

A Case Study from Indian E-commerce Customers (E-retail Factors for Customer Activation and Retention)

Data Analysis

Data Preprocessing

Importing Libraries:

Import all the necessary libraries for the project

Importing the required dataset:

Using pandas, we can read the datasets in excel and csv file formats. It is the e-commerce data collected from the users about so many factors which affects the customer retention and activation of the e-retail businesses.

```
In [2]: import pandas as pd
import numpy as np
import csv

df=pd.read_excel(r'C:/Users/hp/Datascience/customer_retention_dataset.xlsx')
df.head()
```

Out[2]:

	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? \t\t\t\t\t\t\t\t	10 What is the operating system (OS) of your device? \t\t\t\t\t\t\t\t	...	Longer time to get logged in (promotion, sales period)	Longer time in displaying graphics and photos (promotion, sales period)	La declarati of pri (promotic sales perio
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.cc
1	Female	21-30 years	Delhi	110030	Above 4 years	41 times and above	Wi-Fi	Smartphone	4.7 inches	IOS/Mac	...	Amazon.in, Flipkart.com	Myntra.com	snapdeal.cc
2	Female	21-30 years	Greater Noida	201308	3-4 years	41 times and above	Mobile Internet	Smartphone	5.5 inches	Android	...	Myntra.com	Myntra.com	Myntra.cc
3	Male	21-30 years	Karnal	132001	3-4 years	Less than 10 times	Mobile Internet	Smartphone	5.5 inches	IOS/Mac	...	Snapdeal.com	Myntra.com, Snapdeal.com	Myntra.cc

Understanding the data:

- Checked for the **shape** of the dataset, data types of each column
- Checked for **null values** and **special characters** in the dataset, did not find any.
- All the columns have **Categorical Data** about the Website names. It is the data collected from a research conducted to know about the customers' experiences who shop online. If it is numerical data, we can interpret the data for its distribution, skewness, Outliers and process it for prediction

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Data Visualization

The columns in the data contain feedback questions, the response of which the customers have chosen their interested websites. The questionnaire gives most sensible data which any e-retail company expects for improving their businesses in terms of customer retention and activation.

It is observed from the visualizations that most of the customers are **female**. Also the age group of the customers who took part in the research is more in between **20 years and 50 years**. Most of them are using their **smart phones** to shop online.

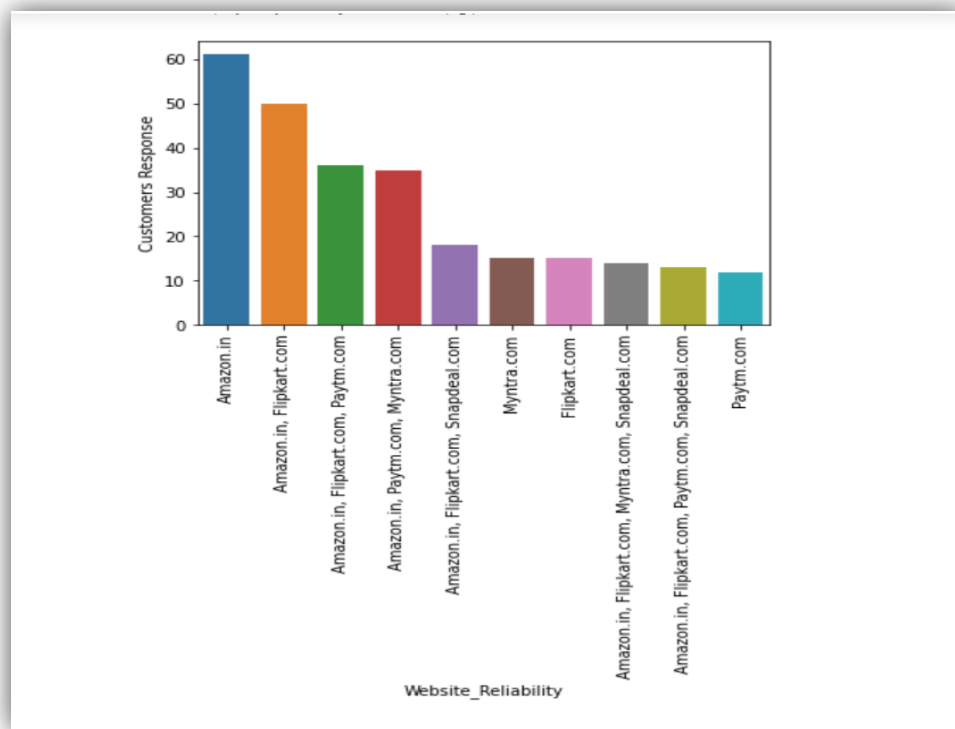
Google Chrome is observed to be most used browser for shopping online. Most of the customers are paying online through **Credit/Debit Cards**. The data also carries information about the opinions regarding the user friendliness of each user interface and the reliability of them.

For it is online shopping, it is the most important thing for the e-commerce people to provide utmost **privacy of their payment details**. It is observed that the most of the customers are satisfied.

From the Data Visualization observations:

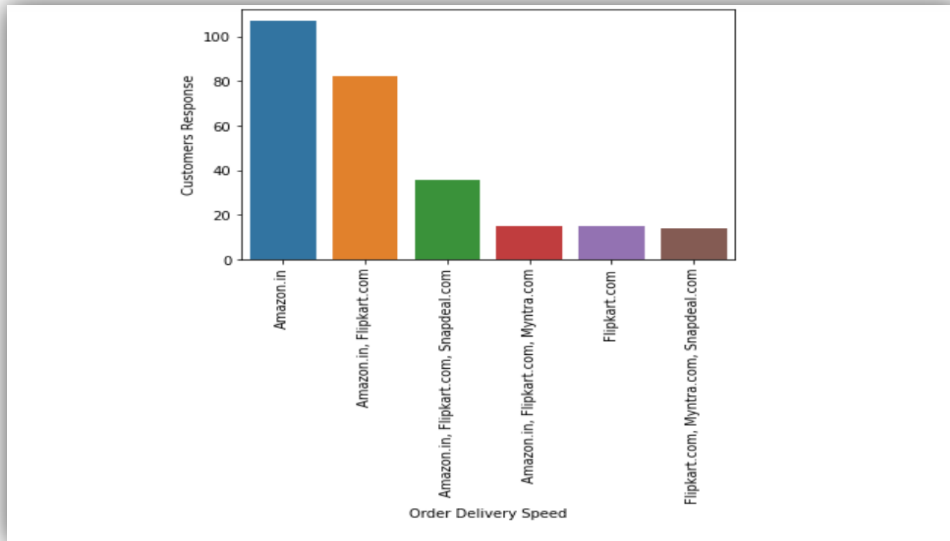
In most of the voting polls conducted, the customers have to select a website which caters to their best of needs in different categories:

- Website Reliability

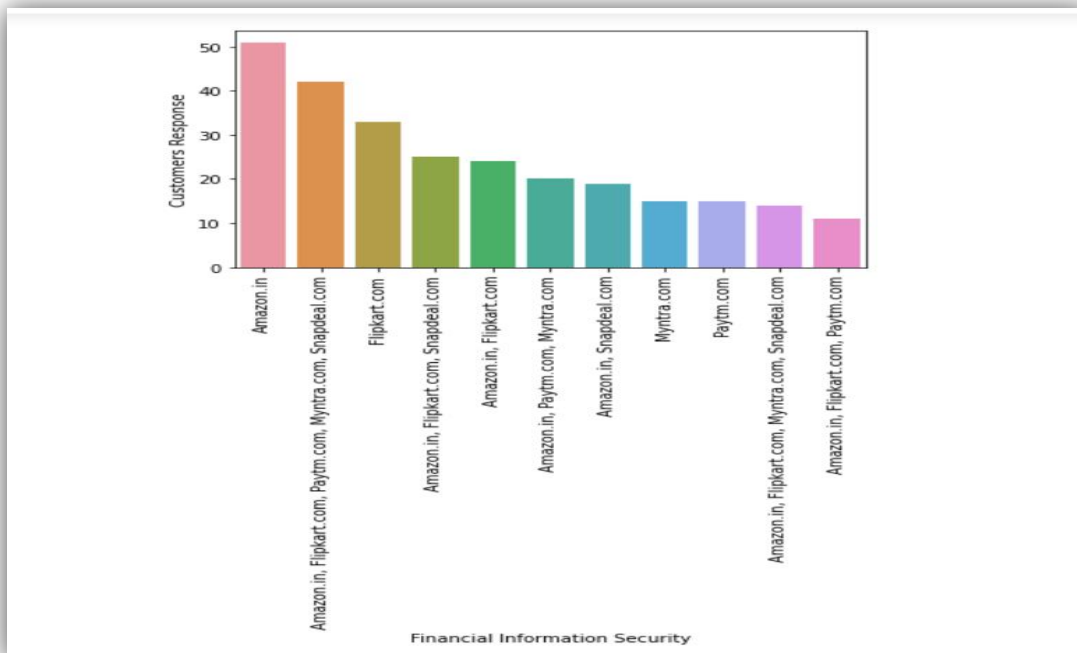


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- Order Delivery Speed

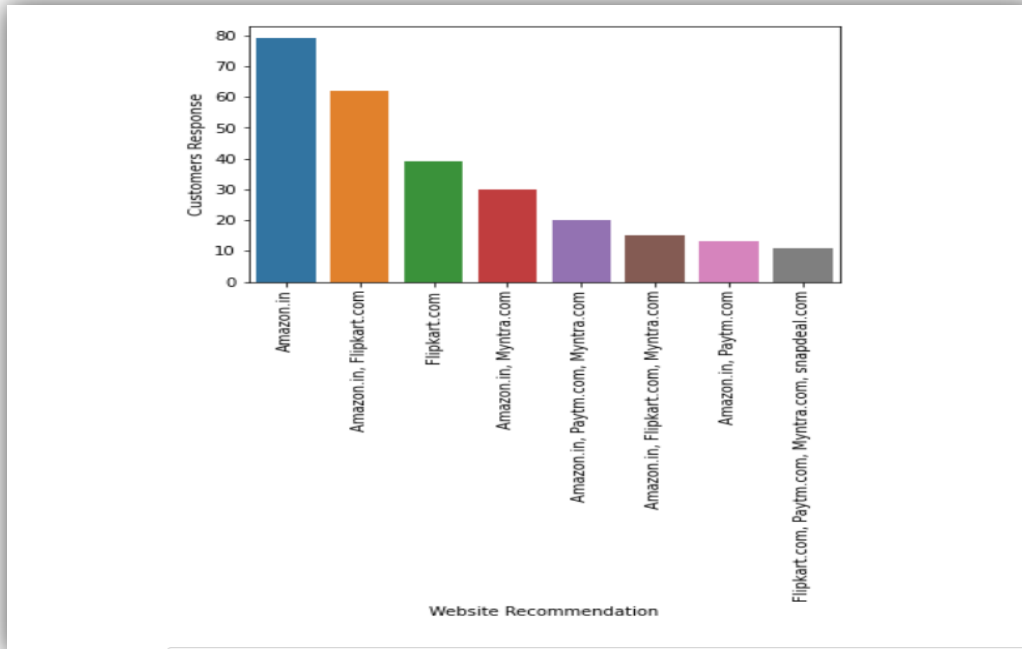


- Financial Information Security



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- Recommended Website



From all the above visualizations, we observe most of the customers feel comfortable shopping through Amazon for their order delivery speed, privacy adherence, etc.

Customers are finding it more reliable and even most of the customers are recommending the same website for their friends.