possible problem-solving approaches (methods)

These are the following approaches I have used here: Importing and displaying insights of the data using pandas Data frame. Analyzing the data and use properpre-processing techniques to clean it.

EDA-Exploratory Data Analysis

> ➢ Visualization – Univariate Analysis

     Univariate analysis is the simplest form of data analysis where the data being analyzed contains only one variable.
     In this project analysis, I have used count-plot because it helped to understand each feature of data like people of which age used which site more, which type of device more to order any product, and people of which age or gender researched about the product before buying it, etc.
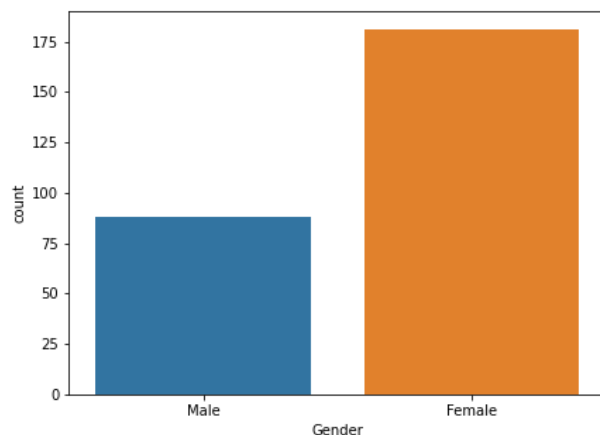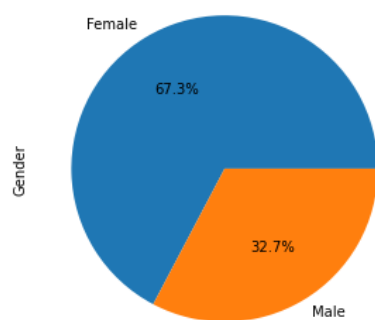
- We can see that Female (181) respondents are more in comparison to the Male (88) respondents.
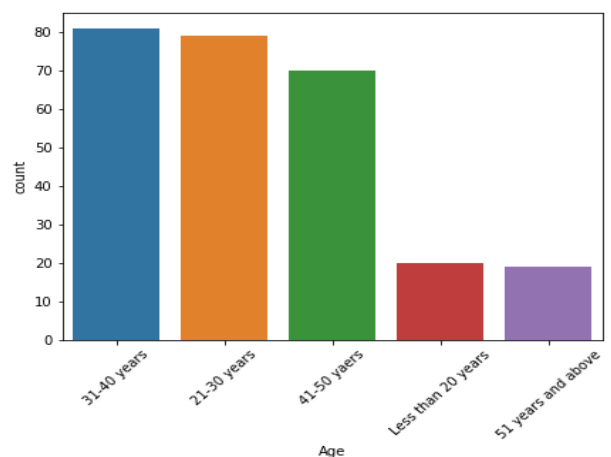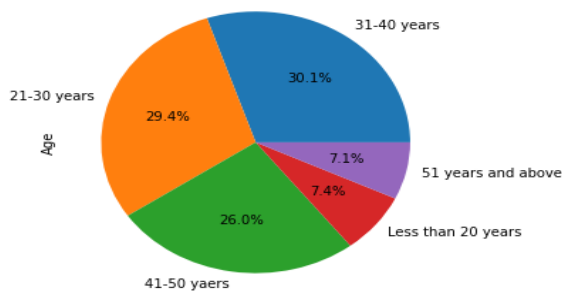
- From the plots we can clearly see that most of the respondents are from the following three categories:-
  1) 31-40 years 2) 21-30 years 3) 41-50 years

- Very few respondents are from these two categories :-
  1) Less than 20 years 2) 51 years and above.
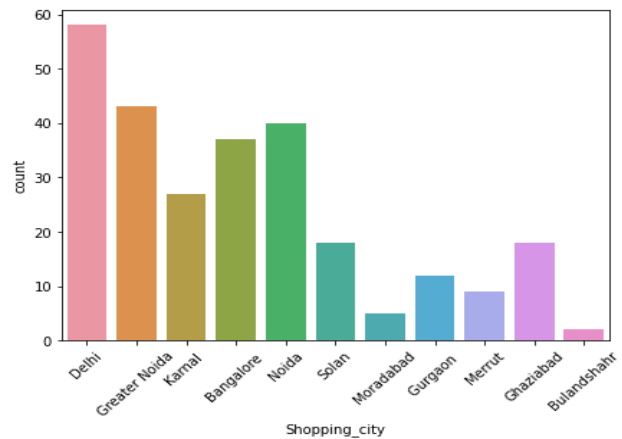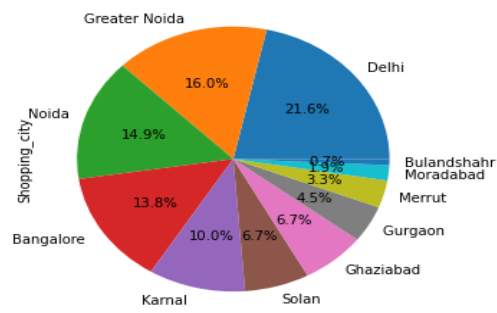
- We can see that most people are ordering from Delhi & least people are ordering from Bulandshahr

- Shopping_cities in decreasing order:

  1. Delhi > 2.Greater Noida > 3.Noida > 4.Bangalore > 5.Karnal > 6.Solan > 7.Ghaziabad > 8. Gurgaon > 9.Merrut > 10.Noradabad > 11.Bulandshahr
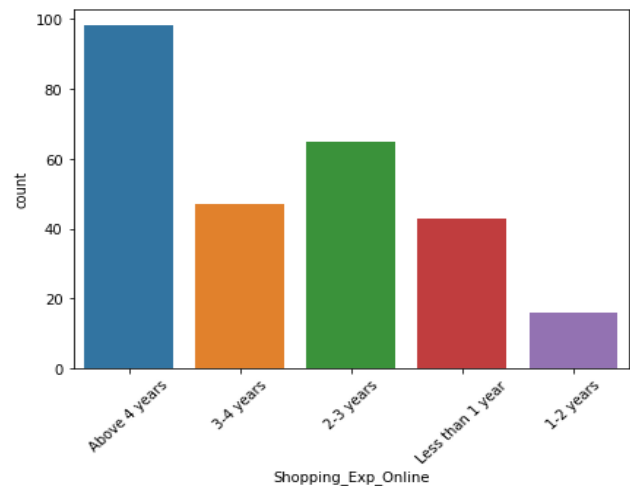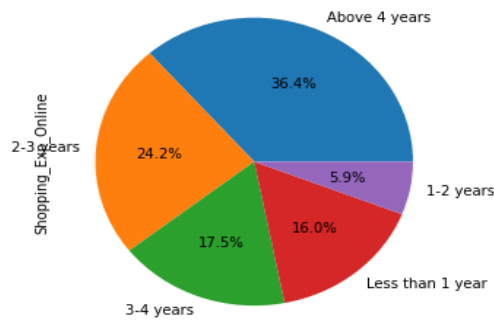
- We can see that most of the online shoppers of our dataset have more than 4 years of shopping experience

- Very few of the shoppers have experience of 1-2 years.
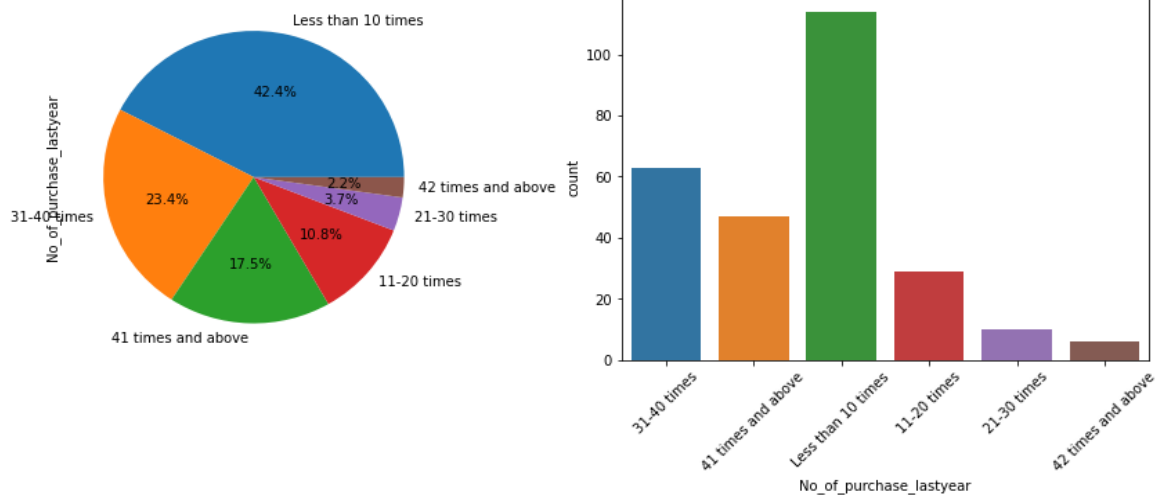
- From the above plots we can conclude that majority people purchase less than 10 times in last one year
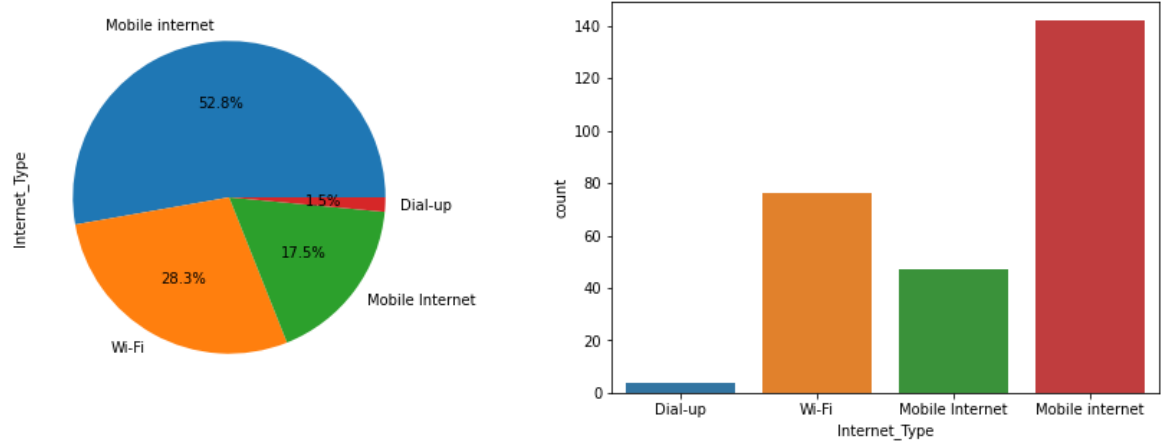
- From the above plots we can conclude that most of people depend on "Mobile Internet" & followed by "Wi-Fi" for the online shopping.
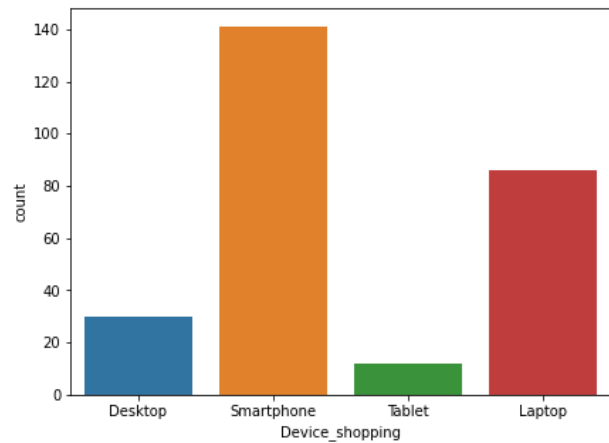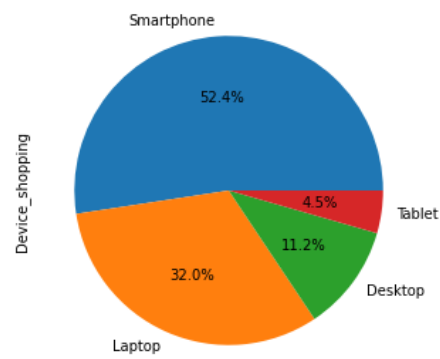
- Above plots clearly say that "Smartphone" is the most popular device followed by the "Laptop".
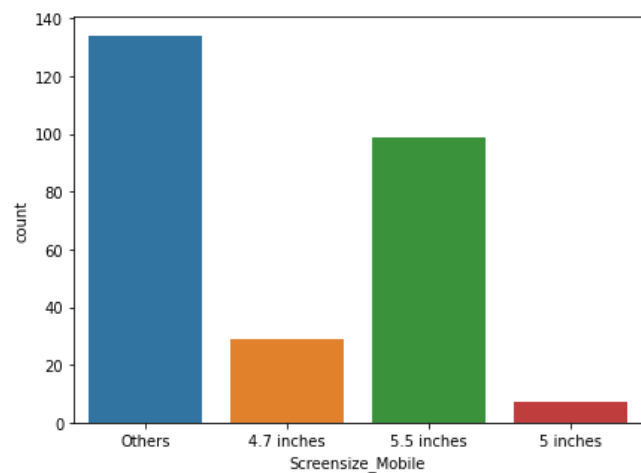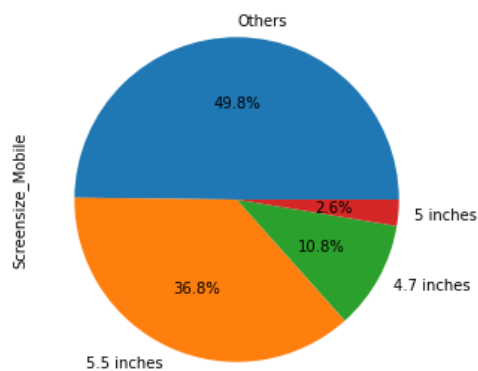
- The data which we have it is saying most people have screen size apart from 4.7, 5.5,5 inches. But the screen size does not matter for the online shopping.
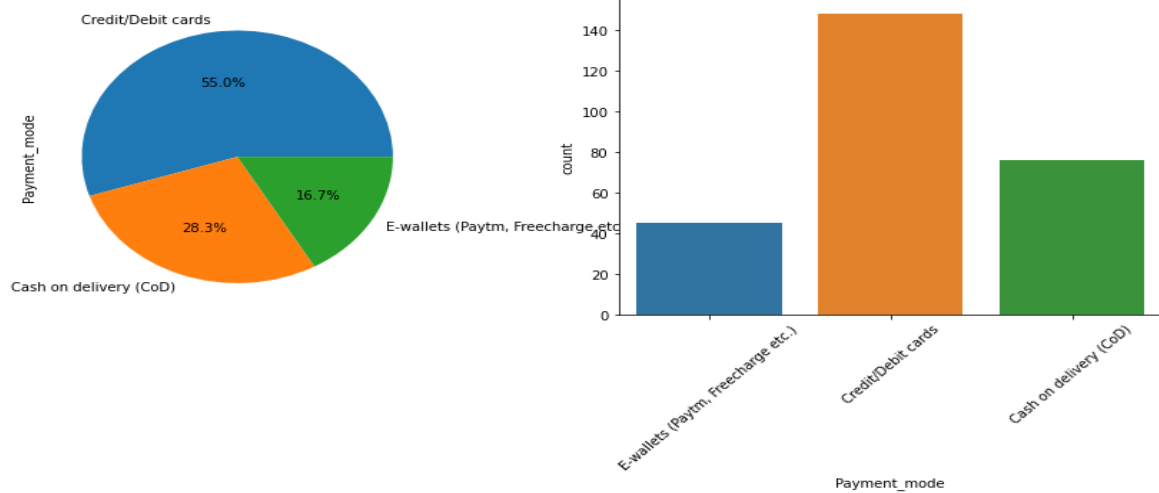
- We can see that most people prefer Credit/Debit card for their payment options.

- After Credit/Debit card comes the Cash on Delivery(COD).

- Least people go with E-wallets(Paytm, Freecharge).
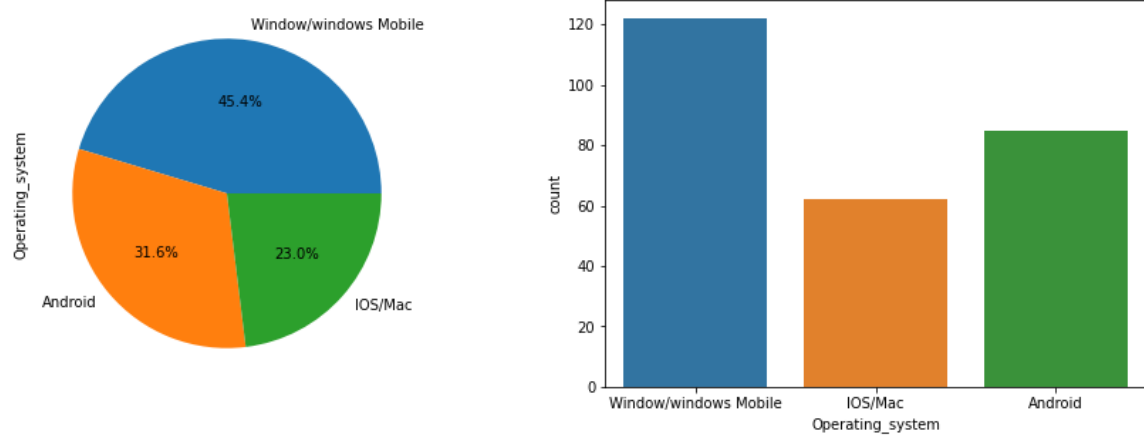
- Most people are using the windows phone/windows.

- Very few people are using the IOS/MAC operating system.
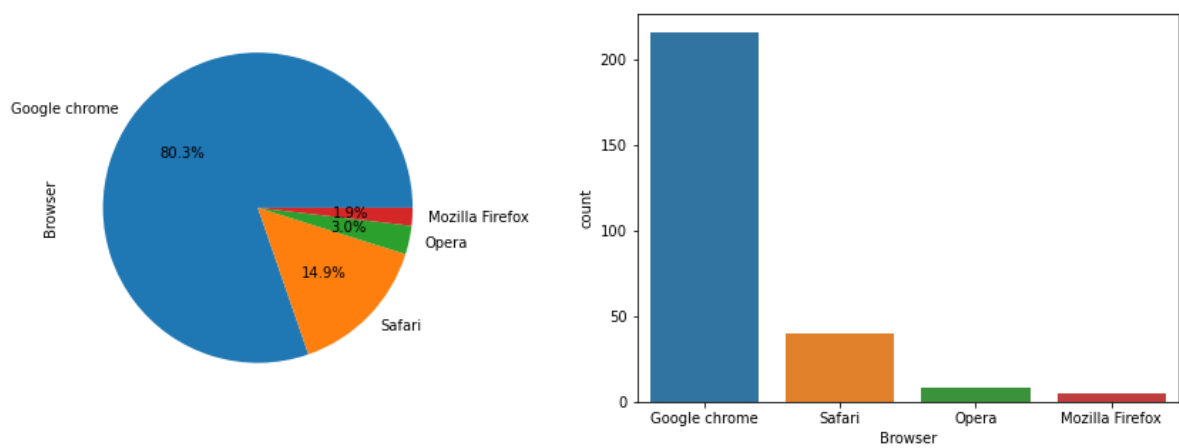
- We can see that mostly people use "Google chrome" followed by "Safari".

- Very less people use "Mozilla Firefox" & "Opera".
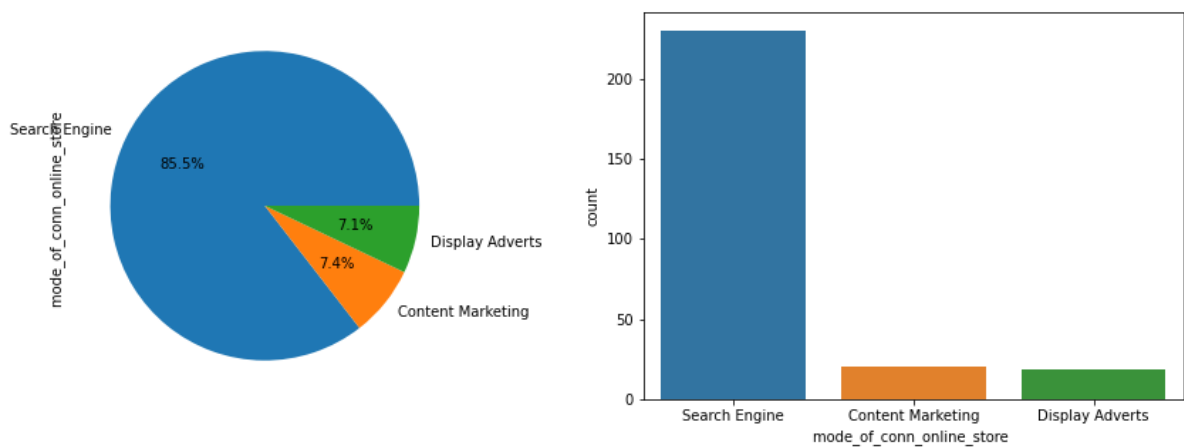
- Search Engine is the channel which is used mostly by the people for the first time to arrive at their favorite online store.
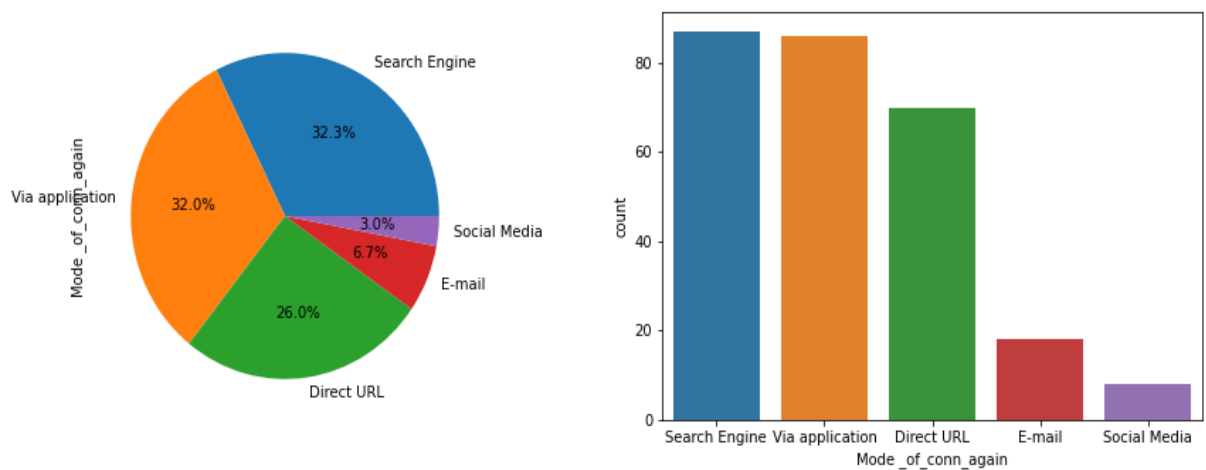
- After first visit, mostly people again use online store via search engine or applications and then followed by direct URL. Very Less of the people are using via e-mail and social media.
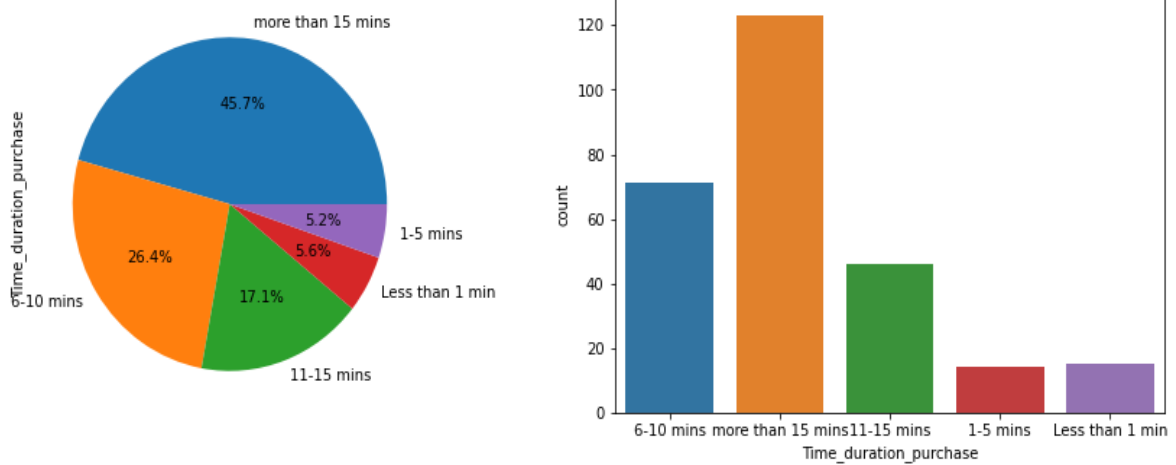
- For making a purchase decision most of the people spent more than 15 mins to explore the e-retail store.
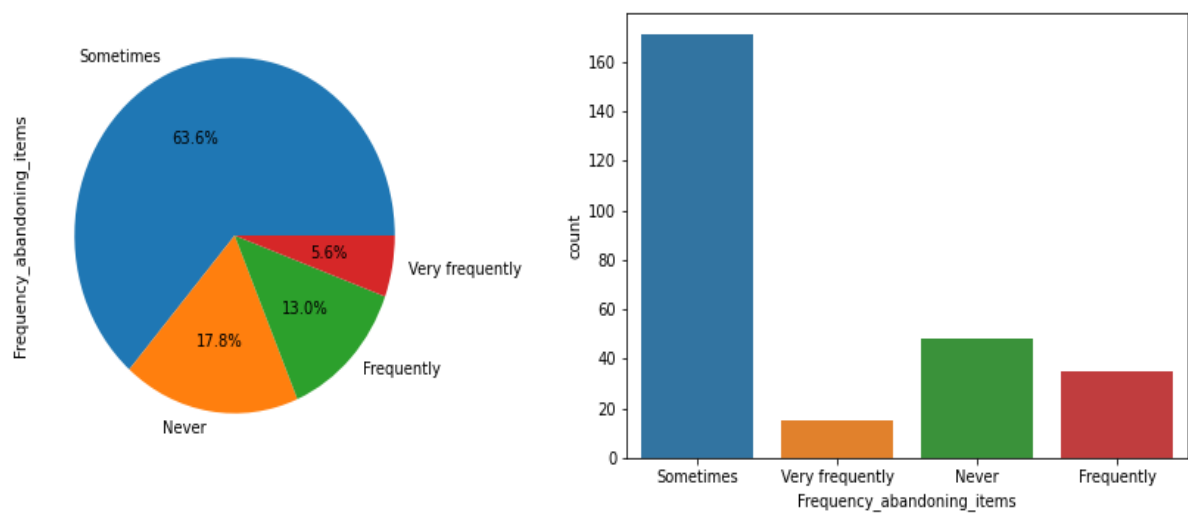
- Sometimes most of the people do abandoned the items in list while shopping online.
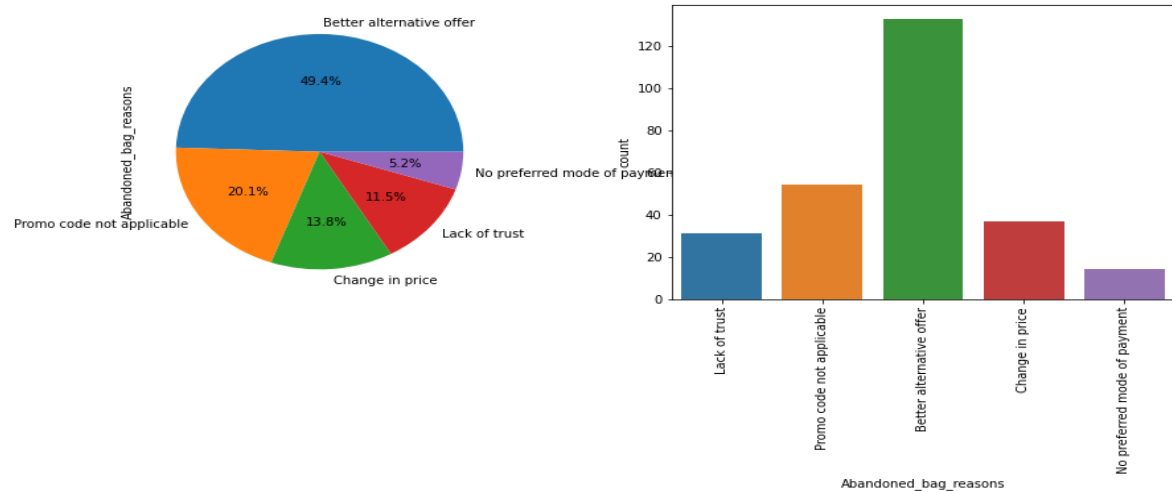
- Most people abandoned the items of their list because they have waited for" Better_alternative_offers" followed by "Promo code not applicable".
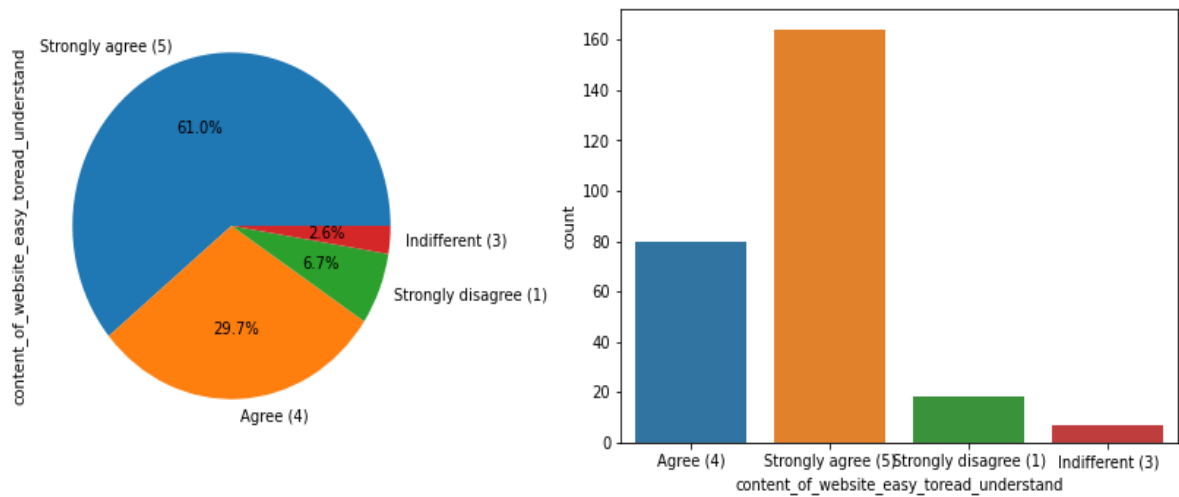
- Most people strongly agree that the content must be easy to read and understand.
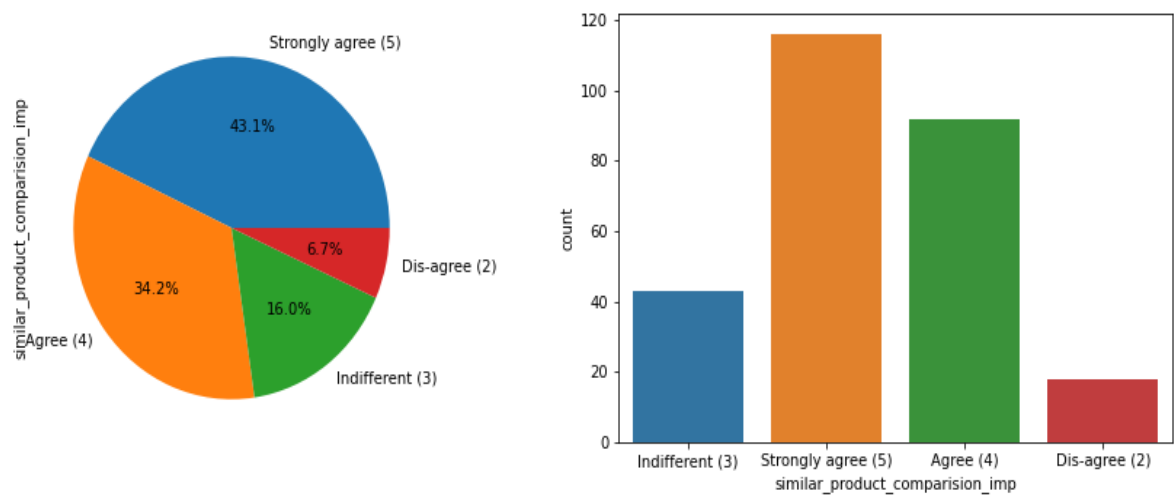
- Most people strongly agree that product comparison is very much important.
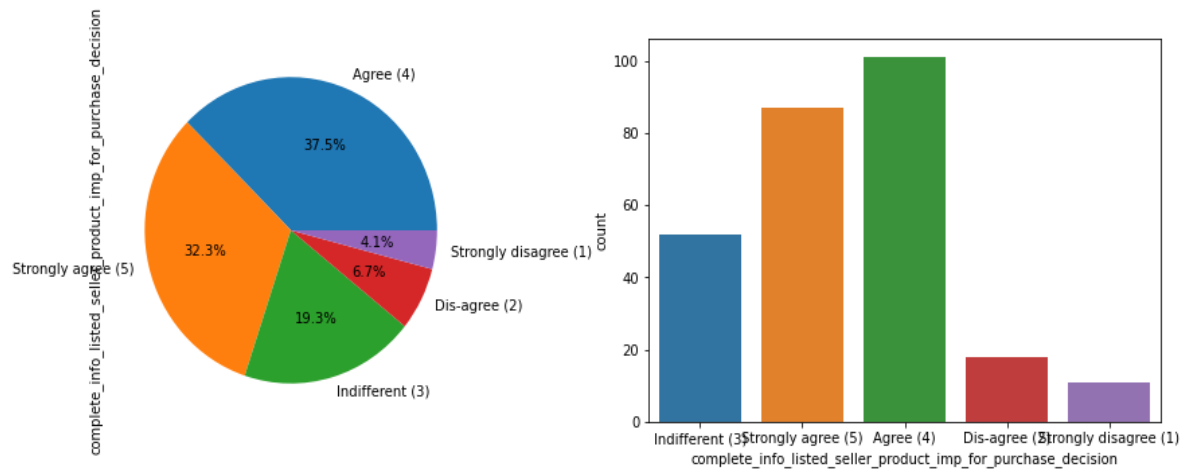
- Mostly people agree and some of people strongly agree that complete information on products is important for purchase decision.
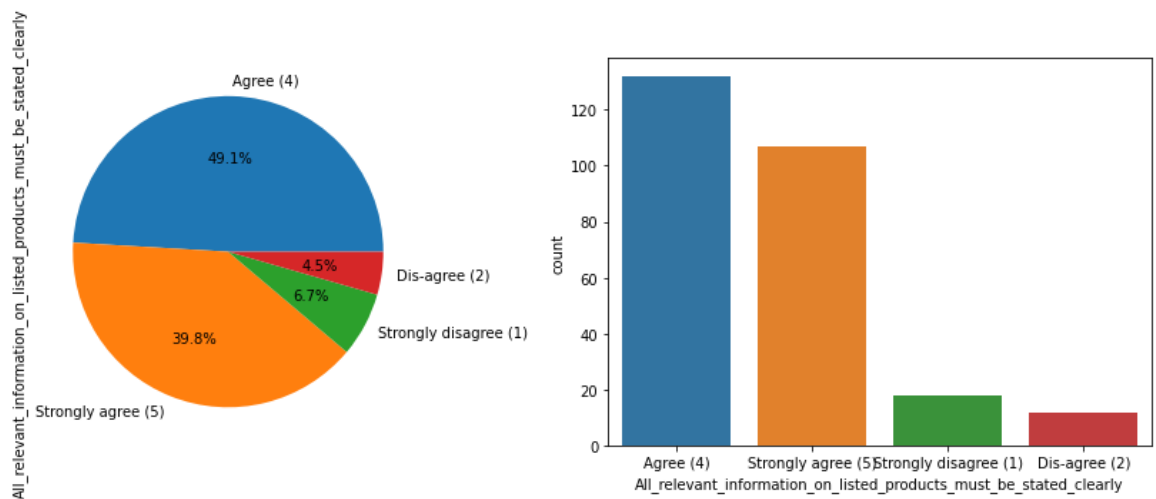
- From the above plots we can say that most of the people agree with "Importance of all relevant information on listed products must be stated clearly".
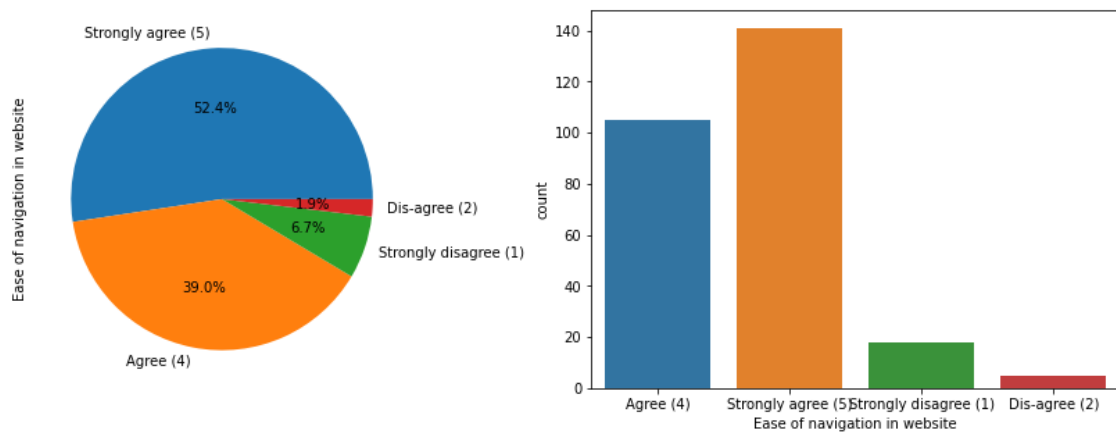
- Mostly people strongly agree that "ease in navigation of website" is very important.

- Very less people dis-agree with "Important of ease in navigation of website".
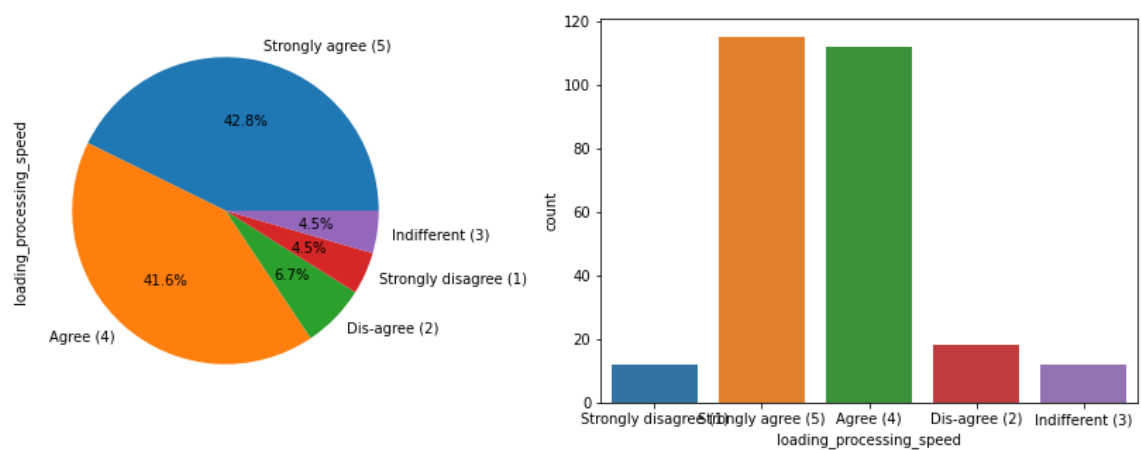
- Mostly people agree followed by strongly agree with the importance of loading processing speed.
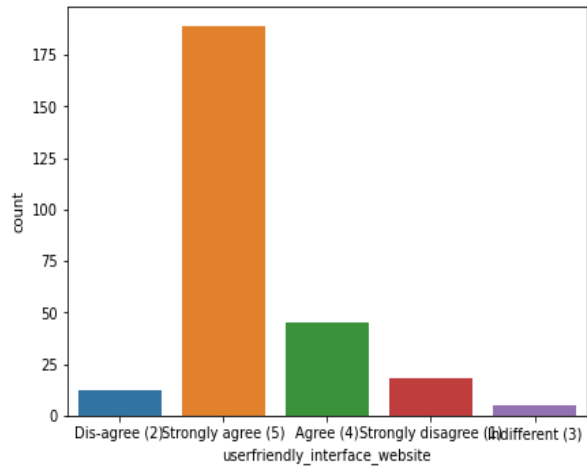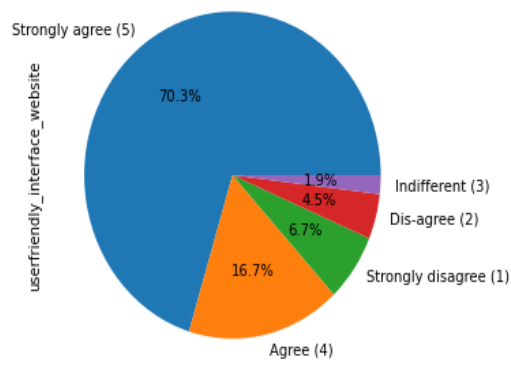
- We can see that most of our respondents strongly agree to the point that "userfriendly interface of the website" is very important.
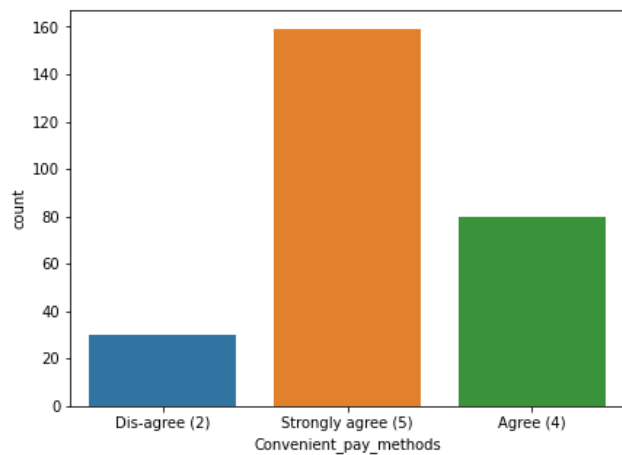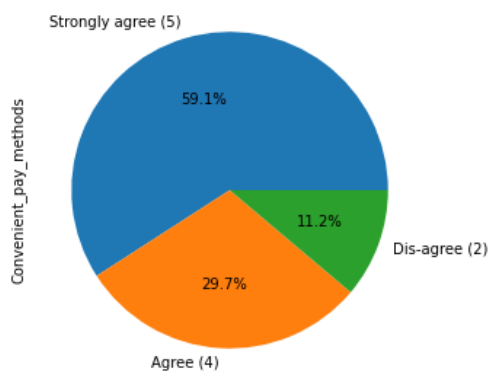
- Many of the respondents strongly believe that if payment methods are convenient then it will be good for online shoppers.
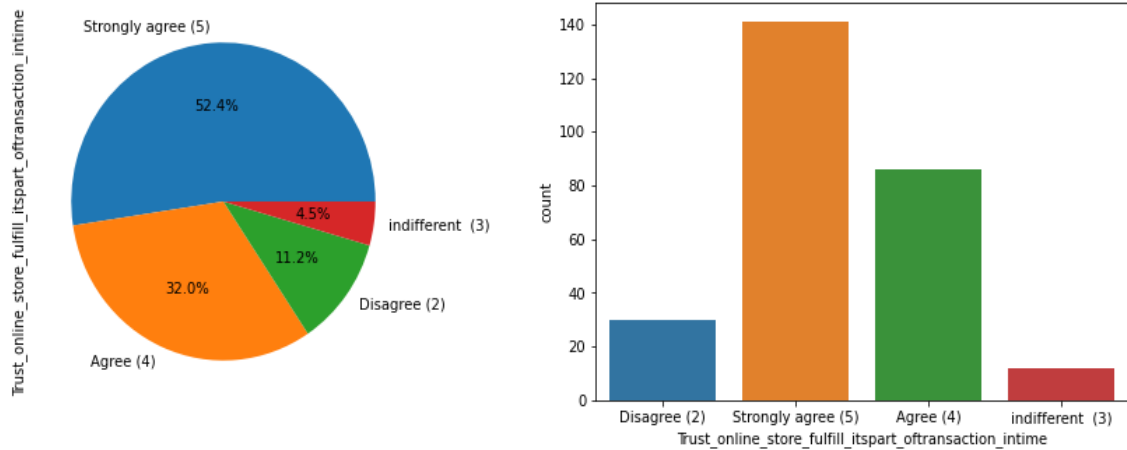
- Many of the respondents strongly trust that the online retail store will fulfill its part of the transaction at the stipulated time.
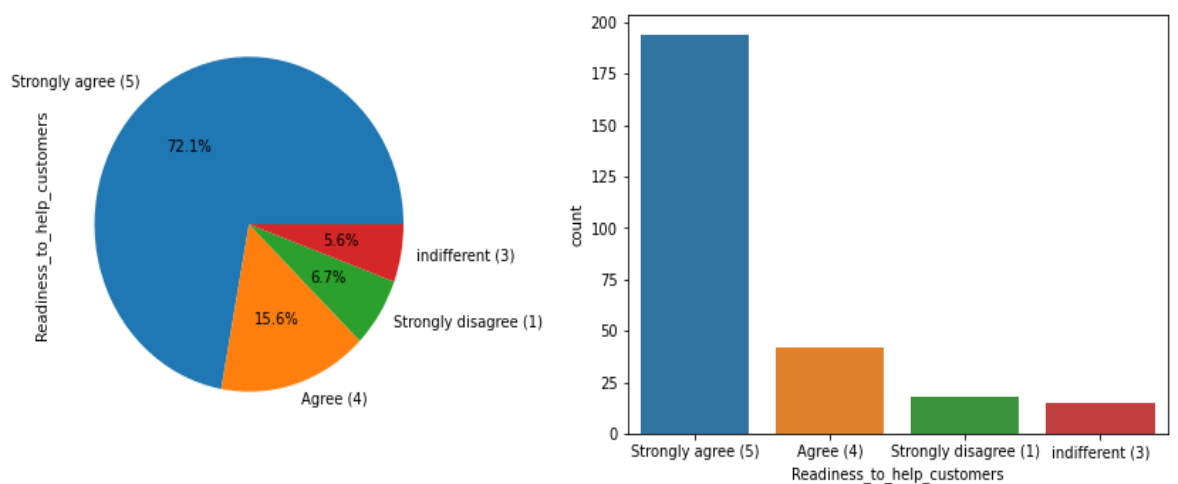
- Most of Customers firmly believe that approach of "Readiness to help the customers always" is the most important concern.
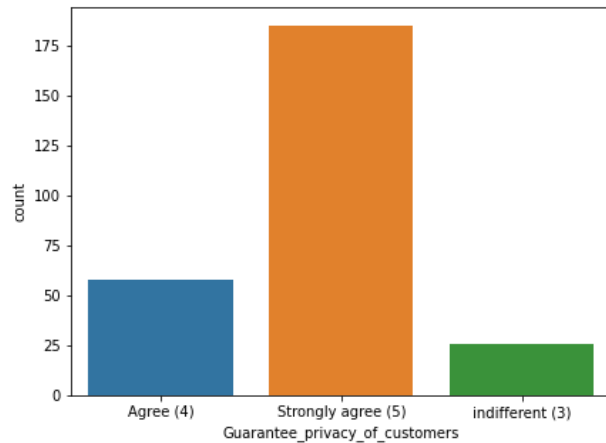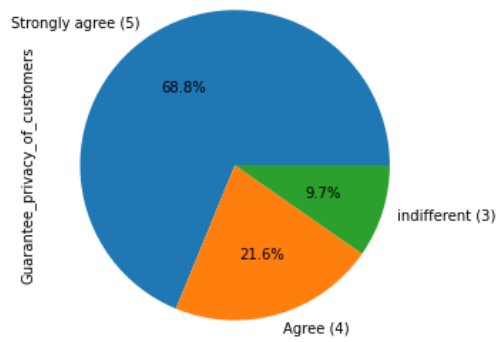
- As we all know that privacy is the most vital thing as all the customers data like credit-card number, debit-card number, are stored in the retailers database, and customer believes on the company that it will not breach the private data policy.

- Our records also shows that most of customers strongly believe that online store must guarantee the privacy of the data of customers.
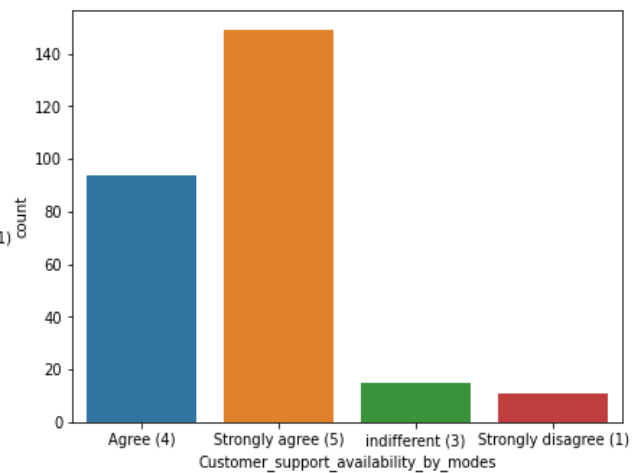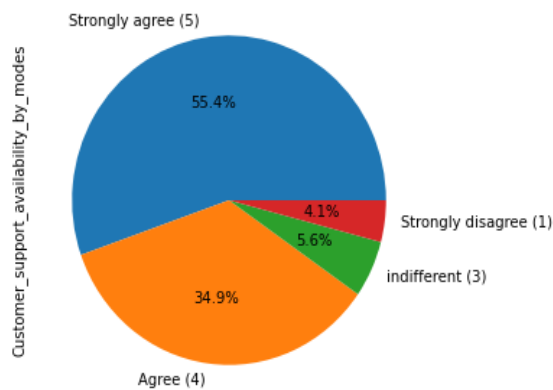
- Most of the customers expect that their online store must provide the assistance to them through various modes like ("Email", "Text messages", "Phone Call").
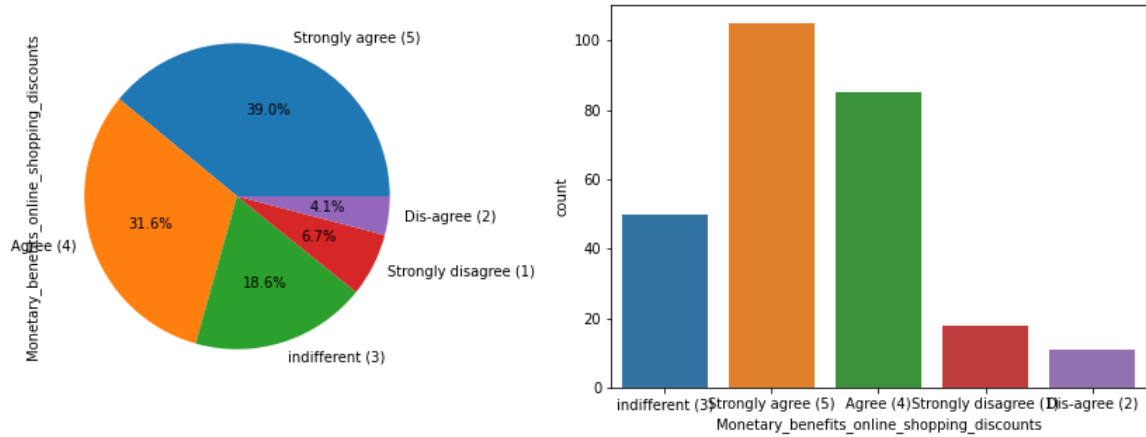
- Mostly of the customers are inclined towards the perks of monetary benefits while shopping in the forms of coupons, discount offers etc.
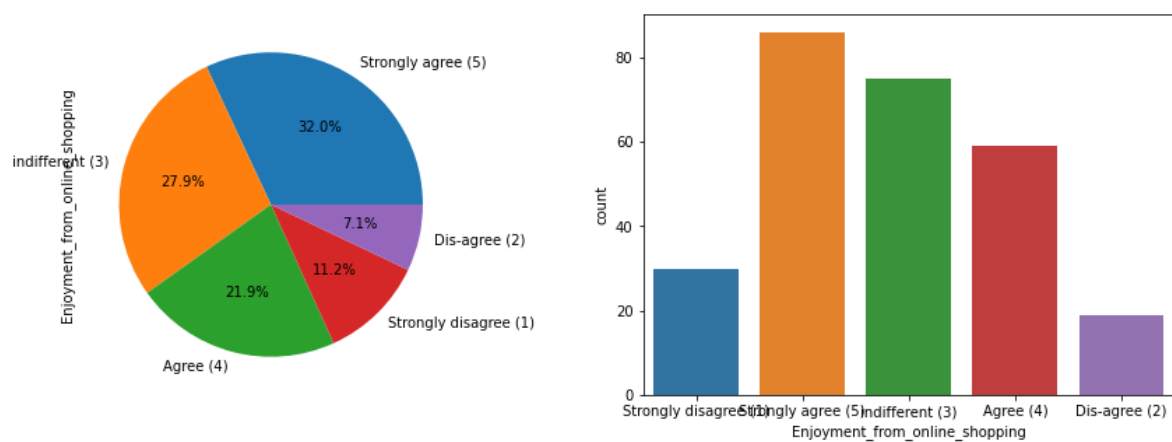
- Most people agree that they enjoy the online shopping.

- Many of respondents are also unconcerned about the enjoyment.

- Very few of them disagree with the fact of enjoyment while online shopping.
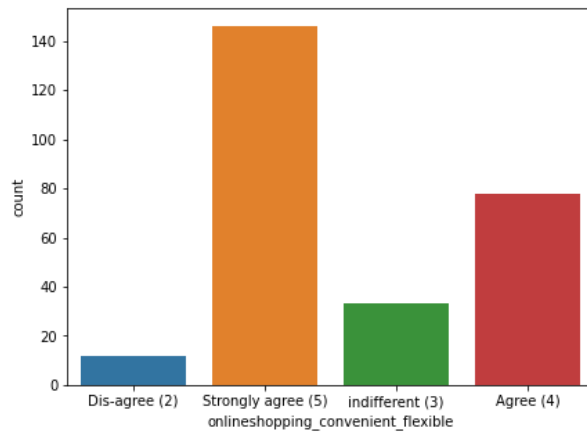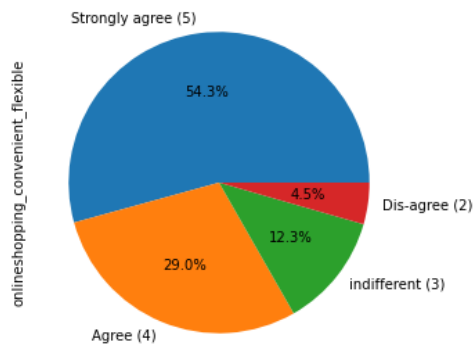
- Mostly people strongly agree with online shopping is flexible and convenient
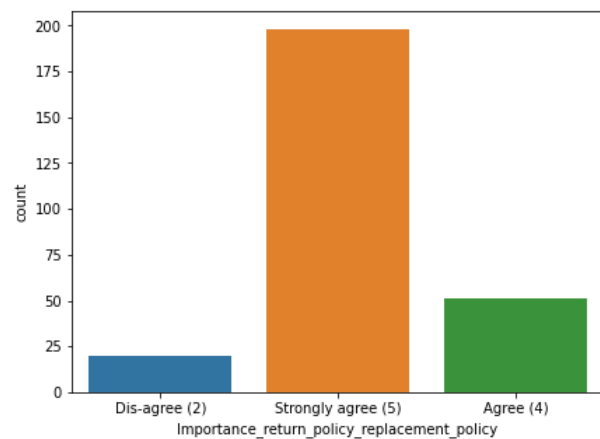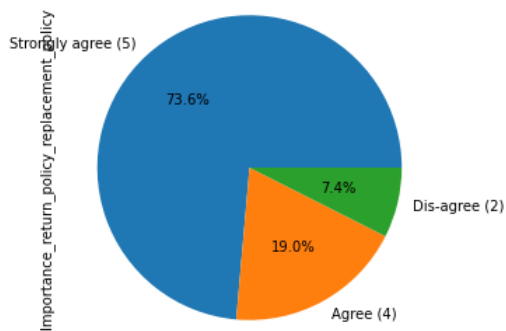
- As we all know that replacement and return policy is very much important for a customer since if the product which he/she bought, not performing well then they can return it to the seller without any problem by giving proper reason of return of product.

- Most of the customers are agreeing with the fact that there must be customer friendly return or replacement policy must be present for the product.
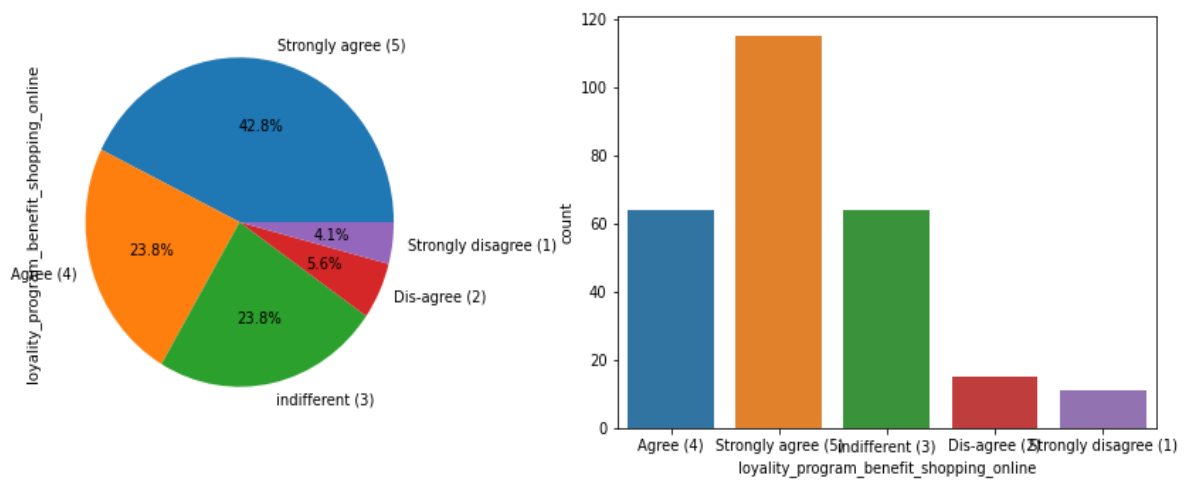
- Mostly people strongly agree with "Loyalty program is benefit of online shopping"
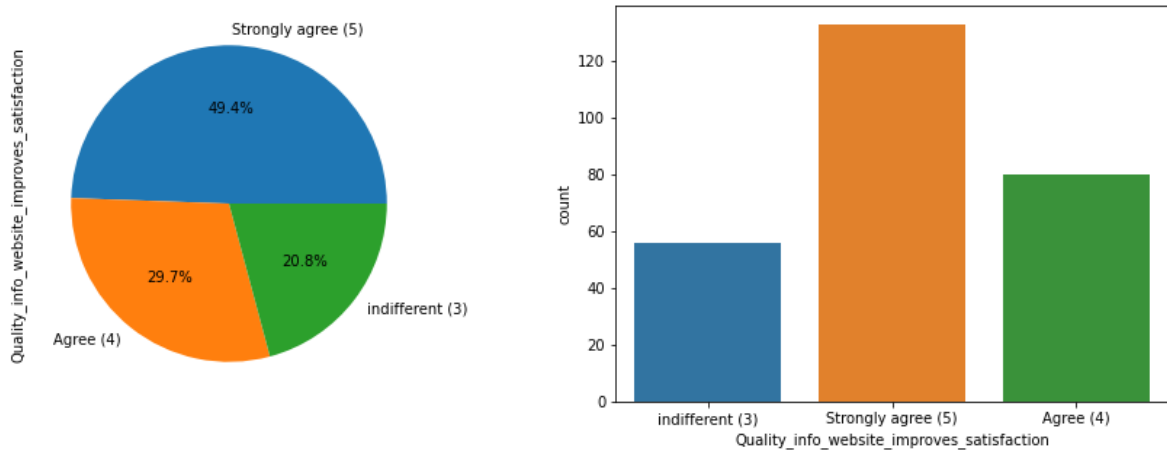
- We all know that quality information about the product helps us to understand the product well and we can decide upon reading the details whether to go for the shopping or not.

- Customers are strongly agreeing with importance of the presence of the quality information present in the dashboard improves the satisfaction of the customers.
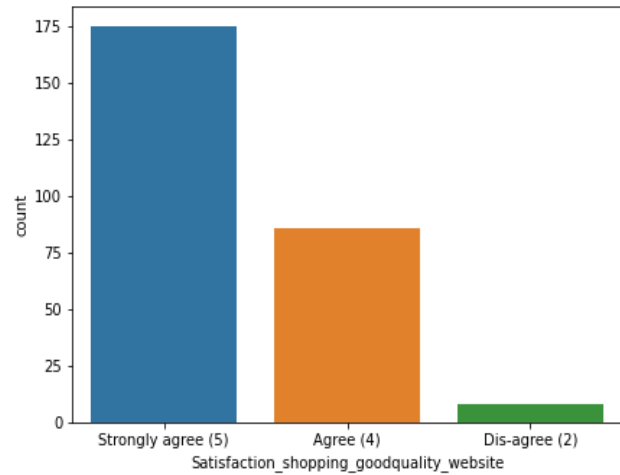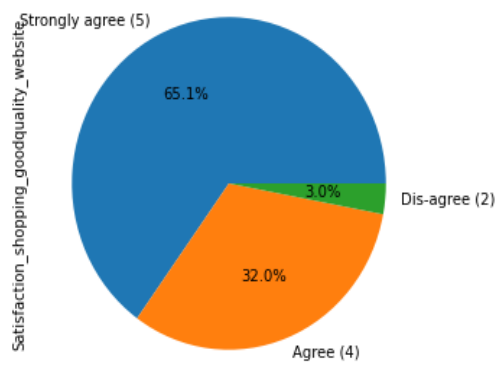
- Mostly people strongly agree for deriving satisfaction while shopping on a good quality website or a application.
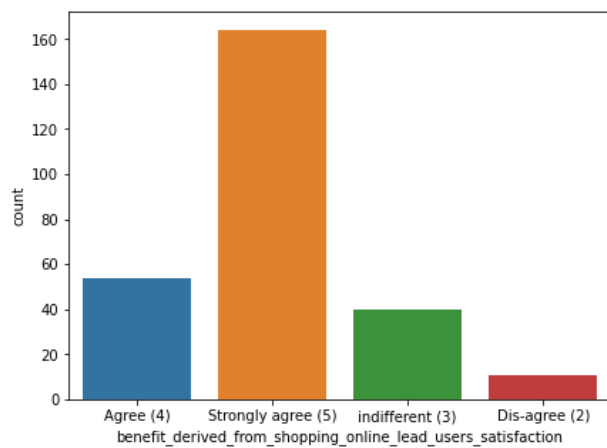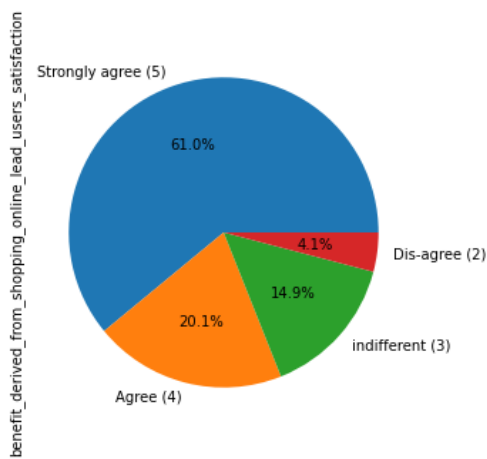
- We can see that from the plots that many customers believe that benefit derived from the online shopping leads to customer satisfaction.
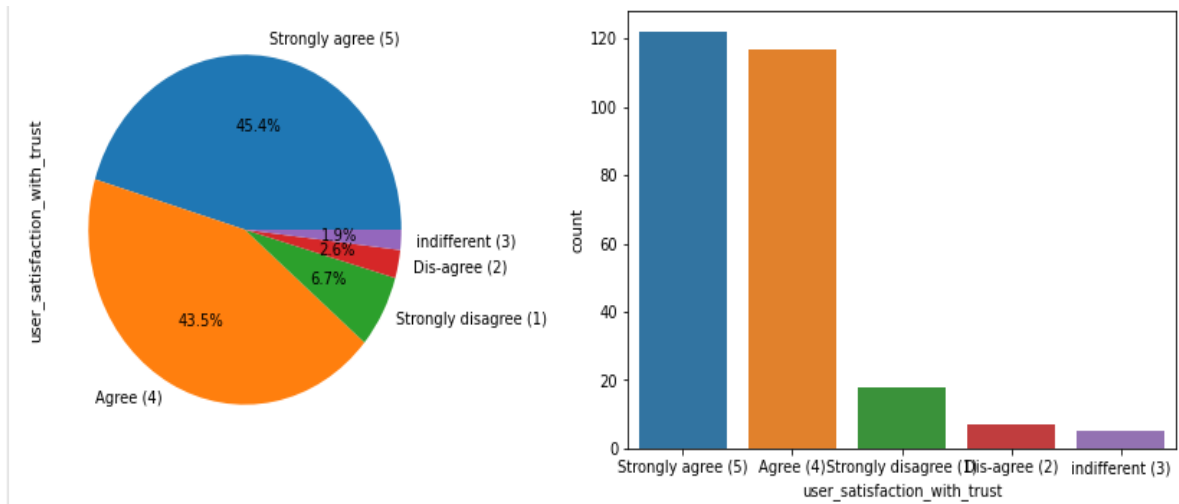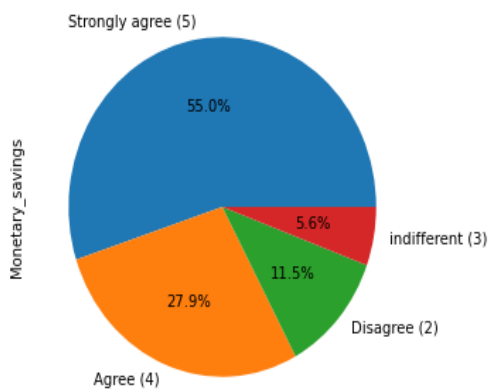
- We can see that mostly people strongly agree with existence of user satisfaction with trust on the online seller.
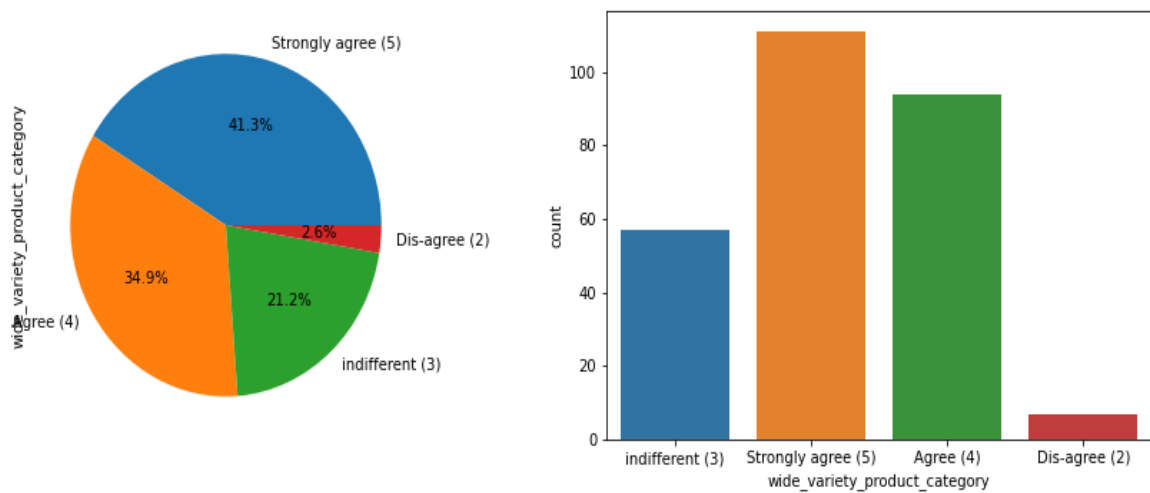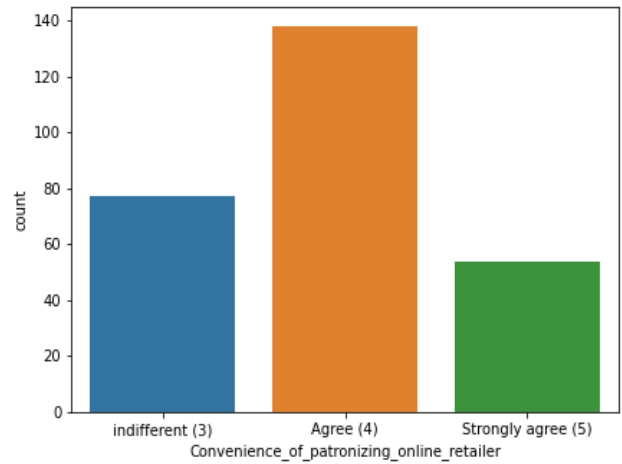

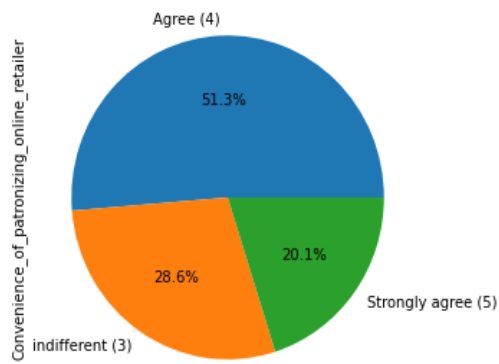- We can see that many people agree with offering a wide variety of listed product in different category
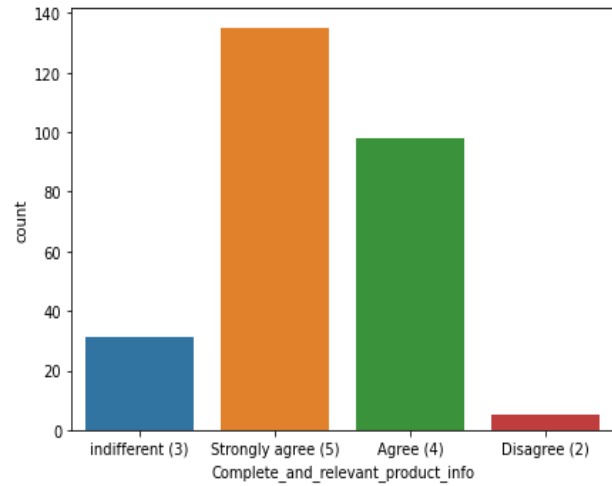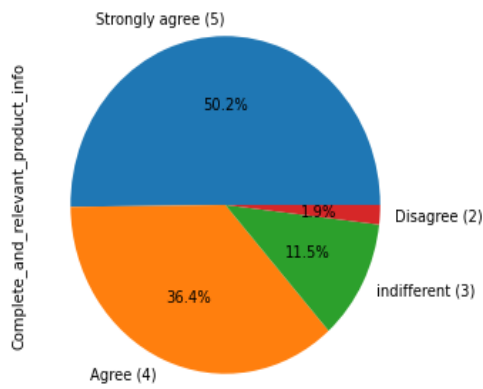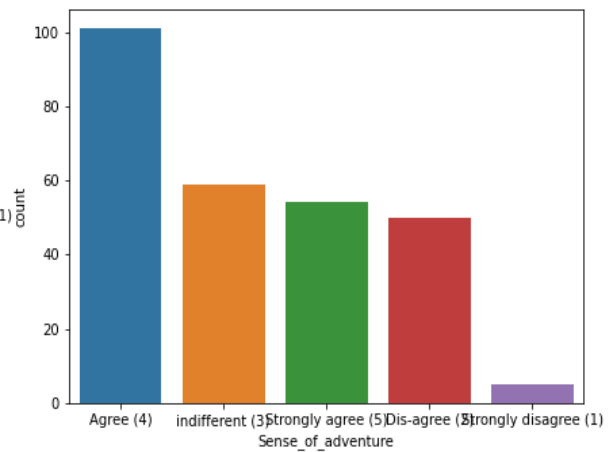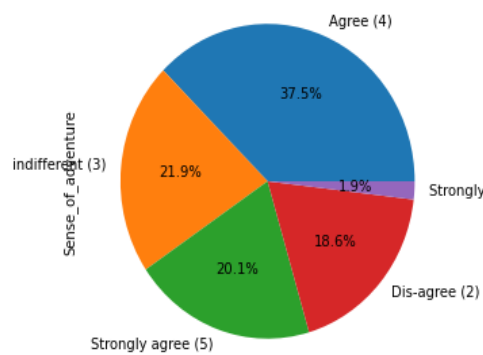
- Mostly people are strongly agreeing that there should be complete and relevant information of every products.
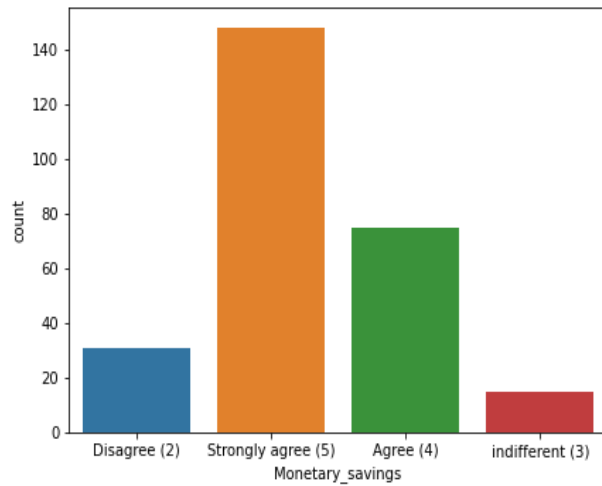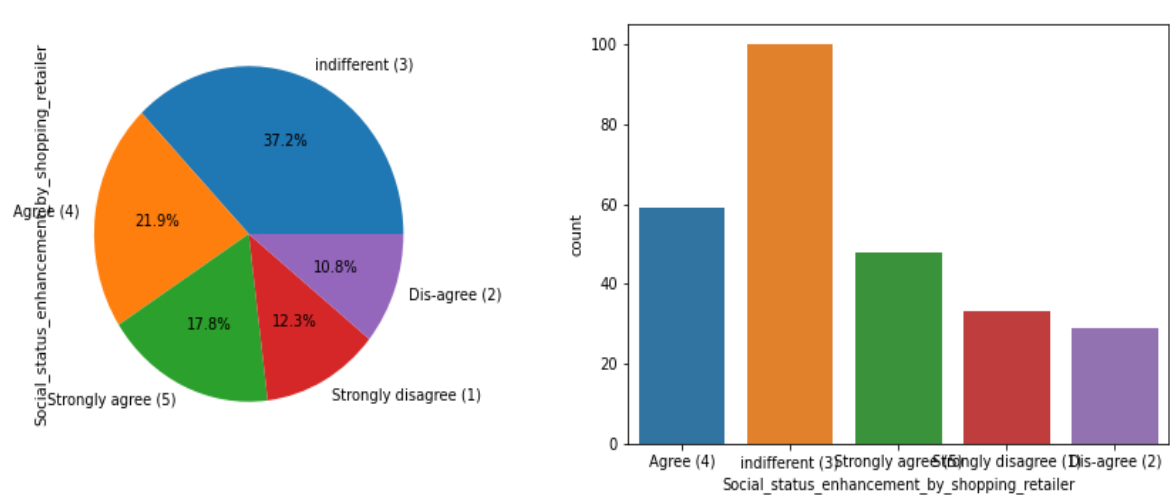

- We can see that large amount of people strongly agree with "Monetary savings"

- We can see that people are agree with convenience of patronizing the online retailer.


- Some of people agree that shopping online gives you the sense of adventure and some of people are indifferent and dis-agree with this.

- We can see from the above plots that there is some mixed kind of response on "Shopping on your preferred e-retailer enhances your social status", Most of the respondent are not concerned about it, Some of are strongly concerned about it.
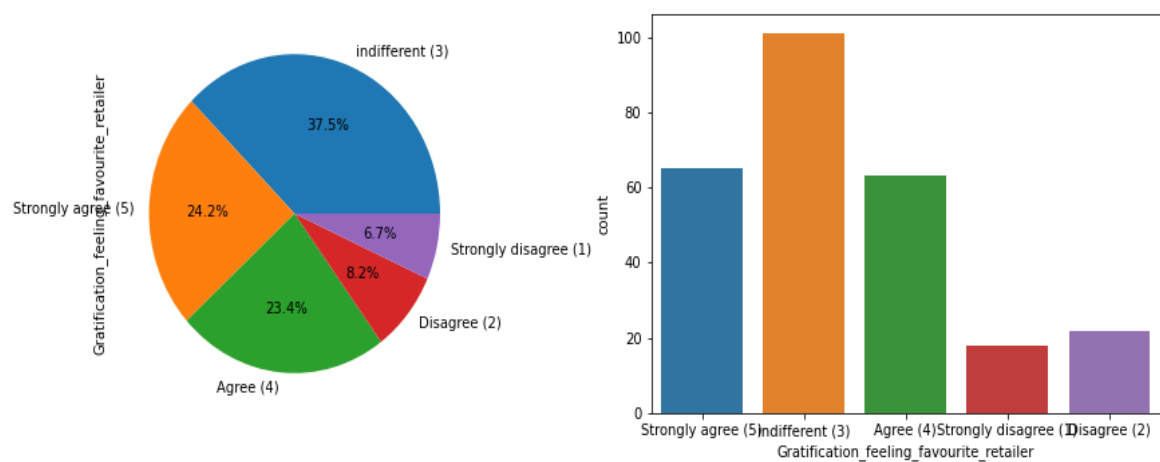

- We can see from the above plots that there is some mixed kind of response on "Gratification feeling while shopping from the favorite retailer", Most of the respondent are not concerned about it, Some of very strongly concerned about it.
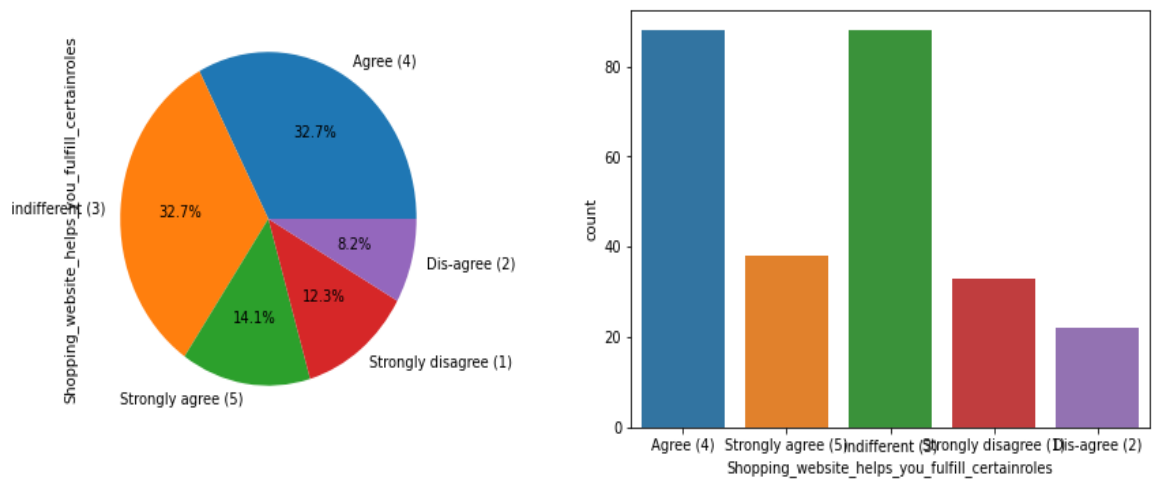
- We can see from the above plots that there is some mixed kind of response on "Shopping on the website helps you fulfill certain roles", Most of the respondent are not concerned about it, Some of are concerned about it.
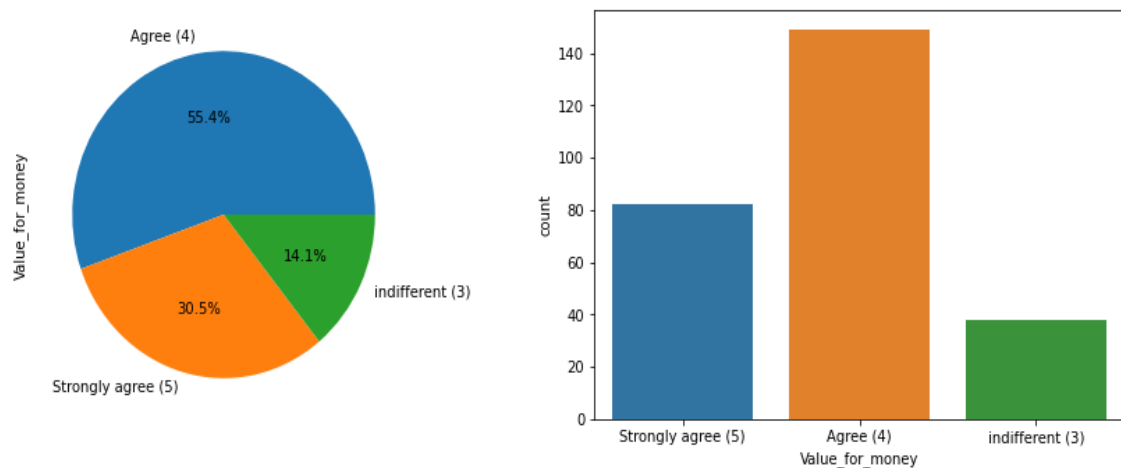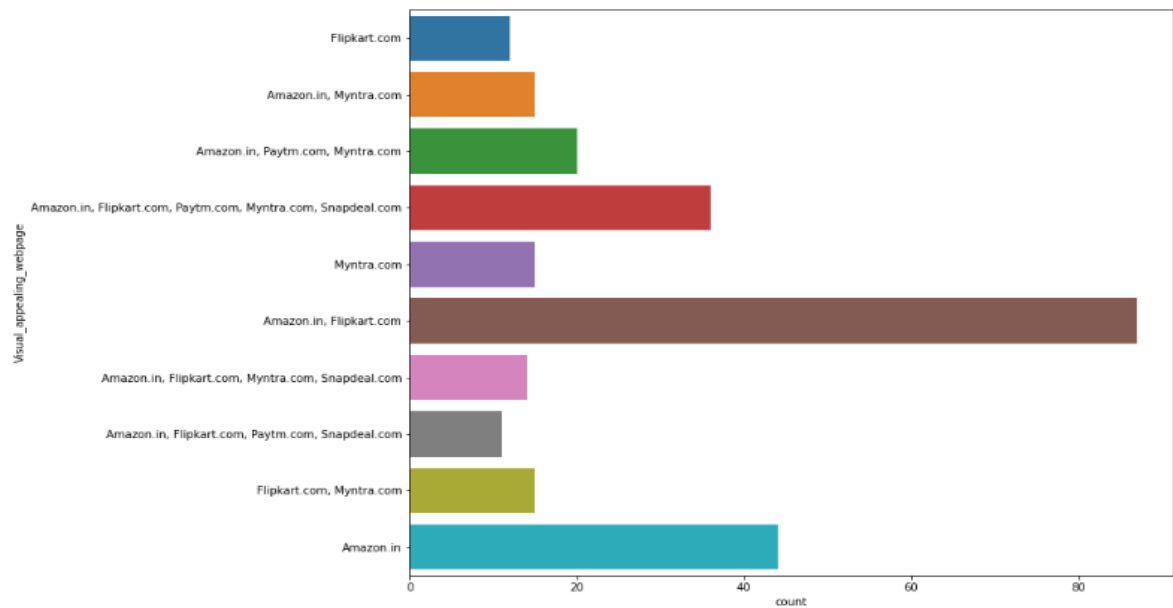

- All of us expect value for the money whenever we shop anything from anywhere.

- Here also the respondents are also stick to the value for money statement.
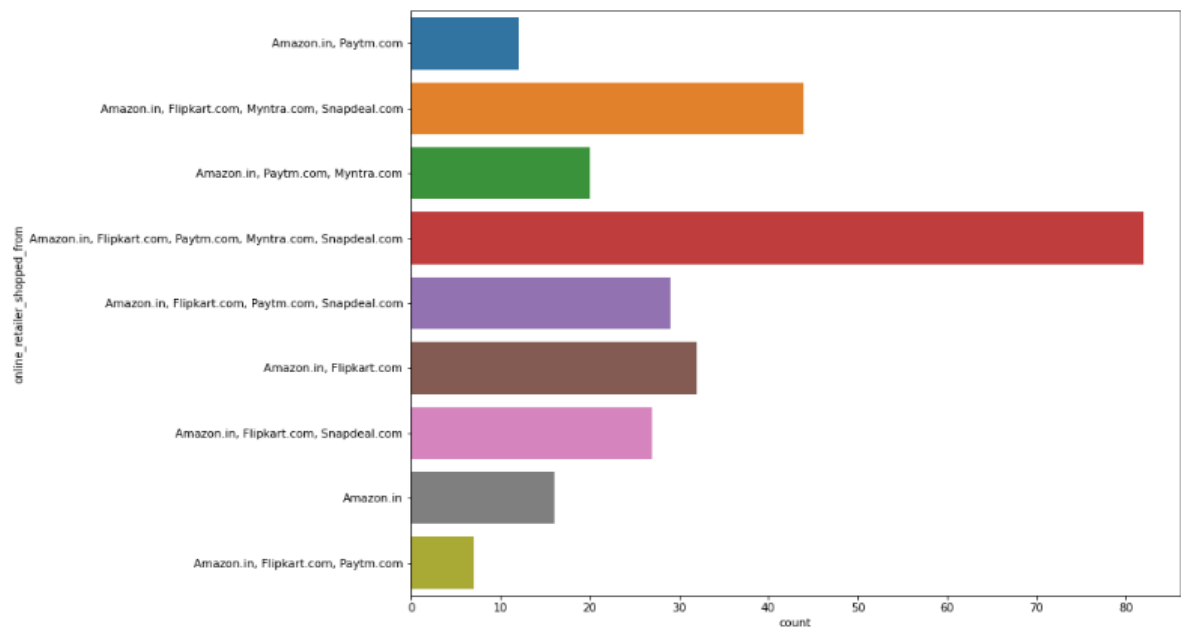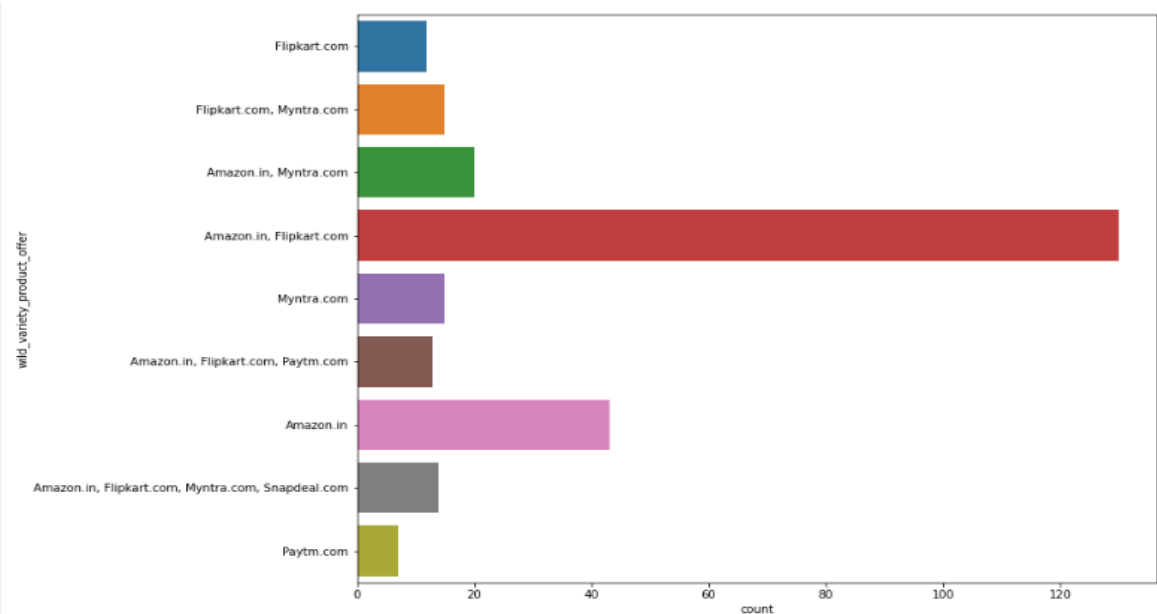
- Most of the Customers have shopped from all ("Amazon", "Flipkart", "Paytm", "Myntra", "Snapdeal").
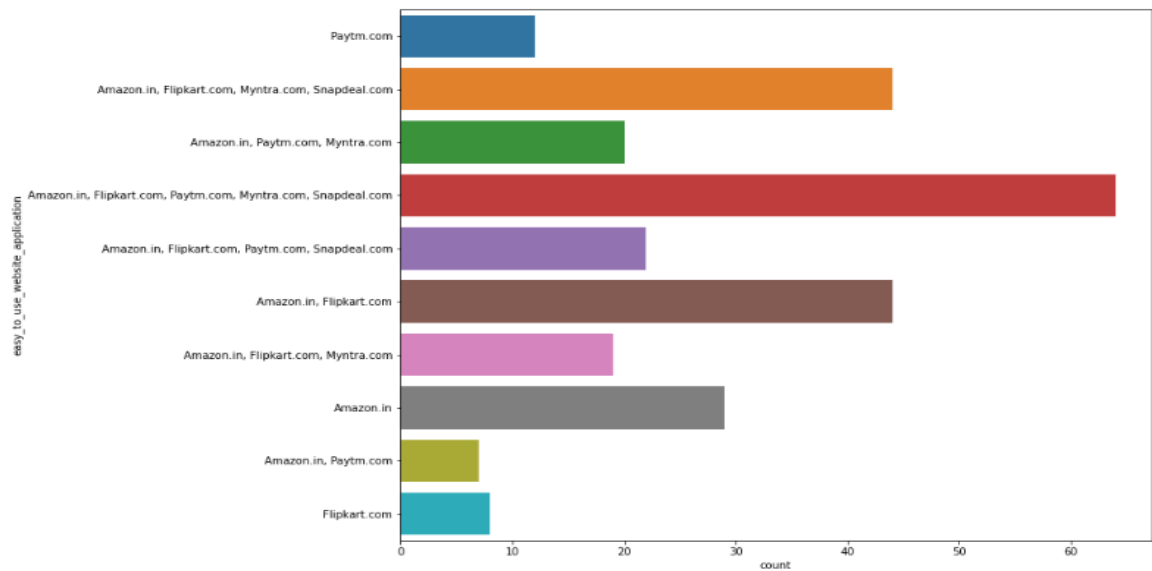
- Most of the Customers have agreed that all("Amazon", "Flipkart", "Paytm", "Myntra", "Snapdeal") these websites or applications are easy to use.
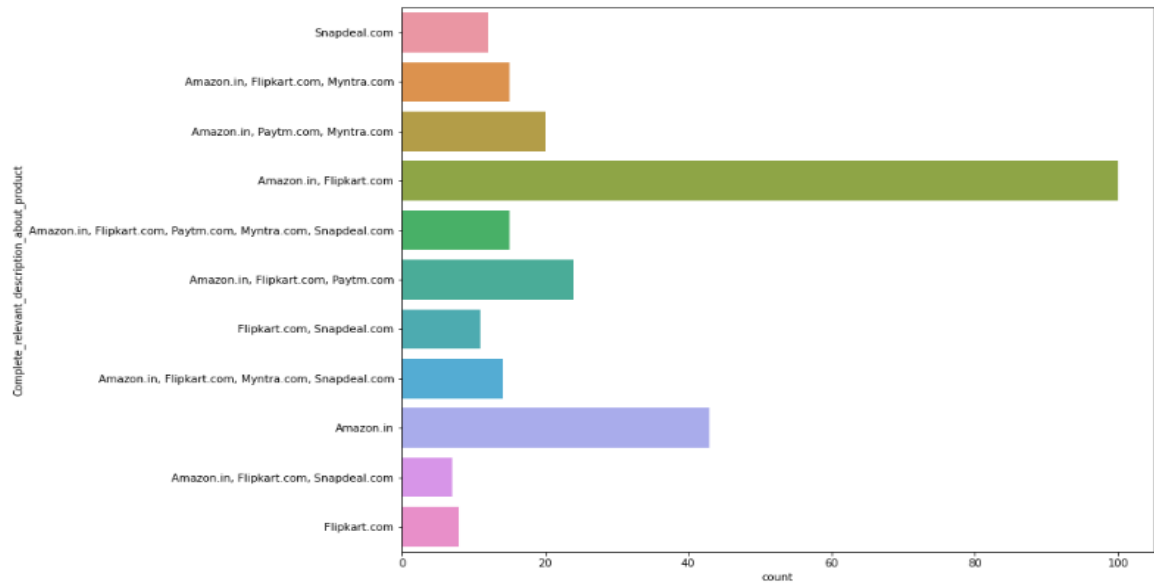
- There are two website/applications (Amazon.in, Flipkart.com) that visually good as per the customer analysis.
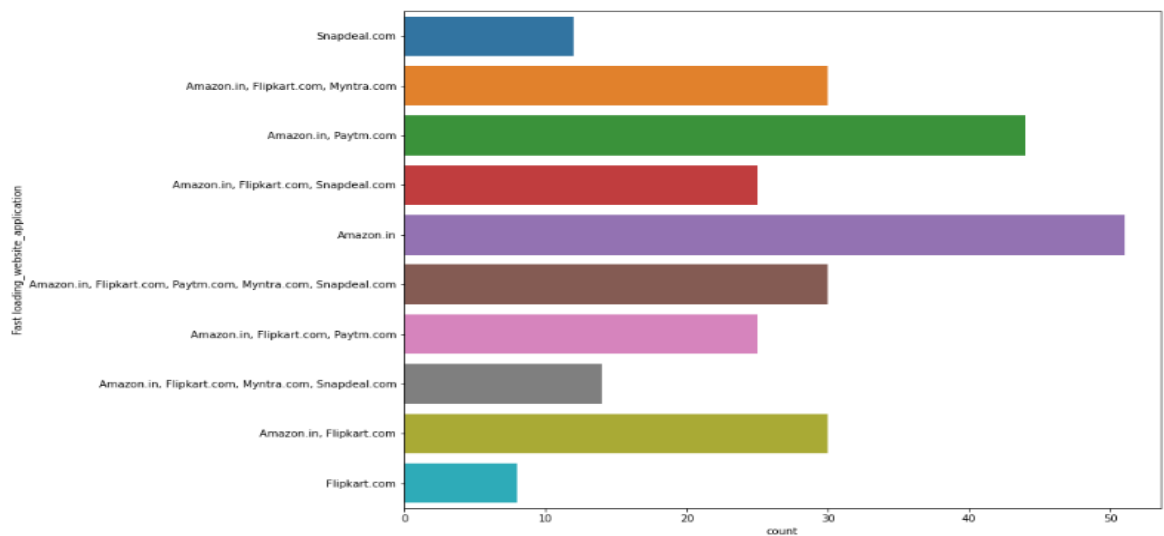

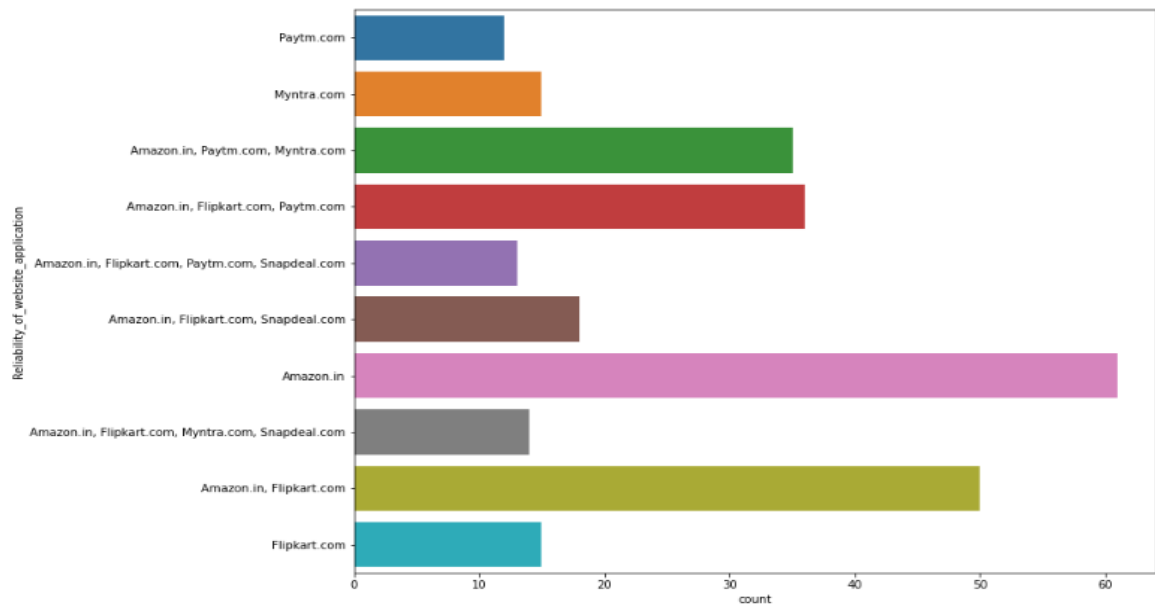- Only two websites/application (Amazon.in, Flipkart.com) have offers on wide variety of products.

- Only two websites/application (Amazon.in, Flipkart.com) have complete and relevant description of products.

- We can see that most responsive and fast website is "Amazon.com", "Paytm" followed by "Flipkart.com"
- Slowest website is the "Snapdeal.com".

- We can see that Amazon.in is more reliable followed by Paytm.com, Flipkart.com and Myntra.com.
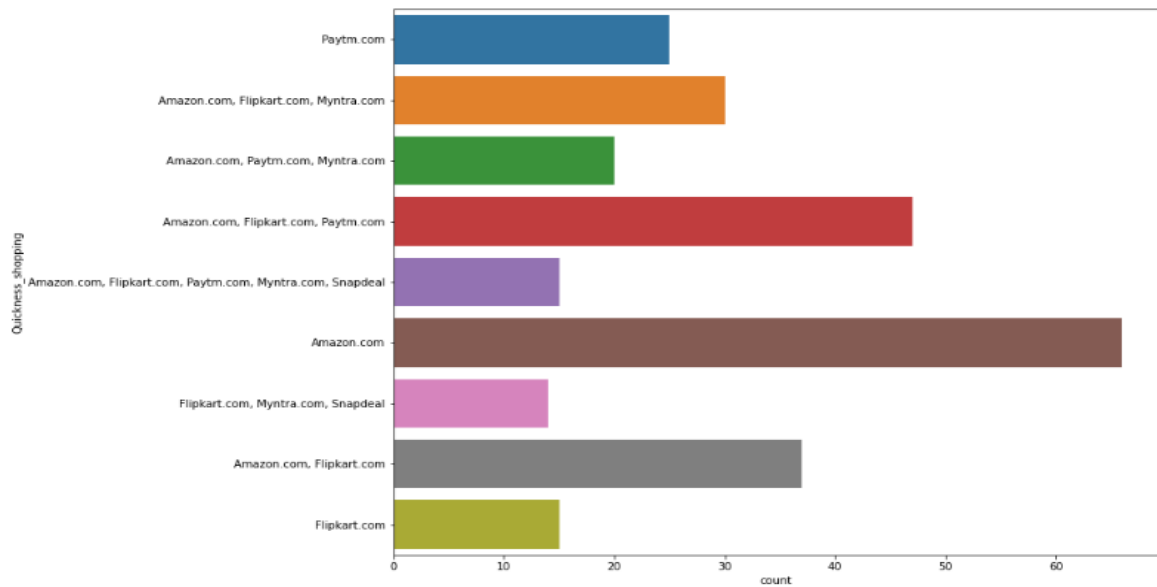
- Amazon.in website or application has the quickness to complete purchase followed by Flipkart.com and Paytm.com.
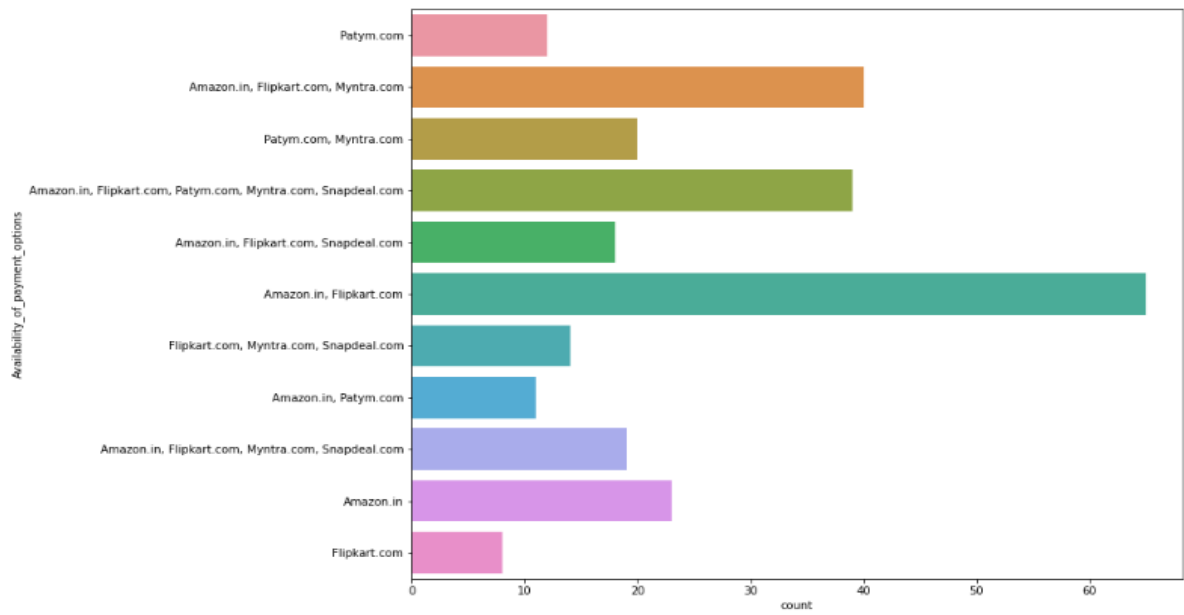
- Amazon.in and Flipkart.com have more payment options rather than other online platforms.
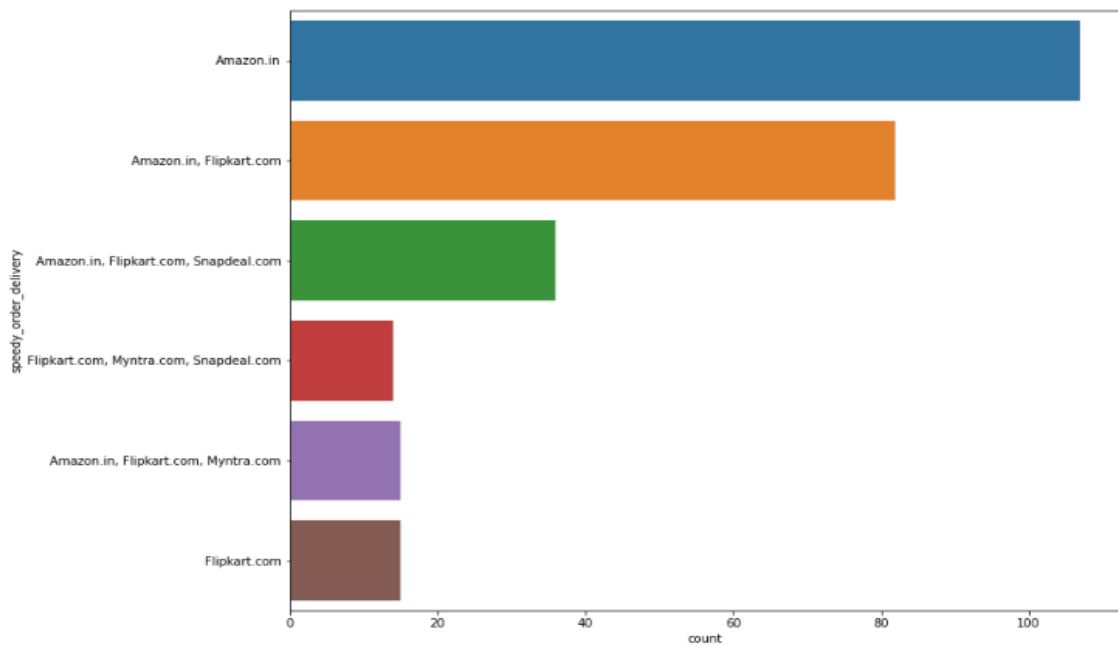
- We can see that "Amazon.com" delivers the product fastly followed by the "Flipkart.com".
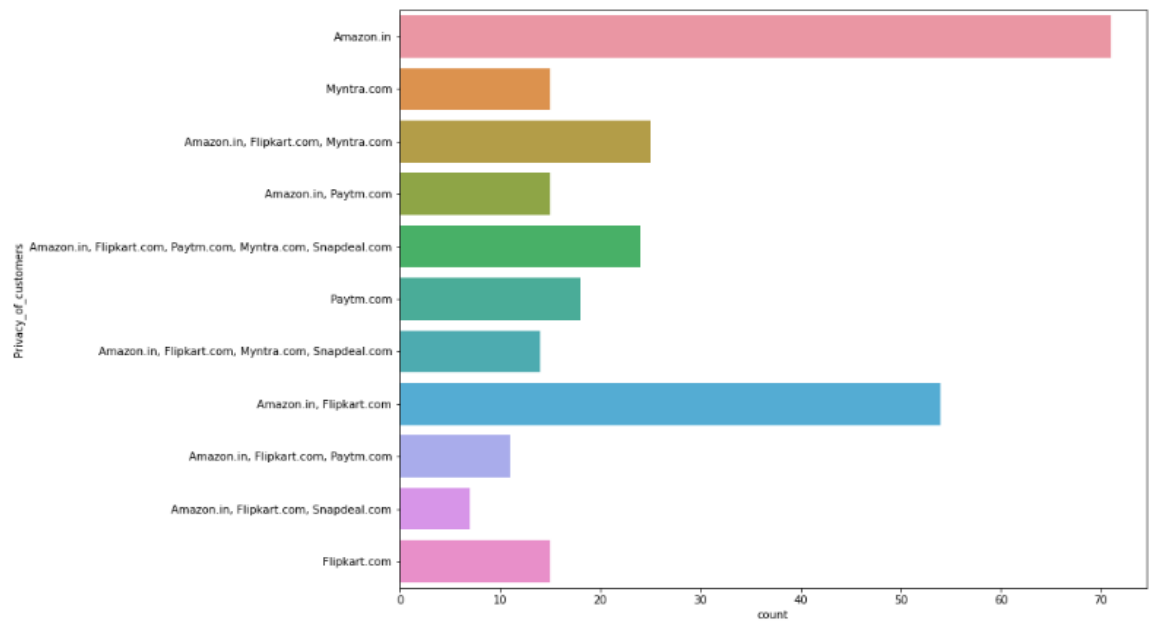
- We can see that "Amazon.in" has more privacy for the customers' information followed by Flipkart.com.
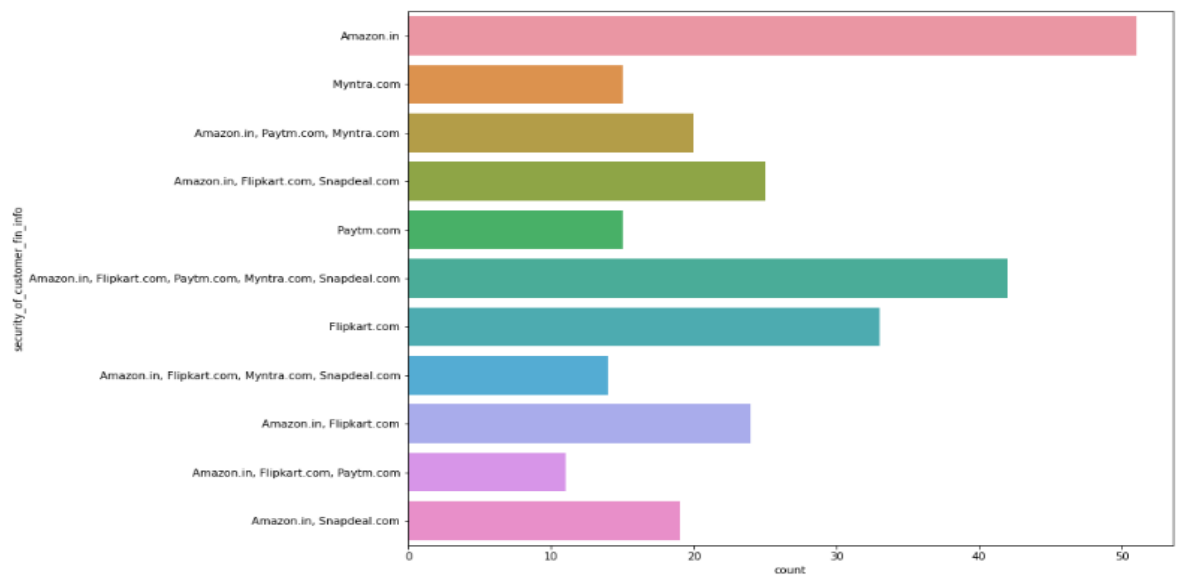
- We can see that "Amazon.in" has more security of customer financial information followed by "Flipkart.com".
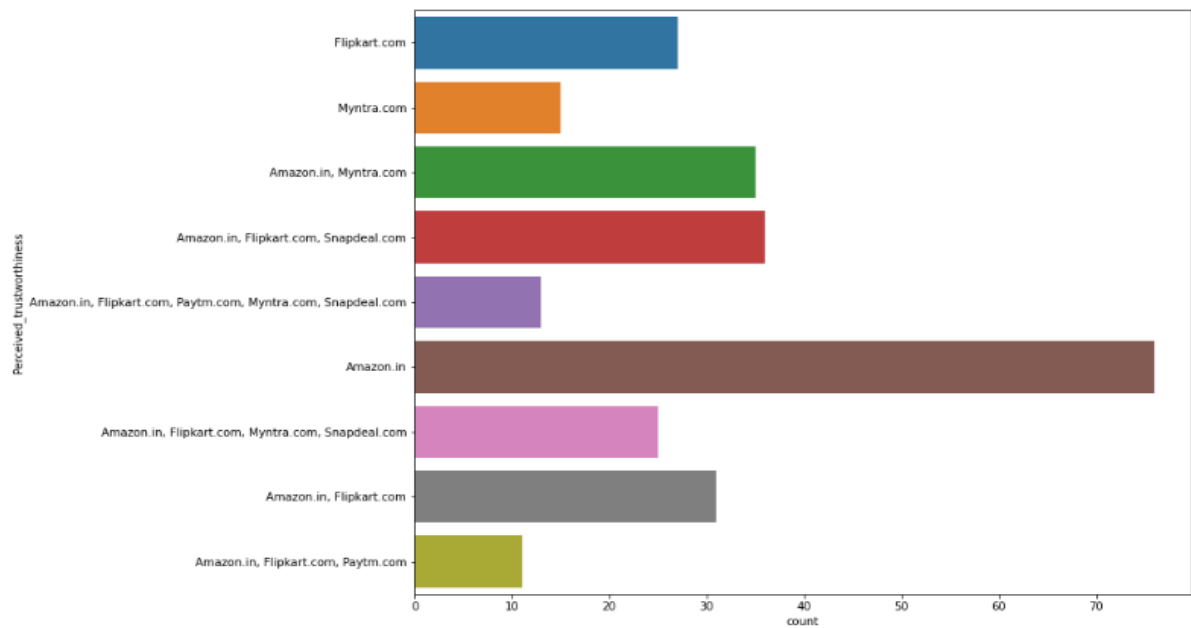
- We can see that "Amazon.in" has perceived trustworthiness followed by "Flipkart.com".
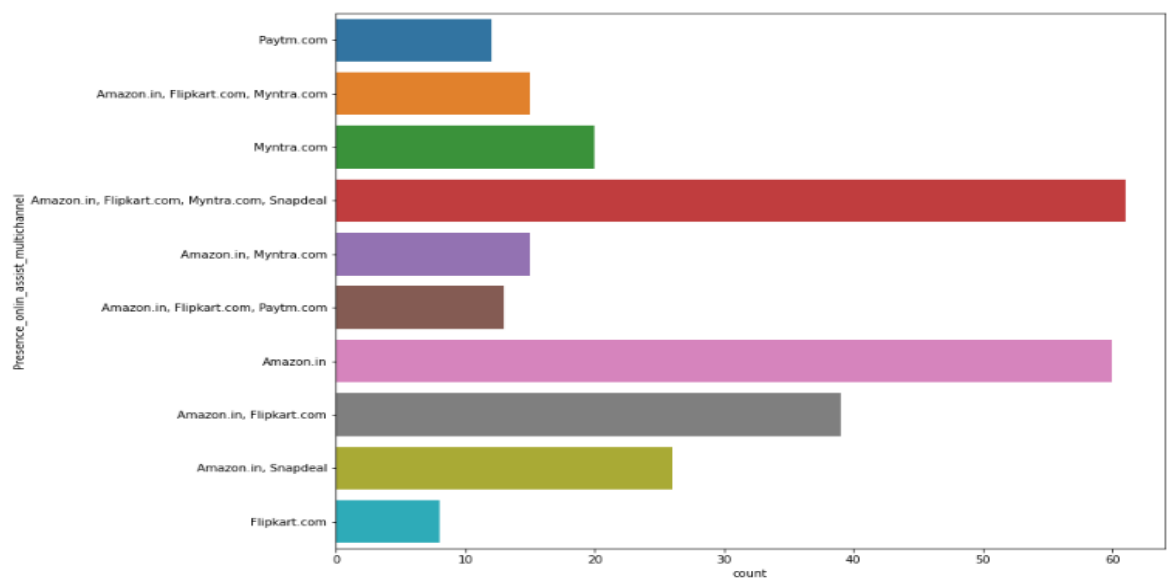
- We can see that "Amazon.in", "Flipkart.com", "Myntra.com" and "Snapdeal.com" have online assistance through multi channels.
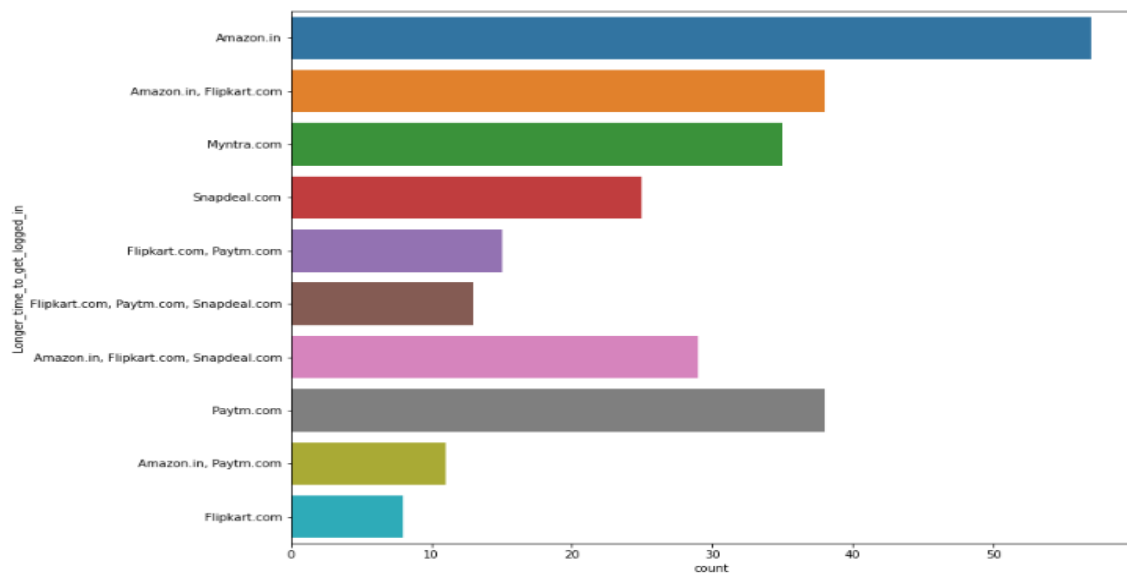
- We can see that "Amazon.in" have longer time to get logged in followed by "Paytm.com" then "Myntra.com" then "Flipkart.com".
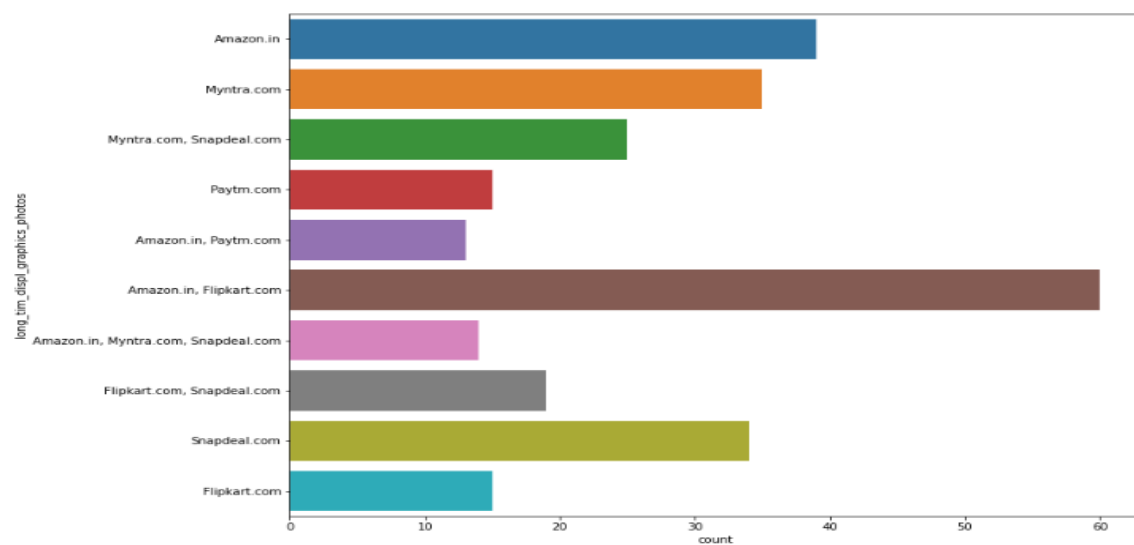
- We can see that "Amazon.in" has longer time in displaying graphics and photos followed by "Myntra.com", "Snapdeal.com".
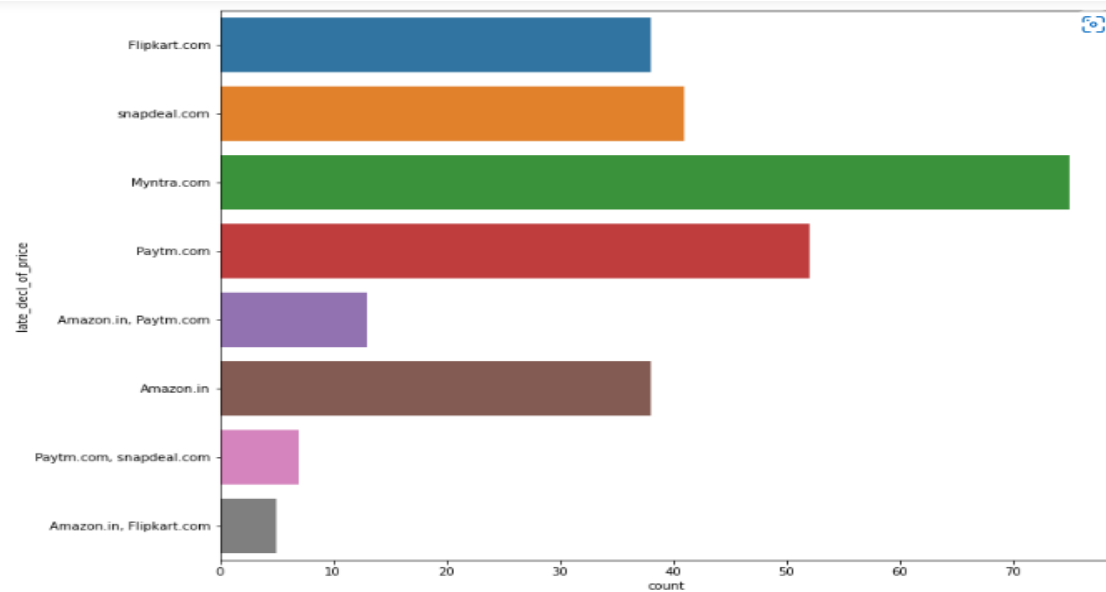
- We can see that "Myntra.com" have declared the prices of the products very late followed by "Paytm.com", "Snapdeal.com" and "Flipkart.com".
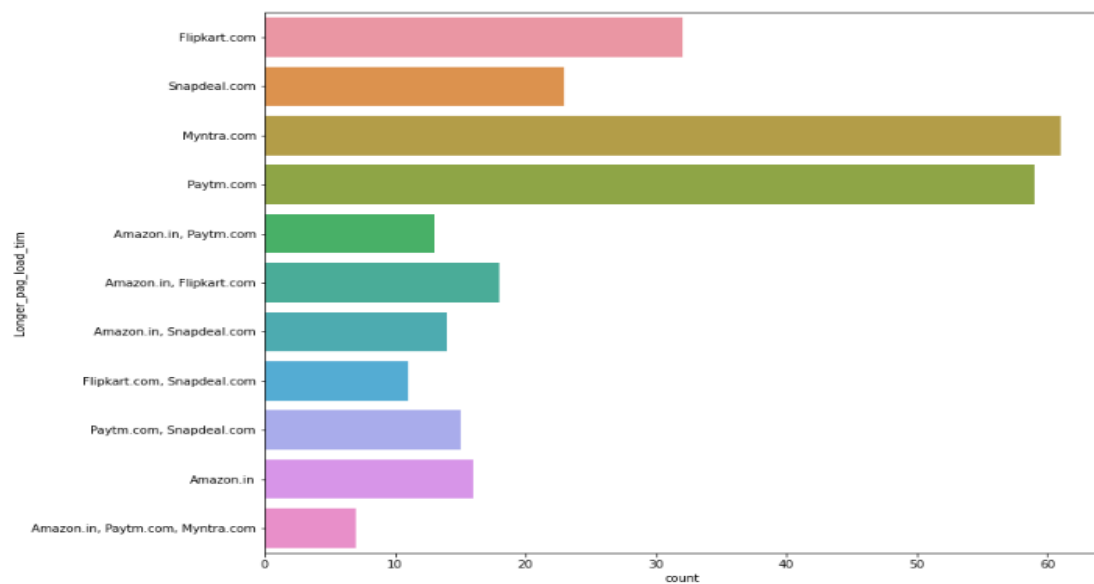
- We can see that "Myntra.com" and "Paytm.com" takes more time to load the page followed by "Flipkart.com" and "Snapdeal.com".
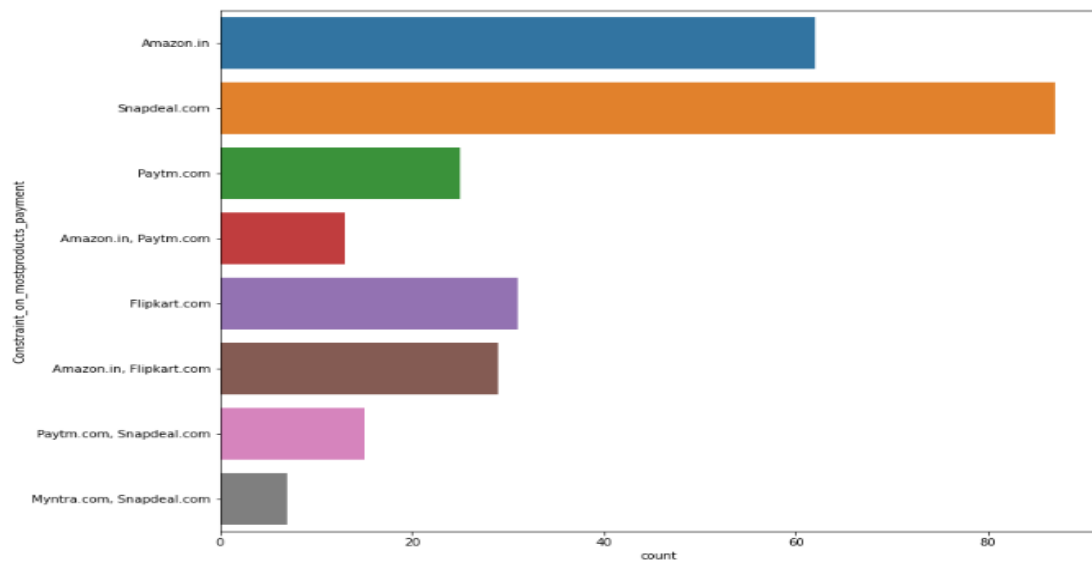
- We can clearly see from the plot that "Snapdeal" has constraints on payment methods for many products followed by "Amazon".

- Myntra and Snapdeal are open to different payment methods.
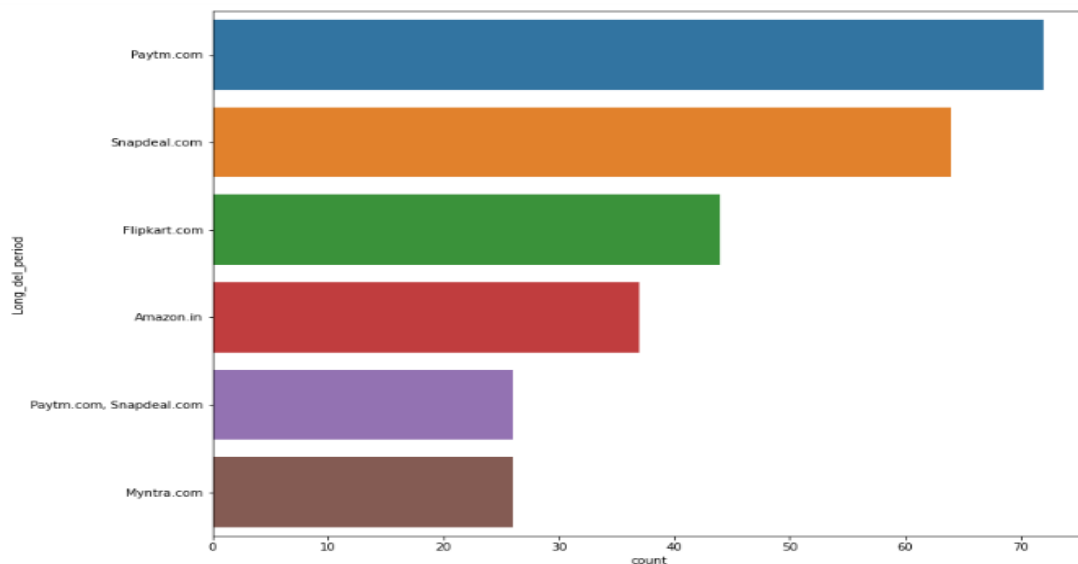
- From the above data given by the respondents we can clearly say that most quickly delivering website is 'Myntra'. From the data ,most lately delivering website is "Paytm". Flipkart and Amazon both deliver the product on average time.
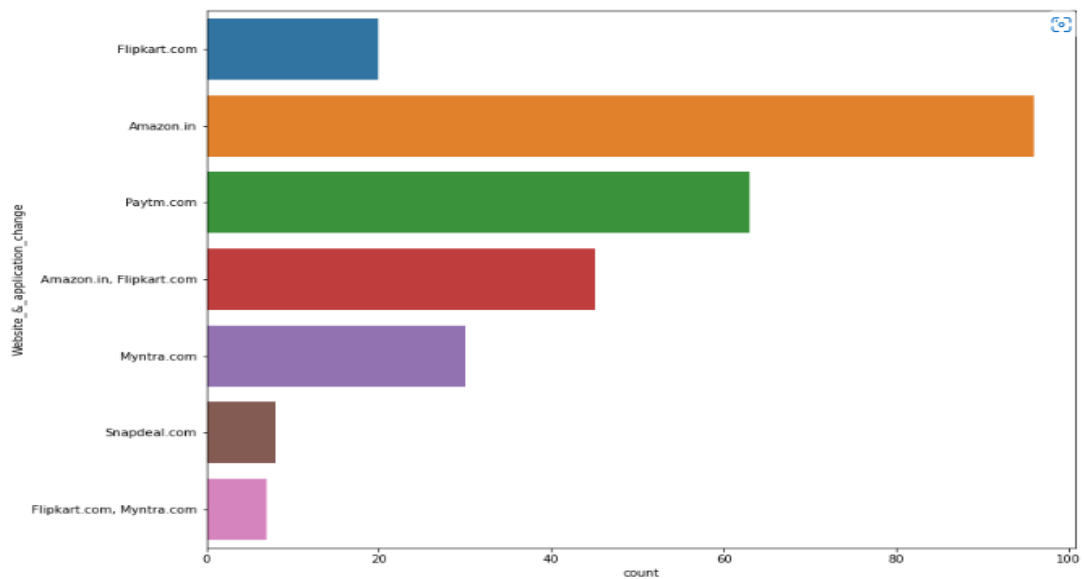
- We can see that "Amazon.in" is likely to change design in website or application then "Paytm.com".

- Other platforms are very less likely to change the designs of website or application.
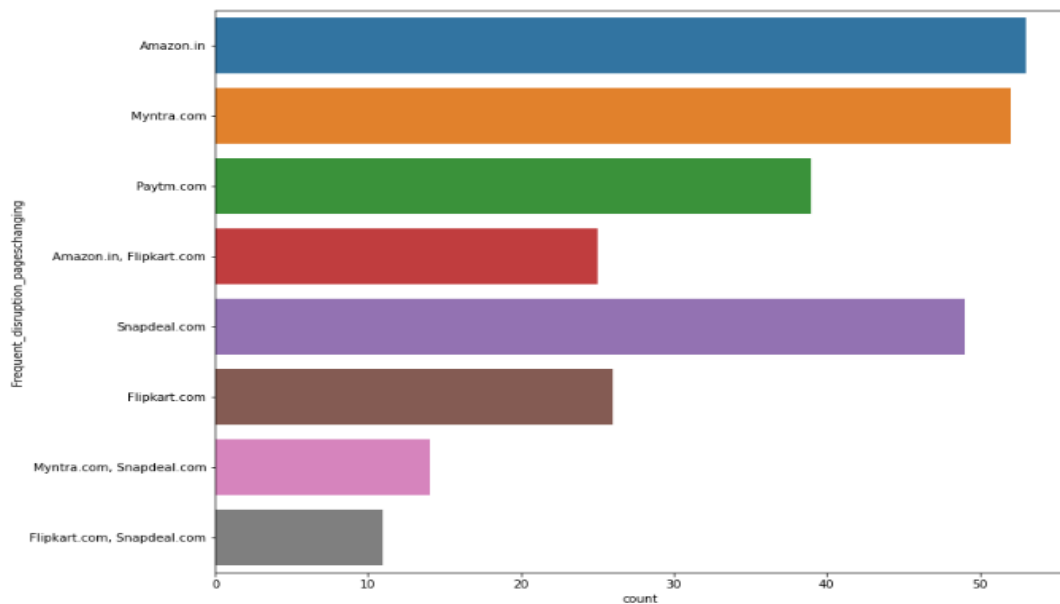
- From the above plot, we can see that "Amazon.in" has frequent disruption while moving from one page to another followed by "Myntra.com", "Snapdeal.com", "Paytm.com" and "Flipkart.com"
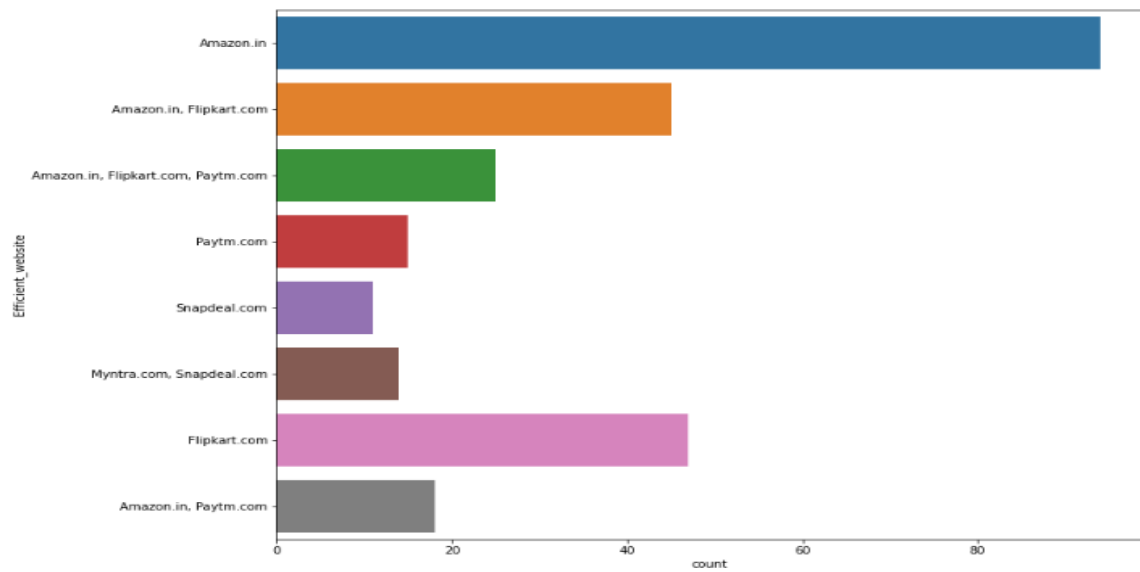
- From the polls we can say that most efficient website is "Amazon" followed by "Flipkart".

- Most inefficient website is "Snapdeal".
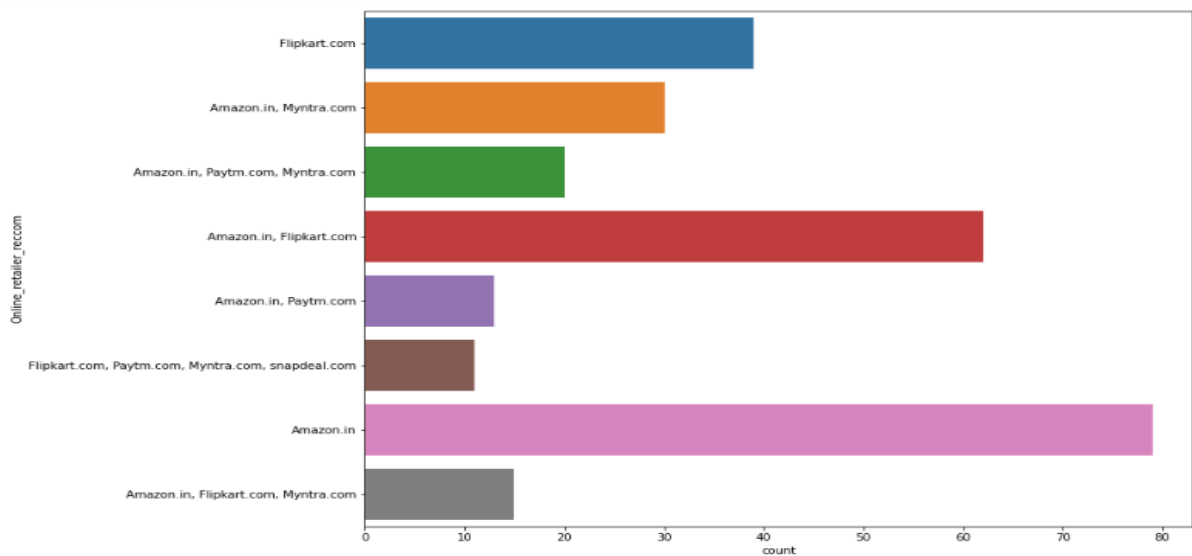
- We can see that the best choice of most of the people is "Amazon" followed by "Flipkart" & "Myntra".

- Very few people will recommend "Snapdeal" & "Paytm".

Conclusion

For companies who do business online it is clear that the company cannot generate long term profits unless they achieve the goal of customer loyalty. Retaining customers are less expensive than attracting new customers, and to retain customers' retailers must give them reasons to be loyal.

Healthy customer retention rates make online stores more profitable and more resilient to a fluctuating marketplace. After the visualizations of different features, we can say that customer retention is based on customer repurchase intention and also on psychological categories based on the emotional and practical values derived from shopping online (hedonistic shopping values and utilitarian shopping values). Hedonic Shopping Value is the immediate gratification and excitement that comes from shopping online. Utilitarian shopping values are the level of fulfillment on being able to achieve the shopping goals.

Utilitarian values are rational, goal-oriented. Many features in the dataset were found important on visualizing.

• An online store is incomplete without relevant information on products. This information helps a customer to know about the product before making a purchase. Customer can be sure of what he is purchasing. Absence of relevant information on products puts a negative effect on customers and they do not feel secure about the purchase.

• Several convenient payment methods make sure that e-retailer wants to provide customer with choices to choose the best one that suits them to make payment. If in case one transaction fails, customer should readily have other options to choose from. Unavailability of convenient payment methods would make a customer drop the intention of purchase.

• Monetary benefits and discounts - Customers get discounts on products almost throughout the year on online shopping. Also, transportation cost is not involved when we do online shopping which gives monetary benefits to the customer. Customers are saving on their pocket which would make them satisfied and hence a loyal customer.

• Online shopping is considered convenient and flexible; customers can shop at anytime from anywhere. No need to stand in long queues for the payment. No need to take out a day dedicatedly for shopping. These all things matter to customers which makes them stick to online shopping.

• Online retailers must empathize with the customer, customer service assist customers in completing their purchase. Any doubt a customer lands in must be handled so that he does not feel lost.

• Clear and concise return and exchange policy are considered important by customers. While shopping online a customer cannot touch and feel the product. He can only take this risk of online purchase when he has assurance that the product can be taken back by the e-retailer. When terms and conditions are clearly stated then only can a customer be retained.

• A simple ecommerce website is an easy way to tempt customers. An easy-to-use interface is an important feature of a polished online store. Ease of use can be attained by decreasing the number of steps that an online shopper had to go through. The more people have to click, the less likely they are to buy the product. In many online stores, there are often barriers to sales that

occur before the checkout process. Ecommerce retailers need to see how many clicks it takes to go from the homepage of their store to checkout, and to reduce that number to its lowest possible level.

• Getting a speedy order delivery is a customer's wish come true. The majority of consumers expect their package to arrive as quickly as possible or on a day of their choosing – even happily paying a little extra to do so. Customers do not want to wait for longer periods to get their delivery. Retention of customer depends on the delivery speed offered.

• Security of information of customer is important factor customer retention depends upon. An ecommerce is trusted when it provides information security to customer. These factors are important for customer's retention and e-retail store should focus upon these factors that are important to customers.

Thank you