FLIP ROBO

CUSTOMER RETENTION

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

Submitted By:

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Acknowledgement

In successfully completing this project, I would like to thank all those who are related to this project.

I have worked on Customer Retention analyzing key factors which are important aspects that affects customer shopping decisions. I have found some insights which helps e-retailers customer activation and retention.

Primarily, I would thank God for being able to complete this project with success. Then I will thank **FlipRobo Technologies** for providing me this opportunity, my **SME Srishti Maan**, under whose guidance I learned about this project. The suggestions and directions have helped in the completion of this project.

Finally, I would like to thank my parents and friends who have helped me directly or indirectly throughout my journey.

Introduction:

➢ The efficiency of customer retention efforts is hard to underestimate. With 80% of the future profits are coming from 20% of existing customers, the ability to keep them loyal is the key to success.

➢ Tracking and analyzing customer retention should be a high priority for any company with the hope of becoming successful.

➢ Customers are the people who keep us in business, and customer retention is a measure of how well they are satisfied with our service. Dissatisfied customers will not continue to give our business their money.

➢ Understanding how retention rate works, calculating it and other KPIs, and gleaning insights from the previous data are all crucial steps to making the business work.

➢ Keeping in mind that retention rate is just as critical to a subscription or membership-based business as a company selling consumables.

➢ In other words, it's viable for all businesses.

Problem Statement:

➢ 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.

➢ 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.

Data Source:

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

➢ We have 269 records and 71 attributes collected all over the Indian e-commerce retailers for the analysis.

Some Important Definitions

➢ **Customer:** A person or an organization that buys products or service from a shop or business.

➢ **Retention:** Is to keep, hold on or maintain something.

➢ **Customer profitability:** Is the difference between the revenues earned from and the costs associated with the customer relationship in a specified period.

➢**Average customer:** Are customers that patronized products when prices are reduced

What is Customer Retention ?

➢ Customer retention refers to the ability of a company or product to retain its 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 does not defect to another product or business, or to non-use entirely.

What is Customer Retention Analysis ?

➢ Retention analysis (or survival analysis) is the process of analyzing user metrics to understand how and why customers churn. Retention analysis is key to gain insights on how to maintain a profitable customer base by improving retention and new user acquisition rates.

LITERATURE REVIEW

India has an Internet user base of about 696.77million as of May 2020, about 40% of the population. Despite being the second-largest user base in world, only behind China (650 million, 48% of population), the penetration of e-commerce is low compared to markets like the United States (266 million, 84%), or France (54 M, 81%), but is growing, adding around 6 million new entrants every month. The industry consensus is that growth is at an inflection point.

In India, cash on delivery is the most preferred payment method, accumulating 75% of the e-retail activities. Demand for international consumer products (including long-tail items) is growing faster than in-country supply from authorized distributors and e-commerce offerings.

The e-commerce sector in India is predicted to grow at a 27% CAGR over 2019-24 and is expected to reach $99 billion by 2024, according to a report released by EY-IVCA Trend Book 2021. Grocery and fashion/apparel are said to be the key drivers of this growth.

Five major factors that contributed to the success of an e-commerce store have been identified as:
1. Service Quality
2. System quality
3. Information quality,
4. Trust
5. Net benefit.

Representation of Customer Churn
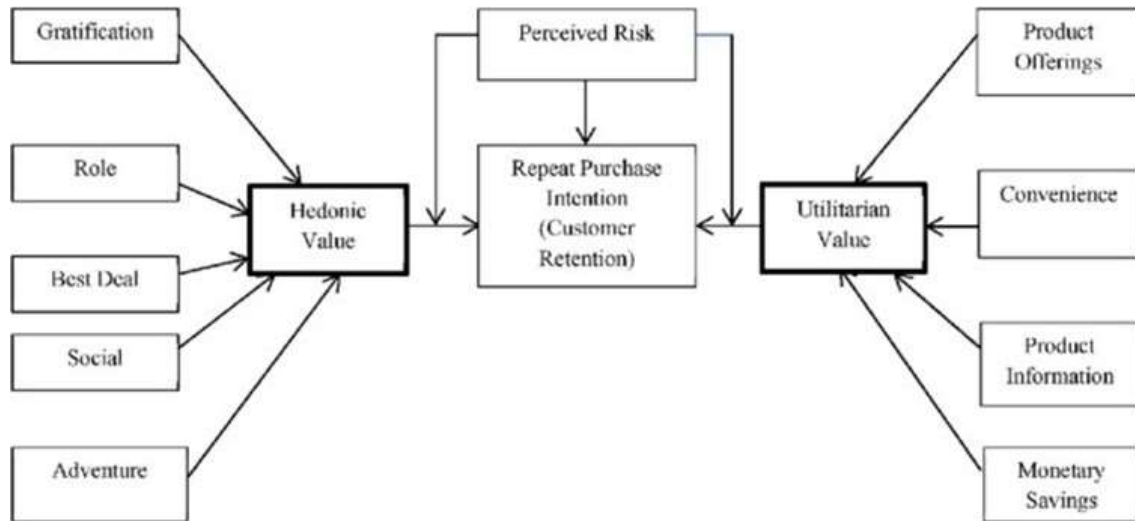
Motivation for the problem statement:

We are provided with datasets, as a Data scientist we must apply our analytical skills to extract key findings from the attributes provided and give the valuable inputs that helps e-retailers to effectively increase the customer satisfaction from the retail services and find the Key Performance Indicators for customer Activation and Customer Retention.

Data Analysis :

We are using the data provided inform of xlsx format assuming that data collected represents the whole population of the country and normally distributed.

We are going to make inference on the sample data and after applying statistical data analytical skills we will come to conclusion based on the visualization and KPI's performances.

We are using Python programming language which comes with inbuilt libraries to perform data analysis.

Following are the libraries we are using:

```
#to work on mathematical and statistical datasheets
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

```
#checking for null values
df.isnull().sum()
```

```
Gender                              0
Age                                 0
Location                            0
Pin_Code                            0
Shopping_since                      0
                                    ..
Delivery_period                     0
Design_change                       0
Disruption_frequency                0
Efficiency_comparison               0
Recomendation_of_online_retailer    0
Length: 71, dtype: int64
```

```
df = pd.read_excel('customer_retention_dataset.xlsx', 'datasheet')
coded = pd.read_excel('customer_retention_dataset.xlsx', 'codedsheet')
```

```
df.head()
```

	Gender	Age	Location	Pin_Code	Shopping_since	Purchase_frequency	Internet_access	Device_name	Screen_size	OS	...	time_in_promotion
0	Male	31-40 years	Delhi	110009	Above 4 years	31-40 times	Dial-up	Desktop	Others	Window/windows Mobile	...	
1	Female	21-30 years	Delhi	110030	Above 4 years	41 times and above	Wi-Fi	Smartphone	4.7 inches	IOS/Mac	...	Amazon
2	Female	21-30 years	Greater Noida	201308	3-4 years	41 times and above	Mobile Internet	Smartphone	5.5 inches	Android	...	
3	Male	21-30 years	Karnal	132001	3-4 years	Less than 10 times	Mobile Internet	Smartphone	5.5 inches	IOS/Mac	...	
4	Female	21-30 years	Bangalore	530068	2-3 years	11-20 times	Wi-Fi	Smartphone	4.7 inches	IOS/Mac	...	Flipkart.c

5 rows × 71 columns

Exploratory Data Analysis

There are 71 attributes provided in the data sets which contain user personal information, User service details, Customer feedback on various online retailers and then customer recommendation. I have gone through all the datasets and found some of below noted columns are Key factors for the well-groomed e-commerce business.

➢ Gender of the customer
➢ The device which customer
➢ How user friendly the website/application is ?
➢ How reliable and trust worthy is the website, How many mode of payments available?
➢ Is the customer personal/financial information safe at online retailers?
➢ Customer benefits and Loyalty programs.
➢ Is there any online assistance through different channels?
➢ How speed the order delivery works?
➢ Are the products have value for money spent
➢ Presence of online assistance through multi-channel
➢ Return and replacement policy of the e-tailer is important for purchase decision
➢ Is Shopping online convenient and flexible
➢ User friendly Interface of the website
➢ Which of the Indian online retailer would you recommend to a friend?

From the data provided, we observe that there are no null values in the datasets and all the attributes are categorical values. All the columns are having too long unconvenient names, we will modify the names which are easy to analyse. Here are the modified names of column.

Index(['Gender', 'Age', 'Location', 'Pin_Code', 'Shopping_since',   'Purchase_frequency', 'Internet_access',
'Device_name', 'Screen_size',   'OS', 'Browser', 'Channel_name', 'After_first_visit',   'explore_frequency',
'Payment_option', 'Abandon_frequency',   'Abandon_reason', 'Ease_of_reading', 'Similar_prod_info',
'Complete_info', 'Clear_Relavant_info', 'Ease_of_navigation',   'Loading_speed', 'User_friendliness',
'Conveient_payment',   'Trust_of_transaction', 'Empathy', 'Customer_privacy', 'Customer_friendly',
'Benefits/discounts', 'Shopping_Enjoyment',   'Convenience/flexibility', 'Return/Replacement', 'Loyalty_programs',
'Quality_info_on_website',   'Satisfaction_by_good_website',   'Net_benefit_by_shopping', 'Trust',
'Category_of_products',   'Complete_Product_info', 'Savings', 'Patronizing_retailer',   'Sense_of_adventure',
'Social_status', 'Gratification',   'Role_fullfillment', 'Value_for_money', 'Online_retailers_shopped',
'Website/application Ease', 'Web-page_layout', 'Variety_of_product',   'Complete/relavant info',
'Speed_of_website',   'Reliability_of_application', 'Quickness', 'Payment_options',   'Delivery_Speed',
'Privacy_of_customer_info',   'Financial_info_security',   'Trustworthiness',   'Online_assistance',
'time_in_promotion_sales_period', 'Displaying_graphs_time',   'Declaration_of_price', 'Loading_time',
'Limited_mode_of_payment',   'Delivery_period', 'Design_change', 'Disruption_frequency',
'Efficiency_comparison', 'Recomendation_of_online_retailer'],

dtype='object')

➢ The number of women customer shopping online is higher than that of men, 68% of customer are Women.
➢ Nearly 31-40 aged people are seen to be shopping online the most. People aging from 21-50 makes around 85% of total customers who are shopping online.
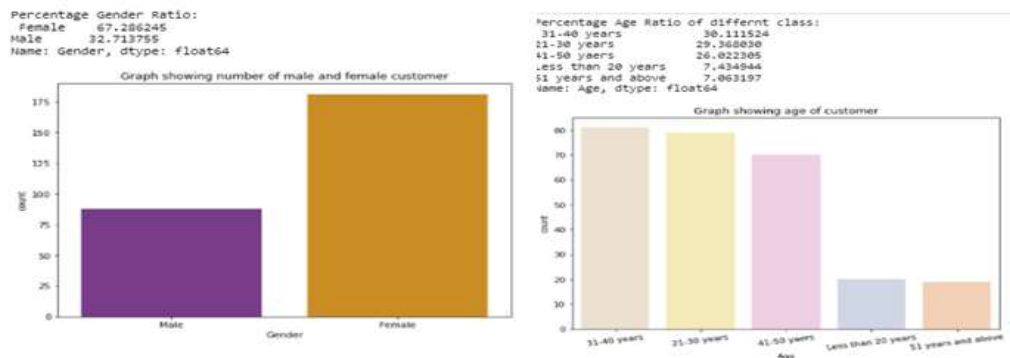

➢ People shopping in the last 4 years make nearly 36-40% of customers, and customer shopping 80% of total customer are shopping since more than 2 years.
➢ High number of people have voted to shop less than 10 times in a year. Hence this category of data needs to be focused more in order to improve action and retention.
➢ 70% of people using the application make use of Mobile Internet to shop online.

How long customer is Shopping Online :
  Above 4 years   36.431227
  2-3 years   24.163568
  3-4 years   17.472119
  Less than 1 year 15.985130
  1-2 years   5.947955
Name: Shopping_since, dtype: float64
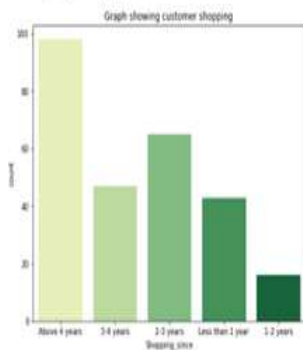
Purchase_frequency of customer in 1 year :
  Less than 10 times 42.379102
  31-40 times   23.420074
  41 times and above 17.472119
  11-20 times   10.780669
  21-30 times   3.717472
 42 times and above   2.230403
Name: Purchase_frequency, dtype: float64
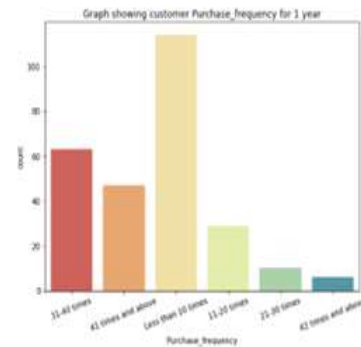
Internet_access of customer while browsing :
  Mobile internet 42.788104
  Wi-Fi   28.252788
  Mobile Internet 17.472119
  Dial-up   1.486989
Name: Internet_access, dtype: float64
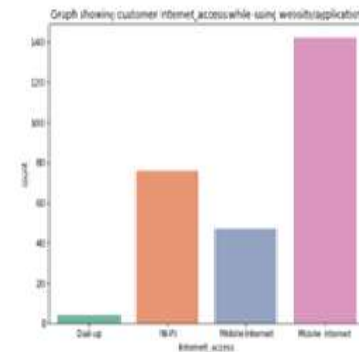
- Customer shopping from mobile comprise of more than 50% of total customers.
- 80% percent customer accessing online shopping website are Chrome users. We can say that chrome provides user friendly interface which is liked by most of users.
- Channel followed by user to arrive at the favorite online store for the first time is Search_engine
- 3. 45% customer uses smart phones to access online shopping and 42% customers use windows OS.
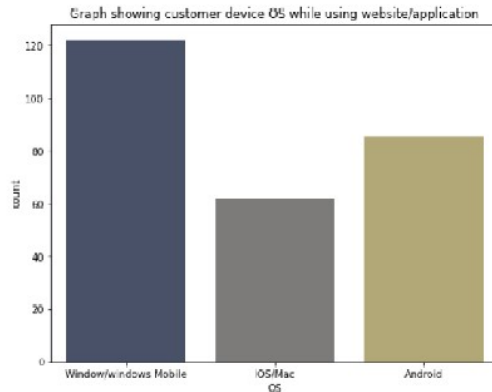

Device used by customer while browsing :
  Smartphone 52.416357
  Laptop   31.970260
  Desktop   11.152416
  Tablet   4.460967
Name: Device_name, dtype: float64
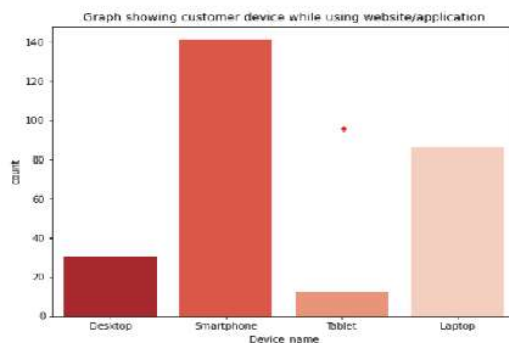
Screen_size of mobile used by customer while browsing :
  Others   49.814126
  5.5 inches 30.882974
  4.7 inches 18.780669
  5 inches   2.602230
Name: Screen_size, dtype: float64
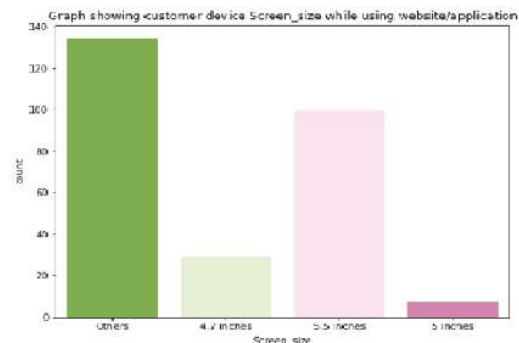
OS of mobile used by customer while browsing :
Window/Windows Mobile   45.353169
Android   31.598513
IOS/Mac   23.048327
Name: OS, dtype: float64

Browser used by customer while browsing :
Google chrome   80.297398
Safari   14.869888
Opera   2.973978
Mozilla Firefox   1.858736
Name: Browser, dtype: float64
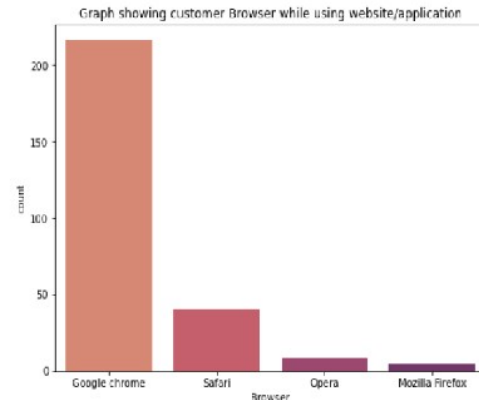
- ➢ Channel followed by user to arrive at the favorite online store for the first time is Search_engine.
- ➢ Highest online shopping is done from Delhi region with 21% of total customers, followed by Greater Noida, and Least is Bulandshahr.
- ➢ 90% of Customer has reached the websites after first visit through search engine, application, and company URL.


- ➢ Most of the customer has spent more than 15 minutes before making the decision of purchase.

➢ Customer feels ease of using Debit/Credit cards and COD as mode of payment while making an order. This may be due to availability of any cashback offers or customer see reliability in COD payment.

➢ 65% of Customers have voted that they abandon the products in bags "Sometimes".

➢ More than 50 % of customer has abandoned the bag as they got another alternative, but nearly 30% of customer abandoned due to lack of trust and not available mode of payment, by focusing on providing good benefits and multiple mode of payments may reduce these columns into 0

➢ 90% of customer agree or strongly agree that the content on the website is be easy to read and understand. Further improvement can be directly made by asking customer feedback and taking hypothesis if that decision holds good for all population.

➢ 80% of customer agree that information on similar product to the one highlighted is important for product comparison.

➢ 75% of customer agree that if product is to be bought by most of customer, then, complete information on listed seller and product being offered is important for purchase decision.

➢ 90% agree that to make a clear decision on purchase of product all the relevant information on listed products must be stated clearly
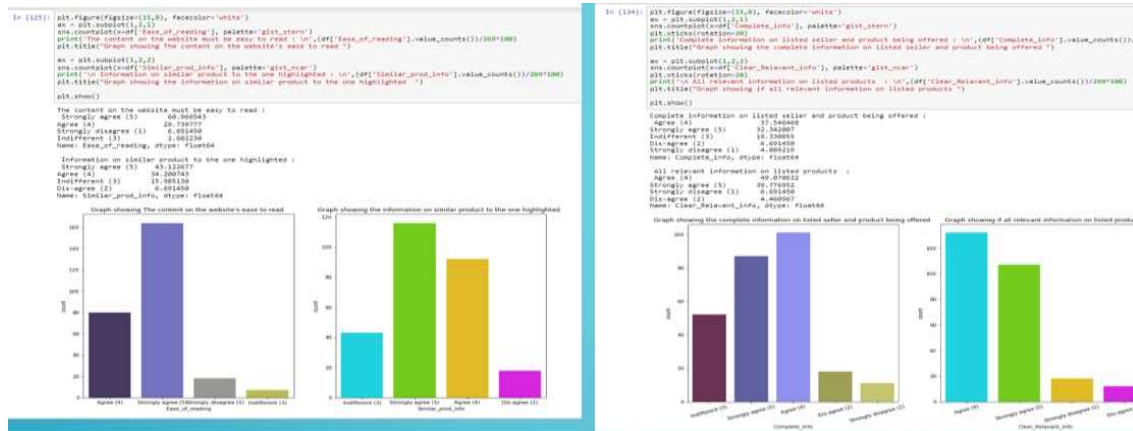
- Customer have agreed that there is trust of transaction with the online retailers.
- They strongly agree that customer executives have empathy towards customers problems.
- Customer strongly agree that customer care executives behave with empathy towards customer problems/issues.
- Customer have strongly agreed that customer data privacy is guaranteed and Responsiveness is more customer friendly.
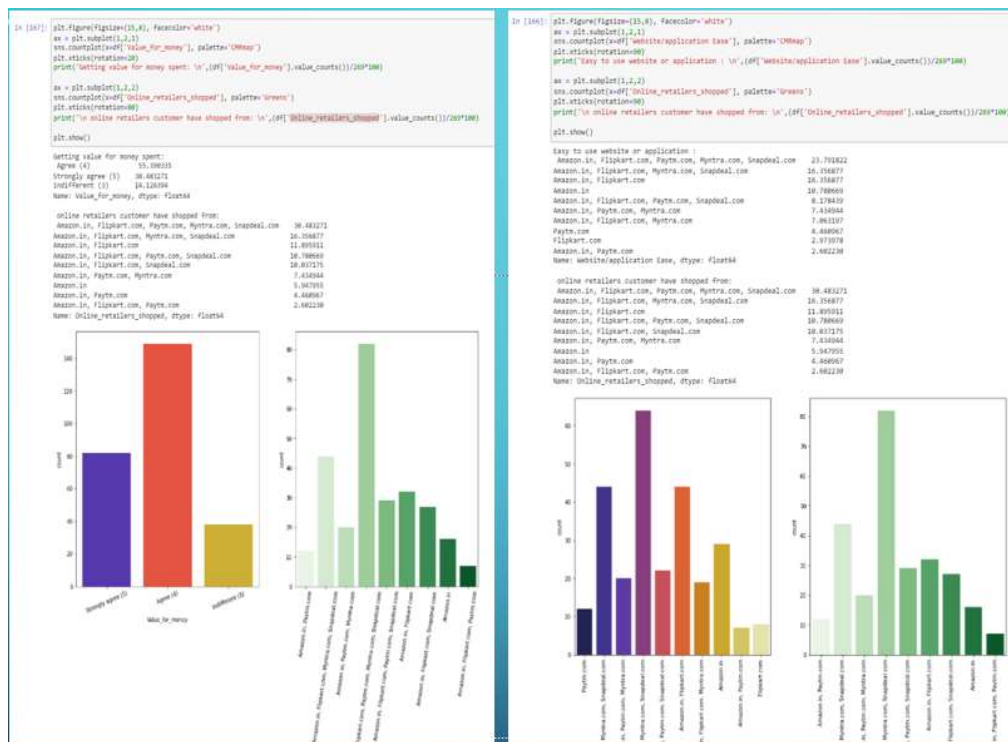
Following are the most agreed points by customers

➢ Benefits and Discounts are provided by online shopping retailers, and they have enjoyed the shopping experience.

➢ Convenience and Flexibility in shopping online, Return/Replacements are provided for the products purchased.

➢ Loyalty benefit programs are benefits for online shopping,

➢ Information provided on website have quality information of products and improves customer satisfaction.

➢ Net benefits by online shopping leads to customer satisfaction

➢ Online shopping provides wide variety of products listed into websites.

➢ There is provision for complete product information.

➢ From online shopping the monetary savings can be done

Observations

➢ Amazon and Flipkart are the online shopping applications/websites with good web-page layout, comprise of 32% of customer votes

➢ 70% of customers say that wild variety of products are listed in Amazon and Flipkart.

➢ 15% of customers believe the reliability of amazon website is better followed by Flipkart, Myntra, Paytm, Snapdeal.

- Amazon has quickest purchase time as per customer feedback comprise of 28% of total feedback.
- Wide range of payment methods must be provided by online websites/application to attract higher customer base.
- To retain the customer, we must work more on waiting period for delivery, which can be done by appointing more logistics option internally as well as externally.

People agreed or have indifferent feeling on below attributes

- 37% customer have indifferent feeling on Gratification on e-retailer
- 32% of customer have indifferent feeling that shopping online fills the role.
- 55% customer believes that online shopping give value for money.
  - Amazon being top player in the e-commerce business, is one of common Online_retailers_shopped by all customers.

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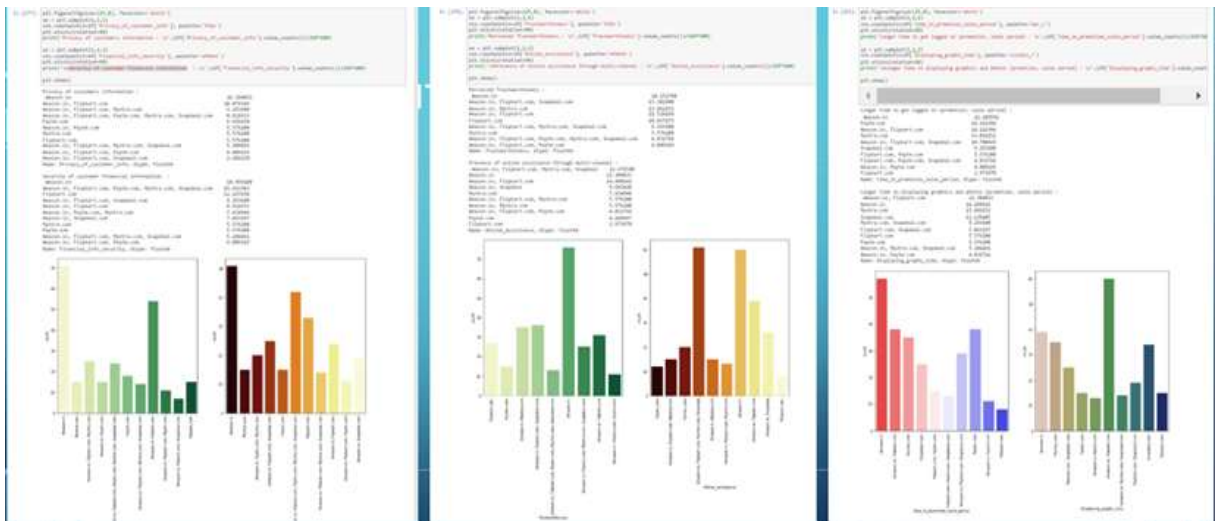
➤ Privacy of customers information: When customer uses online shopping, they will be sharing all the personal/private information to the retailers, Keeping the privacy of customer is one of toughest though most important thing which helps in building trust in customers

➤ Financial information: shared by customer during payments will be saved in online store databases. Hence keeping the financial information safe makes the them reliable towards customer.

- Trustworthiness: built up towards customer might be one of important reason to increase customer database
- If customer who have made online shopping from any retailer, Resolving their issues w.r.t to product should be important to attract them again form online shopping, Presence of online assistance through multi-channel should be kept by online retailers.
- To increase the number of customers attracting to online shopping, online retailers should focus on increasing sales promotion.
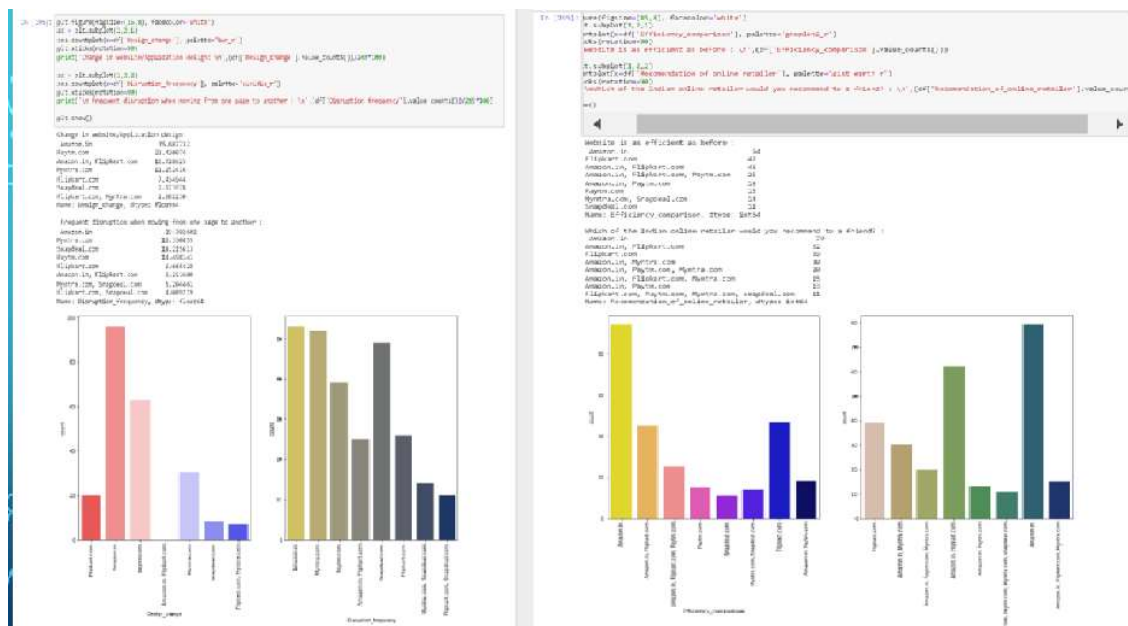
- Online websites/applications should be having attractive product information and images/ graphics in order to make products more visible for shopping. While it should also be kept in mind to keep time constraints of loading the websites/images.
- Website/application efficiency are calculated by how fast the website can bring up the results, how big traffic it can hold with out being disrupted and how light the application is. It must be designed keeping all the constraints in mind to be more efficient.
- Finally, recommendation is something one does when that product is impressive and has been outstanding with all the competitors.
- We can see that amazon has got 79 individual votes out of 269, and Flipkart has got 39 votes from the customer choose

CONCLUSION

➤ Based on the above understanding, analysis, EDA steps and visualizations we could see find some insights about the online retail stores, how they have been working to improvise there customer activity and increasing customer repeat purchase intention.

➤ Online retailers should be more focused on providing convenient mode of payments so that customer feels safe to share the private and financial information for transactions and make sure the privacy retention of customer is the goal.

➤ E-commerce businesses must provide wild range of variety of combinations for the products which make the customer to choose which is best suitable for there use case, also make sure that products listed on the site are trustworthy and maintain quality. Customer also be provided with return and replacement policies.

➤ Overall customer should be provided with such a service that he is coming back to us with all heart looking for the value for the money he spent on our products, such services create trustworthiness between customer and sellers.

➤ Looking at above surveys took between couple of the online retailers, Amazon has been the best customer friendly, reliable, user friendly, customer service focused company which has excellent customer assistance at hand to provide all the information, help needed by customer hence such environments attract huge customer bases, and a smaller number of churns are seen.

➤ By the recommendations provided Amazon bagged 21% of overall upvotes which makes that amazon is leading in its own sector. Though there are some drawbacks like 'mode of payments' and 'Speed_of_website', 'website application ease' which company needs to work on to improvise near actions and attract more customers.

➤ Likewise, company has been constantly focusing on providing customer benefits and discounts on products to attract huge base of customer.