

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

SUBMITTED BY:- ABHISHEK KUMAR

BATCH:- DS0622

ACKNOWLEDGMENT

I have taken efforts in this project. However, it would not have been possible without the kind support and help of many individuals and organizations. I would like to extend my sincere thanks to all of them.

I am highly indebted to Flip Robo Technologies Bangalore for their guidance and constant supervision as well as for providing necessary information regarding the project & also for their support in completing the project. I want to thank my SME Ms.Khushboo Gupta for providing the Dataset and helping us to solve the problem and addressing out our Query in right time.

I would like to express my gratitude towards my parents & members of Flip Robo for their kind co-operation and encouragement which help me in completion of this project.

INTRODUCTION

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.

Conceptual Background of the Domain Problem

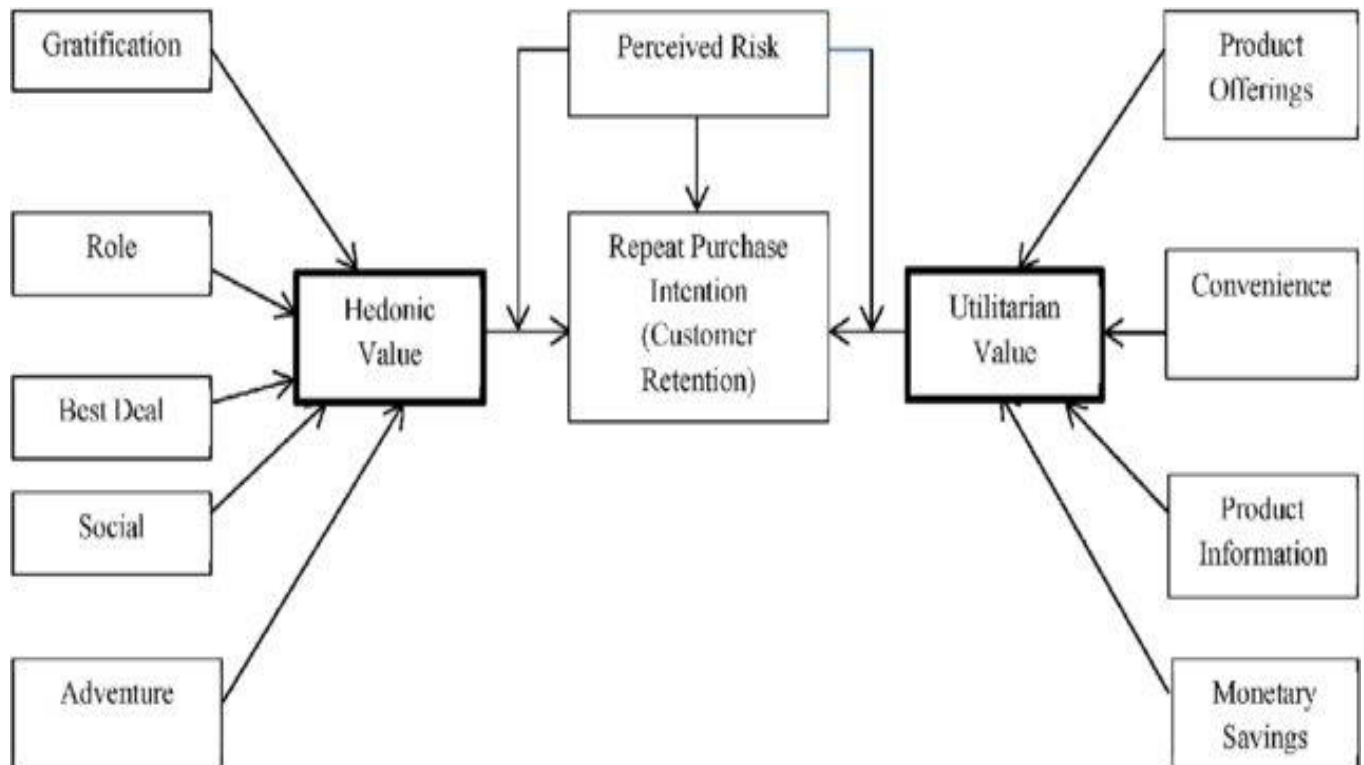
The data is collected from the Indian online shoppers. Results indicate the e-retail success factors, which are very much critical for customer satisfaction.

Five major factors that contributed to the success of an e-commerce store have been identified as: service quality, system quality, information quality, trust and net benefit. The research furthermore investigated the factors that influence the online customers repeat purchase intention.

Motivation for the Problem Undertaken

Our main objective of doing this project is to analyse whether the users are shopping products from e-commerce websites, how did they give feedbacks to these websites on the basis of several positive and negative factors and also the details of the users on basis of factors like age, gender, etc.

Diagrammatic Representation of Customer Retention



The Hedonic value consists of factors like Gratification, Role, Best Deal, Social and Adventure.

The Utilitarian value consists of factors like Product Offerings, Convenience, Product Information and Monetary Savings.

Customer Retention is based on 3 factors, according to the above diagram. They are:-

Perceived Risk, Hedonic value and Utilitarian value

Data Sources and their formats

The data is been given by a highly-confidential company and they gave it to us in an excel file. They also had provided the problem statement by explaining what they need from us and also the required criteria to be satisfied.

Let's check the data now. I have attached the images below to give an overview.

LOADING THE DATASET

```
In [2]: import os
```

```
In [3]: os.getcwd()      #checking for the current directory
```

```
Out[3]: 'C:\\Users\\Hp'
```

```
In [4]: os.chdir('C:\\Users\\Hp\\Downloads\\Customer_retention_dataset---1-\\Customer_retention_dataset') #changing the directory to impo
```

```
In [5]: df = pd.read_excel("customer_retention_dataset.xlsx", sheet_name = "datasheet")      #dataset in excel format
```

```
In [6]: df.head()      #Looking for the first 5 columns of the dataset
```

```
Out[6]:
```

	1 Gender of respondent	2 How old are you?	3 Which city do you shop online from?	4 What is the Pin Code of where you shop online from?	5 Since How Long You are Shopping Online ?	6 How many times you have made an online purchase in the past 1 year?	7 How do you access the internet while shopping on-line?	8 Which device do you use to access the online shopping?	9 What is the screen size of your mobile device?	10 What is the operating system (OS) of your device?	...	Longer time to get logged in (promotion, sales period)	Longer time in displaying graphics and photos (promotion, sales period)	Late declaration of price (promotion, sales period)
0	Male	31-40 years	Delhi	110009	Above 4 years	31-40 times	Dial-up	Desktop	Others	Window/windows Mobile	...	Amazon.in	Amazon.in	Flipkart.com
1	Female	21-30	Delhi	110030	Above 4 years	41 times and	Wi-Fi	Smartphone	4.7 inches	IOS/Mac	...	Amazon.in, Flinkart.com	Myntra.com	snapdeal.com

:- Our objective is to find the insights of the data and to do data analysis.

```
In [8]: df.info()      #checking the datatype of all the columns present in the dataset
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 269 entries, 0 to 268
Data columns (total 71 columns):
 #   Column
Non-Null Count  Dtype
---  -
0   1Gender of respondent
269 non-null    object
1   2 How old are you?
269 non-null    object
2   3 Which city do you shop online from?
269 non-null    object
3   4 What is the Pin Code of where you shop online from?
269 non-null    int64
4   5 Since How Long You are Shopping Online ?
269 non-null    object
5   6 How many times you have made an online purchase in the past 1 year?
269 non-null    object
6   7 Would you consider the internet while shopping as 100%?
```

There is only 1 column of dtype as int64 i.e. "column 3- picode of where you shop online from", rest all columns are having obejct as dtype.

```
In [9]: df.isnull().sum()      #checking for null values if any present in the dataset
```

```
Out[9]: 1Gender of respondent      0
2 How old are you?                0
3 Which city do you shop online from?  0
4 What is the Pin Code of where you shop online from?  0
5 Since How Long You are Shopping Online ?  0
..
Longer delivery period            0
Change in website/Application design  0
Frequent disruption when moving from one page to another  0
Website is as efficient as before    0
Which of the Indian online retailer would you recommend to a friend?  0
Length: 71, dtype: int64
```

70 columns are of object datatype.

1 column is having int64 as datatype.

EDA

```
In [11]: for i in df.columns:           #Looking for value counts for all the features in the dataset
          print(i)
          print(df[i].value_counts())
          print("\n")
```

```
1Gender of respondent
Female    181
Male      88
Name: 1Gender of respondent, dtype: int64
```

```
2 How old are you?
31-40 years    81
21-30 years    79
41-50 yaers    70
Less than 20 years  20
51 years and above  19
Name: 2 How old are you? , dtype: int64
```

```
3 Which city do you shop online from?
Delhi          58
Greater Noida  43
Noida          40
Gurgaon        37
```

```
In [12]: for i in df.columns:           #CHECKING THE VALUE COUNT FOR ALL THE FEATURES IN THE DATASET
          plt.figure(i)
          print(sns.countplot(df[i]))
          plt.xticks(rotation=55)
          print("\n")
```

We checked the value counts of all 71 columns above and we iterated using a for loop. We can see some value counts of the columns like gender, age, city, etc. Below I had attached the value counts of other columns.

ANALYSIS OF WEBSITES FEEDBACK OBTAINED

ANALYSIS OF FEEDBACKS OBTAINED BY WEBSITES

There are both positive and negative feedbacks given by the customers to all the websites. we will analyse them using data analysis process.

```
4]: feedback=df.iloc[:,47:] #extracting the data from where the feedback columns starts
feedback
```

4] :

	From the following, tick any (or all) of the online retailers you have shopped from;	Easy to use website or application	Visual appealing web-page layout	Wide variety of product on offer	Complete, relevant description information of products	Fast loading website speed of website and application	Reliability of the website or application	Quickness to complete purchase	Availability of several payment options	Speedy order delivery	...	Longer to get local products (promotional sales price)
0	Amazon.in, Paytm.com	Paytm.com	Flipkart.com	Flipkart.com	Snapdeal.com	Snapdeal.com	Paytm.com	Paytm.com	Paytm.com	Amazon.in	...	Amazon.in
1	Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com	Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com	Amazon.in, Myntra.com	Flipkart.com, Myntra.com	Amazon.in, Flipkart.com, Myntra.com	Amazon.in, Flipkart.com, Myntra.com	Myntra.com	Amazon.com, Flipkart.com, Myntra.com	Amazon.in, Flipkart.com, Myntra.com	Amazon.in, Flipkart.com	...	Amazon.in, Flipkart.com
2	Amazon.in, Paytm.com, Myntra.com	Amazon.in, Paytm.com, Myntra.com	Amazon.in, Paytm.com, Myntra.com	Amazon.in, Myntra.com	Amazon.in, Paytm.com, Myntra.com	Amazon.in, Paytm.com	Amazon.in, Paytm.com, Myntra.com	Amazon.com, Paytm.com, Myntra.com	Paytm.com, Myntra.com	Amazon.in	...	Myntra.com
3	Amazon.in, Flipkart.com, Paytm.com, Myntra.com...	Amazon.in, Flipkart.com, Paytm.com, Myntra.com...	Amazon.in, Flipkart.com, Paytm.com, Myntra.com...	Amazon.in, Flipkart.com	Amazon.in, Flipkart.com	Amazon.in, Flipkart.com, Snapdeal.com	Amazon.in, Flipkart.com, Paytm.com	Amazon.com, Flipkart.com, Paytm.com	Amazon.in, Flipkart.com, Myntra.com	Amazon.in, Flipkart.com, Snapdeal.com	...	Snapdeal.com
4	Amazon.in, Flipkart.com, Paytm.com, Myntra.com...	Amazon.in, Flipkart.com, Paytm.com, Myntra.com...	Myntra.com	Myntra.com	Amazon.in, Flipkart.com, Paytm.com, Myntra.com...	Amazon.in	Amazon.in, Paytm.com, Myntra.com	Amazon.com, Flipkart.com, Paytm.com, Myntra.com...	Amazon.in, Flipkart.com, Paytm.com, Myntra.com...	Amazon.in	...	Flipkart.com, Paytm.com
...
264	Amazon.in	Amazon.in	Amazon.in	Amazon.in	Amazon.in	Amazon.in	Amazon.in	Amazon.com	Amazon.in	Amazon.in	...	Amazon.in
265	Amazon.in	Flipkart.com	Amazon.in	Amazon.in	Flipkart.com	Flipkart.com	Flipkart.com	Flipkart.com	Flipkart.com	Flipkart.com	...	Flipkart.com

ANALYSING THE –VE FEEDBACKS

NEW DATAFRAME i.e, NEW2 FOR DISPLAYING NEGATIVE FEEDBACKS

```
In [16]: dfnew2=feedback[["Longer time to get logged in (promotion, sales period)",  
                        "Longer time in displaying graphics and photos (promotion, sales period)",  
                        "Late declaration of price (promotion, sales period)",  
                        "Limited mode of payment on most products (promotion, sales period)",  
                        "Longer page loading time (promotion, sales period)",  
                        "Longer delivery period", "Frequent disruption when moving from one page to another"]]  
dfnew2
```

```
Out[16]:
```

	Longer time to get logged in (promotion, sales period)	Longer time in displaying graphics and photos (promotion, sales period)	Late declaration of price (promotion, sales period)	Limited mode of payment on most products (promotion, sales period)	Longer page loading time (promotion, sales period)	Longer delivery period	Frequent disruption when moving from one page to another
0	Amazon.in	Amazon.in	Flipkart.com	Amazon.in	Flipkart.com	Paytm.com	Amazon.in
1	Amazon.in, Flipkart.com	Myntra.com	snapdeal.com	Snapdeal.com	Snapdeal.com	Snapdeal.com	Myntra.com
2	Myntra.com	Myntra.com	Myntra.com	Amazon.in	Myntra.com	Paytm.com	Paytm.com
3	Snapdeal.com	Myntra.com, Snapdeal.com	Myntra.com	Paytm.com	Paytm.com	Paytm.com	Amazon.in, Flipkart.com
4	Flipkart.com, Paytm.com	Paytm.com	Paytm.com	Snapdeal.com	Paytm.com	Paytm.com	Snapdeal.com
...
264	Amazon.in	Amazon.in	Amazon.in	Amazon.in	Amazon.in	Amazon.in	Amazon.in
265	Flipkart.com	Flipkart.com	Flipkart.com	Flipkart.com	Flipkart.com	Flipkart.com	Flipkart.com
266	Amazon.in	Snapdeal.com	Amazon.in	Snapdeal.com	Snapdeal.com	Snapdeal.com	Snapdeal.com
267	Amazon.in	Amazon.in, Myntra.com, Snapdeal.com	Amazon.in	Amazon.in	Amazon.in, Snapdeal.com	Amazon.in	Myntra.com, Snapdeal.com

ANALYSING +VE FEEDBACKS

NEW DATAFRAME FOR DISPLAYING POSITIVE FEEDBACK

```
In [15]: dfnew=feedback.drop(["Longer time to get logged in (promotion, sales period)",  
                             "Longer time in displaying graphics and photos (promotion, sales period)",  
                             "Late declaration of price (promotion, sales period)",  
                             "Longer page loading time (promotion, sales period)",  
                             "Limited mode of payment on most products (promotion, sales period)",  
                             "Longer delivery period", "Frequent disruption when moving from one page to another"],axis=1)  
  
dfnew
```

Out[15]:

	From the following, tick any (or all) of the online retailers you have shopped from;	Easy to use website or application	Visual appealing web-page layout	Wide variety of product on offer	Complete, relevant description information of products	Fast loading website speed of website and application	Reliability of the website or application	Quickness to complete purchase	Availability of several payment options	Speedy order delivery	Privacy & customer informatic
0	Amazon.in, Paytm.com	Paytm.com	Flipkart.com	Flipkart.com	Snapdeal.com	Snapdeal.com	Paytm.com	Paytm.com	Paytm.com	Amazon.in	Amazon.
1	Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com	Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com	Amazon.in, Myntra.com	Flipkart.com, Myntra.com	Amazon.in, Flipkart.com, Myntra.com	Amazon.in, Flipkart.com, Myntra.com	Myntra.com	Amazon.com, Flipkart.com, Myntra.com	Amazon.in, Flipkart.com, Myntra.com	Amazon.in, Flipkart.com	Myntra.co
2	Amazon.in, Paytm.com, Myntra.com	Amazon.in, Paytm.com, Myntra.com	Amazon.in, Paytm.com, Myntra.com	Amazon.in, Myntra.com	Amazon.in, Paytm.com, Myntra.com	Amazon.in, Paytm.com	Amazon.in, Paytm.com, Myntra.com	Amazon.com, Paytm.com, Myntra.com	Paytm.com, Myntra.com	Amazon.in	Amazon.
3	Amazon.in, Flipkart.com, Paytm.com, Myntra.com...	Amazon.in, Flipkart.com, Paytm.com, Myntra.com...	Amazon.in, Flipkart.com, Paytm.com, Myntra.com...	Amazon.in, Flipkart.com	Amazon.in, Flipkart.com	Amazon.in, Flipkart.com, Snapdeal.com	Amazon.in, Flipkart.com, Paytm.com	Amazon.com, Flipkart.com, Paytm.com	Amazon.in, Flipkart.com, Myntra.com	Amazon.in, Flipkart.com, Snapdeal.com	Amazon.i Flipkart.cor Myntra.co
4	Amazon.in, Flipkart.com, Paytm.com, Myntra.com...	Amazon.in, Flipkart.com, Paytm.com, Myntra.com...	Myntra.com	Myntra.com	Amazon.in, Flipkart.com, Paytm.com, Myntra.com...	Amazon.in	Amazon.in, Paytm.com, Myntra.com	Amazon.com, Flipkart.com, Paytm.com, Myntra.co...	Amazon.in, Flipkart.com, Paytm.com, Myntra.com...	Amazon.in	Amazon.i Paytm.co
...
264	Amazon.in	Amazon.in	Amazon.in	Amazon.in	Amazon.in	Amazon.in	Amazon.in	Amazon.com	Amazon.in	Amazon.in	Amazon.

