

Customer Retention

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

1. Problem Definition.

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.

2. Life Cycle of the Project

We need only Data Analysis for this project so the following steps will be taken care for this project:

1.Importing Data Set

2.Data Analysis and Data Processing

3.Exploratory Data Analysis

i) Uni-Variate Analysis, ii) Bi-Variate Analysis and iii) Multi-Variate Analysis

3. Data Analysis and Data Processing

After importing the Dataset into Jupiter notebook of Anaconda Navigator, for better visualization and for data processing we used libraries like pandas, matplotlib, seaborn and sklearn.

The basic Outlook of the Data Set:

The Dataset is of categorical type, only pin code was of integer type but we saw it as a category as it infers the location of a particular place.

The Data Set consists of total 71 columns and 269 rows. The first 19 columns tell us about customer information, the next 30 columns tell us about customer satisfaction with online e-retail features like, payment options, speed of delivery, etc., the last 22 columns tell us about online retail shops which customers really like and want to shop different products through different applications. Since all most all columns are of type categorical we label encoded them to make the machine understand, as there was no response variable so we looked at the correlation between 2 independent variables if there is any significant correlation between those then we analyse that pair using suitable technique to derive maximum cooperative information.

4. EDA Concluding Remark.

Univariate Analysis:

- 1.Out of total users 67% were females.
- 2.Most participating age group in online retail shopping is from 30-50 years.
- 3.Most of the users in this dataset is from Delhi followed by Noida and Bangalore.
- 4.In this dataset we have majority of users who are shopping through online from past 4 years and above followed by 2-3 years.
- 5.Around 44 % of users had ordered less than 10 times in past one year followed by 31-40 times which consist of 22% user.
- 6.Around 67% of user use mobile internet for online shopping followed by WIFI which consist of 22%.
7. Regarding the operating system of users around 45% of user has got windows/windows mobile followed by android and IOS/Mac of 31% and 24% respectively.
- 8.Around 80% of user use Google Chrome as their web browser followed by safari, opera and Mozilla Firefox of 15%, 3% and 2% respectively.

9. Out of 269 users around 85 users again visited by search engine, around 85 again visited through applications and around 70 have visited through direct URL.

Column 14: How much time do you explore the e-retail store before making an decision

- Around 44% of user spend more than 15 min before they make up the decision of purchasing
- Around 24% of user spend 6-10 minutes before making an decision of purchasing
- Around 19% of user spend 10-15 minutes before making an decision of purchasing

Column 15: what is your preferred payment option?

- Around 55% of user prefer credit/debit cards
- Around 29% of user prefer cash on delivery
- Around 16% of user prefer e-valets

Column 16: How frequently do you abandon (selecting an items and leaving without making payment) your shopping cart?

- Around 63% of user abandoned sometimes without making an payment
- Around 18% of user never abandoned without making an payment
- Around 13% of user frequently abandoned without making an payment.

Column 17: Why did you abandon the “Bag”, “Shopping Cart”

- Around 48% of user abandoned the cart because of better alternative offer
- Around 20% of user abandoned the cart because of promo code not applicable
- Around 14% of user abandoned the cart because of change in price
- Around 11% of user abandoned the cart because of lack of trust
- Around 7% of user abandoned the cart because of no preferred mode of payment

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

- Around 59% of the user strongly agree that the content on the website is easy to read and understand
- Around 29% of the user agree that the content on the website is easy to read and understand
- Around 7% of the user strongly disagree with the content on the website -
- Around 5% says that the contents are indifferent

Column 19: Information on similar product to the one highlighted is important for product comparison

- Around 42% strongly agree that information on similar products to the one highlighted is important for product comparison.

- Around 35% agree that information on similar products to the one highlighted is important for product comparison.

- Around 15% have opinion that information on similar products to the one highlighted is important for product comparison is indifferent.

- Around 8% disagree that information on similar products to the one highlighted is important for product comparison.

Column 20: Complete information on listed seller and product being offered is important for purchase decision.

- Around 31% of user have strongly agreed that complete information on listed seller and product being offered is important for purchase decision and on the same topic 37% just agree.

- Around 18% of user have stated that complete information on listed seller and product being offered is important for purchase decision is indifferent

- Around 14% of user have disagreed that complete information on listed seller and product being offered is important for purchase decision

Column 21: All relevant information on listed products must be stated clearly

- Around 48% of user have agreed that all relevant information on listed products stated clearly

- Around 40% of user have strongly agreed that all relevant information on listed products stated clearly

- Around 8% of user have strongly disagreed that all relevant information on listed products stated clearly

- Around 4% of user have disagreed that all relevant information on listed products stated clearly

Column 22: Ease of navigation in website

- Around 52% of the user says that they strongly agree that navigation through website is easy.

- Around 39% of the user says that they agree with ease of navigation through website

- Around 7% of the user strongly disagree with the ease of navigation through website

- Around 2% of the user disagree with the ease of navigation through website

Column 23: Loading and processing speed

- Around 42% of the user strongly agree that there is enough processing speed and loading
- Around 40% of the user agree that there is enough processing speed and loading
- Around 7% of the user disagree that there is enough processing speed and loading
- Around 6% of the user stated that the processing speed and loading are indifferent
- Around 5% of the user strongly disagree that there is enough processing speed and loading

Column 24: User friendly Interface of the website

- Around 66% of user strongly agree that the website has a user-friendly interface
- Around 16% of user agree that the website has a user-friendly interface
- Around 8% of user strongly disagree that the website has a user-friendly interface
- Around 4% of user disagree that the website has a user-friendly interface
- Around 6% of user stated that the website interface is indifferent

Column 25: Convenient Payment methods

- Around 59% of user strongly agree that the payment methods are convenient
- Around 29% of user agree that the payment methods are convenient
- Around 12% of user disagree that the payment methods are convenient

Column 26: Trust that the online retail store will fulfil its part of the transaction at the stipulated time

- Around 52% of user strongly agree that they have trust in the online retail store will fulfil its part of the transaction at the stipulated time
- Around 31% of user agree that they have trust in the online retail store will fulfil its part of the transaction at the stipulated time
- Around 11% of the user disagree with the fact that online retail store will fulfil its part of the transaction at the stipulated time.
- Around 6% of user stated that its indifferent.

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

- Around 71% of user strongly agree with the fact that the online retail stores are always ready to assist with queries of customers.

- Around 15% of user agree with the fact that the online retail stores are always ready to assist with queries of customers.
- Around 8% of user disagree with the fact that the online retail stores are always ready to assist with queries of customers.
- Around 6% of user stated that this is indifferent.

Column 28: Being able to guarantee the privacy of the customer

- Around 68% of user strongly agree with the fact that online retail store will guarantee their privacy
- Around 21% of user agree that online retail store will guarantee their privacy
- Around 11% stated it as indifferent.

Column 29: Responsiveness, availability of several communication channels (email, online rep, twitter, phone etc.)

- Around 55% of user strongly agree that there are several communication channels
- Around 35% of user agree that there are several communication channels
- Around 6% of user agree that its indifferent
- Around 4% of user strongly disagree that there are several communication channels

Column 30: Online shopping gives monetary benefit and discounts

- Around 39% of user strongly agree that online shopping gives monetary benefits
- Around 31% of user agree that online shopping gives monetary benefits
- Around 18% stated that its indifferent
- Around 7% strongly disagree with fact that online shopping gives monetary benefits
- Around 5% of user disagree with the fact that online shopping gives moentory benefits

Column 31: Enjoyment is derived from shopping online

- Around 32% of user strongly agree with the fact that they enjoy online shopping
- Around 29% of user stated it as indifferent
- Around 22% of user agree with the fact that they enjoy online shopping
- Around 11% of user strongly disagree with the fact that they enjoy online shopping
- Around 6% of user disagree with the fact that they enjoy online shopping

Column 32: Return and replacement policy of the e-retailer is important for purchase decision

- Around 74% of user strongly agree that replacement policy is important for purchase

- Around 19% of user agree that replacement policy is important for purchase

- Around 7% of user disagree with the fact that replacement policy is important for purchase

Column 33: Shopping online is convenient and flexible

- Around 54% of user strongly agree that online shopping is flexible and convenient

- Around 29% of user agree that online shopping is flexible and convenient

- Around 5% of user disagree that online shopping is flexible and convenient

- Around 12% of user stated it as indifferent

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

- Around 74% of user strongly agree that gaining access to loyalty programs is a benefit of shopping online

- Around 19% of user agree that gaining access to loyalty programs is a benefit of shopping online

- Around 7% of user disagree that gaining access to loyalty programs is a benefit of shopping online

Column 35: Displaying quality Information on the website improves satisfaction of customers

- Around 49% of user strongly agree with the fact that displaying quality Information on the website improves satisfaction of customers

- Around 29% of user agree with the fact that displaying quality Information on the website improves satisfaction of customers

- Around 22% of user stated it as indifferent

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

- Around 65% of user says that they strongly agree with the fact that user derive satisfaction while shopping on a good quality website or application

- Around 32% of user says that they agree with the fact that user derive satisfaction while shopping on a good quality website or application

- Around 3% of user says that they disagree with the fact that user derive satisfaction while shopping on a good quality website or application

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

- Around 60% of user strongly agree with the fact that net benefit derived from shopping online can lead to users satisfaction
- Around 20% of user agree with the fact that net benefit derived from shopping online can lead to users satisfaction
- Around 15% of user stated it as indifferent
- Around 5% of user disagree with the fact that net benefit derived from shopping online can lead to users satisfaction

Column 38: User satisfaction cannot exist without trust

- Around 45% of user strongly agree that user satisfaction cannot exist without trust
- Around 43% of user agree that user satisfaction cannot exist without trust
- Around 6% of user strongly disagree that user satisfaction cannot exist without trust
- Around 3% of user disagree that user satisfaction cannot exist without trust
- Around 3% of user stated it as indifferent

Column 39: Offering a wide variety of listed product in several category

- Around 42% of user strongly agree with the fact that online retail store offers a wide variety of listed products in several category
- Around 35% of user agree with the fact that online retail store offers a wide variety of listed products in several category
- Around 2% of user disagree with the fact that online retail store offers a wide variety of listed products in several category
- Around 21% of user stated it as indifferent

Column 40: Provision of complete and relevant product information

- Around 50% of user strongly agree that complete and relevant product information is available.
- Around 36% of user agree that complete and relevant product information is available.
- Around 12% of user stated is as indifferent
- Around 2% of user disagree that complete and relevant product information is available.

Column 41: From the following, tick any (or all) of the online retailers you have shopped from -Everyone is familiar with amazon and flipkart.

Column 42: Monetary savings -Around 55% of user strongly agree with the fact that there is a monetary savings through online shopping

-Around 28% of user agree with the fact that there is a monetary savings through online shopping

-Around 11% of user disagree with the fact that there is a monetary savings through online shopping

-Around 6% of user stated it as indifferent

Column 43: The Convenience of patronizing the online retailer

-Around 51% of user agree

-Around 29% user stated that its indifferent

-Around 54% user strongly agree.

Column 44: Shopping on the website gives you the sense of adventure

-Around 37% of user agree that shopping on the website gives you the sense of adventure

-Around 20% of user strongly agree that shopping on the website gives you the sense of adventure

-Around 19% of user disagree that shopping on the website gives you the sense of adventure

-Around 2% of user strongly disagree that shopping on the website gives you the sense of adventure

-Around 22% of user stated it as indifferent

Column 45: Shopping on your preferred e-tailer enhances your social status

-Around 37% of user stated it as indifferent

-Around 22% agree the fact that shopping on your preferred e-tailer enhances your social status

-Around 18% strongly agree the fact that shopping on your preferred e-tailer enhances your social status

-Around 13% strongly disagree the fact that shopping on your preferred e-tailer enhances your social status

-Around 10% disagree the fact that shopping on your preferred e-tailer enhances your social status

Column 46: You feel gratification shopping on your favorite e-tailer

-Around 37% of user stated it as indifferent

-Around 24% strongly agree the fact that they feel gratification shopping on thier favorite e-tailer

- Around 23% agree the fact that they feel gratification shopping on thier favorite e-tailer
- Around 9% disagree the fact that they feel gratification shopping on thier favorite e-tailer
- Around 7% strongly agree the fact that they feel gratification shopping on thier favorite e-tailer

Column 47: Shopping on the website helps you fulfill certain roles

- Around 32% of user stated it as indifferent
- Around 32% agree the fact that shopping on the website helps you fulfill certain roles
- Around 14% strongly agree the fact that shopping on the website helps you fulfill certain roles
- Around 12% strongly disagree the fact that shopping on the website helps you fulfill certain roles
- Around 10% disagree the fact that shopping on the website helps you fulfill certain roles

Column 48: Getting value for money spent

- Around 15% of users stated it as indifferent
- Around 55% agree the fact that they got the value for money spent
- Around 30% strongly agree the fact that they got the value for money spent

Column 49: State any of the online retailers you have shopped from.
Everyone are familiar with amazon and flipkart.

Column 50: Which is the easy to use application?

According to user the Amazon, Flipkart and paytm are top three easy to use applications.

Column 51: Which website has got visual appealing webpage?

According to user amazon has most appealing webpage followed by flipkart ,snapdeal,paytm and myntra.

Column 52: Which website provides the wide variety of products on offer?

According to user amazon provides wide variety of products on offer followed by flipkart and mynthra.

Column 53: Which website provides the complete relevant description of the products?

According to user amazon tops the chart in providing the complete relevant product description followed by flipkart, snapdeal and paytm.

Column 54: Which is the fastest loading websites?

According to user amazon is the fastest loading website followed by snapdeal, flip kart and Paytm

Column 55: Which is the most reliable web application?

According to user amazon tops the chart followed by flipkart and paytm

Column 56: In which website the purchasing will be quick?

According to user amazon is so quick in terms of completing the purchase followed by flipkart paytm and mynthra.

Column 57: Availability of several payment options?

According the user amazon has got several payment options followed by flipkart and mynthra.

Column 58: Which website has got speedy delivery of products?

Amazon tops the chart followed by flipkart and snapdeal

Column 59: Which web application takes most care regarding the privacy of customer's information?

In case of customers privacy amazon tops the chart followed by flipkart and paytm

Column 60: Which web application takes most care regarding the customer's financial information?

In case of user's financial privacy amazon tops the chart followed by flipkart and snapdeal

Column 61: Presence of online assistance through multiple channels?

In case of Presence of online assistance through multi-channel amazon tops the chart followed by flipkart and snapdeal

Column 62: Which website takes more time to get logged in?

Amazon tops the chart followed by flipkart in case of time taking to logged in.

Column 63: Which website takes longer time in displaying the graphics and photos? - In case of time taking for displaying the pictures Amazon takes a lot of time followed by flipkart and snapdeal

Column 64: Which website declares price of products in late?
In case of late declaration of price myntra tops the chart followed by paytm and flipkart

Column 65: Change in website/application design
Amazon tops the chart followed by flipkart, paytm in case of Change in website/Application design

Column 66: Website is as efficient as before
Amazon tops the chart followed by flipkart and paytm in retaining the efficiency of website or company as before

Column 67: Which of the Indian online retailer would you recommend to a friend? - Majority of the user refer amazon followed by flipkart and myntra.

Column 68: Which website takes longer time to load the page? - In case of longer page loading paytm tops the chart followed by myntra snapdeal, flipkart

Column 69: Limited mode of payment on most products (promotion, sales period) In case of limited mode of payment on most of the products snapdeal tops the chart followed by flipkart and amazon.

Column 70: Which website has longer delivery period? In case of longer delivery period snapdeal tops the chart followed by paytm and flipkart.

Bi-Variate and Multi-Variate Analysis:

Gender has got significant correlation with the following:

1.Responsiveness, availability of several communication channels (email, online rep, twitter, phone etc.)

Both male and female users are equally agreed that online retail stores are responsive and graph shows that if there is any disagreement the probability that it's from female user is more compared to male user.

2.Users remark on the convenience of the online retail shop based on their experience in online shopping. In the long run on online retail store as

customers started to having more and more years of experience through online retail store the category of strongly agree will remain almost constant but dis agree will slightly increase.

3. Customers enjoys the shopping when they derive the internet from WIFI or mobile.

4. Browser we going to use has significant affect over the flexibility and convenience of online shopping. In terms of convenience mozilla firefox tops the chart followed by chrome, safari and opera

5. There is relationship between how quickly they purchase and in which website they are purchasing, in this dataset those who completes purchase within one minute belongs to flipkart and those who completes within one to five minutes belongs to amazon.

6. The significant factor for higher sales is cash on delivery, why amazon is leading because it provides more cash on delivery options compared to other web applications.

7. There are situations or instances where user abandon the shopping without purchasing, one of the factors which is closely related to this according to this dataset is which web browser they use.

i). The study shows that around 77% of chrome user sometimes abandon shopping without purchasing

ii). The study shows that every Mozilla user sometimes abandon shopping without purchasing

iii). The study shows that the no opera user abandons the shopping without purchasing

iv). 63% of safari user abandon the shopping without purchasing.

8. There will be certain reasons which explains why user abandon the shopping cart and according to this dataset these reasons has got significant correlation with the web browser they are using. Better alternative offer is the reason why almost all type of user gives for abandoning the shopping cart

9. There is a significant correlation between the loading / processing speed and product description of one highlighted is very important for product comparison.

10. The columns convenient payment methods and complete information on listed seller and product being offered is important for purchase decision has got significant relationship in following way.

Users react similarly on following two columns:

a. Complete information on listed seller and product being offered is important for purchase decision

b. Convenient Payment methods

11. If all the relevant information on listed products stated clearly then it would make the navigation so easy for the users,
The ease of navigation over the website is depends on how much complete information is there regarding the products.
The ease of navigation is also depending on how many payment options are there, if there are enough amount of payment option especially cash on delivery then user will comment it as so easy for the navigation
12. To be stated as the best user-friendly interface of the website the retail shop should be very responsiveness and there should be several communication channels and the website should be easy for the navigation.
13. The study shows that if online retail store fulfils its part of the transaction in stipulated time then user will feel gratified.
14. If Online retail shop want to get good rating for empathy towards the customer then they should assure the privacy of the customer at its best, the customer should get value for the money inferring that there should be best service and quality of the product.
15. The above study shows that to make the customer satisfy the online retail shop should have enough responsiveness and should be available to the customer with enough communication channels.
16. To retain the customer in this competitive world the online retail shop should give enough online assistance through multiple channels for retaining the customers, the website should be fast loading and there should be several payment options especially cash on delivery.
17. In case of payment option majority of the user likes amazon, the following pie chart shows which payment option most of the user uses in amazon.
All user opted for the cash on delivery payment option as their most favourite payment option.
18. Amazon tops the chart in case of easy to use application why because it has got several payment options, it has got good online assistance, the page loads fast comparatively and it provides complete, relevant description information of products,
19. To be the most appealing webpage there should be wild variety of products on offer, there should be more payment options especially cash on delivery and the web page should be easy to use.
20. The fast loading of the website makes the user to easy to use the website
21. If any online retail website wants to score top on the topic privacy of customers information then it should make sure that it will keep customers financial information as safe as possible.
22. Frequent disruptions when moving from one page to another is mostly caused by longer page loading.

23. To get your online retail shop offered to someone following are the required factor

There should be complete, relevant descriptive information of products, the website should be reliable. The website should be easy to use, the website should provide better online assistance through multi-channel

5. Conclusion / Remarks

To excel in this competitive world the retail shop should have very good assistance through many channels, It should provide several mode of payments especially cash on delivery adding to that it should have an appealing web page and clear and relevant product description, along with quick loading of web application.

In this particular project we have learnt many things starting with we shouldn't directly jump into the project we should understand each and every variable and we should plan before entering like how to analyse etc, The pre-processing of data is very much important as otherwise it waste much time in later stage, We should have as much as grip over data visualization, We should write set of questions regarding what we are going to analyse, We should not deviate from our problem statement of the project. As in the final conclusion in which user were asked which online retailer they would recommend to a friend. Most of the respondents says Amazon.in because it is providing all the features that users want. Website is efficient and it is fast loading. It gives complete, relevant description and information of products. It is reliable and quick to complete the purchase. Amazon give speedy delivery to its customers and there are several payment options available on the website. It provides online assistance through multi channels. Providing good deals on products. Amazon have a user-friendly interface and has visual appealing webpage layout. Amazon also offers wide variety of products and its application is easy to use. lastly the main thing why user recommend it is because of its Trustworthiness and also its robust Security in protecting customer financial information and their Privacy information.

They are some cons like the amazon website topping the list In Frequent disruption when moving from one page to another this con company should see and improve it to give overall best experience to the users.

This paper investigated the factors that influence the online customers repeat purchase intention. During the process various data processing methods has been used to clean the data. The project contains extensive EDA considering every aspect. The major finding is Complete relevant description of products and

reliability of the website increases chances of customer retention. However, if the content on the website is not easy to read and understand or can't guarantee the privacy of the customer will lead to chances of customer retention. This project has increased my understanding of the concept. During the research I came across various challenges and while solving them I learned a lot of new things. How to plot different charts. For example, I learned how to plot subplot. How to handle legends manually. How to group data and visualize that.

The limitation of the solution provided is that the data carried a lot of unrealistic values. Apart from that my laptop took too much time while running certain command where I lost a lot of precious time.