FLIP ROBO

E-retail factors for customer activation and retention

Submitted by:

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ACKNOWLEDGMENT

The success and final outcome of this project required a lotof guidance and assistance from Chandan Verma Sir and I am Extremely fortunate tohave got this all along the completion of my project work Whatever I have done is only due to such guidance and assistance and I would not forget to thank him.

I respect and thank Chandan Verma Sir, for providing me support and guidance which made me complete the project on time. I am extremely grateful to him for providing such anice support and guidance though he had busy schedule managing the company affairs.

I have also referred to various articles in Towards Data Science and Kaggle to obtain codes on various visualization methods.

I am also thankful to my Friends who helped me discussing about this project.

INTRODUCTION

- ## Business Problem Framing

  Customer satisfaction has emerged as one of the most important factors that guarantee the success of online store, hence analysing the extent to which the factors that leads to customer retention becomes significant.

- ## Conceptual Background of the Domain Problem

  Online shopping customer retention becomes significant for the store and data needs to be taken from the sample pool of the customers and analyze the factors that influence them in choosing a website.

- ## Review of Literature

  Research has been done on a dataset which contains various parameters that can cause the success of an online store. Extensive research has been done on various parameters such as:
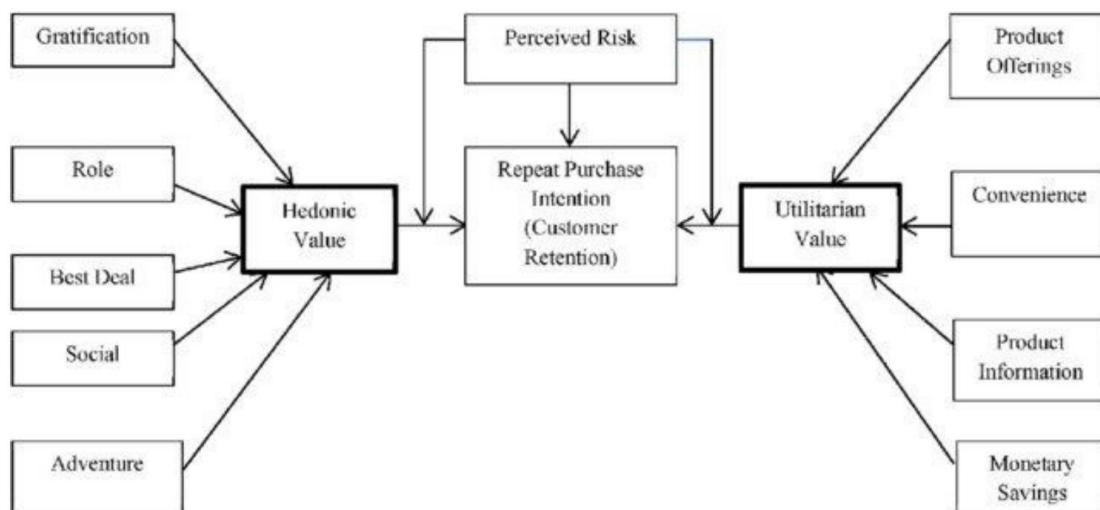
- ## Motivation for the Problem Undertaken

  The objective of the projects was in understanding what all parameter can make an online store more efficient. It has been fascinating to understand the parameters like offers, as to how much less significance it can have. The domain is interesting as the current market is online.

  Hence through this analysis, any online store could be made better.

Analytical Problem Framing

- ## Mathematical/ Analytical Modeling of the Problem

  Visualization of various factors have been done through matplotlib and seaborn.

- ## Data Sources and their formats

  Data set is in CSV format, it needs to be cleaned (columns mainly)

  The columns contain the factors which can potentially affect the customer retention, where the factors contain how strongly the respondents agree to the factor in hand. Also some columns contain respondent's analysis as to which website has performed the best in the factor.

Gender	2 How old	3 Which c	4 What is	5 Since H	6 How ma	7 How do	8 Which d	9 What is	10 What i	11 What b	12 Which	13 After fi	14 How m	15 What i	16 How fr	17 Why di	18 The co	19 Inform	20
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Male	41-50 year	Delhi	110011	Less than	Less than	Wi-Fi	Laptop	Others	Window/w	Google ch	Search En	Via applica	more than	E-wallets (	Frequently	Better alte	Strongly a	Strongly a	Sti
Female	41-50 yae	Delhi	110018	1-2 years	Less than	Wi-Fi	Laptop	Others	Window/w	Google ch	Display Ad	Direct URL	more than	Credit/Det	Sometime	Promo coc	Agree (4)	Agree (4)	Ag

- ## Data Preprocessing Done

  A. Encoding of the data done allowing the easy usage of the data

  B. Column names we cleaned

- ## Data Inputs- Logic- Output Relationships

  Data input and output are both categorical. The input is all the columns which are the factors and the output/label is the website that the respondent will refer a friend to.

- <u>the set of assumptions (if any) related to the problem under consideration</u>

  The assumption taken here are that the respondent has knowledge about Amazon, Flipkart, Snapdeal, Paytm and Myntra.

- <u>Hardware and Software Requirements and Tools Used</u>

  Hardware: PC Windows 10

  Software: Jupiter notebook, Panda library, numpy library, Matplotlib library, Seaborn library.

Model/s Development and Evaluation

Identification of possible problem-solving approaches (methods)

The factors need to be found which can impact the customer retention capacity. This can be done by analysing the various factors and the store the respondent prefers. This will be done by checking each of the factors impacts the respondent's decision making.

Visualizations

Customer activation

Methods used by respondent during customer activation

Search engine has been the primary usage during the first attempt to reach site

Method used by customer in 2nd time(Customer Retention))
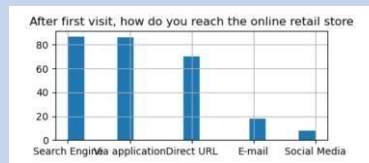
In the second time, the method has search engines usage but also an equal usage of Via application

Factors hindering the customer activation
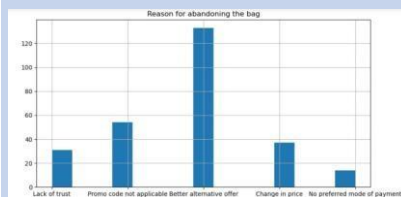
Maximum people and the highest frequency of dropping the bag is because of Better alternative
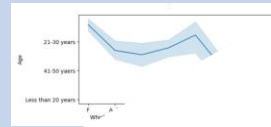
Respondents

Respondents

Gender of respondent

More number of femal respondents.They

Male

Gender of respondent

Female

Age

Age
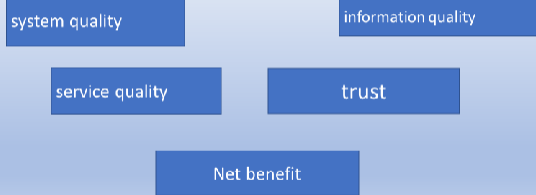
The respon been

21-30 years

41-50 years

Less than 20 years
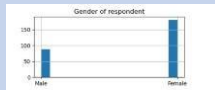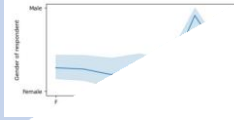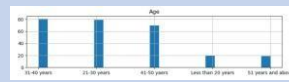
Age
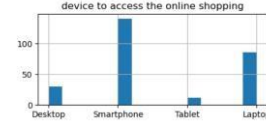
Five major factors that contributed to the success of an e-commerce store have been identified as:
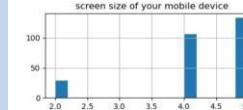
system quality	information quality
service quality	trust

Net benefit

System quality

The system quality

```
Smartphone    141
Laptop         86
Desktop        30
Tablet         12
Name: device to access the online shopping, dtype: int64
```

Largest number of online shopping done through Smartphone and least through tablet

device to access the online shopping

Desktop Smartphone Tablet Laptop

```
Others        134
5.5 inches     99
4.7 inches     29
5 inches        7
Name: screen size of your mobile device, dtype: int64
```

Others is highest with 134 respondents for the device size

screen size of your mobile device

operating system (OS)

Window/windows Mobile   IOS/Mac   Android

Maximum OS used are Windows

The respondent who would prefer	Device used	mobile device screen size	OS
amazon alone	smartphone	4.7 inches	windows/IOS
flipkart alone	Smartphone and tablet	not 4.7 inches/5.5 inches	windows
both amazon and flipkart	tablet	4.7 inches	IOS
both amazon and myntra	tablet	4.7 inches	IOS
amazon and paytm	smartphone	5.5 inches	android
amazon,myntra and flipkart	laptop	not 4.7 inches/5.5 inches	Windows
amazon,myntra and paytm	smartphone	5.5 inches	android

Easy to use websites and the device they used

This shows the device is most suited for the website

| The respondent who would prefer	Device preferred
amazon alone	Smartphone and tablet
flipkart alone	smartphone
both amazon and flipkart	Smartphone and tablet
amazon and paytm	smartphone
amazon,myntra and flipkart	laptop
amazon,myntra and paytm	Smartphone
Paytm alone	Desktop
Amazon,myntra,flipkart and snap deal	tablet
Amazon,paytm,flipkart and snap deal	Tablet and laptop

Information Quality

Content Readability

The readability of the product information is very significant as above 164 people have expressed how important it is to them. If not readable they are abandoning the bag

Clarity of content


All relevant information on listed products must be stated clearly
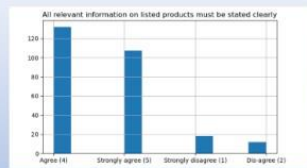
The DETAILS of the product information is very significant as above 132 people have expressed how important it is to them. If details are not proper then they are abandoning the bag

All relevant information on listed products must be stated clearly vs frequency of abandoning cart

Complete, relevant description information of products websites/apps
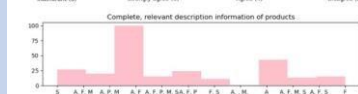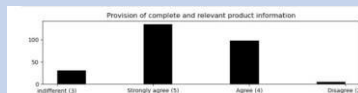
The respondents strongly agree the significance of relevant producdtescrition With complete description, the user friendly interface is being impacted Flipkart gives the best description and then Amazon.

Relationship between product information and gratification

Displaying quality Information on the website improves satisfaction of customers
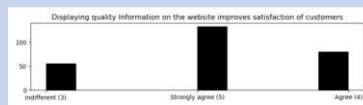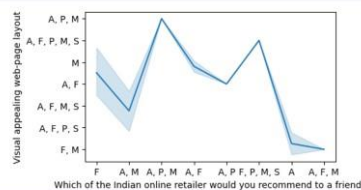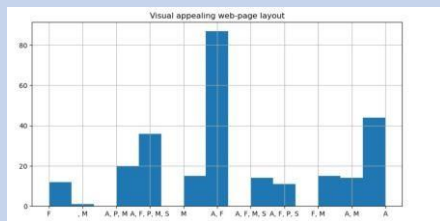
Displaying the quality of the product is very important for customer gratification
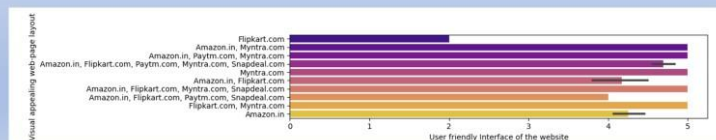
Visual appealing web-page layout

- Amazon and flipkart are having the best visual layout
- the visual appealing is impacting the User Friendlyintercace of the website
- it is not impacting much as a factor to be chosen again by the customer

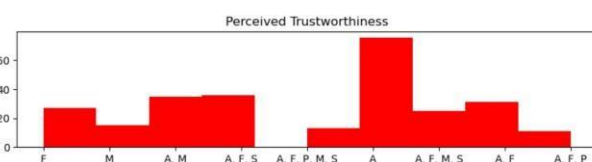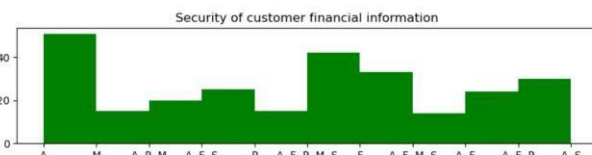Visual appeal has less impact on recommendation to a friend

SERVICE QUALITY

PRIVACY

It is very important for an individual to have privacy and the highest privacy of customer information is seen in amazon
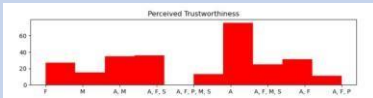

Highest privacy of customer financial information and perceived trustworthiness is also seen in amazon
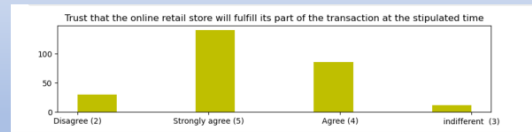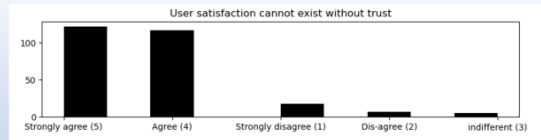
TRUST

TRUST

Perceived Trustworthiness

Amazon is the most trust worthy

Reliability of the website or application

User satisfaction cannot exist without trust

Trust that the online retail store will fulfill its part of the transaction at the stipulated time
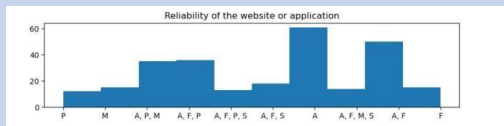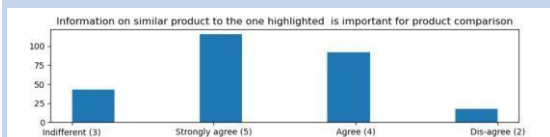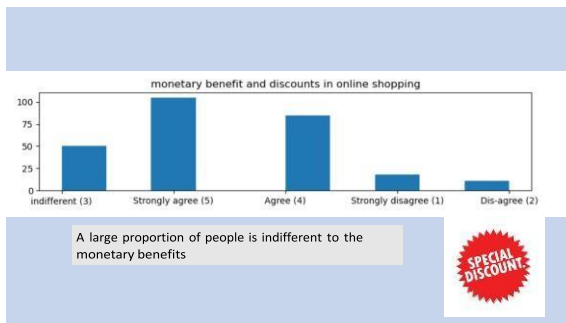
User satisfaction is directly proportional to trust that the product will be delivered in the proper amount of time

Monetary savings/Net benefit

Monetary savings/Net benefit

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

There is a wide proportion who does not need the product comparison and check net benefit

monetary benefit and discounts in online shopping

A large proportion of people is indifferent to the monetary benefits

SPECIAL DISCOUNT

Access to loyalty programs

Access to loyalty programs

Gaining access to loyalty programs is a

CUSTOMER CARE

Need for several communication channels:

Responsiveness/availability of several communication channels

Presence of online assistance through multi-channel
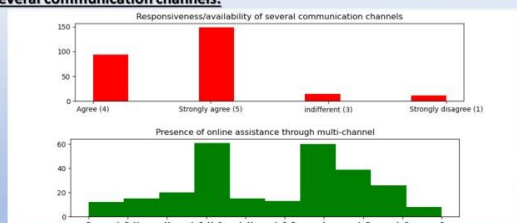
There is a high need for several communication channels and Amazon is the best in online assistance through several communication channels

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

Empathy (readiness to assist with queries) towards the customersl

<u>Interpretation from the visualization done are:</u>

1. Search engine has been the primary usage during the first attempt to reach site.
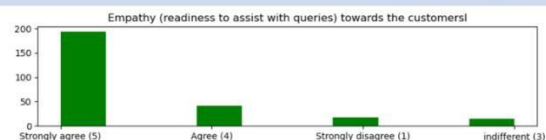2. In the second time, the method has search engines usage but also an equal usage of Via application.
3. Maximum people and the highest frequency of dropping the bag is because of Better alternative.
4. More number of female respondents. They consist $3/4^{th}$.
5. Male have chosen all flipkart, myntra, snapdeal and paytm but not amazon.
6. Whereas women have chosen all ranges.
7. The respondents have been mostly between 21-50 years.
8. 21-30 years have not chosen snapdeal.
9. 41-50 years like all of them.
10. Largest number of online shopping done through Smartphone and least through tablet.
11. Others is highest with 134 respondents for the device size.
12. Maximum OS used are Windows.
13.

The respondent who would prefer	Device used	mobile device screen size	OS
amazon alone	smartphone	4.7 inches	windows/IOS
flipkart alone	Smartphone and tablet	not 4.7 inches/5.5 inches	windows
both amazon and flipkart	tablet	4.7 inches	IOS
both amazon and myntra	tablet	4.7 inches	IOS
amazon and paytm	smartphone	5.5 inches	android
amazon,myntra and flipkart	laptop	not 4.7 inches/5.5 inches	Windows
amazon,myntra and paytm	smartphone	5.5 inches	android

14.

The respondent who would prefer	Device preferred
amazon alone	Smartphone and tablet
flipkart alone	smartphone
both amazon and flipkart	Smartphone and tablet
amazon and paytm	smartphone
amazon,myntra and flipkart	laptop
amazon,myntra and paytm	Smartphone
Paytm alone	Desktop
Amazon,myntra,flipkart and snap deal	tablet
Amazon,paytm,flipkart and snap deal	Tablet and laptop

15. The readability of the product information is very significant as above 164 people have expressed how important it is to them. If not readable they are abandoning the bag.

16. The DETAILS of the product information is very significant as above 132 people have expressed how important it is to them. If details are not proper, then they are abandoning the bag.
17. The respondents strongly agree the significance of relevant product description with complete description, the user friendly interface is being impacted.
18. Flipkart gives the best description and then Amazon.
19. Displaying the quality of the product is very important for customer gratification.
20. Amazon and flipkart are having the best visual layout.
21. the visual appealing is impacting the User Friendly interface of the website it is not impacting much as a factor to be chosen again by the customer.
22. It is very important for an individual to have privacy and the highest privacy of customer information is seen in amazon.
23. Highest privacy of customer financial information and perceived trustworthiness is also seen in amazon.
24. Amazon is the most trust worthy.
25. User satisfaction is directly proportional to trust that the product will be delivered in the proper amount of time.
26. There is a wide proportion who does not need the product comparison and check net benefit.
27. A large proportion of people is indifferent to the monetary benefits.
28. A large section is indifferent to loyalty programmers.
29. There is a large section of respondents who are indifferent about shopping online and also many who strongly disagree that enjoyment is not present in shopping online.
30. Return and replacement is very important for shopping online.
31. Customers derive satisfaction only when the website quality is good.
32. Displaying the quality of the product is very important for customer gratification.
33. Mostly people don't get affected emotionally by which online storethey buy from as they have no much attachment to it.
34. Mostly people don't get affected emotionally by which online storethey buy from as they have no much attachment to it.
35. There is ease in patronizing a retailer.
36. It is not an accepted idea among respondent, that online shoppingincreases the social status of the people are indifferent to it.

37. Even though some respondents respond they come into the websitefor adventure in some small sense. But There is also a large number of respondent were indifferent to it.
38. the largest section of respondent strongly agrees or agree that userfriendly websites impacts in taking decisions.
39. Amazon, flipkart, paytm and myntra all are easy to use websites.
40. Amazon takes most amount of time to get logged in due to promotions and sales.
41. Loading speed of amazon is fastest.
42. Longest time in displaying graphics and photos is amazon and flipkart.
43. Prices are declared late the most is myntra.
44. Flexibility is very important factor for decision making.
45. Amazon is the quickest for transactions.
46. Delivery speed is highest for Amazon.
47. It is very significant to show similar products descriptions as more than 70% have agreed to it.
48. Even though a large group of people are drawn towards online shopping through discounts and loyalty shopping, a large group of people are indifferent to it.

- ## Interpretation of the Results

The Customer retention depends on all the factors largely other than:

a. Status increase through online shopping

b. Discounts/offers and loyalty

c. Programmed Adventure

CONCLUSION

- ## Key Findings and Conclusions of the Study

  a. The customer retention improvement should be focused on the hedonic ad utilitarian factors(other than adventure) i.e.

Hedonic values	Utilitarian values
1.gratification 2. role 3.best deal	1.Product offering 2. convenience 3.product information

  b. Also the success of the online store depends on:

  i. system quality
  ii. service quality
  iii. Net benefit
  iv. information quality
  v. trust

- ## Learning Outcomes of the Study in respect of Data Science

  Matplotlib and Seaborn helped in making the vast data into more understandable and hence helping a person to analyze the data.