Project Report on Customer Retention

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

Prepared by Debanti Roy

ACKNOWLEDGMENT

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Introduction

In today's world the whole equation of conducting a business has changed. As per Online Business vs Offline Business Statistics, **82% of consumers use online media every day compared to offline media (24%)**. There we understand that business can see more profitability in an online platform when compared to their physical counterparts. Now this calls for a competition to keep the audiences entertained or rather engaged and convert the leads into profitable ROI.

Infact, customer retention is one of the main relationship marketing objectives. Currently the perception and application of customer retention is significantly valuable for companies. Thus, in order to perceive and apply marketing principles in practice relevantly, it is important to ground theoretically and assess empirically customer retention.

Let's take into account the details of an e-commerce shopping site to understand how several factors can change the statistics of customer retention.

Understanding the Challenges in Business

Owing to the rate of increase in online purchasing, companies now need to focus on improving customer experience. Here, customers' satisfaction can be attributed as one of the most important factors to ensure greater customer retention. In this regard, companies need to find out "What individual factors motivate a buyer to purchase online as well as restrain to purchase online?". We will discuss about this in data analysis part.

The main aim of this project is to explore consumer perceptions of internet-based e-retailing. 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.

Utilitarian value: Utilitarian value is an objective value which provides some functional benefits to the consumers and helps consumers to accomplish practical tasks.

Hedonistic value: Hedonistic value is subjective (Psychological) value which provides an experiential satisfaction. In other words, the immediate psychological gratification that comes from experiencing some activity or from consumption of a product.
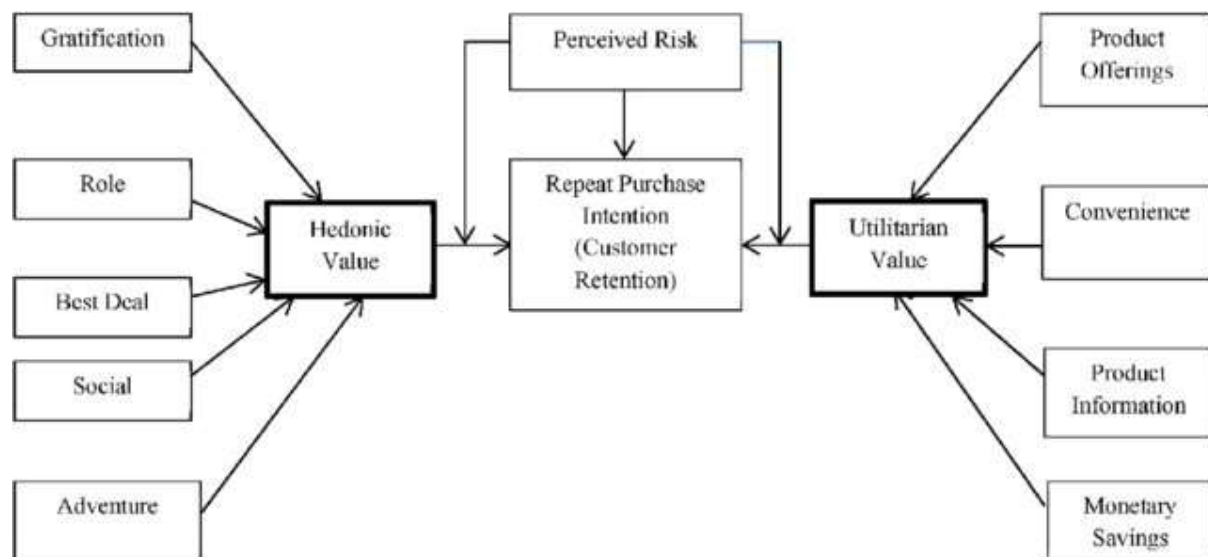
Generally has a huge number of customers and runs at the risk of churning to a competitor. Therefore, it was necessary to find out insights as to which customers are at the risk of leaving, why they may leave, and on which customers should the company focus the retention effort on.

Conceptual Background of the Domain Problem

An e-commerce company generally has a huge number of customers and runs at the risk of churning to a competitor. Therefore, it was necessary to find out insights as to which customers are at the risk of leaving, why they may leave, and on which customers should the company focus the retention effort on.

The result of the study shows that, ease of use and enjoyment were also significant determinants of service quality, while speed of delivery and reliability had positive impact on service quality. Many businesses focus on customer loyalty programs to remain competitive in today's marketplaces and explore innovative ways to keep their existing customers engaged. Customer retention is a simple concept. Yet, it often requires effort from every department to improve the customer experience and build lasting trust. Let's understand the concept of customer retention.

Understanding Customer Retention

Customer retention is a metric that measures customer loyalty, or the ability for an organization to keep its customers over time. In addition to identifying the number of loyal customers, customer retention can reflect or predict customer satisfaction, repurchase behaviour, customer engagement and emotional ties to a brand.

While customer relationships typically begin with an initial interaction, customer retention metrics are related to the first purchase made by a customer and include all subsequent interactions. Once customer retention is measured, organizations can use this feedback to perform data analysis on components of customer experience and customer success. For example, if a drop in customer retention is reported, an organization can use this to help identify the root cause and adjust its product offerings.

Why is customer retention important for businesses?

If an organization does not focus on customer retention but instead focuses solely on expanding its customer base, it is potentially losing out on repeat customers. While the process of gaining new customers, or customer acquisition, is important, it is also much more expensive. Maintaining customers and transitioning them into recurring customers is just as important of a process as gaining new ones.

How to measure customer retention and key metrics

Customer retention is typically measured in terms of retention rate and should be monitored continuously. The first step to determining this rate is to identify the period of time an organization wants to record. This can range from a month to a fiscal year or beyond. Other factors used to determine the retention rate include the following:

- the number of customers in the customer base at the start of the period (S);
- the number of customers at the end (E); and
- the number of new customers acquired over time (N).

These metrics should be recorded. Once retrieved, the formula is applied as follows:

E-N/S x 100 = retention rate

For example, if an organization starts with 750 customers and ends with 950, but acquires 625 over the period of time, the customer retention rate would be 43.3%.

Customer retention strategies

Some best practices and strategies to follow when considering customer retention strategies include the following:

Offer personalized service. Personalizing services to the customer can improve a customer's experience and lead them to become repeat customers.

Use data to provide personalized support interactions. Data gathered about customers can help aid organizations in knowing their preferences, enabling them to build more personalized services.

Build trust. Building relationships with customers will help increase brand loyalty and trust.

Use social media. Social media sites such as Twitter, LinkedIn and Facebook can help an organization reach out to its customers, build relationships and trust, and even respond to customer support queries.

Incentivize loyalty. This can be done through customer loyalty programs or by offering discounts or credit.

Gather customer feedback. Gathering feedback from customers enables an organization to further personalize experiences.

Improve customer support services. Implementing a live chat or help desk tool, putting an emphasis on responding to customer support queries quickly and encouraging customers to create accounts can all help increase customer retention.

All these customer retention strategies together can help build more trust between an organization and a customer, which can help increase the chances of current customers becoming repeat customers.

Importance of Customer Retention

Customer retention measures not only how successful a company is at acquiring new customers but also how successful they are at satisfying existing customers. It also increases ROI, boosts loyalty, and brings in new customers.

It's also easier and more cost-effective to retain customers than to acquire new ones, returning customers spend more and buy more often, and refer friends and family. Only a 5% increase in customer retention can increase company revenue by 25-95%.

The numbers don't lie: Retaining customers brings companies a *ton* of ROI.

There are a few reasons why customer retention is critical to company growth and success:

- **Affordability:** It's 6 to 7 times more expensive to acquire a new customer than it is to retain an existing customer.
- **ROI:** A 5% increase in customer retention can increase company revenue by 25-95%.
- **Loyalty:** Retained customers buy more often and spend more than newer customers. They've learned the value of a product or service and keep coming back, again and again.
- **Referrals:** Satisfied, loyal customers are more likely to sing a company's praises and refer their friends and family — bringing in new customers, free of charge.

It might seem obvious — of course, companies should want to retain customers — but when companies start growing quickly and struggle to implement a solid customer support program, proactive customer support for existing customers can slip through the cracks.

Review of Literature

Here the review of literature is the integrated form of relationship marketing, customer loyalty, trust, reliability and privacy policy concept because all of these concepts are interlinked.

The customer retention is possible only when the organization fulfil customers' needs and their expectations. A buyer goes through five stages while making a decision to purchase like problem recognition, information search, evaluation of alternatives, purchase decision, and purchase behaviour. These stages are best explainable when a buyer goes to buy expensive items on online stores, such as a diamond jewellery, home appliances etc. However, in day-to-day purchase, consumers may not go through all these stages, since some commodities do not need information, and based on buyer's previous experience they will visit a store for the purchase.

In addition, companies are now using the Internet to build closer relationships with consumers and marketing partners. Besides competing in traditional marketplaces, they now have access to exciting new market spaces. Moreover, through the internet, consumers can learn about design, order, and pay for products and services, without ever leaving home and then, through the wonders of express delivery, they can receive their purchases in short time. From virtual reality displays that test new products to online virtual stores that sell them, the technology explosion is affecting every aspect of marketing. The internet has now become a truly global phenomenon.

Consumer's satisfaction and purchase decision on online shopping depends on few more issues. These are, e-store image, delivery and customers services, service quality and purchase behaviour personalisation, motivations for online purchase, trust, reliability, privacy, transaction and cost, incentive programmes, web-site design, online interactivity, merchandise motivation, assurance, convenience, responsiveness etc.

Following from the above consideration, this project will find out what individual factors motivate a buyer to purchase online and restrain to purchase online.

Aim of the Problem Undertaken:

The main aim of this problem is to help the ecommerce websites to find the e-retail factors for customer activation and retention.

As we all know online shopping is considered convenient by almost everyone as the store is open 24X7 and it is easy, time saving and less stressful to shop online. One can shop anything from their comfort zone and not by hoping from one physical store to other to find their favourites. Additionally, online shopping gives access to a wide range of stores and products and one can shop from anywhere in the world with the best offers. So, in this project we will be analysing how these online stores attracts the customers and whether the customers feel satisfied by their products or not.

Analytical Problem Framing

Mathematical/ Analytical Modelling of the Problem:

The data provided to us in the problem statement is unsupervised data. The problem statement contains both utilitarian value and hedonic values. Thus, I have performed both univariate and bivariate analysis to analyse these values using different plots like pie plot, count plot, distribution plot, factor plot, etc.

In this project I have also done various mathematical and statistical analysis such as describing the statistical summary of the columns in which I found that the count is same for all the columns which means no null values present. Since the dataset contains object data type, I used label encoding method to convert the object data into numerical data. Checked for correlation between the features and visualized it using heatmap.

Data Sources and their formats:

- The data was collected from the Indian online shoppers. Results indicate the e-retail success factors, which are very much critical for customer satisfaction. The dataset is provided by Flip Robo which is in the format xlsx.
- There are two excel sheets one is detailed datasheet and other one is encoded datasheet. I have used detailed datasheet for the processing.
- The dataset contains 269 rows and 71 columns which is comprised of categorical columns. All the features contain object data type except the feature Pincode column (integer data type).
- While describing the data I found the presence of skewness and outliers. Since all the columns are categorical so I haven't removed outliers and skewness.

Data Pre-processing:

- Firstly, I have imported the necessary libraries and dataset.

```
In [1]: #Importing required packages & libraries.

import pandas as pd
import numpy as np

import matplotlib.pyplot as plt
import seaborn as sns

%matplotlib inline
import warnings
warnings.filterwarnings('ignore')
```

- Checked the dimension of the dataset, data types of the features.
- Checked the information of the data frame using info() and checked the number of unique values present in the dataset.
- Since the columns had no proper names, so I renamed them with new name as below.

```
# Renaming the column names for better understanding
columns = ['Gender','Age','Purchase_City','Pincode','Shopping_For_Years','Purchase_Repitition',
           'Internet_Accessibility','Used_Device','Screen_Size','OS', 'Preferred_Browser',
           'Channel_Followed','Login_Mode','Time_Explored','Payment_Option','Abandon_Frequency',
           'Abandon_Reason','Content_Reading_Quality','Similar_Product_Info','Seller_Product_Info',
           'Clarity_of_Product_Info','Ease_of_Navigation','Loading_Processing_Speed',
           'User_Friendly_Interface','Convenient_Payment_Mode','Trust_Value','Empathy_Towards_Customer',
           'Privacy_Guarantee','Responsiveness_to_Diff_Channels','Benefits','Enjoyment_Derived',
           'Shopping_Convenience','Return_Replacement_Policy','Accessing_Loyalty',
           'QualityInfo_vs_CustSatisfaction','Site_Quality_Satisfaction','NetBenefit_vs_Satisfaction',
           'Trust','Variety_of_Product','Relevant_Product_Info','Monetary_Savings',
           'Convenience_of_Patronizing','Sense_of_Adventure','Social_Status','Gratification',
           'Fulfil_Role','Value_for_Money','Shopped_From','Easy_of_Use','Visually_Appealing_Layout',
           'Wide_Product_Variety','Complete_Description','Fast_Loading_Website','Reliability',
           'Quickness_of_Purchase','Availability_of_Payment_Options','Speedy_Delivery',
           'Customer_Privacy_Info','Financial_Security_Info','Perceived_Trustworthiness',
           'Multichannel_Assistance','Long_LoginTime','Long_DisplayTime','Late_Price_Declare',
           'Long_Loading_Time','Limited_Payment_Mode','Longer_Delivery','Change_in_WebDesign',
           'Page_Disruption_Frequency','Website_Efficiency','Recommendation']

df.columns = columns
```

- I have checked the null values and found no null values present in the dataset.
- Checked the value count of each column. By checking value count function, I found some of the columns contains duplicate and unwanted entries, so I have replaced them using appropriate values.
- Visualized each feature using seaborn and matplotlib libraries by plotting count plot, pie plot, distribution plot, box plot and factor plot.
- Performed label encoding.
- Checked the skewness and outliers. Since all the columns are categorical, so I haven't removed skewness and outliers.
- Checked the correlation between the features and visualised it using heat map.
- Described the data using describe().

Hardware & Software Requirements & Tools Used:

Hardware required:

- Processor: core i5 or above
- RAM: 8 GB or above
- ROM/SSD: 250 GB or above Software required:
- Anaconda 3- language used Python 3
- Microsoft Excel Libraries: The important libraries that I have used for this project are below:

import numpy as np

It is defined as a Python package used for performing various numerical computations and processing of the multidimensional and single dimensional array elements. The calculations using Numpy arrays are faster than the normal Python array.

import pandas as pd

Pandas is a Python library that is used for faster data analysis, data cleaning and data pre-processing. The data-frame term is coming from Pandas only.

import matplotlib.pyplot as plt and *import seaborn as sns*

Matplotlib and Seaborn acts as the backbone of data visualization through Python.

Matplotlib: It is a Python library used for plotting graphs with the help of other libraries like Numpy and Pandas. It is a powerful tool for visualizing data in Python. It is used for creating statical interferences and plotting 2D graphs of arrays.

Seaborn: It is also a Python library used for plotting graphs with the help of Matplotlib, Pandas, and Numpy. It is built on the roof of Matplotlib and is considered as a superset of the Matplotlib library. It helps in visualizing univariate and bivariate data.

from sklearn.preprocessing import LabelEncoder

There are several encoding techniques like Label Encoder, OneHotEncoder, Ordinal Encoder. In this project I have used Label Encoder technique to convert categorical data or object type data into numerical data.

MODEL/S DEVELOPMENT AND EVALUATION

- Identification of possible problem-solving approaches (methods):
- I have used "*.replace()*" function to replace unwanted entries in the columns.
- Used "*LabelEncoder*" method to encode the categorical features into numerical.
- Described the statistical details of the features using "*.describe()*" method.
- Used "Pearson's method" to check the correlation between the features.
- Performed both univariate and bivariate analysis using seaborn and matplotlib.

Data Visualizations

I have performed both univariate and bivariate analysis to visualize the data. In univariate analysis I have used pie plots, count plots and distribution plot and in bivariate analysis I have used count plot, factor plot and boxplots. Here I will be showing only bivariate analysis plots to analyse the data.
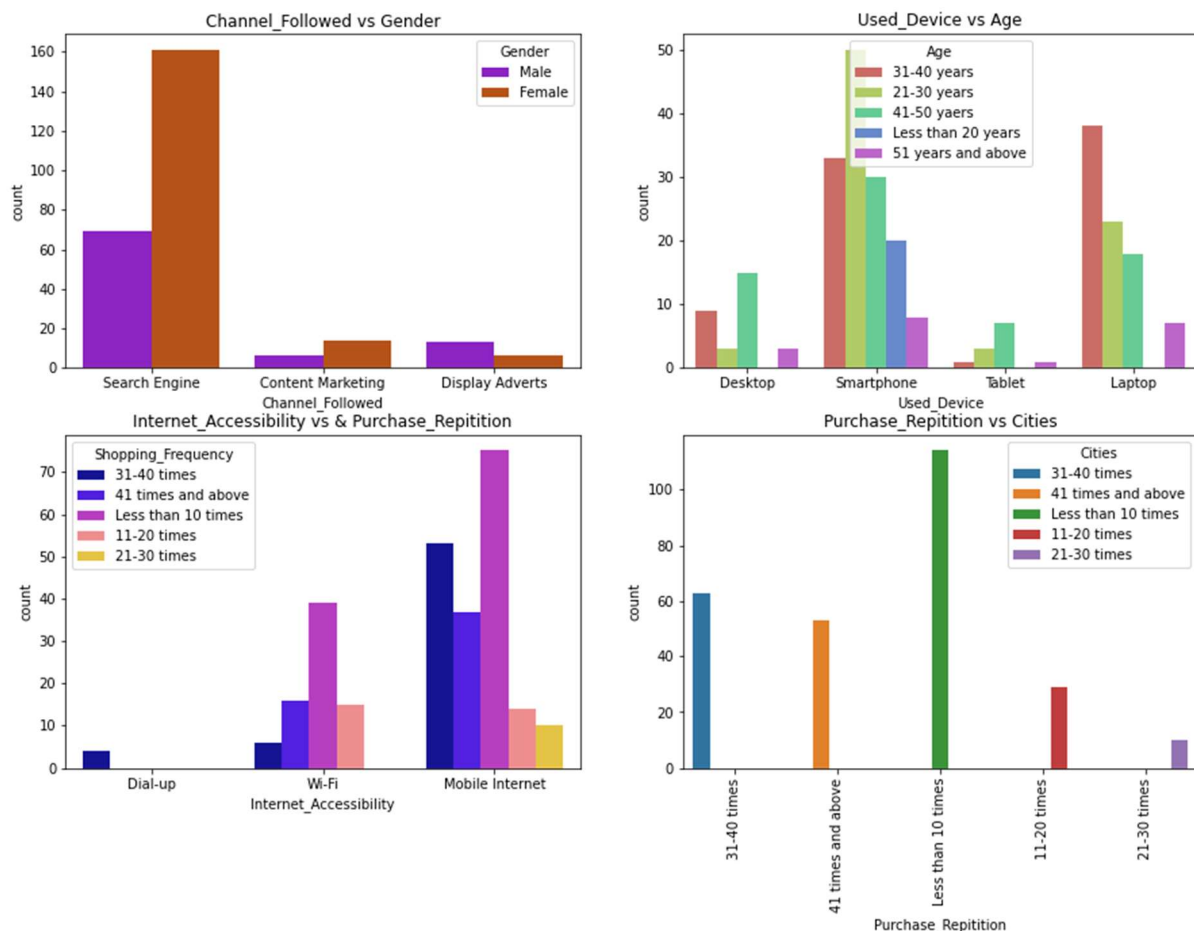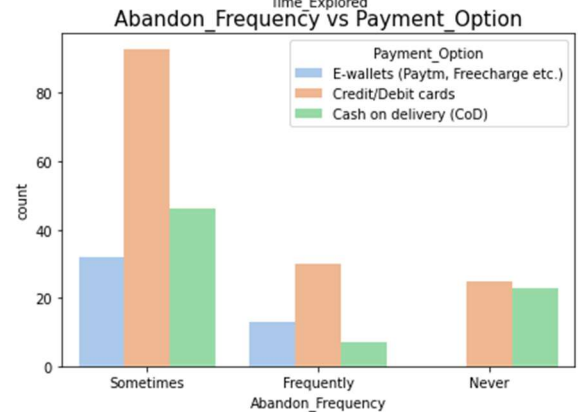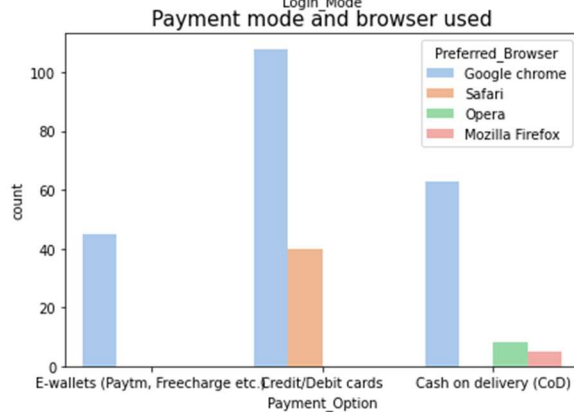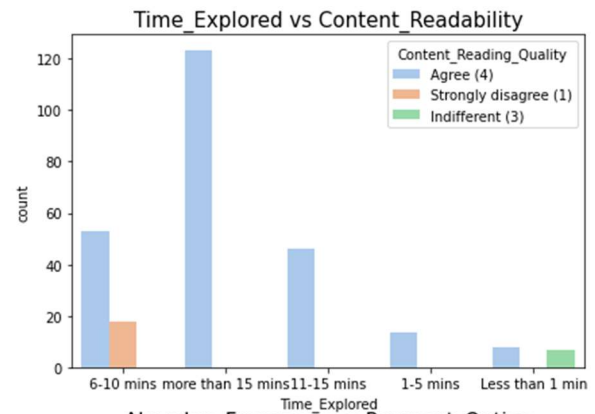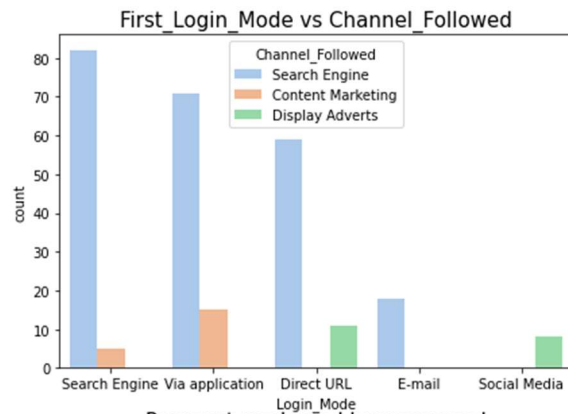

Observation:

- We can see that most respondents are female who shopped online for 4 or more years and the count is also high for the females who shopped from 2-3 years. There are only a few male customers who have shopped online more than 4 years.
- Many customers' falls within the age range 31-40 years and 21-30 years, use Smartphones followed by Laptops to access the online shopping websites.
- Most of the customers access the shopping websites more than 31-40 times in 1 year through Mobile Internet to shop the products. Only few of the customers used WIFI network to access the shopping store.
- Most of the customers used ecommerce websites less than 10 times in a year from the city Delhi to shop the products.
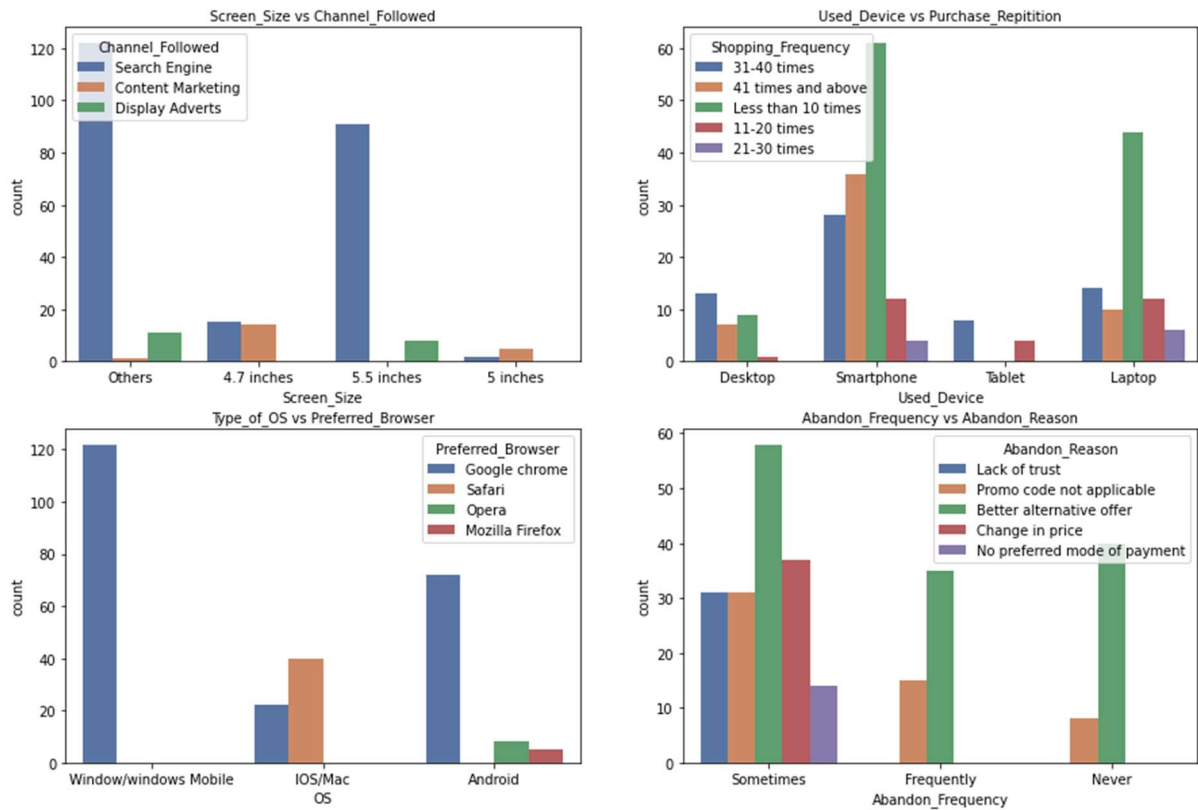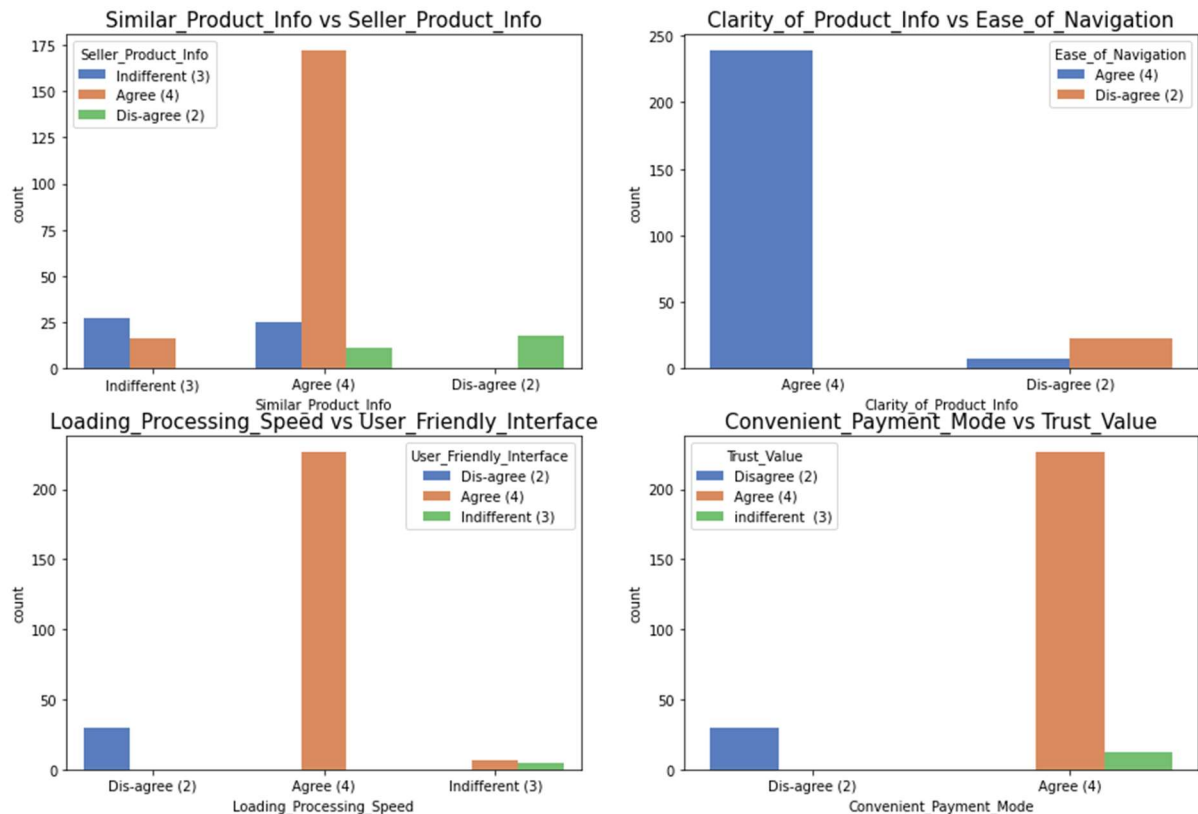
Observations:

- The customers having their mobile screen size other than 5.5 inches(others), 5.5 inches have chosen search engine to reach their preferred online store for the first time.
- Most of the customers used Smartphones 31-40 times to access the shopping site. Many of them also have windows OS and use Google chrome to access the shopping sites. Few of them use IOS/Mac to launch Google chrome or Safari and open the online shopping store.
- Most customers abandon the website due to lack of trust. Others abandoned because the promo code was not applicable.
- Thus, shopping sites should pay more importance to offering discounts and applicable promo codes to retain the customers.

Observations:

- Most people used Search engine to arrive to their favourite store for the first time and thereafter.
- Most preferred/agreed that the content should be easy to read and understand. They explored more than 15 mins before making a purchase decision. Some were quick and decided within 6-10 mins. It means that clearer and relevant information can help improve purchases on a shopping site.
- Google chrome seemed to be the most preferred browser to reach the websites. Payments were done mainly via Credit/Debit cards.
- Some customers agreed that they sometimes abandoned their selected items left without making payments and most of them making the payment using Credit/Debit cards, followed by Cash on delivery.
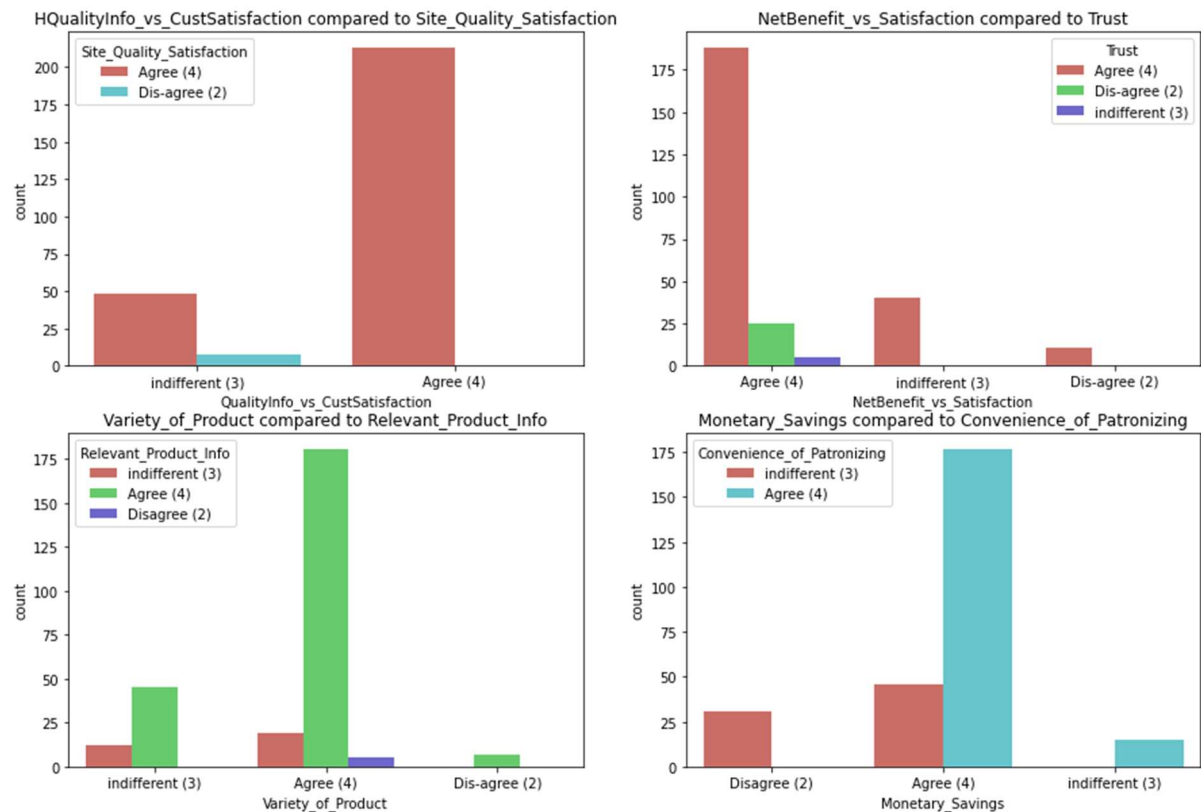
Observations:

- Customers look forward to information on similar product, complete information on listed seller and product on offer to make a purchase decision. Thus, online shopping sites must give complete information about the product and seller.
- Almost 90% agreed that the website or app should be easy to navigate with all information.
- Most want faster processing speed alongwith user friendly interface. Slow sites tend to frustrate customers and in turn increase bounce rates.
- Most of the customers feel trust is important while purchasing on an online retail store. This also gives an idea how the company fulfils its transaction at the stipulated with convenient payment modes.
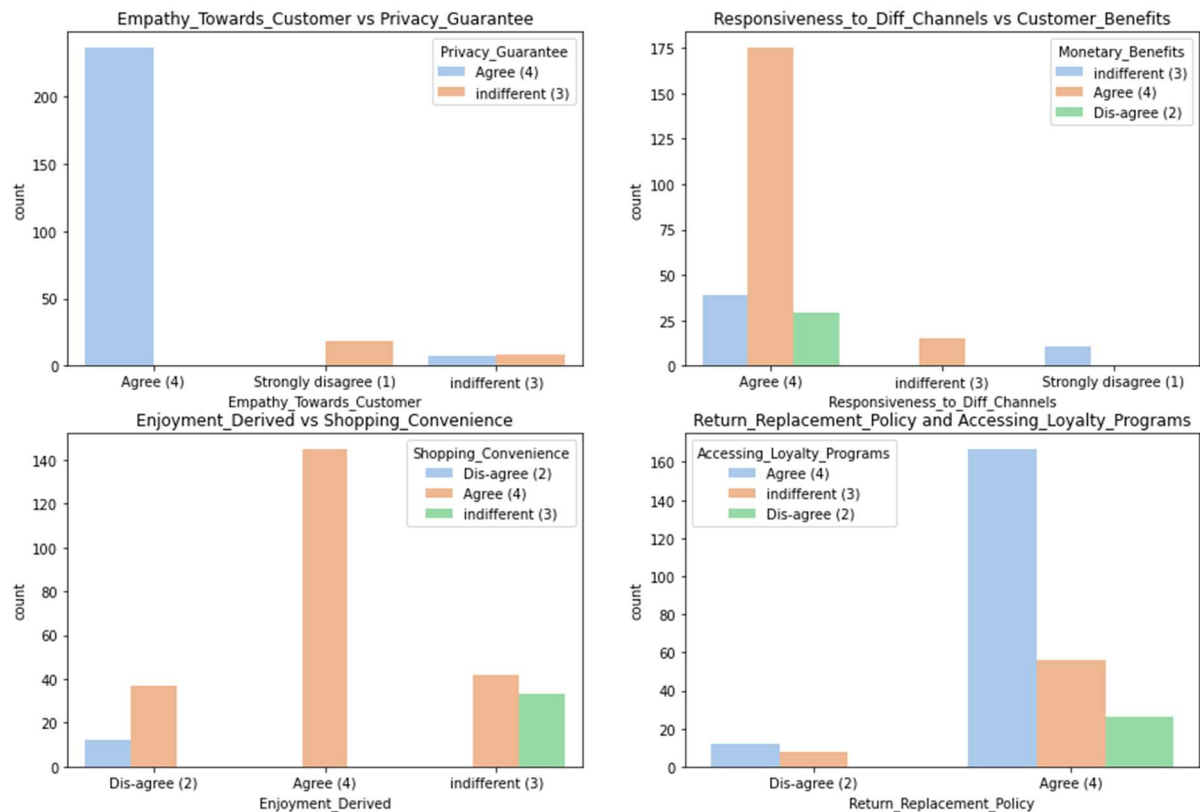
Observations:

- Most customers agreed that companies should have empathy towards customers and also ensure privacy guarantee. This will make sure all their queries are resolved and their credentials remain safe and secure.
- Customers also love the fact that online shopping offers monetary benefits (through offers, discounts, cashbacks, etc.). Here responsiveness through different channels is important as this gives the customers to reach out to the company in case of difficulties with a purchase.
- Most of the customers believed that they enjoy online shopping as it is convenient and flexible. These people con tribute to the increased sales as these people enjoy shopping for satisfaction and not necessity.
- Another important factor is the return and replacement policy of the shopping site. Customers are willing to return to companies which has good return or replacement policies and offers good loyalty programs. This helps in customer retention to a great extent.
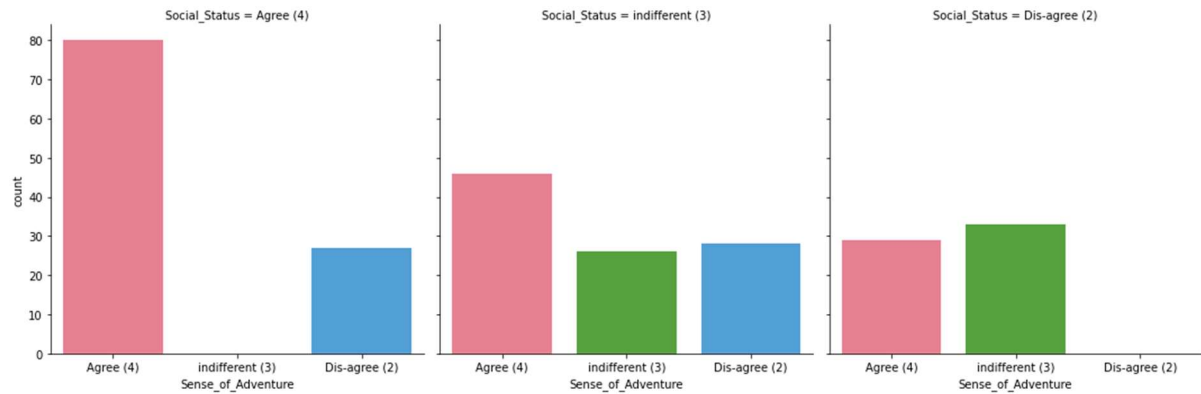
Observations:

Quality information is a key factor that enhances satisfaction. Thus, customers tend to rely on quality information. E-stores should focus on services that makes their customers happy and satisfied.

Net Benefit (as coins/points) is another way to enhance the satisfaction of customers. This should be cultivated along with values of trust. More benefits to the customers means the customer will come back for more purchases. And more purchases means more sales and more business.

The wider the range of products the greater choices will the customer have. So, if a company can offer several types of products in different category. Here product relevance, marketing trends and accurate, information can all contribute to higher number of purchases.

If the company can offer money saving offers, it will be an added bonanza. Companies need to make their customers feel that every purchase on the site helps them save money compared to other sites. Thus, this would generate a factor of faith, trust and in turn increase the statistics of customer retention. A factor of convenience can add to the effect even more.
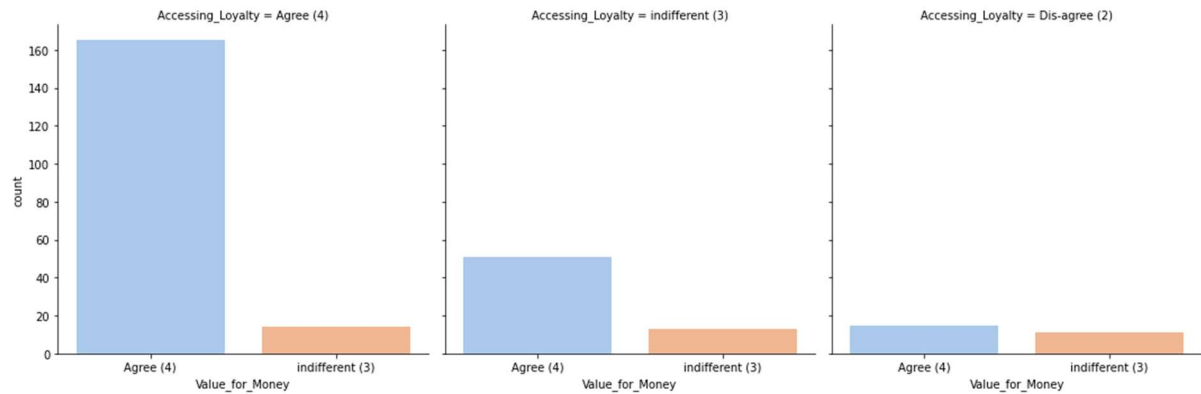
Observation:

Most of the customers agreed that online shopping rises a sense of adventure. Some also agreed that shopping on preferred e-store enhances the social status of the customers. For many it is an adventurous experience and fun to kill their empty time.
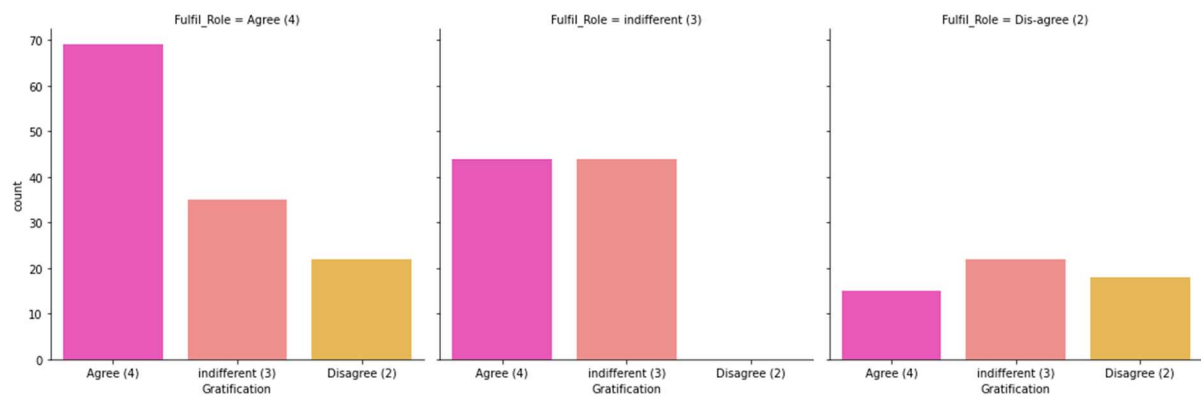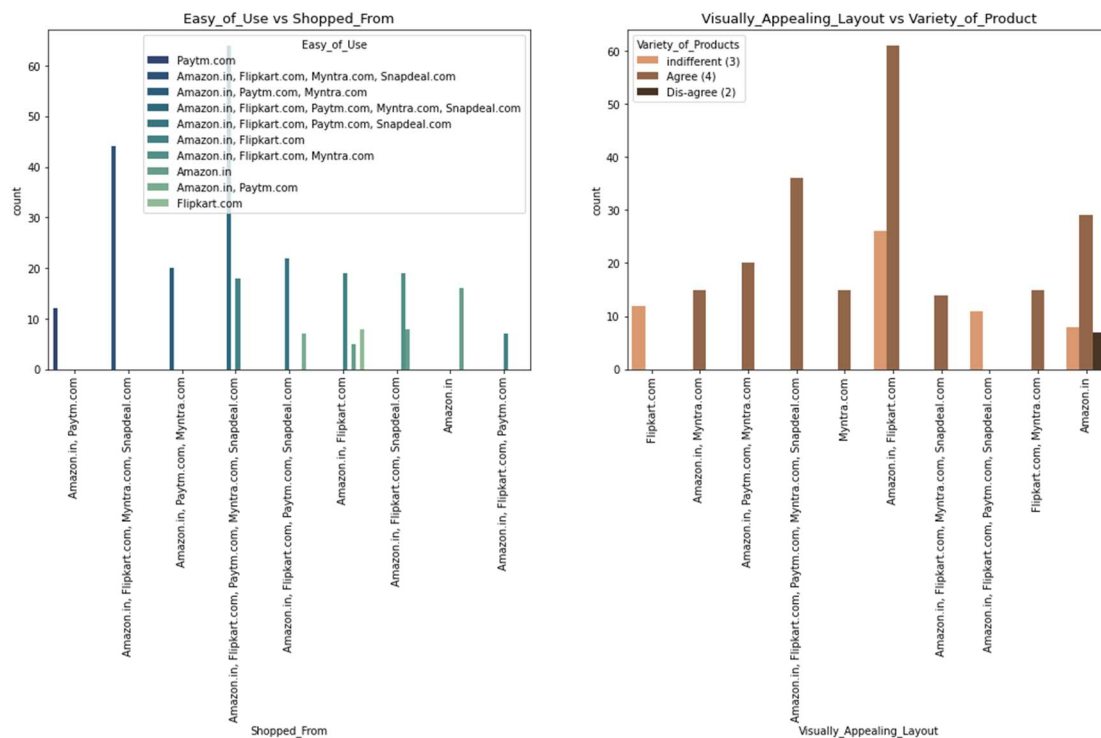

Observation:

If the shopping store is able to tend to customer needs, turn their dissatisfaction into satisfaction and compensate for mistakes, there are greater chances that customers will feel gratified.

Most of the customers have agreed that shopping online has helped them in a way or the other to fulfil certain roles. This step is a culmination of order accuracy, timely delivery, etc. This indicates that satisfaction of the customers is directly proportional to customer's belief of the probability of a service, previous experience. The position vibration can make them seek the company for future purchases.
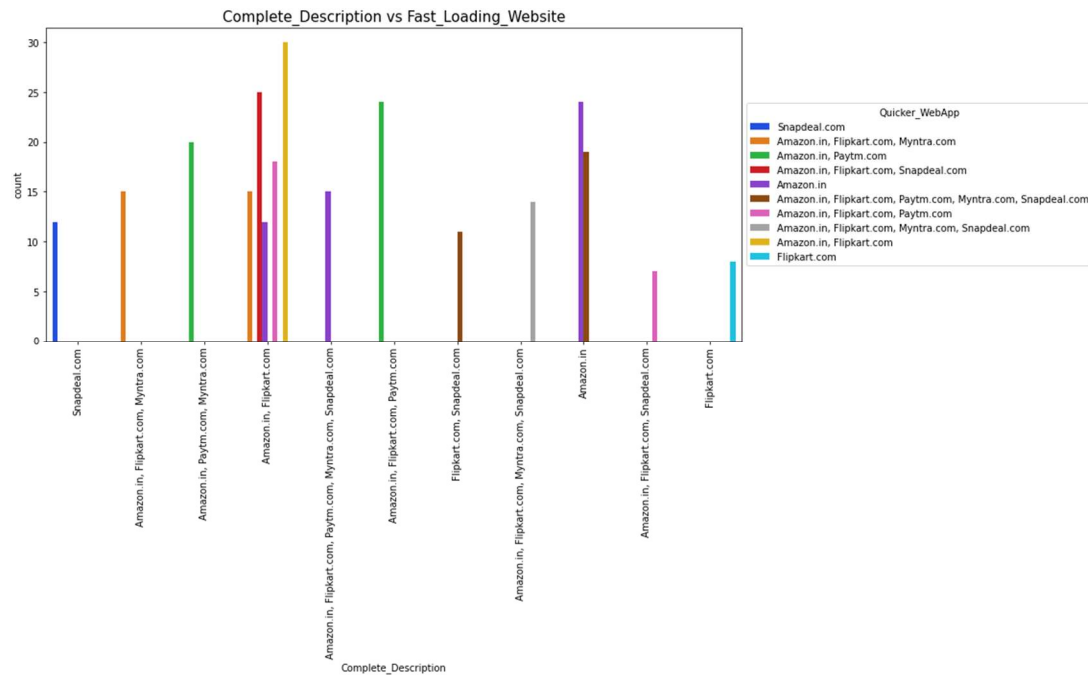
Observation:

The online sites should take efforts to make the customers feel satisfied with the product they purchased online. Thus, they will remark it as a Value for money purchase. Thus, there should be complete and relevant information about product quality.
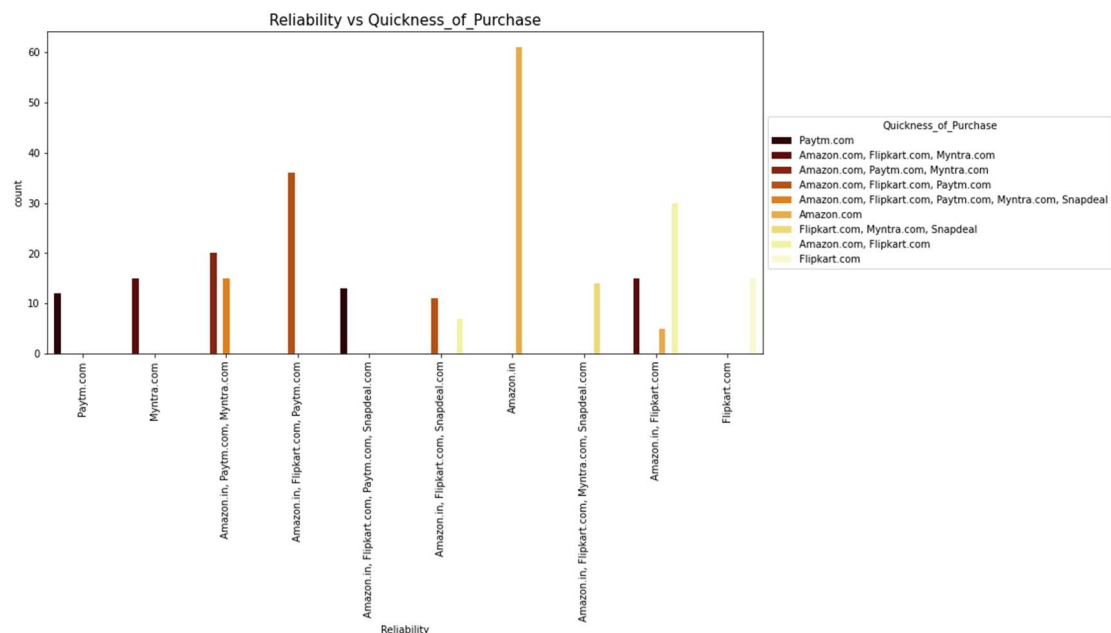

Observations:

There are many online market players. Big names are Amazon.in, Flipkart.com, Paytm.com, Myntra.com, Snapdeal.com. These are easy to use and shop and hence more popular among customers. Additionally, these sites offer huge discounts, great offers, and has a stock of similar and different types of products in almost all categories.

Visually Amazon and Flipkart stand out in their appeal to customers. Thus, it attracts more audiences who are ready to explore the site. Moreover, interesting brand marketing, advertising, etc. often turn the audiences into potential customers.

Complete_Description vs Fast_Loading_Website

Observation:

A fast loading site/app has a higher chance of customer retention than the one that takes a while to load a complete info/page. Complete description of products, seller, etc. alongwith a fast loading site leaves behind a good impression on the customers. Customers agreed that Amazon and Flipkart offers them good experience when it comes to both complete product description and page loading. These sites face lesser server related issues.


Reliability vs Quickness_of_Purchase

Observation:

Customers feel that Amazon is more reliable and they choose to complete their purchases on Amazon faster than any other site. The reliability factor is transmitted by the shop through different factors like order accuracy, timely delivery, return and replacement, customer assistances, etc. Customers tend to complete their orders faster if there is a timebound discount offer, free delivery, less price, etc.

Availability_of_Payment_Options vs Speedy_Delivery
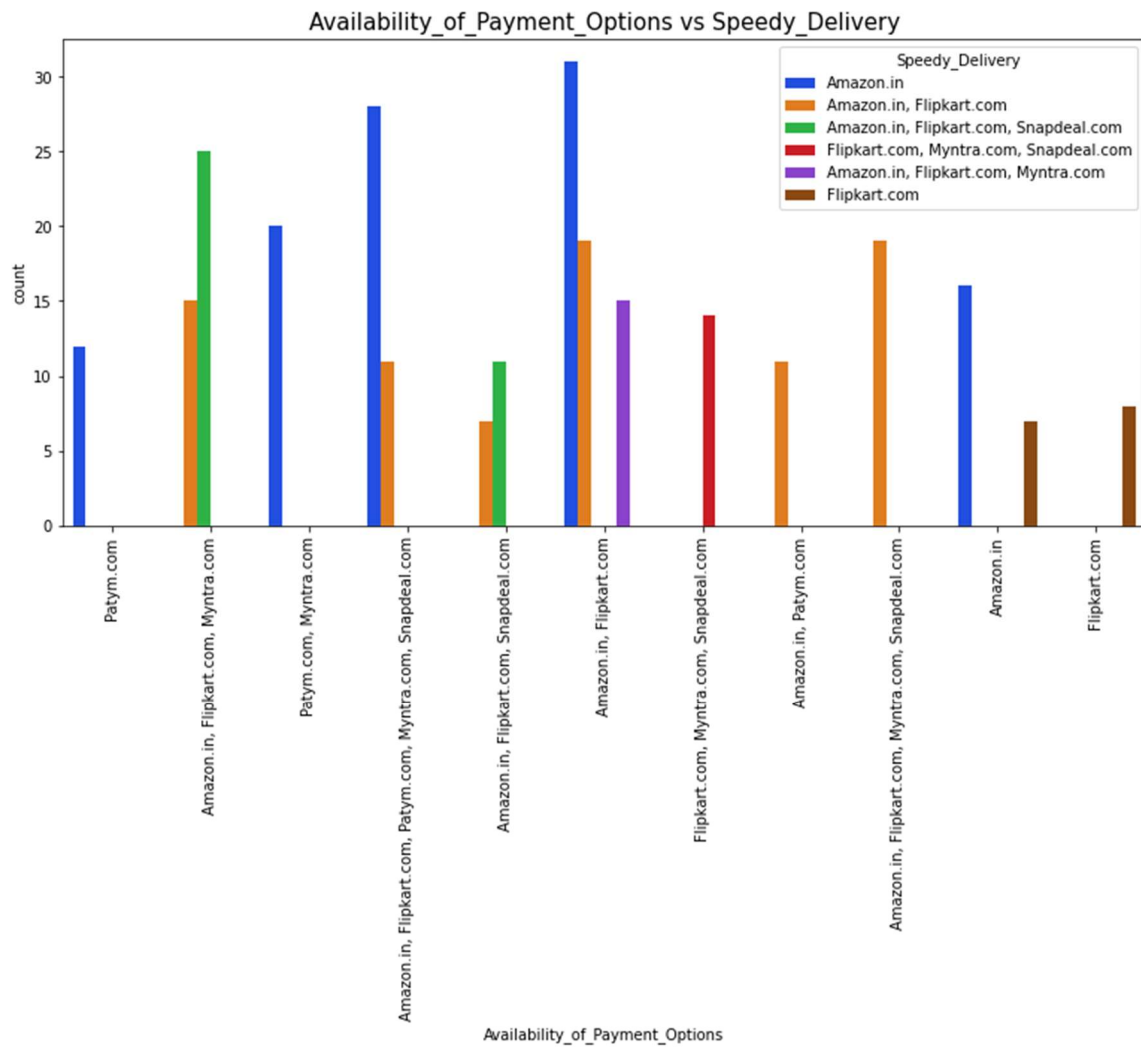
Observation:

We can see that Amazon offers speedy delivery. The site also has different types of payment options that gives the customers their free will to make a purchase of their choice. Here the second most preferred e-store is Flipkart.

Customer_Privacy_Info vs Perceived_Trustworthiness
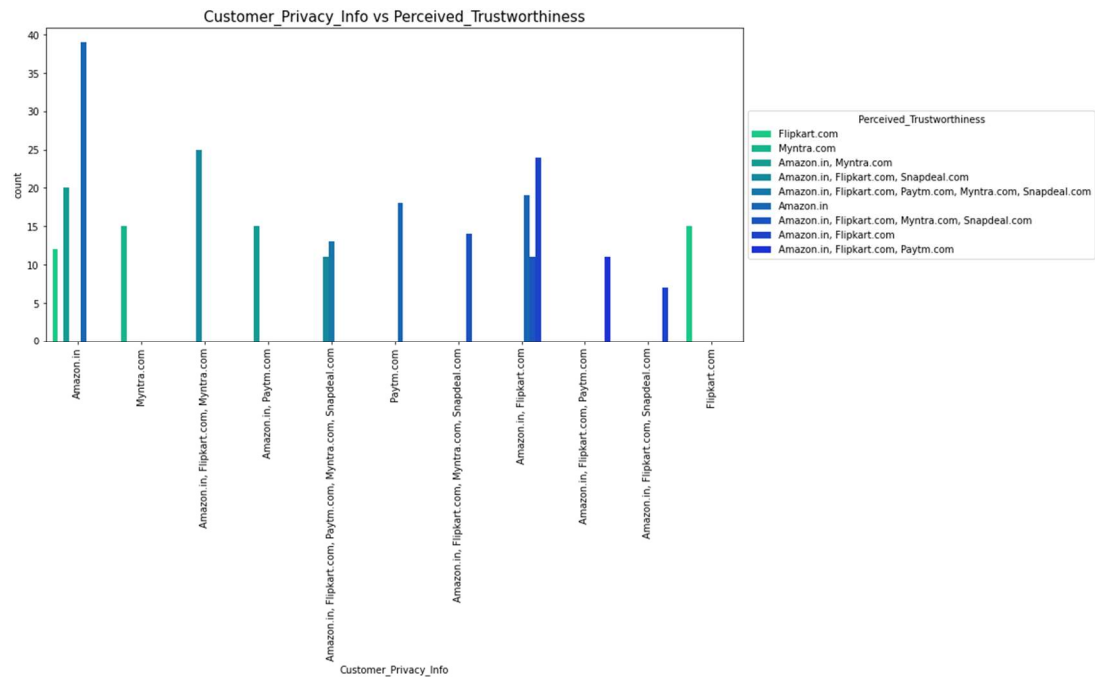
Observation:

Customers feel a sense of trust while purchasing with Amazon, followed by Flipkart as both these sites gives utmost importance to privacy, security of customer data. Perceived trustworthiness is an important factor that can make or break a company.

Financial_Security_Info vs Multichannel_Assistance
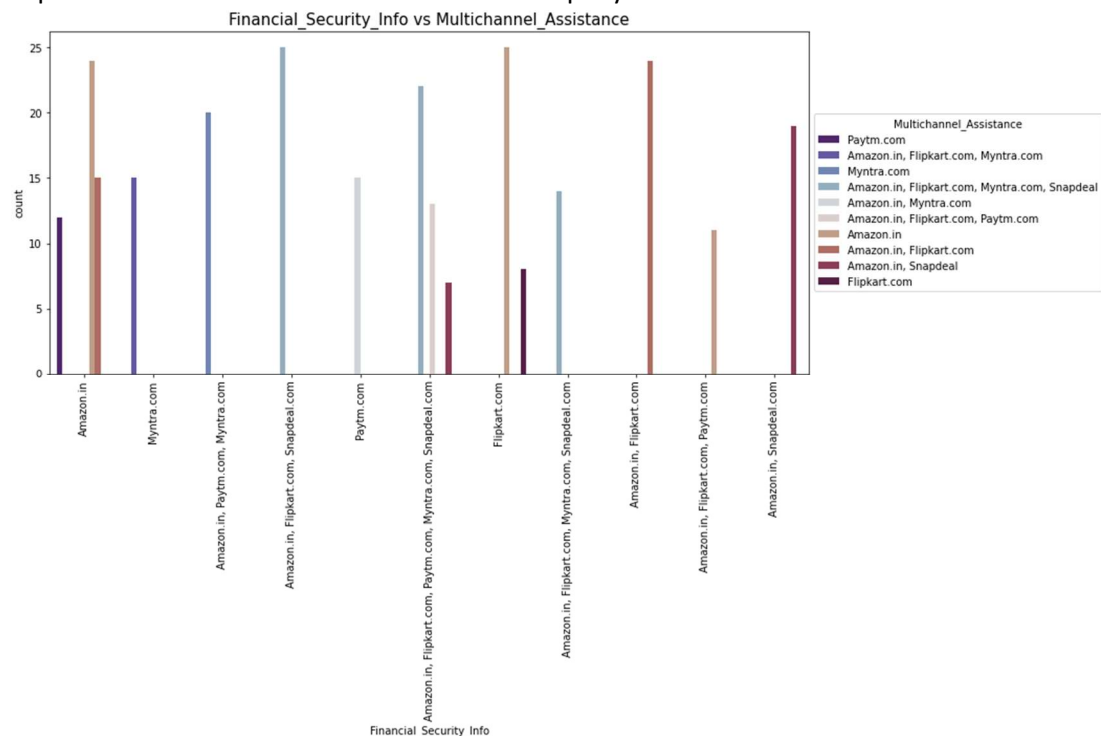
Observation:

Customers have faith that Amazon and Flipkart maintains privacy of their financial information. Also Amazon has multi-channel online presence which attracts customers much more than any other stores.

Long_LoginTime vs Long_DisplayTime
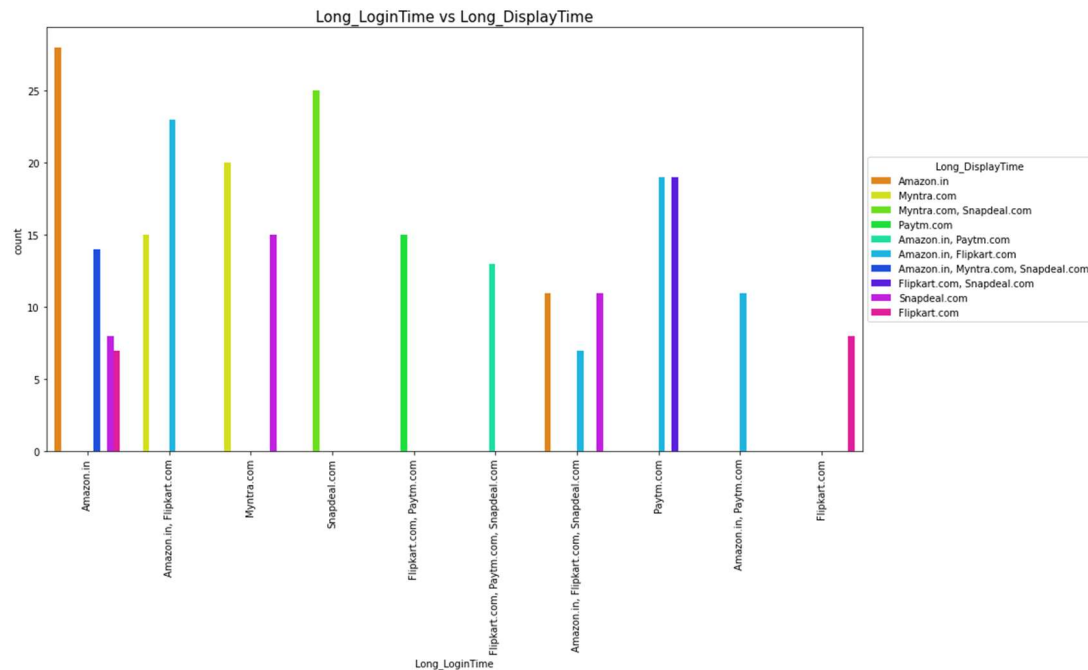
Observation:

Amazon seems to be again on top for its promotions and sales periods in some days. During this time the site will take more time to display the pictures and graphics than usual and also greater time to login. Myntra and Snapdeal also follows a similar approach on days of promotion or sales period.


Late_Price_Declare vs Long_Loading_Time
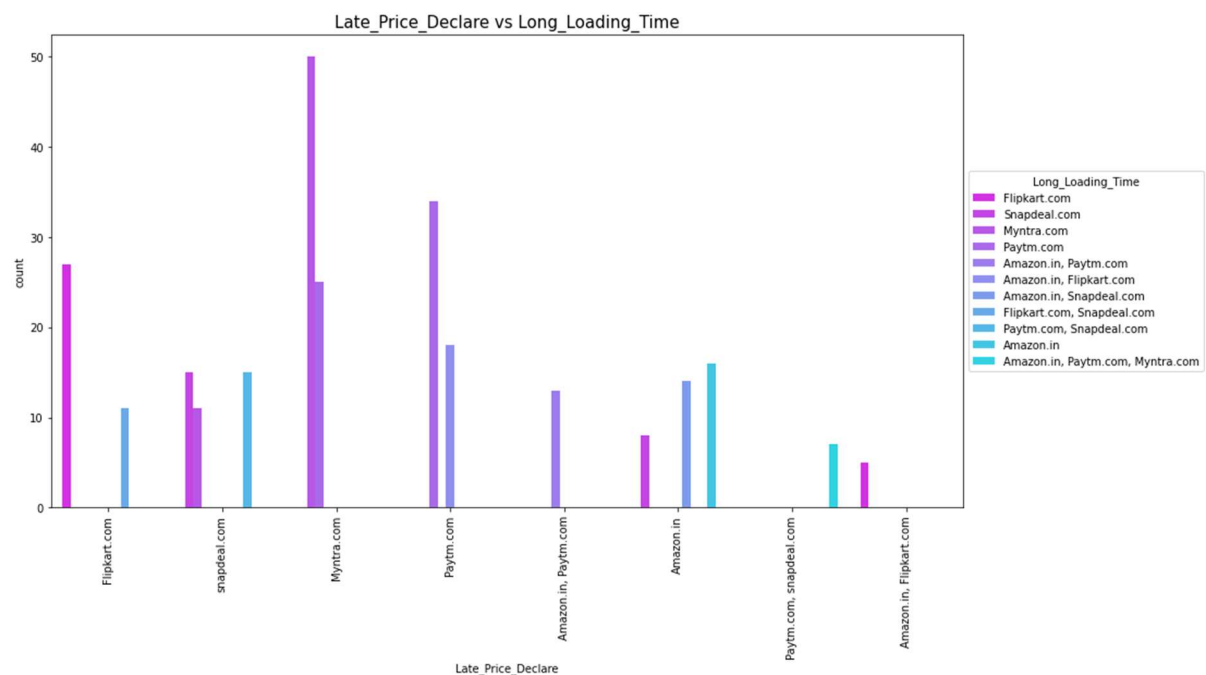
Observation:

We can see that at times of promotion and sales, Myntra takes longer to load and has late declaration of price as several customers tries to shop on the site. The sales and promotions are done in order to clear the sales. The prices are fixed after comparing with the other sites. Also certain benefits might be offered to customers.

Limited_Payment_Mode vs Longer_Delivery
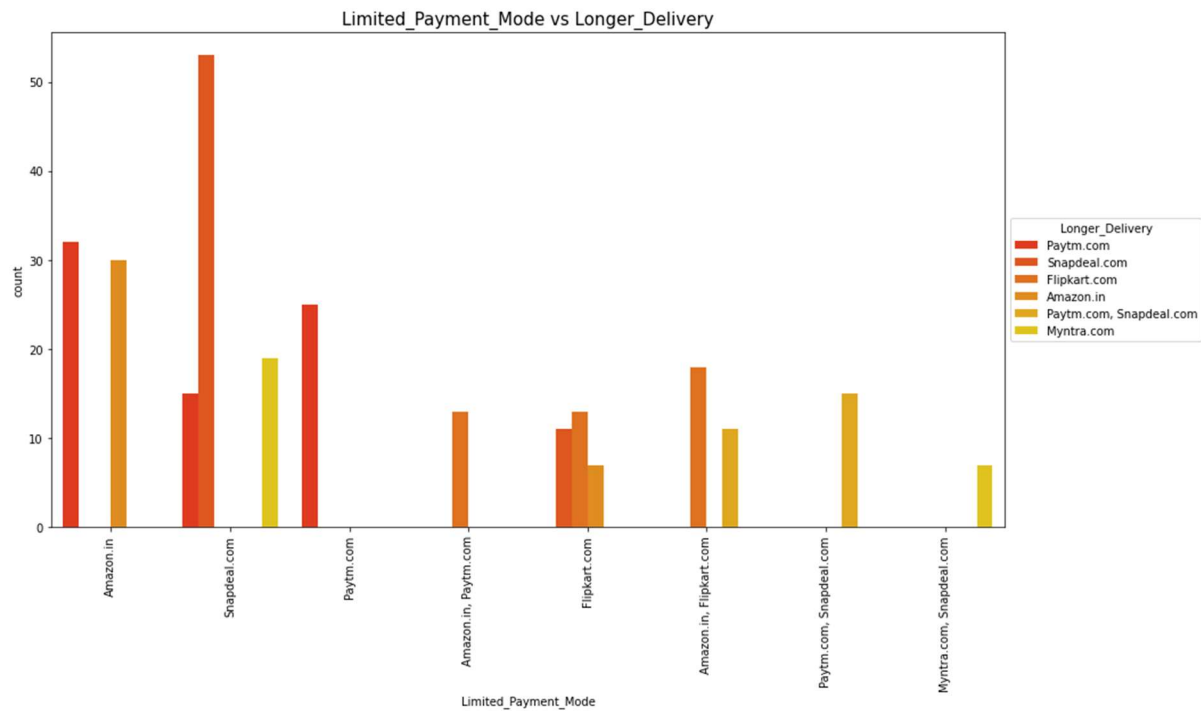
Observation:

We can see Snapdeal has limited mode of payment followed by Amazon. On the other hand, Paytm requires a longer delivery period than others. A customer is mostly willing to choose a company which offers quick delivery rather than a slow one.

Change_in_WebDesign vs Page_Disruption_Frequency

Website_Efficiency vs Recommendation
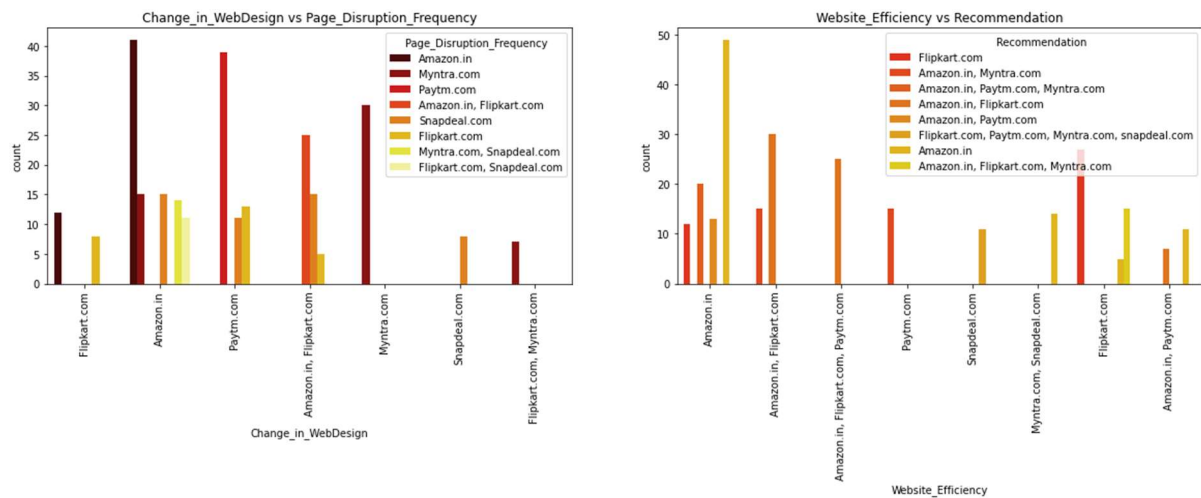
Observation:

We can see that Amazon changes its web/app designs very frequently so that it can attract customers. The site also gets updated everyday in order to stay in trend and meet customer needs. However, it has a longer moving time while moving from one page and sometimes it may shutdown too.

We also see Amazon is more efficient. One would easily recommend Amazon followed by Flipkart as the best Indian online retailer store for purchasing all types of products, as these sites offer great benefits.

Interpretation of the Results:

The results that were interpreted from the visualization are as follows:

- The survey reveals that most customers agreed with certain things like ecommerce website should have empathy towards the customers, the website content must be easy to read and understand, similar products should be highlighted for product comparison, payment should be convenient, trustworthy and they feel gratified while shopping etc.
- The respondents were asked to give ratings and feedback regarding certain statements that may be used to describe their ideal online store. We have found answers from customers like which websites among listed sites they are familiar with, they find easy to use, reliable, secured, about their delivery, change in web design, etc.
- We have that most respondents found Amazon.in as the most used and favourite website followed by Flipkart, Snapdeal.com and Paytm.com.

Findings of the Data Analysis

1. Quality of ecommerce sites and the factors leading to activation and retention.

2. How ecommerce websites affect customer satisfaction, customer trust, and customer behaviour, i.e., repurchase intention, customer loyalty, and site revisit.

3. The factors like product information, convenient payment modes, Trust, Role Fulfilment, change in website design, security/privacy, etc. which throw a positive impact on the ecommerce sites. There were several other factors that did not seem to impact the site which the companies can work to their benefit like ease of navigation, loading and processing speed, longer delivery period, etc.

4. Customer satisfaction and customer trust were found the most important factors

5. The mains reasons that attract customers to shop online and the obstacles which discourage consumers from shopping online.

Conclusions

The aim of this project was to understand the factors that makes an online shopping site successful and find out the most favoured site of the customers.

In this project, I have applied some feature engineering by renaming the columns, replacing the unwanted entries, etc. There was no null values. I have also showed visualized data by plotting count plot, distribution, count and pie plot. Later I have applied LabelEncoder to encode the categorical data into numerical. I have taken out the statistical summary, found outliers and skewness of the data and jotted a correlation using heatmap.

We were able to understand that customers rely on a number of factors when it comes to purchasing online. Some of the important factors as per our analysis is complete and correct information, net benefit, time saving, ease of navigation, security and privacy.

We also found that Amazon is perhaps the most favourite website or app for most customers as it offers lucrative discounts, remains in trend with regular updates, offers utmost data security and privacy when it comes to satisfying its customers. They feel a sense of trust when shopping with Amazon. Moreover, with wide variety of products, multi-channel assistance and multiple payment modes the site is popular among most people. Hence, without any doubt we can say that it has better customer retention and activation.

References

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