E-retail factors for customer activation and retention

Submitted by:

C.S.Manjunath Reddy

ACKNOWLEDGMENT

I would like to thank FlipRobo for giving me this opportunity. The DataTrained institute classes helped me to solve this problem.

The language used for this project is Python with Pandas, NumPy. I referred to the websites seaborn.pydata, matplotlib.org for visualization purpose, stackoverflow.com to solve the doubts.

INTRODUCTION

- Business Problem Framing

  Customer satisfaction is most important for any business development. For this project, the business problem is which type of customers are much interested to do online purchases and who will stay back for online purchases.

- Conceptual Background of the Domain Problem

  The project is on online purchase customers' retention. We used Python, Pandas, Matplotlib, and Seaborn for this project analysis.

Analytical Problem Framing

Descriptive Statistics:

The data set contains categorical data. With the help of "pandas.describe()" function we got information of descriptive statistics for categorical data (unique value, Top most frequent occurred value, Frequency of topmost frequently occurred value).

Visualization:

I used Seaborn and Matplotlib to analyze the given data with visualization.

Observations from the analyzed data:

** The data set contains both Female and Male data. Most Females from the age of 21 – 50 years are much interested to do online shopping, while most Males from the age of 31 – 50 years are interested to do online shopping.

** The majority of the customers are from Delhi City.

** The customers who have 4 years or above experience in online shopping made most purchases when compared to customers below or equal to 4 years of experience.

**70% of the customers feel safe to do online shopping with their own smartphone and mobile data.

**80% of the customers use the Google Chrome browser.

** Customers when they visit for the first time they use Search Engine but later half of the customers changed to different channels(app, email, Social Media) mostly to do online shopping through company app.

** Customers who spent more than 15 minutes did more purchases than those who spent less time in the past 1 year.

** As the shopping experience increase customers like to use credit/debit card and e-wallet payment.

**50% of customers abandon the cart for the reason of Better alternative offer and the remaining customers abandon because of promo code not being applicable, change in price, lack of trust.

**93.3% of customers gave a good ratings to do online shopping whereas 6.6% of customers feel bad, the customers who provided bad ratings are from the age group of 41 – 50 years mainly from the cities Delhi and Bangalore cities.

** Most of the customers are interested to do online shopping on Amazon.in depending on the value of money, trust, empathy, security, delivery time, website user friendly, recommending and the next most interested website is FlipKart.com.

- Data Sources and their formats

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 269 entries, 0 to 268
Data columns (total 71 columns):
 #   Column                                                Non-Null Count  Dtype
---  ------                                                --------------  -----
 0   Gender                                                269 non-null    object
 1   Age                                                   269 non-null    object
 2   City                                                  269 non-null    object
 3   Pincode                                               269 non-null    int64
 4   Shopping years                                        269 non-null    object
 5   Online purchase in the past 1 year                    269 non-null    object
 6   Internet access                                       269 non-null    object
 7   Access device                                         269 non-null    object
 8   Screen size of your mobile device                     269 non-null    object
 9   OS of device                                          269 non-null    object
 10  Browser                                               269 non-null    object
 11  Channel                                               269 non-null    object
 12  Medium of next visit                                  269 non-null    object
 13  Explore time                                          269 non-null    object
 14  Preferred payment option                              269 non-null    object
 15  Abandon frequency                                     269 non-null    object
 16  Abandon reason                                        269 non-null    object
 17  Easy to read and understand content                   269 non-null    object
 18  Information on similar product                        269 non-null    object
 19  Complete information on listed seller and product     269 non-null    object
 20  All relevant information on listed products           269 non-null    object
 21  Ease of navigation in website                         269 non-null    object
 22  Loading and processing speed                          269 non-null    object
 23  User friendly Interface                               269 non-null    object
 24  Convenient Payment methods                            269 non-null    object
 25  Trust for stipulated time                             269 non-null    object
```

```
26  Empathy                                                    269 non-null    object
27  Customer privacy gurantee                                  269 non-null    object
28  Responsiveness/availability of communication channels      269 non-null    object
29  Monetary benefit and discounts                             269 non-null    object
30  Enjoyment derived                                          269 non-null    object
31  Convenience/flexiblility                                   269 non-null    object
32  Return and replacement policy                              269 non-null    object
33  Access to loyalty programs                                 269 non-null    object
34  Display of quality information                             269 non-null    object
35  Satisfaction                                               269 non-null    object
36  Net Benefit                                                269 non-null    object
37  Trust                                                      269 non-null    object
38  Wide variety of listed product                             269 non-null    object
39  Complete and relevant product information                  269 non-null    object
40  Monetary savings                                           269 non-null    object
41  Convenience of patronizing                                 269 non-null    object
42  Sense of adventure                                         269 non-null    object
43  Enhancement of social status                               269 non-null    object
44  Gratification                                              269 non-null    object
45  Fulfillment of certain roles                               269 non-null    object
46  Value for money spent                                      269 non-null    object
47  Online retailers customer shopped from                     269 non-null    object
48  Easy to use website/application                            269 non-null    object
49  visual appeal                                              269 non-null    object
50  Wild variety of product on offer                           269 non-null    object
51  Complete, relevant description information of products     269 non-null    object
52  Loading time                                               269 non-null    object
53  Reliability                                                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 efficiency                                         269 non-null    object
 70  Recommended online retailer                                269 non-null    object
dtypes: int64(1), object(70)
```

With the above screenshots, we can see that there are categorical data in all the columns except pincode column.

- Data Preprocessing Done

The data set contains no null values. For better understanding, I changed the column names.

- Hardware and Software Requirements and Tools Used

The tools/libraries used for the project are:

Pandas

NumPy

Matplotlib

Seaborn .

CONCLUSION

Key Findings and Conclusions of the Study

Customers are more interested to select "Amazon.in" for their online shopping (depending on the value of money, trust, empathy, security, delivery time, website user friendly, recommending) and the next website in the line is "FlipKart.com". but, these two websites are slow in loading the page on promotions and sales periods this might be because of the high volume of customers browsing the website at the same time. So, at these periods websites should update their websites to speed up the process.