FLIP ROBO

PROJECT REPORT ON:
"CUSTOMER RETENTION"

SUBMITTED BY
Ms. Pooja C

ACKNOWLEDGMENT

I would like to express my special gratitude to "Flip Robo" team, who has given me this opportunity to deal with a beautiful dataset and it has helped me to improve my analyzation skills. And I want to express my huge gratitude to Ms. Khushboo Garg (SME Flip Robo), she is the person who has helped me to get out of all the difficulties I faced while doing the project. And also Mr. Sajid Choudhary (SME Flip Robo) who has inspired me in so many aspects and also encouraged me a lot with his valuable words and with his unconditional support I have ended up with a beautiful Project.

A huge thanks to my academic team "Data trained" who are the reason behind what I am today. Last but not least my parents who have been my backbone in every step of my life. And also thank you for many other persons who has helped me directly or indirectly to complete the project.

Contents:

1.INTRODUCTION

1.1 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. The data is collected from the Indian online shoppers. Results indicate the e-retail success factors, which are very much critical for customer satisfaction.

Now as a data scientist our work is to analyse the dataset and apply our skills towards customer retention.

1.2   Conceptual Background of the Domain Problem

Customer retention means the process of maintaining or keeping customers once you have acquired them. It's all the activities that a company must do in order to keep their customers around. The goal is to build a long-lasting relationship between the brand and consumers. Once a customer becomes loyal to your brand, not only he will buy more from you than a normal customer but he'll spread good words about your business, increase your reputation.

Based on high churn rate (customer attrition) in some business sectors, customer retention has attracted significant interest from scholars and practitioners in the field of relationship marketing over the last two decades. Frequently, the main theme of customer retention studies has focused on studying the supplier sides and how they maintain relationships with customers. Even from the supplier side, the bulk of previous customer

retention literature has focused on the economic aspects of retaining customers and how firms develop strategies to improve customer retention and maximize returns through the customers life cycles. However, establishing and maintaining strong relationships with all customers may not be the primary aim of some organizations because not all customers and their relationships are similar or profitable. But keeping the old customers is more worthy than getting new customers. The overall purpose of this Project is to increase our understanding of customer retention by investigating the relationship between service providing companies and their customers, and the ways in which companies develop relationships in order to enhance customer retention. Below are the main frameworks we are going to do in this perticular project.

- How can the advantages of customer relationship management be described?
- How can companies benefit from using a customer retention strategy?
- How can companies develop a customer retention program and apply it to their business.

1.3 Review of Literature

Customer retention survives when the companies can fulfil customer expectations and additionally maintain it in long-term relationships to ensure long-term buying decisions. The topic of customer retention is argued in business economics commonly within the perspective of relationship marketing, which considers customer relationships as one of the primary concerns with the long-term objective of developing and maintaining them. Many previous studies indicated that companies should always manage customer satisfaction to achieve the retention stage. According to "satisfaction is an overall customer attitude towards a service provider". Business authors added that satisfaction is an emotional reaction regarding what customers expect and what they receive, including the fulfilment of needs and goals. Although customer satisfaction does not guarantee repurchase, it still plays a vital role in ensuring customer retention. While many studies on customer retention had long focused on customer satisfaction, additional factors are stated as an influence in customer retention, such as trust and commitment. "The Commitment-Trust Theory of Relationship Marketing," which is the most influential Relationship Marketing, suggests that the center of successful

relationship marketing is the relationship of commitment and trust. They urged the importance of commitment and trust that leads to build a positive correlation between company and customers and encourage efficiency, productivity, and effectiveness. The degree of trust between service provider and customer is significantly influenced by the quality of the service, which results in an effective commitment to the provider, and enhancing commitment is important since it leads to an intention to invest further and reinforce the relationship with the provider. This review study will attempt to highlight the recent findings of scholars about customer retention and explore some new or limited. With the pandemic grabbing up places all over the world, the decline in businesses, macro and micro, is inevitable. Among these businesses is the retail sector which plays an important role for any economy. Retail sector covers all the basic necessities that a human being needs. Retail sector is dependent on many factors that drive the sales of a company and the most vital one is the customer retention. With eruption of technology, it is highly important to underscore the importance of social media and advanced technology. The main reason for that is the number of options the customers have. Due to this the switching cost is low. From the porter's analysis, we can clearly conclude that the bargaining power of the buyer is high for most retail commodities. Many customers are loyal towards a brand because of the brand image, so it is highly important that a company fulfils its CSR programs in a way that can grab the attention of the customers and glue them to the brand. This brand image can also be connected to the store ambience. This study is based on various factors that are perceived by the customers as of value and how these factors can enhance the customer retention.

1.4   Motivation for the Problem Undertaken

I have also handled many other projects. But this project has given me an idea to deal with more number of features. I have taken up this project for practice purpose and I felt very happy that I was able to get a huge idea on tha data exploration. So particularly in this project I have used all my analysation skills and found a way for customer retention.

2.Analytical Problem Framing

2.1   Mathematical/ Analytical Modeling of the Problem

The studies were identified using different keywords that are related mainly to customer retention and analysing other factors such as satisfaction, trust, and commitment in several searching processes until reaching a suitable number of related and targeted articles and studies to select and analyze. The datasets were downloaded and then filtered to remove the duplicate entries. Then got up with some cleaned part of data, which will be further processed to make sure the customers will get better satisfaction from the e-commerce sellers. In the dataset there was no numerical columns and all the categorical columns has been analysed using all categorical plots to get better insight on the dataset. After visualizing the features it bought us a good insight that what actually customers are expecting from the e-commerce sellers. And looking into the observations of the ploting we were able to get a good measures to have customer retention. In this dataset no need to check outliers and skewness as all the columns are categorical.

2.2 Data Sources and their formats

The data is collected from the Indian online shoppers. Results indicate the e-retail success factors, which are very much critical for customer satisfaction. There are two sheets (one is detailed) and second is encoded in the excel file. You may use any of them by extracting in separate excel sheet. The number of column(s) is more than 47.

The features in the dataset are as follows:

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?\t\t\t\t\t\t

10 What is the operating system (OS) of your device?\t\t\t\t

11What browser do you run on your device to access the website?\t\t\t

12 Which channel did you follow to arrive at your favorite online store for the f irst time?

13 After first visit, how do you reach the online retail store?\t\t\t\t

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

15 What is your preferred payment Option?\t\t\t\t\t

16 How frequently do you abandon (selecting an items and leaving without ma king payment) your shopping cart?\t\t\t\t\t\t\t

17 Why did you abandon the "Bag", "Shopping Cart"?\t\t\t\t\t

18 The content on the website must be easy to read and understand

19 Information on similar product to the one highlighted is important for prod uct comparison

20 Complete information on listed seller and product being offered is importan t for purchase decision.

21 All relevant information on listed products must be stated clearly

22 Ease of navigation in website

23 Loading and processing speed

24 User friendly Interface of the website

25 Convenient Payment methods

26 Trust that the online retail store will fulfill its part of the transaction at the s tipulated time

27 Empathy (readiness to assist with queries) towards the customers

28 Being able to guarantee the privacy of the customer

29 Responsiveness, availability of several communication channels (email, onli ne rep, twitter, phone etc.)

30 Online shopping gives monetary benefit and discounts

31 Enjoyment is derived from shopping online

32 Shopping online is convenient and flexible

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

34 Gaining access to loyalty programs is a benefit of shopping online

35 Displaying quality Information on the website improves satisfaction of customers

36 User derive satisfaction while shopping on a good quality website or application

37 Net Benefit derived from shopping online can lead to users satisfaction

38 User satisfaction cannot exist without trust

39 Offering a wide variety of listed product in several category

40 Provision of complete and relevant product information

41 Monetary savings

42 The Convenience of patronizing the online retailer

43 Shopping on the website gives you the sense of adventure

44 Shopping on your preferred e-tailer enhances your social status

45 You feel gratification shopping on your favorite e-tailer

46 Shopping on the website helps you fulfill certain roles

47 Getting value for money spent

From the following, tick any (or all) of the online retailers you have shopped from

Easy to use website or application

Visual appealing web-page layout

Wild variety of product on offer

Complete, relevant description information of products

Fast loading website speed of website and application

Reliability of the website or application

Quickness to complete purchase

Availability of several payment options

Speedy order delivery

Privacy of customers' information

Security of customer financial information

Perceived Trustworthiness

Presence of online assistance through multi-channel

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?

In the dataset we have 296 rows and 71 columns which contains information about the shopper, there needs according to customers view and the ratings for available e-commerce websites.

2.3   Data Preprocessing Done

I have imported the dataset which was in excel format. Then I did all the statistical analysis like checking shape, nunique, value counts, info etc….. Then while looking into the value counts I found some duplicate entries in the features like two words with same meaning. I have replaced those duplicates by grouping them and also I have checked for null values but there was no null values in the dataset.

```
In [44]:  #Converting data type of Pin code column
          df['4 What is the Pin Code of where you shop online from?'] = df['4 What is the Pin Code of where you shop online from?'].astype(
```

 Also the data type of Pincode column was integer type but pincode is a code which will be given to perticular location and it will be unique so the datatype should object. So I have changed the datatype of Pincode column if I don't change the datatype it will carry some wrong information and it may also affect my model accuracy. And the column names are very descriptive and they look hard to handle with unnecessary spacing so I have changed my column names which will be helpful for further studies.

```
In [46]:  #Renaming column names
          rename_columns = ['Gender','Age','Shopping_City','PinCode','Shopping_Since','Shopping_Frequency','Internet_Access','Device_Used',
                  'Screen_Size','Operating_System', 'Browser_Used','Channel_FirstUsed','Login_Mode','TimeSpent_ForPurchase','Payment_Mod
                  'Abandon_Reason','Content_Readability','Similar_ProductInfo','Seller_ProductInfo','ProductInfo_Clarity','Ease_Navigatio
                  'Loading_ProcessingSpeed','UserFriendly_Interface','Conveninet_PaymentMode','TimelyFulfilment_Trust','Customer_Empathy'
                  'CustPrivacy_Guarantee','VariousChannel_Responses','Benefit_Discount','Enjoy_OnlineShopping','Convenience_Flexibility',
                  'QualityInfo_Satisfaction','WebsiteQuality_Satisfaction','NetBenefit_Satisfaction','User_Trust','Product_SeveralCategor
                  'Patronizing_Convenience','Adventure_Sense','Enhances_SocialStatus','Gratification_Shopping','Role_Fulfilment','Money_W
                  'Visually_AppealingWebApp','Product_Variety','Complete_ProductInfo','Fast_WebApp','Reliable_WebApp','Quick_Purchase',
                  'Fast_Delivery','CustInfo_Privacy','FinancialInfo_Security','Perceived_Trustworthiness','MultiChannel_Assistance','Lor
                  'LatePrice_Declare','Long_LoadingTime','Limited_PaymentMode','Late_Delivery','ChangeWebApp_Design','Page_Disruption',
                  'Recommendation']

          df.columns = rename_columns
```

2.4   Hardware and Software Requirements and Tools Used

While taking up the project we should be familiar with the Hardware and software required for the successful completion of the project. Here we need the following hardware and software.

Hardware required: -

1. Processor — core i5 and above
2. RAM — 8 GB or above
3. SSD — 250GB or above

Software/s required: -

1.Anaconda

Libraries required:-

1. **from sklearn.preprocessing import Label Encoder**

Label Encoder and One Hot Encoder. These two encoders are parts of the SciKit Learn library in Python, and they are used to convert categorical data, or text data, into numbers, which our predictive models can better understand.

If we are on the way to build model then we want some more libraries but presently I have not dealt with model building so just Label Encoder library is enough.

To run the program we need some more basic libraries as follows:

```
In [1]: #importing required libraries
        import pandas as pd
        import numpy as np
        import matplotlib.pyplot as plt
        import seaborn as sns
        import datetime as dt

        import warnings
        warnings.filterwarnings('ignore')
```

With this sufficient libraries we can go ahead with our analytical skills.

# 3.Data Analysis and Visualization

3.1 Visualizations

Since all the features are categorical we can use only categorical ploting to get better insight. And particularly I have used bar plot for visualization.
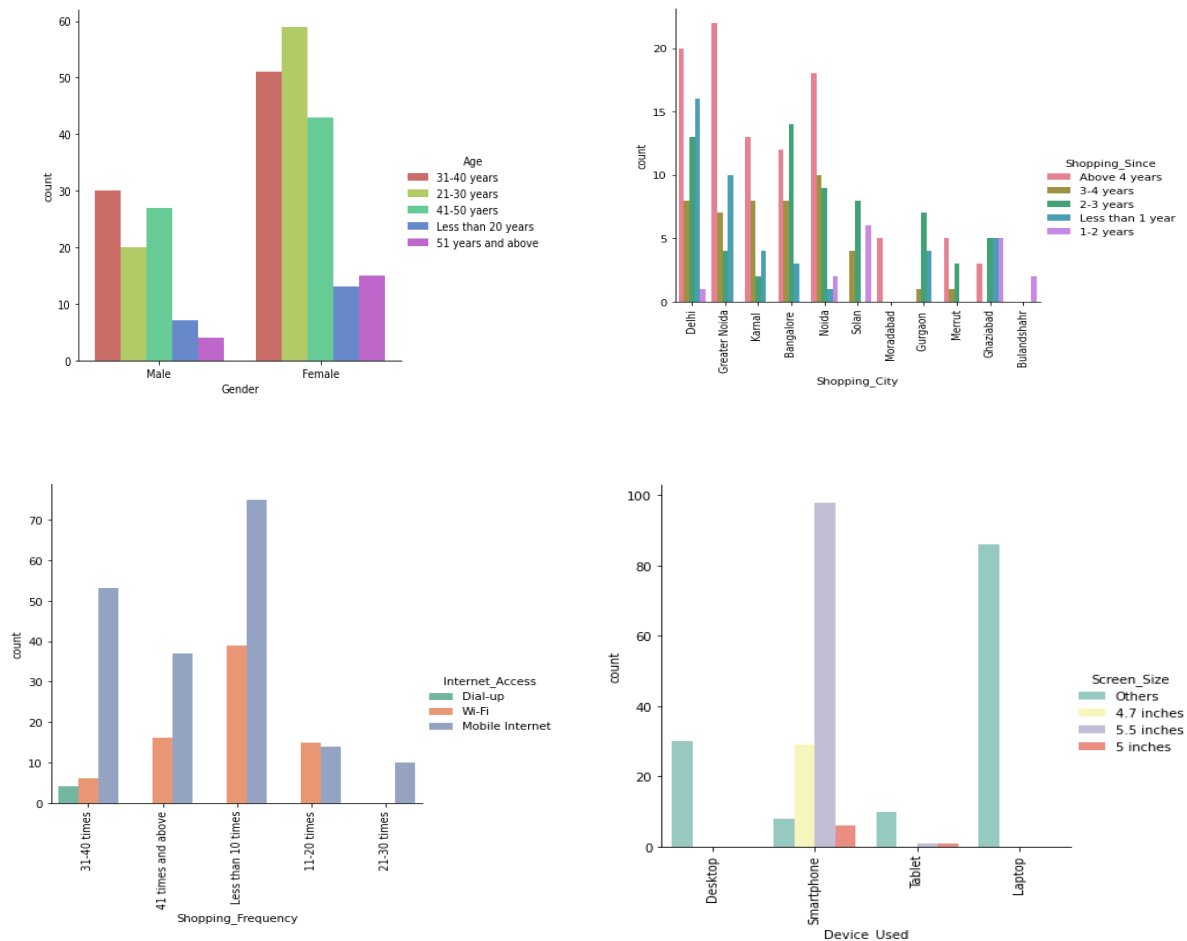

- Female are doing more shopping compared to men and females with age group 21-30 and men of age group 31-40 are shopping more than other age groups.
- I found more customers in Great Noida and they belong to above 4 years of online shopping experience.
- In all the frequencies of online purchase in past 1 year the usage of mobile internet for internet access is having high count.
- All the smartphone users has maximum count for 5.5 inches screen size and for all other devices screen size is not specified i.e., others option.
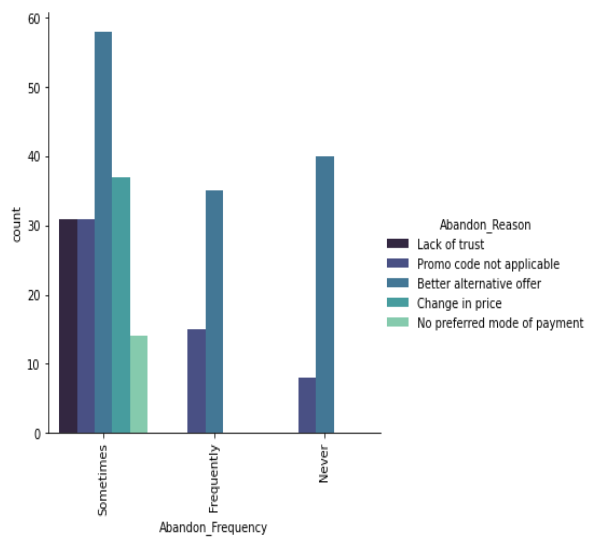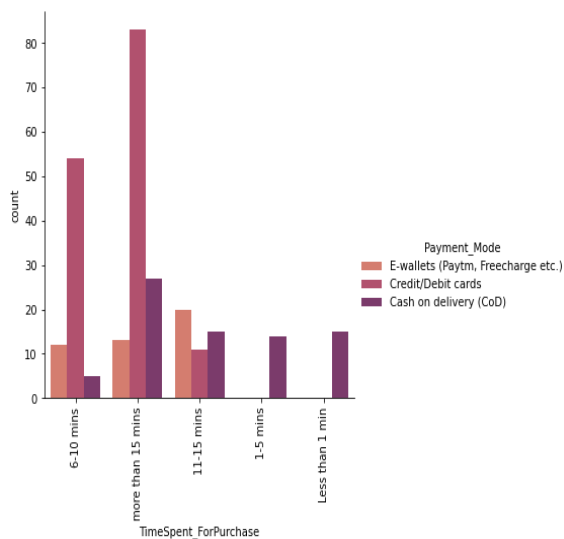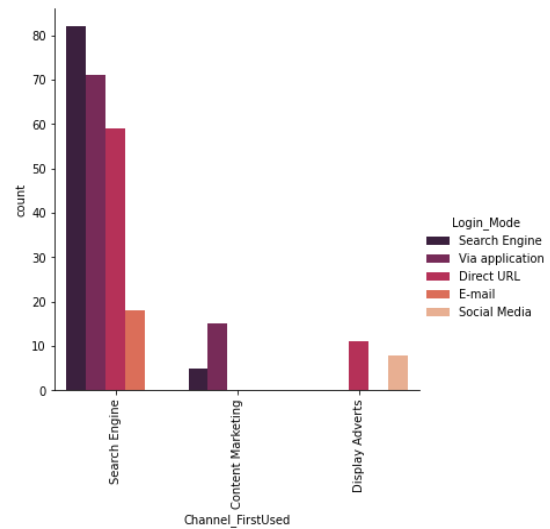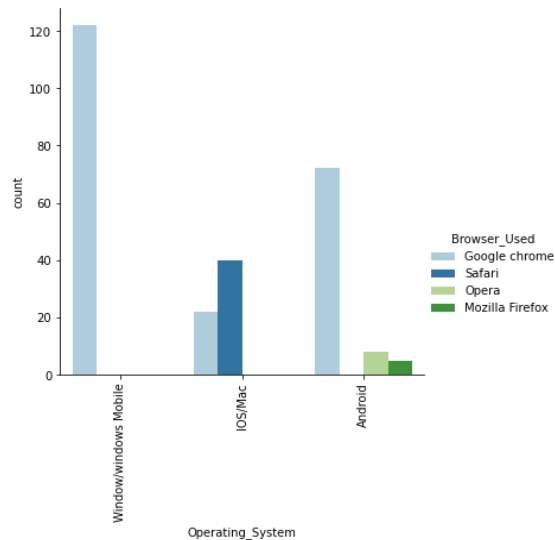
- All the window users and max Android users uses Google Chrome as there browser and IOS/Mac users use Safari as there browser.
- Maximum customers uses Search Engine to visit the online store for first time and after first visit also again they login using search engines so search engines are the good mode to get hike in number of customers.
- Maximum customers uses the e-retail shop for more than 15 mins to make purchase decision and max customers uses credit/debit card as payment option.
- Maximum customers sometimes abandon and the maximum reason for abandons is to get better alternative offer.
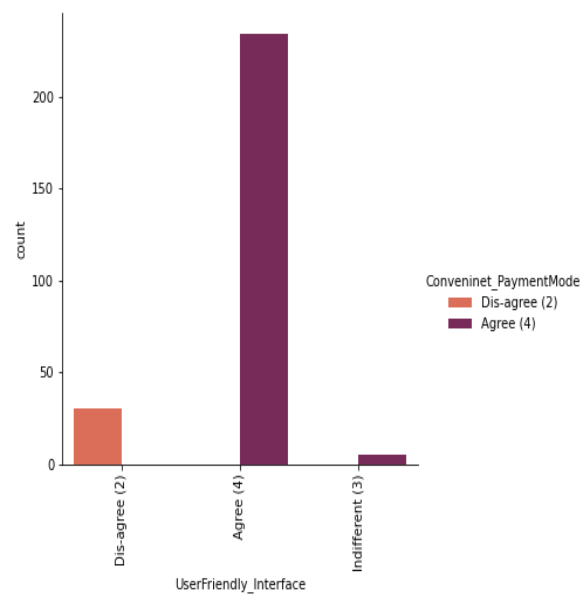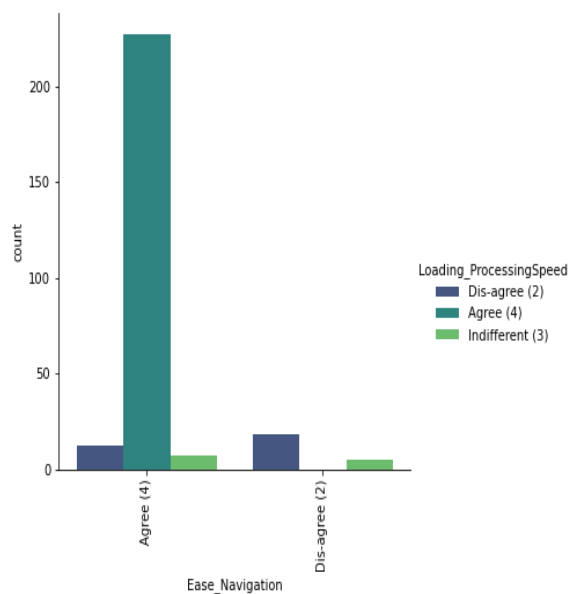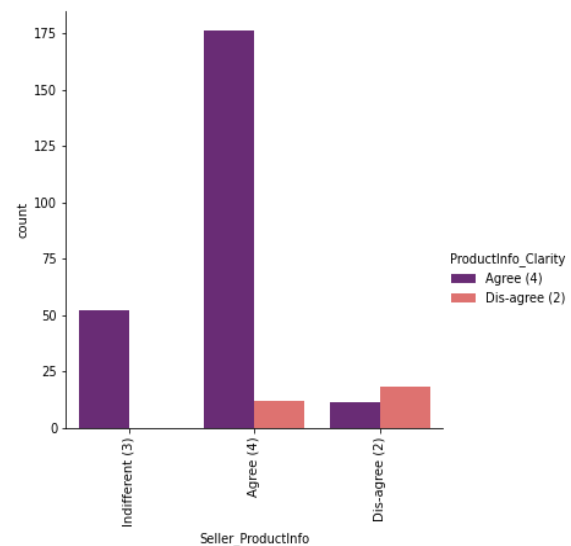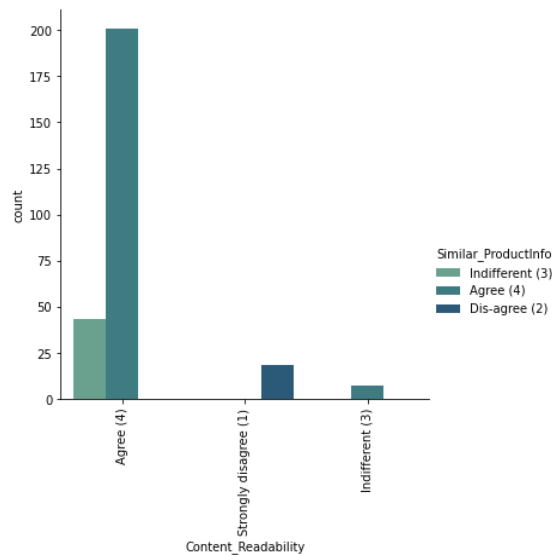
- Maximum customers agrees to have the content on the web page to be easy to read and understand and also they agrees to get information on similar product to the one highlighted is important for product comparison.
- Maximum people agrees to have all relevant information on listed products and agrees with complete information on listed seller and product being offered is important for purchase decision.
- Maximum customers agrees to get easy navigation in website and they wants to have loading and processing speed.
- Maximum customers wants user friendly interface of the website and convenient payment methods.
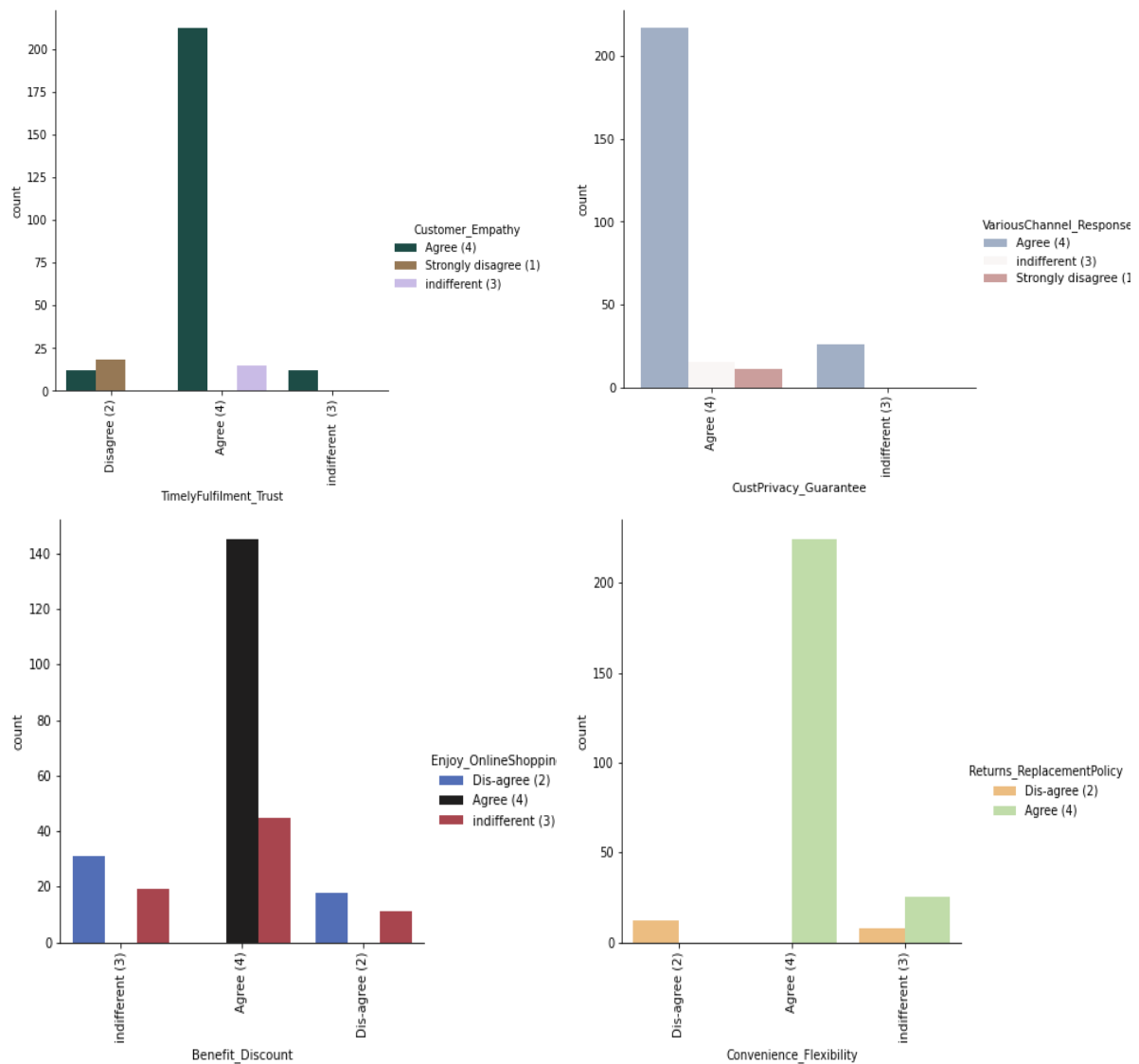
- Maximum customers agrees to get Trust that the online retail store will fulfill its part of the transaction at the stipulated time and expects Empathy towards the customers.
- Maximum customers wants to have the guarantee privacy of the customer and they wish to have Responsiveness, availability of several communication channels.
- Maximum customers agrees that Online shopping gives monetary benefit and discounts and they also agrees that Enjoyment is derived from shopping online.
- Maximum customers agrees that shopping online is convenient and flexible and they also agrees that return and replacement policy of the e-tailer is important for purchase decision.
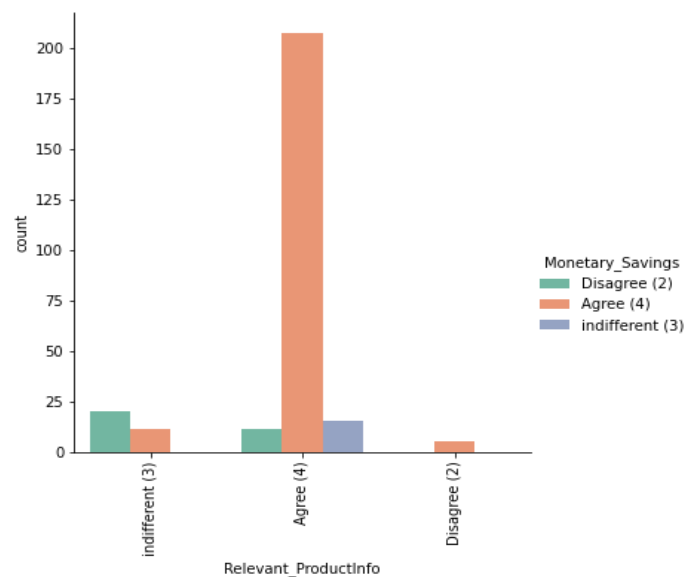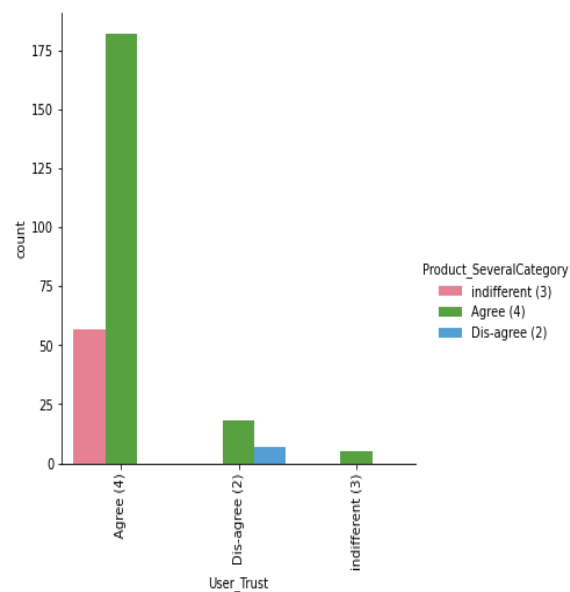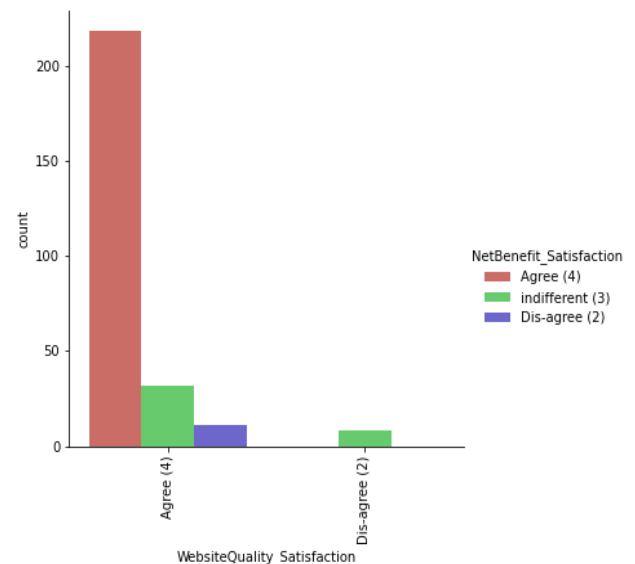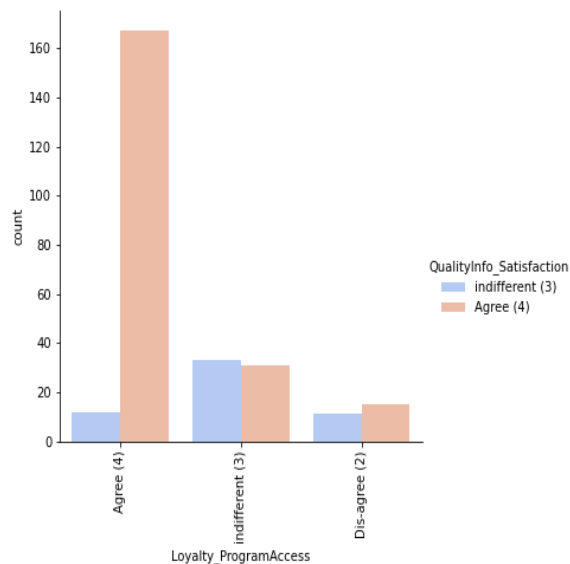
- Max customers agrees with Gaining access to loyalty programs is a benefit of shopping online and they also agrees that displaying quality information on the website improves satisfaction of customers.
- Maximum customers agrees that user derive satisfaction while shopping on a good quality website or application and they also agrees that net benefit derived from shopping online can lead to users satisfaction.
- Max customers agrees to have user satisfaction cannot exist without trust and they also agrees that offering a wide variety of listed product in several category.
- Max customers agrees to have provision of complete and relevant product information and they also agrees to have monetary savings.
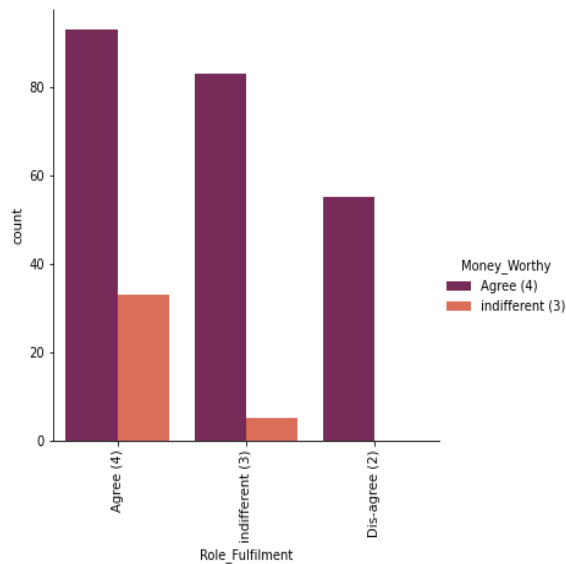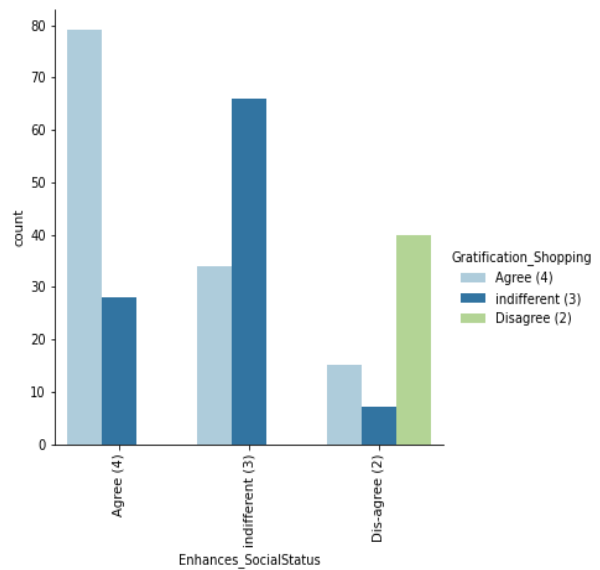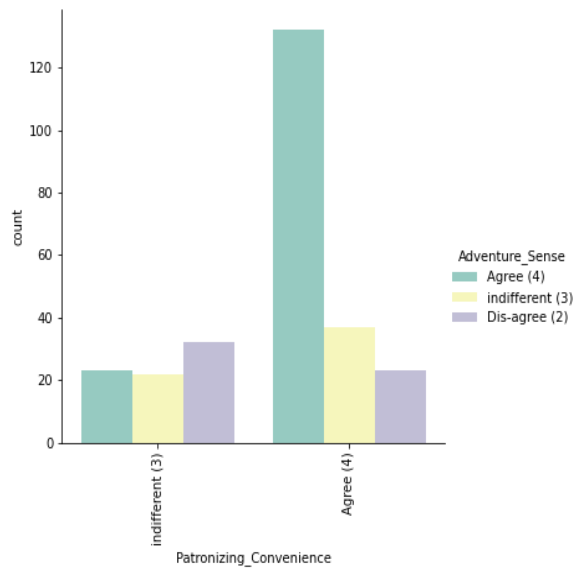
- Max customers agrees for having the convenience of patronizing the online retailer and they also agrees that shopping on website gives us the sense of adventure.
- Max customers agrees that we feel gratification shopping on there favorite e-tailer and they also agrees that shopping on your preferred e-tailer enhances there social status.
- Max customers agrees shopping on the websites helps to fulfill certain roles and they also agrees that getting value for money spent.

- Max customers choosed that all the available online shopping platforms are easy to use and they also shop from all the online shopping websites.
- Maximum customers choosed Amazon and Flipkart as best visual appealing web-page layout and best platform which gives wide variety of product on offer.
- Most of the customers chooses Amazon and Flipkart as the best platform that gives complete relevant description information of products and also they choosed Snapdeal as the fast loading website.

Quick_Purchase

Legend:
- 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

Reliable_WebApp

Fast_Delivery

Legend:
- 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

PaymentOptions_Availability

FinancialInfo_Security

Legend:
- 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

CustInfo_Privacy

- Max customers says that Reliability of the website or application and quickness to complete purchase is good with Amazon.
- Max customers chooses Amazon and Flipkart as having best payment option available and also they are giving fastest delivery also.
- Max customers chooses Amazon for giving best customers information privacy and also for giving best financial information security.
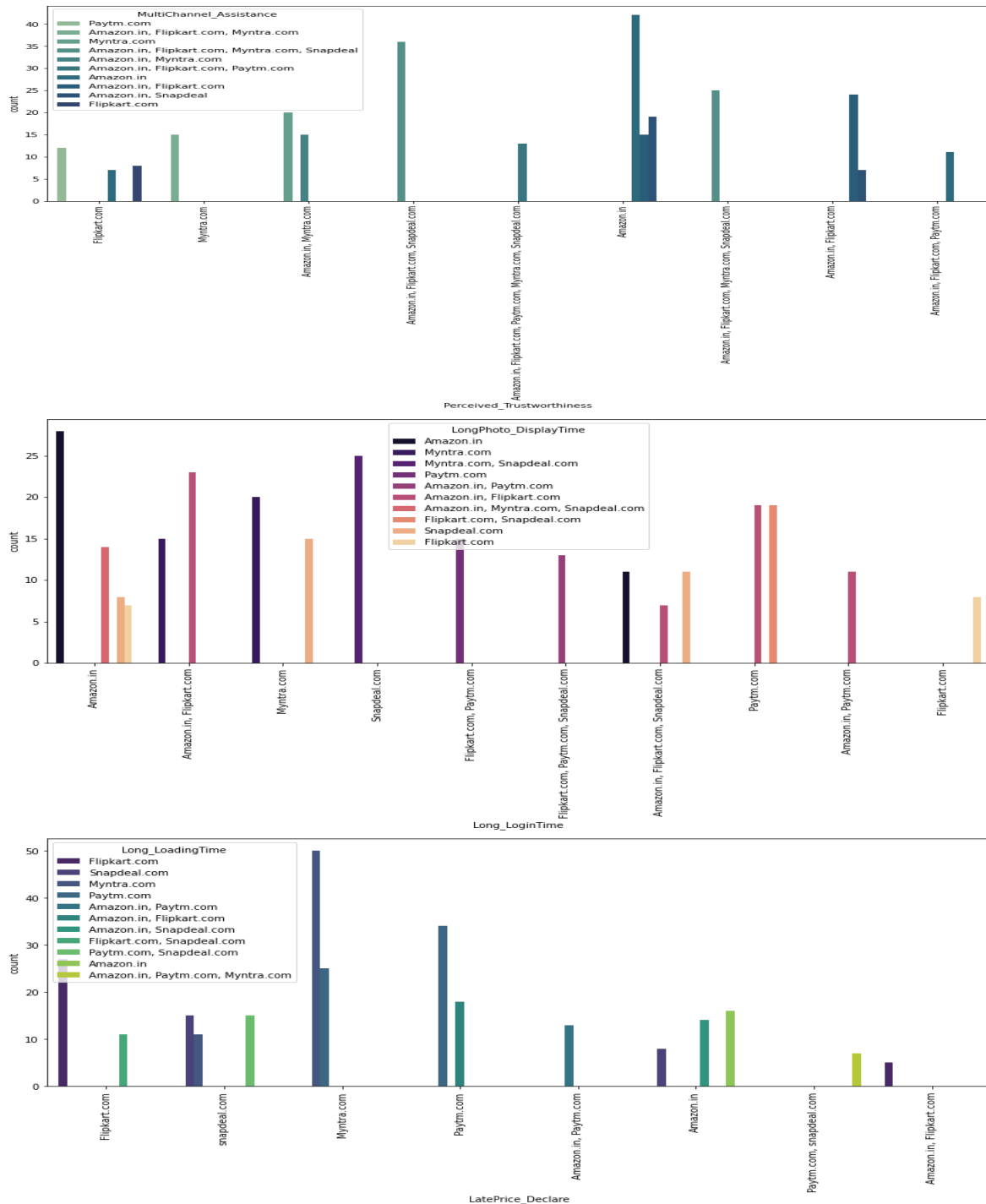
- Amazon is the best online shopping mart which gives perceived trustworthiness and it has the presence of online assistance through multi-channel.
- Since Amazon is the busiest online shopping platform it is also having drawback of taking longer time to login and taking longer time in displaying graphics and photos.
- Max customers says that the drawback of having late declaration of price is with Myntra and longer page loading time is with Flipkart.
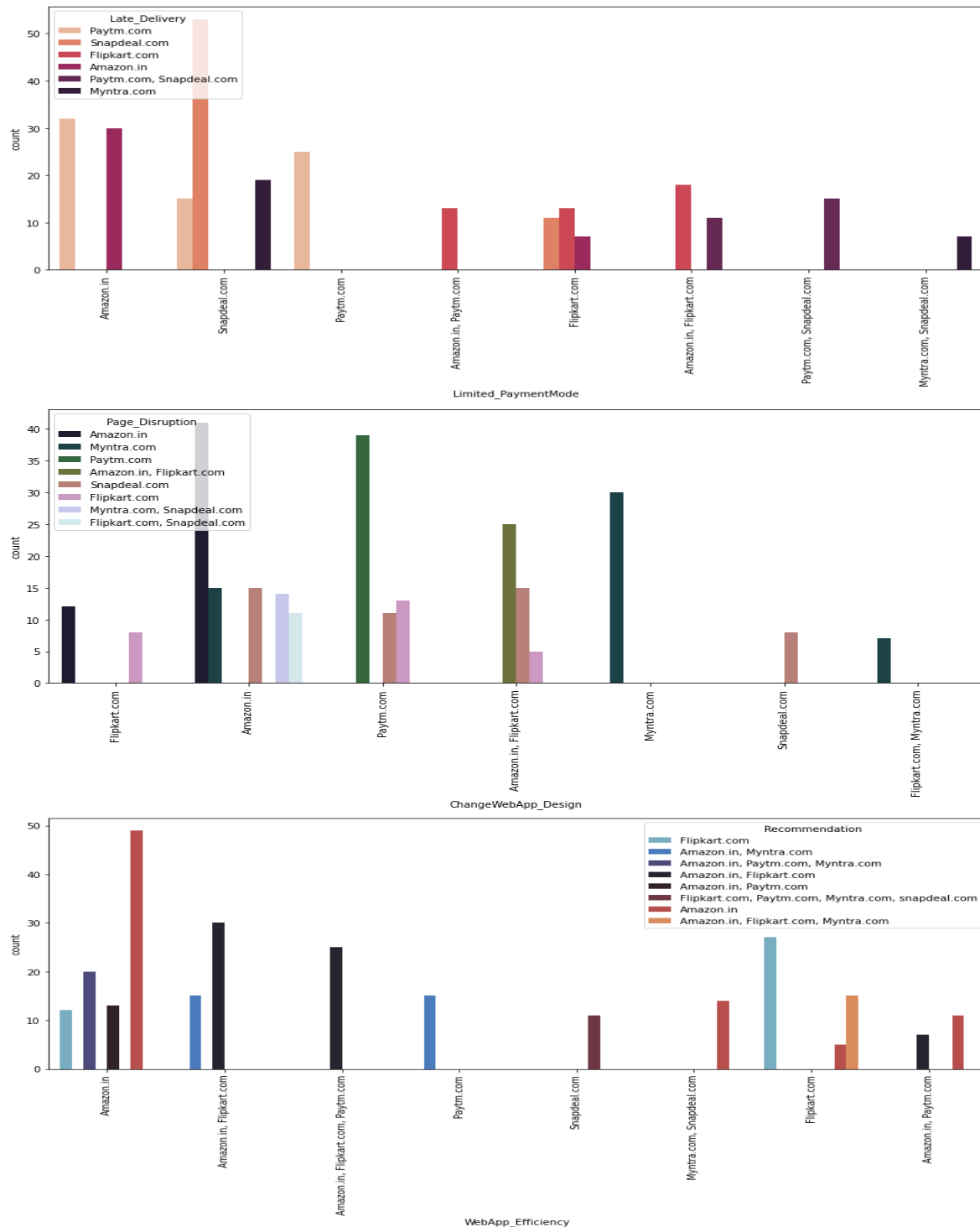
- Snapdeal has a drawback of having limited payment modes and also it has a complaint of late delivery.
- Max customers says that Amazon is the platform with good wedsite/application design and also amazon has a drawback of disruption of pages when moving from one page to another.
- Max customers says that the efficiency of website is good with Amazon and also amazon is recommended by most of the customers.

3.2   Interpretation of the Results

- Most of the customers are females with age from 20-50 and they used mobile internet to access with Windows as operating system.
- And most of the customers used search engines to get into the platform first time and frequently.
- Max customers uses there debit/credit cards for there payment.
- Almost customers has a expectation to have Content_Readability, Similar_ProductInfo, Seller_ProductInfo, ProductInfo_Clarity, Ease_Navigation, Loading_ProcessingSpeed, UserFriendly_Interface, Conveninet_PaymentMode, TimelyFulfilment_Trust, Customer_Empathy, CustPrivacy_Guarantee, VariousChannel_Responses, Benefit_Discount, Enjoy_OnlineShopping, Convenience_Flexibility, Returns_ReplacementPolicy, Loyalty_ProgramAccess, QualityInfo_Satisfaction, WebsiteQuality_Satisfaction, NetBenefit_Satisfaction, User_Trust, Product_SeveralCategory, Relevant_ProductInfo, Monetary_Savings, Patronizing_Convenience, Adventure_Sense, Enhances_SocialStatus, Gratification_Shopping, Role_Fulfilment, Money_Worthy in e-commerce websites.
- Compared to other platforms shopping with Amazon.in and Flipkart.com has maximum benefits rather than drawbacks.
- Compared to all other online shopping platforms Snapdeal and Myntra has maximum drawbacks.
- And having maximum good feedbacks Amazon is recommended by most of the customers.

4.CONCLUSION

While going through the problem and in detailed analysis I found the following conclusions:

♣   Females are furious to shop all the time so making them satisfied will help the sellers to get more business.

- ♣ Loyal customers prefer buying and tend to spend more money on shopping in your store. Statistics show that engaged consumers purchase more frequently. It is necessary to hear customer feedback because most of them are valuable feedbacks.
- ♣ Sometimes customer feedback is the best marketing strategy. They are frequent customers so they will know which areas of your business may well be improved. If their feedback is approved, they will extremely excite and support your company with their best ability.
- ♣ Here as an conclusion part I found that using dead old strategies for retailers will effect customer retention.
- ♣ Organisation will always focus on success for that keeping the old customers will always be a plus point.
- ♣ Also Paytm and Snapdeal has maximum drawbacks it is because of their dead old strategies.
- ♣ I found Amazon and Flipkart are standing best out in the market by using ethical, reasonable business strategies.
- ♣ To conclude, having the right customer retention strategy **will keep sellers company growing if they know how to take advantage of it**. Then customers will find their way back and continue buying stuff from the best company.

5.References

[1] https://www.researchgate.net/publication/344365612_Factors_Affect_Customer_Retention_A_Systematic_Review

[2] https://www.ngdata.com/how-to-improve-customer-retention/

[3] https://en.wikipedia.org/wiki/Category:Customer_relationship_management

[4] The International Customer Service Standard (2009), *TICSS2009*, The International Customer Service Institute

[5] We can also refer in google scholar.