



**Customer Retention Analysis**

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

**Submitted by:**



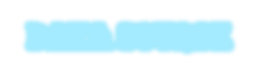
**Sudhanshu Kumar**



**ACKNOWLEDGMENT**

## I would like to thanks to **Flip Robo Technologies** to give me a wonderful opportunity. This project is given by my **SME Mr. Shubham Yadav**. I have referred below resources that helped and guided me in completion of this project as below:-

* Towardsscience.com
* Scikit-learn.org
* Kaggle.com
* Stack overflow, etc



**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.



**INTRODUCTION**

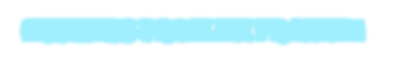


**What is customer retention**

Customer retention is the collection of activities a business uses to increase the number of repeat customers and to increase the profitability of each existing customer.

Customer retention strategies enable us to both provide and extract more value from our existing customer base. We want to ensure the customers we worked so hard to acquire stay with us, have a great customer experience, and continue to get value from our products.

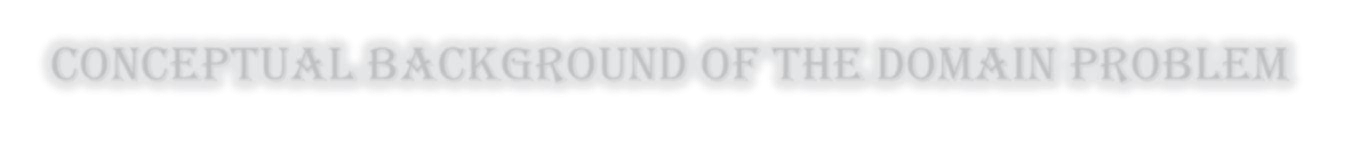
# Business Problem Framing



Customer satisfaction has emerged as one of the most important factors that guarantee the success of online store; it has been posited as a key stimulant of purchase, repurchase intentions and customer loyalty. A comprehensive review of the literature, theories and models have been carried out to propose the models for customer activation and customer retention. Five major factors that contributed to the success of an e-commerce store have been identified as: service quality, system quality, information quality, trust and net benefit. The research furthermore investigated the factors that influence the online customers repeat purchase intention. The combination of both utilitarian value and hedonistic values are needed to affect the repeat purchase intention (loyalty) positively. The data is collected from the Indian online shoppers. Results indicate the e-retail success factors, which are very much critical for customer satisfaction.

**The company wanted to a data analysis to understand various aspect of customer satisfaction.**

# Conceptual Background of the Domain Problem



**Problem Statement**: Analyse the Features affecting Customer Satisfaction & retention and test if brand preference depends on factors like age and gender.

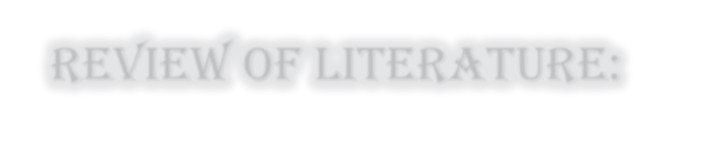
The combination of both utilitarian value and hedonistic values are needed to affect the repeat purchase intention (loyalty) positively.

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

**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



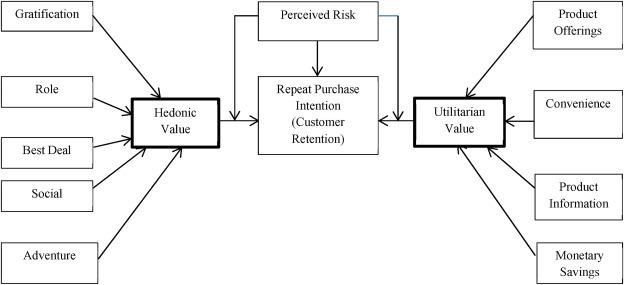
* Review of Literature:

E-commerce market has been contributing to the significant growth for the GDP of the country. It has been continuously growing at more 8% CAGR on each year. And customer being a one of the stakeholders for the e-commerce players, every company wants to retain their valuable customer and grow customer loyalty. For improving the customer satisfaction each enterprise investing/spending a lot not only to improve their sales but improve the CSAT, that is customer satisfaction score.

For this project we are provided with a data set to a data analysis to gather insights for the customer feedback and help us understand the customer in a better way.



**Diagrammatic Representation of Customer Retention**

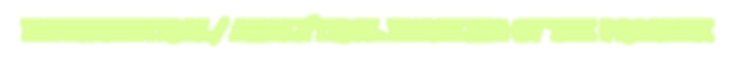
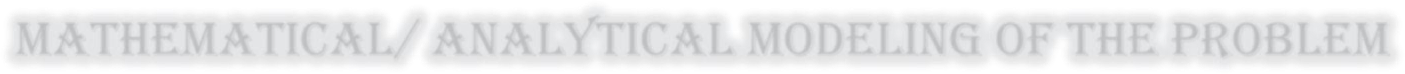


**Motivation for the Problem Undertaken**

Since e-commerce growth has been significant so far at each industry for the last couple of years, understanding the customer who purchase your product and their journey post order in the platform plays a crucial role for retaining a customer. From the dataset we got the feedback of each of the parameters for a customer and through the data analysis each significant parameter has been dig down and understand the deeper meaning of it. This project helps me understand the objective of customer feedback which at enterprise level has a greater focus.

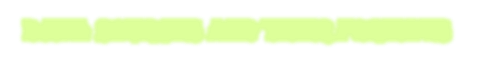
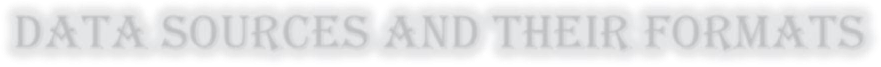


**Analytical Problem Framing**



Mathematical/ Analytical Modeling of the Problem

* + In this project I need to understand the customer satisfaction for each of the parameters provided. I have done the exploratory data analysis process and try to figure out the customer in a better way.



Data Sources and their formats

This Dataset is **provided by Flip Robo Technologies xlsx format**. It contains 269 rows and 71 columns and each of the features is extremely important to under the customer.

# Check the data information cus\_ret.info()

<class 'pandas.core.frame.DataFrame'> RangeIndex: 269 entries, 0 to 268 Data columns (total 71 columns):

# Column Non-Null

Count Dtype

--- ------ --------

------ -----

1. Gender 269 non-

null object

1. Age 269 non-

null object

1. city 269 non-

null object

3 Pin Code 269 non

null int64

4 How Long You are Shopping Online 269 non

null object

5 How many times in the past 1 year 269 non

null object

6 How do you access the internet 269 non

null object

7 device 269 non

null object

8 screen size 269 non

null object

9 operating system 269 non

null object

10 browser 269 non

null object

11 channel 269 non

null object

12 After first visit 269 non

null object

13 How much times 269 non

null object

14 payment Option 269 non

null object

15 How frequently do you abandon 269 non

null object

16 Why did you abandon 269 non

null object

17 content on the website 269 non

null object

18 similar product 269 non

null object

19 Complete information 269 non

null object

20 relevant information 269 non

null object

21 Ease of navigation 269 non

null object

22 Loading and processing speed 269 non

null object

23 User friendly 269 non

null object

24 Convenient Payment methods 269 non

null object

25 Trust that the online retail store 269 non

null object

26 Empathy towards the customers 269 non

null object

27 privacy of the customer 269 non

null object

28 Responsiveness and availability 269 non

null object

29 monetary benefit and discounts 269 non

null object

30 Enjoyment is derived from shopping online 269 non

null object

31 Shopping online is convenient and flexible 269 non

null object

32 Return and replacement policy 269 non

null object

33 Gaining access to loyalty 269 non

null object

34 quality Information on the website 269 non

null object

35 User derive satisfaction 269 non

null object

36 Net Benefit 269 non

null object

37 User satisfaction cannot exist without trust 269 non

null object

38 Offering a wide variety 269 non

null object

39 Provision of complete and relevant product information 269 non

null object

40 Monetary savings 269 non

null object

41 The Convenience of patronizing the online retailer 269 non

null object

42 sense of adventure 269 non

null object

43 enhances your social status 269 non

null object

44 gratification shopping on your favorite e-tailer 269 non

null object

45 Shopping on the website helps you fulfill certain roles 269 non

null object

46 Getting value for money spent 269 non

null object

47 you have shopped from 269 non

null object

48 Easy to use website or application 269 non

null object

49 Visual appealing web-page layout 269 non

null object

50 Wild variety of product on offer 269 non

null object

51 Complete description information of products 269 non

null object

52 Fast loading website speed of website and application 269 non

null object

53 Reliability of the website or application 269 non

null object

54 Quickness to complete purchase 269 non

null object

55 Availability of several payment options 269 non

null object

56 Speedy order delivery 269 non

null object

57 Privacy of customers’ information 269 non

null object

58 Security of customer financial information 269 non

null object

59 Perceived Trustworthiness 269 non

null object

60 Presence of online assistance through multi-channel 269 non

null object

61 Longer time to get logged in 269 non

null object

62 Longer time in displaying graphics and photos 269 non

null object

63 Late declaration of price 269 non

null object

64 Longer page loading time 269 non

null object

65 Limited mode of payment on most products 269 non

null object

66 Longer delivery period 269 non

null object

67 Change in website/Application design 269 non

null object

68 Frequent disruption when moving from one page to another 269 non

null object

69 Website is as efficient as before 269 non

null object

70 Which of the Indian online retailer would you recommend to a friend 269 non

null object

dtypes: int64(1), object(70)

memory usage: 149.3+ KB

• Hardware and Software Requirements and Tools

Used:

For this dataset, the Hardware is used Windows as operating system, a

stable internet connection, and the software used are mainly Jupyter

notebook to do my python programming and analysis.

I received data in xlsx format, I had used few libraries on **Jupyter Notebook**

for this project. The Libraries are:

1. **Pandas**- a library which is used to read the data,

visualization, and analysis of data.

2. **NumPy**- used for working with array and various

mathematical techniques.

3. **Seaborn**- visualization tool for plotting different types of plot.

4. **Matplotlib**- It provides an object-oriented API for

embedding plots into applications.

**Data Analysis Development and Evaluation**

Identification of possible problem-solving approaches

(methods):

For this project I have done EDA to understand the outcome of this dataset. And, I

have used various visualization using seaborn & matplotlib package to understand

the customer satisfaction in a suitable manner.

Key Metrics for success in solving problem under

Consideration:

The key metrics that were mainly taken into consideration were the

followings:

➢ Gender of the respondent

➢ What browser do you run on your device to access the website?

➢ Which device do you use to access the online shopping?

➢ Which of the Indian online retailer would you recommend to a friend?

➢ Quickness to complete purchase

➢ Speedy order delivery

➢ Presence of online assistance through multi-channel

➢ Getting value for money spent

➢ Return and replacement policy of the e-tailer is important for purchase decision

➢ Shopping online is convenient and flexible

➢ Convenient Payment methods

➢ User friendly Interface of the website

EDA Process

And

Visualization



**Exploratory Data Analysis**

**Customer Related Information**

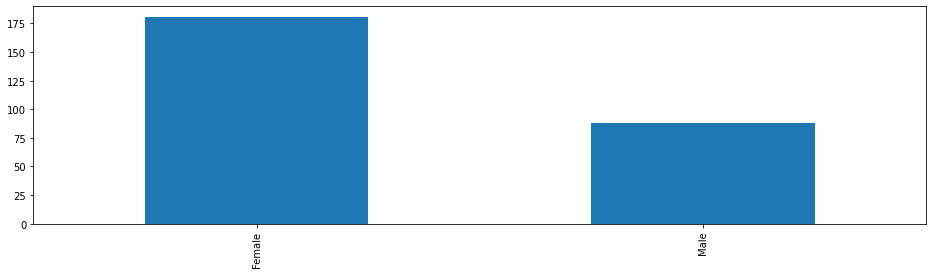
plt.figure(figsize=(15,5))

plt.xticks(rotation=45)

print(cus\_ret['Gender'].value\_counts())

cus\_ret['Gender'].value\_counts().sort\_index().plot.bar()

<AxesSubplot:>



Female 181

Male 88

Name: Gender, dtype: int64

**From the above analysis, it has been observed that around 67% of**

**the customers are women.**

plt.figure(figsize=(15,5))

plt.xticks(rotation=45)

print(cus\_ret['Age'].value\_counts())

sns.countplot(cus\_ret['Age'])

<AxesSubplot:xlabel='Age', ylabel='count'>

