



Customer Retention Project

Submitted by:
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Internship 28

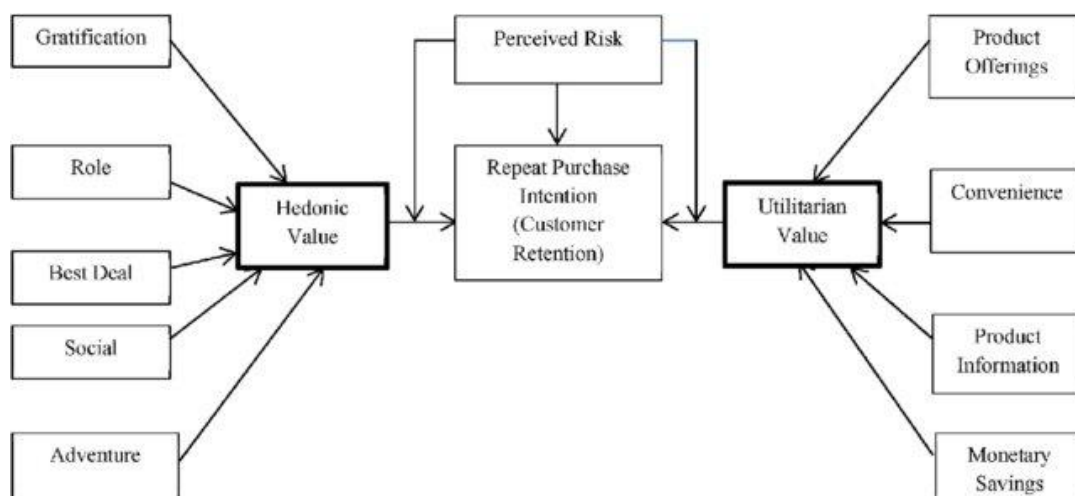
ACKNOWLEDGMENT

The project customer retention on various e-commerce platform. The data includes demographic information of the respondents such as age gender and cities. It also serves as the satisfaction surveys of major Indian e-commerce website such as Amazon, Flip-kart, snapdeal, Myntra and Paytm on various Aspects such as ease of usage, monetary savings etc. My mentor Khushboo Garg has provided me with the data-set and she was of great help in framing the business problem and assisted me in addressing the solution

INTRODUCTION

- **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.



- **Conceptual Background of the Domain Problem**

Shopping or buying new things is a never ending process and with the advancement of internet the way of shopping has also changed, now everybody wants to get new things without leaving their home and with this change in human behaviour a new business form has been evolved, Online retail business and with the increasing use of internet, the popularity of online business has already increased, with the result of which, online marketplace is one of the widely used marketplace in the whole world, lots of player have joined this league, by promoting or selling their products online and this made online retail business highly competitive.

And in this Highly competitive business space, data Analysis becomes crucial for any business to succeed, Data collected by the seller at the time of selling or promoting the product and it is analyzed and studied to make better business decisions, it is very important to understand the behaviour, pattern and sentiments of the buyer/ customer, so that they can promote the business based on the customer needs. And It is best done by proper collection of data and analyzing the data and making appropriate business decision based on the insight collected from the data

- **Review of Literature**

The history of ecommerce started over 40 years ago, when the introduction of early technology like Electronic Data Interchange (EDI) and teleshopping in the 1970s paved the way for the modern-day ecommerce store as we know it today.

The history of ecommerce is closely intertwined with the history of the internet. Online shopping became possible when the internet was opened to the public in

1991. Amazon was one of the first ecommerce sites in the US to start selling products online and thousands of businesses have followed since.

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- **Motivation for the Problem Undertaken**

The data-set was provided by flip Robo Technologies for detailed analysis of customer database, in the growing world of online business, new players are entering the market each day, so it is very important for the business to conduct depth analyse to grow their business, the business wants to know how the customer feels about the shopping through their app or website such as sense of financial security or availability of various choices or variety of products, so that they can provide. It is very important for business to analyze

and identify the trends through the data before implementing any predictive model or algorithm

Analytical Problem Framing

- Data Sources and their formats**

The data was collected from the customer through regular survey, the dataset was provided to me by Flip Robo technologies as a part of a Project'

The csv Files were provided to me, first file had the raw data and second file had the encoded data, I have used raw data for visualization and analysis

The data-set contains 269 rows and 71 columns and all the columns have categorical data, which includes demographic data (gender, age group, cities),

5 Point likert scale data (strongly Agree, Disagree etc) and selection of mobile app and website based on the overall experience.

	1Gender 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? (inches)	10 What is the operating system (OS) of your device? (inches)	Longer time to get logged in (promotion, sales period)	Longer time in displaying graphics and photos (promotion, sales period)	declar of (promc sales pe	
0	Male	31-40 years	Delhi	110009	Above 4 years	31-40 times	Dial-up	Desktop	Others	Window/windows Mobile	...	Amazon.in	Amazon.in	Flipkar
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	snapdea
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
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
4	Female	21-30 years	Bangalore	530068	2-3 years	11-20 times	Wi-Fi	Smartphone	4.7 inches	IOS/Mac	...	Flipkart.com, Paytm.com	Paytm.com	Paytm
...
264	Female	21-30 years	Solan	173212	1-2 years	Less than 10 times	Mobile Internet	Smartphone	5.5 inches	Android	...	Amazon.in	Amazon.in	Amaz
265	Female	31-40 years	Ghaziabad	201008	1-2 years	31-40 times	Mobile Internet	Smartphone	Others	Android	...	Flipkart.com	Flipkart.com	Flipkar
266	Female	41-50 yaers	Bangalore	560010	2-3 years	Less than 10 times	Mobile internet	Laptop	Others	Window/windows Mobile	...	Amazon.in	Snapdeal.com	Amaz
267	Female	Less than 20 years	Solan	173229	2-3 years	Less than 10 times	Wi-Fi	Smartphone	5.5 inches	Android	...	Amazon.in	Amazon.in, Myntra.com, Snapdeal.com	Amaz
268	Female	41-50 yaers	Ghaziabad	201009	2-3 years	31-40 times	Mobile Internet	Smartphone	5.5 inches	Android	...	Amazon.in	Amazon.in	Amaz

269 rows × 71 columns

- **Data Pre-processing**

First we checked the the data set for any null values, using python command, then we has a glimpse of all the columns in the data-set and then we checked how many unique values we have in each column that we we came to the conclusion that all the columns in the data set are categorical

- **Hardware and software requirement and tools used**

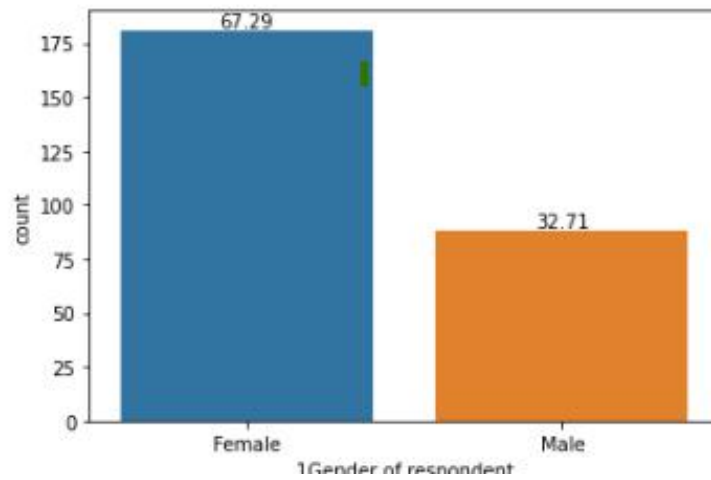
A PC with pre-install Anaconda Navigator has been used, Jupiter Notebook was used as a platform to run Python, different python libraries were used such as pandas for data manipulation, numpy for calculations and sea-born and matplotlib for visualization

Analysis and visualization

- **Distribution of Data based on Demographic Information**

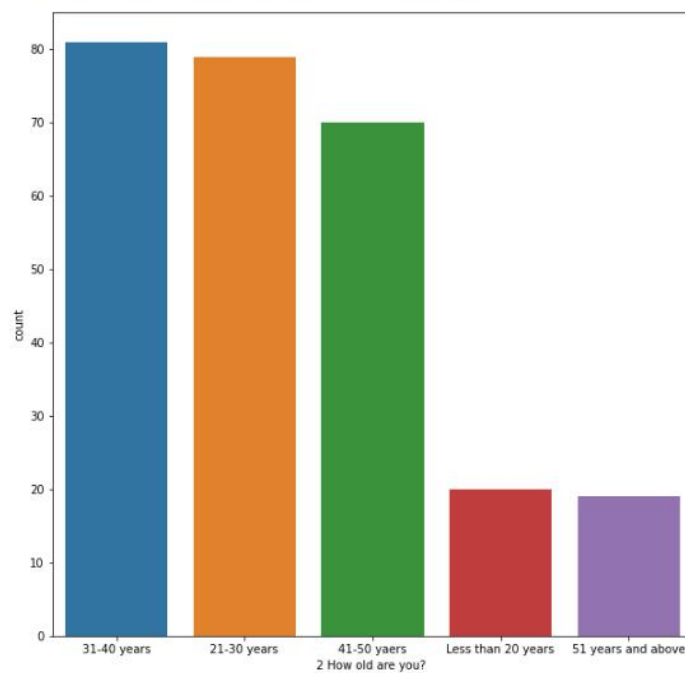
■ Gender

```
Index(['Female', 'Male'], dtype='object')
```

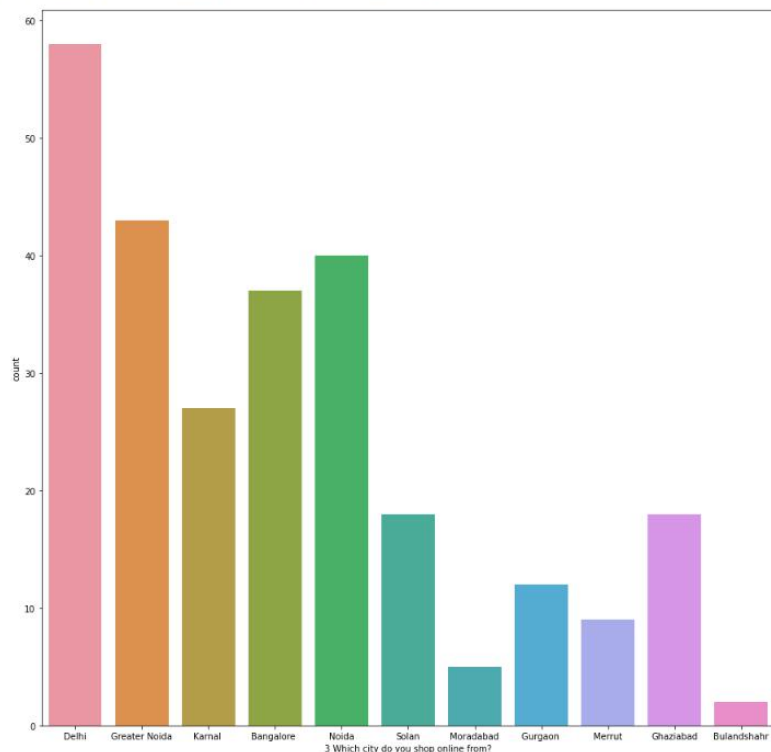


■ Age Group

```
<AxesSubplot:xlabel='2 How old are you? ', ylabel='count'>
```



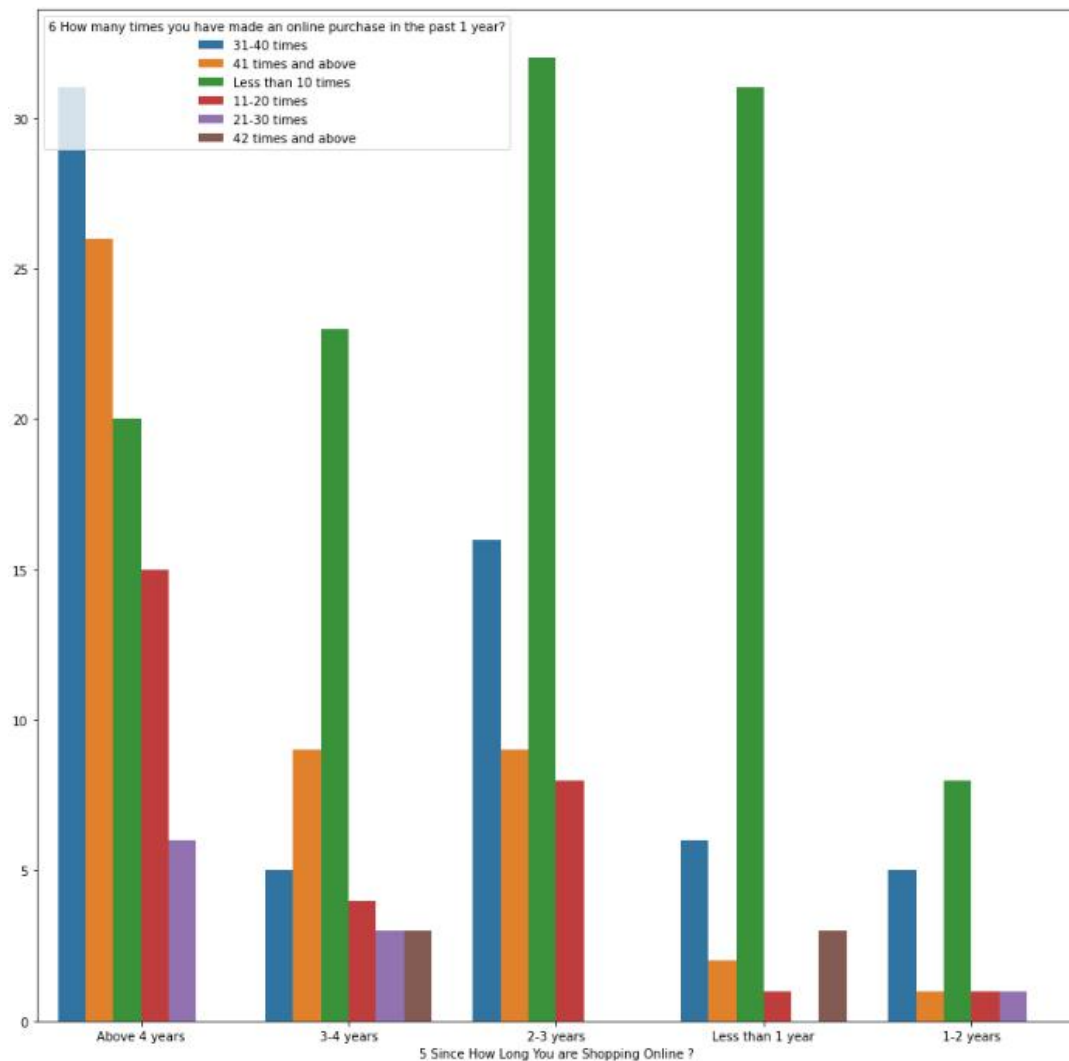
■ Location (cities)



from the above bar graphs we can conclude that:

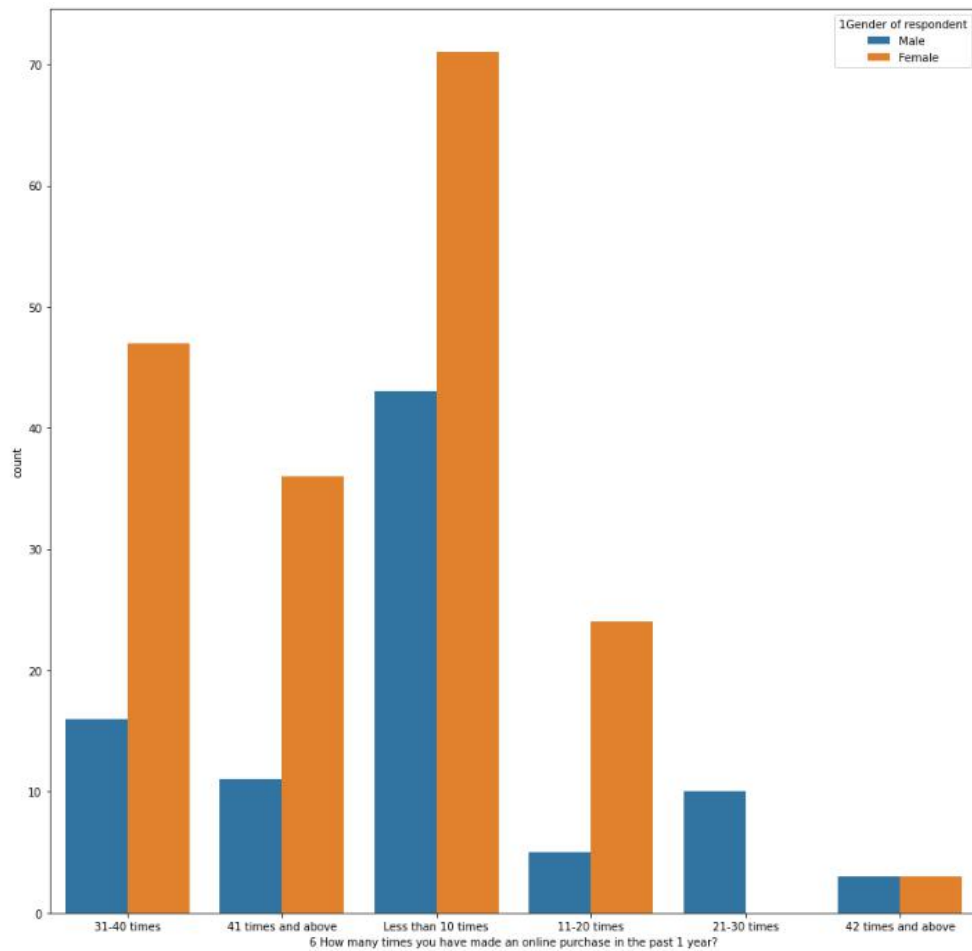
- around 68% of the respondent are female however only 32% of the respondents are male
- majority of the shopper belongs to the 31-40 age group followed by 21-20 age group, however the youngest and eldest age group are least involved in online shopping
- most of the online shoppers belongs to the major cities such as Delhi, Bangalore and Noida, however people from smaller cities are less involved in shopping online

- **Comparing Time span of a customer with frequency of Purchase**



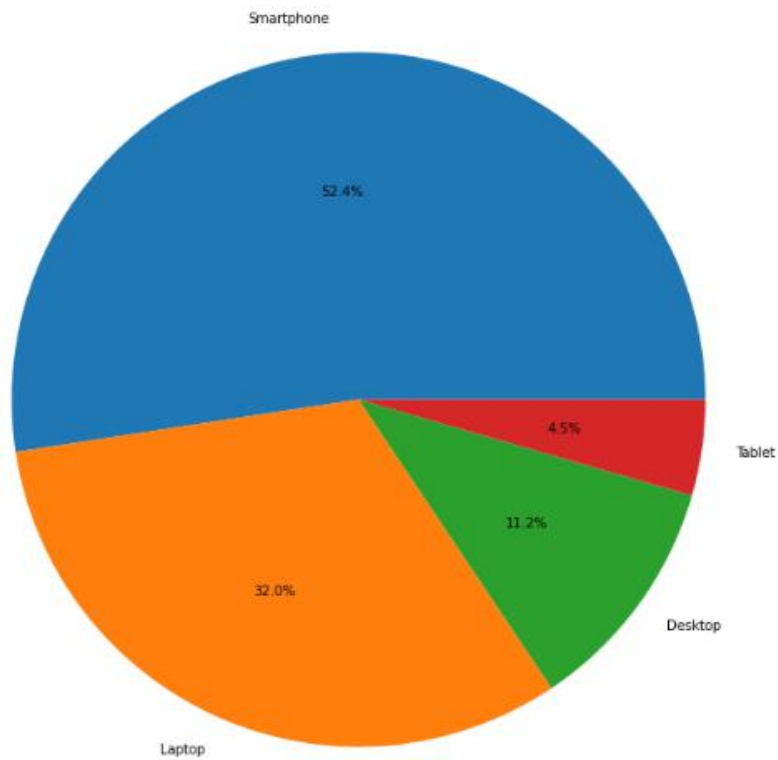
when we compare time span of online consumer with the frequency we see that new consumers are tends to shop less frequently, however the oldest consumer tends to shop 31-40 times a year

- **Frequency of purchase based on Gender**



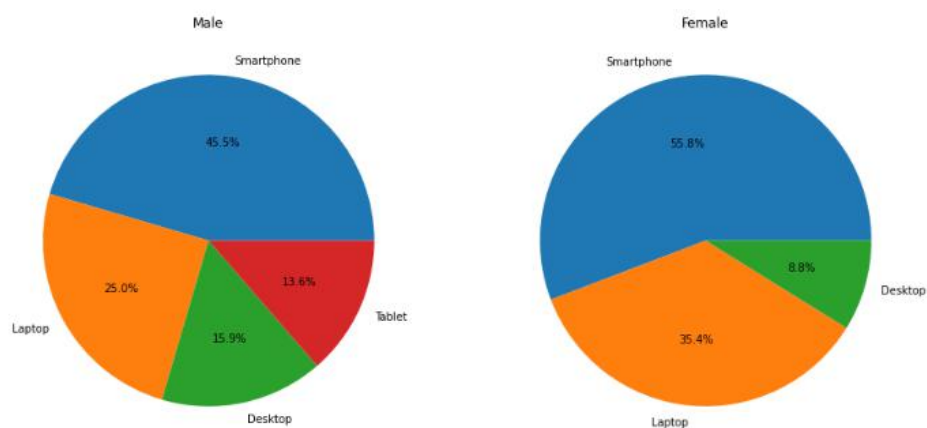
here we see that females are more frequent online buyer as compared to male

- **Distribution of data by device used for shopping**



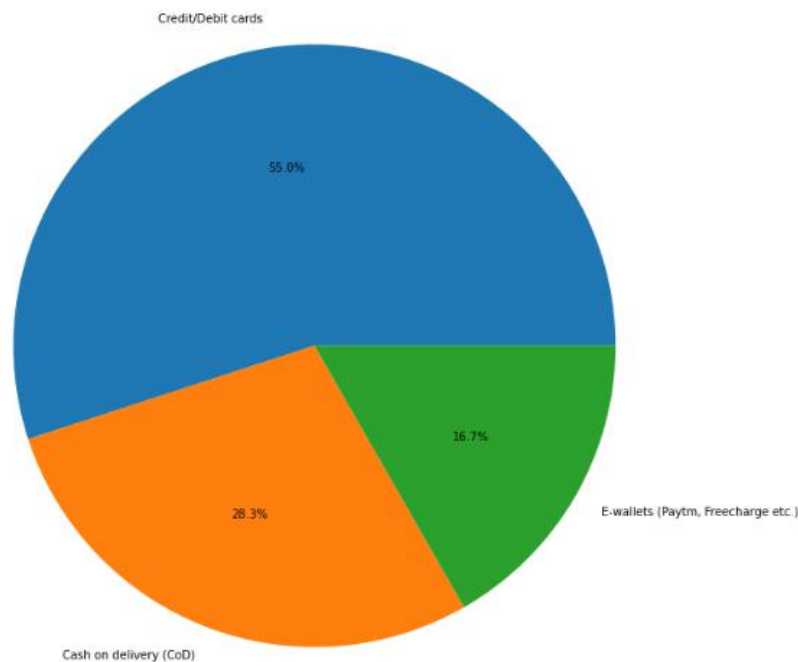
more than 50% of the users use smart phone as the source for online shopping, followed by Laptop which is 32%

- **Distribution of data by device used for shopping bifurcated by Gender**



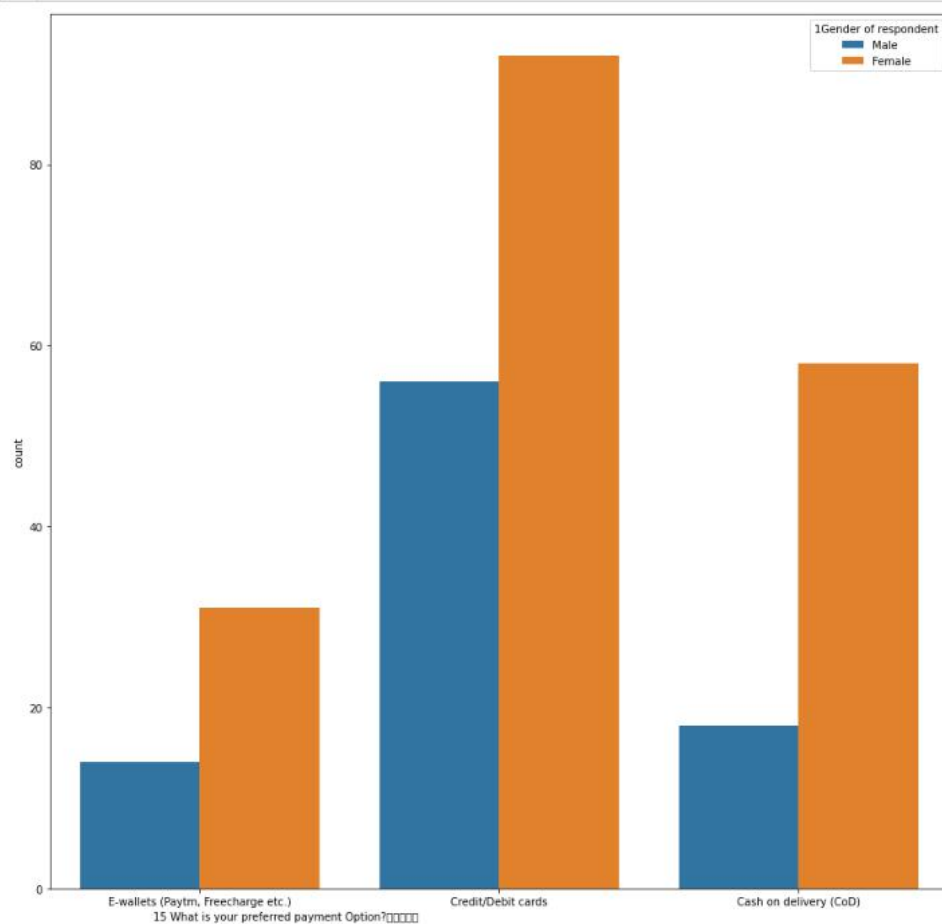
smart phone, is the dominant device for shopping online for both the genders however we noticed that female shopper dont use tablets for shopping purposes

- **Distribution of Data by payment method**



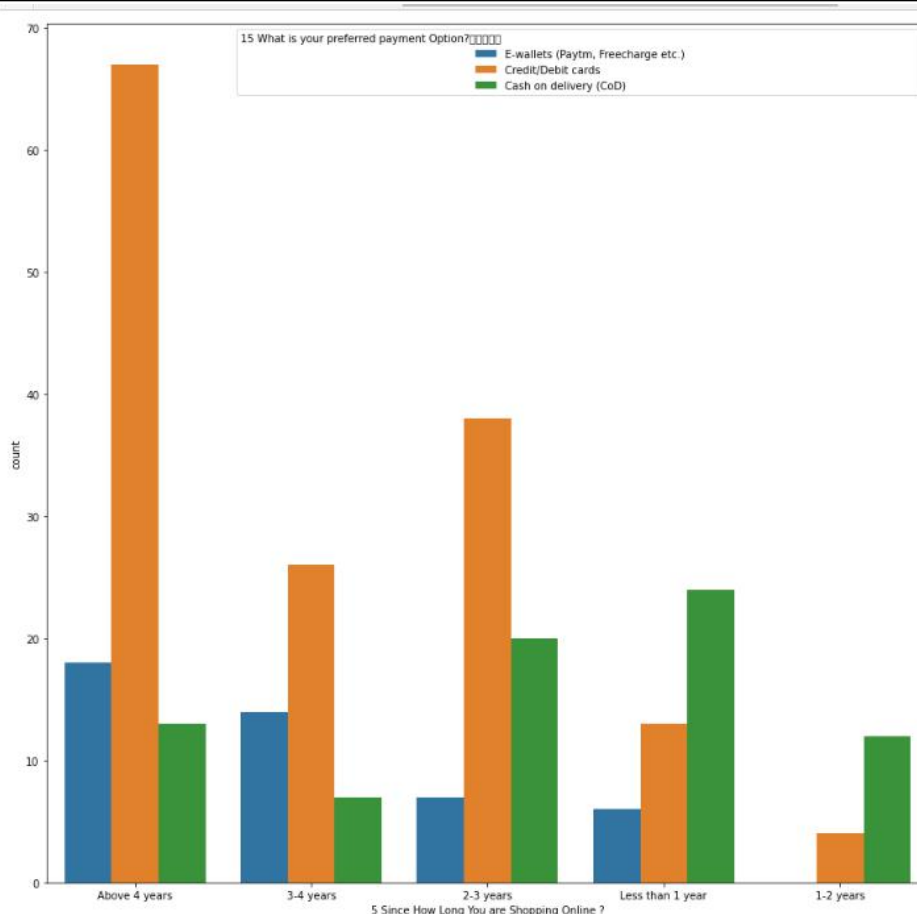
here we see an interesting trend that more than 50% of the respondent uses credit/debit card to make the payment, however only 28.3% of the respondents uses COD

- **Distribution of Data by payment method bifurcated by Gender**



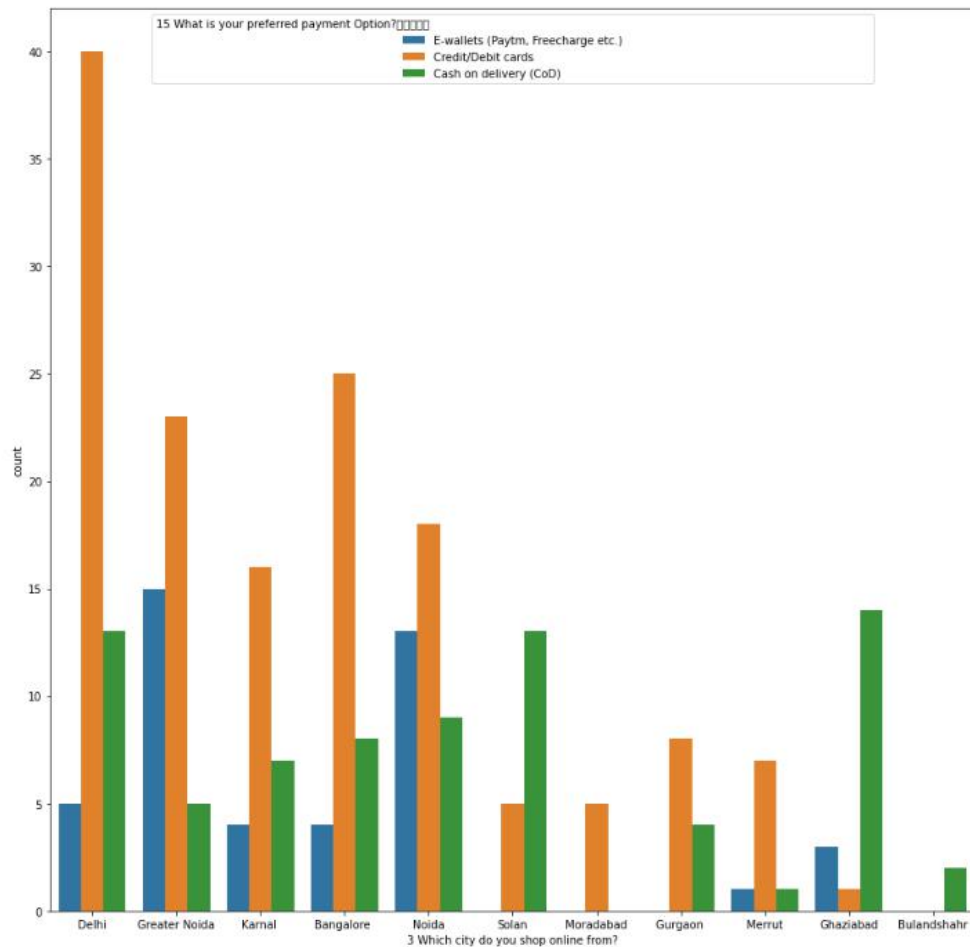
Inspite of Credit/debit card being the most preferred mode of payment by the user, but when we bifurcate it by gender we can see that COD is quite popular among female respondents

- **Distribution of Data by payment method bifurcated by Time span of a customer**



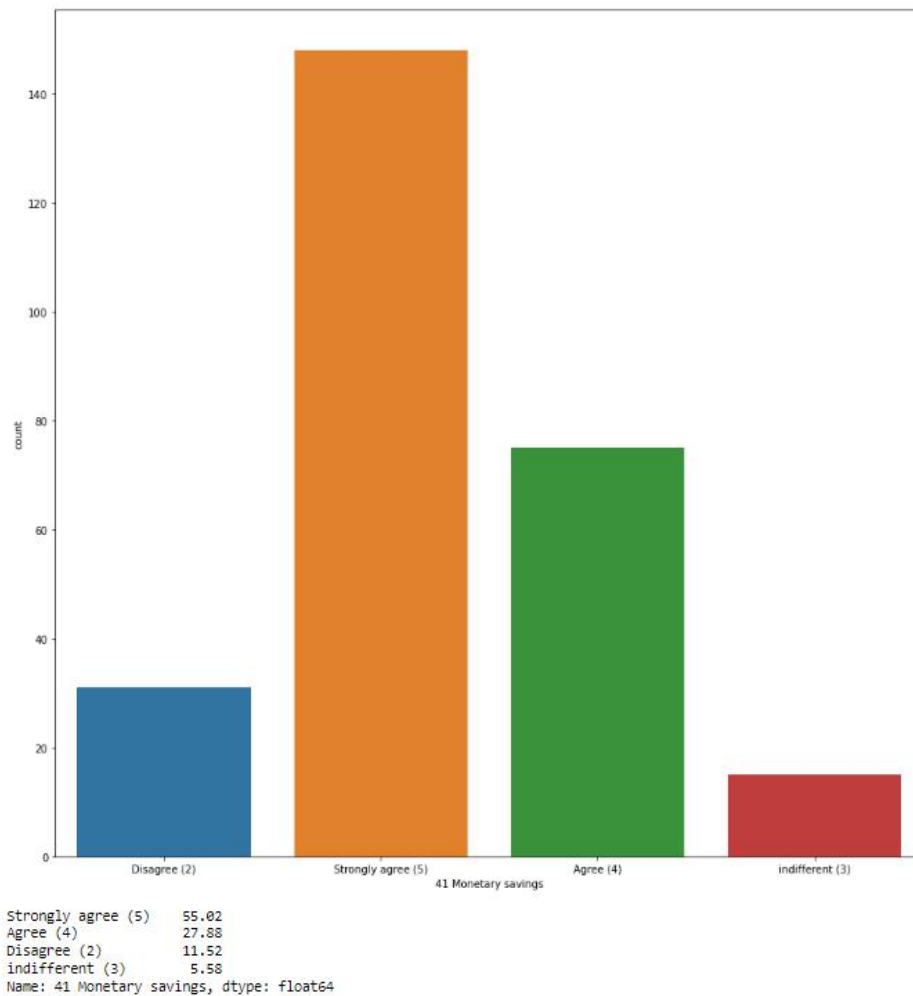
Here we see that new customer are more reluctant to use any digital form of payment and they often use COD(Cash on delivery), however old customer have developed trust in the app or website. Hence they more likely to use digital form of payment such as credit card or ewallet, for these typ of customer COD is the least preferred option

- **Distribution of Data by payment method bifurcated by Cities**



here we can see that shoppers from bigger cities like Delhi , Bangalore, Noida, Credit card is the most preferred mode of payment, but when we check the pattern of the smaller cities we see that people are more reluctant in using credit card or wallet, due to this COD is the most popular form of payment in these cities

- **Monetary Saving**



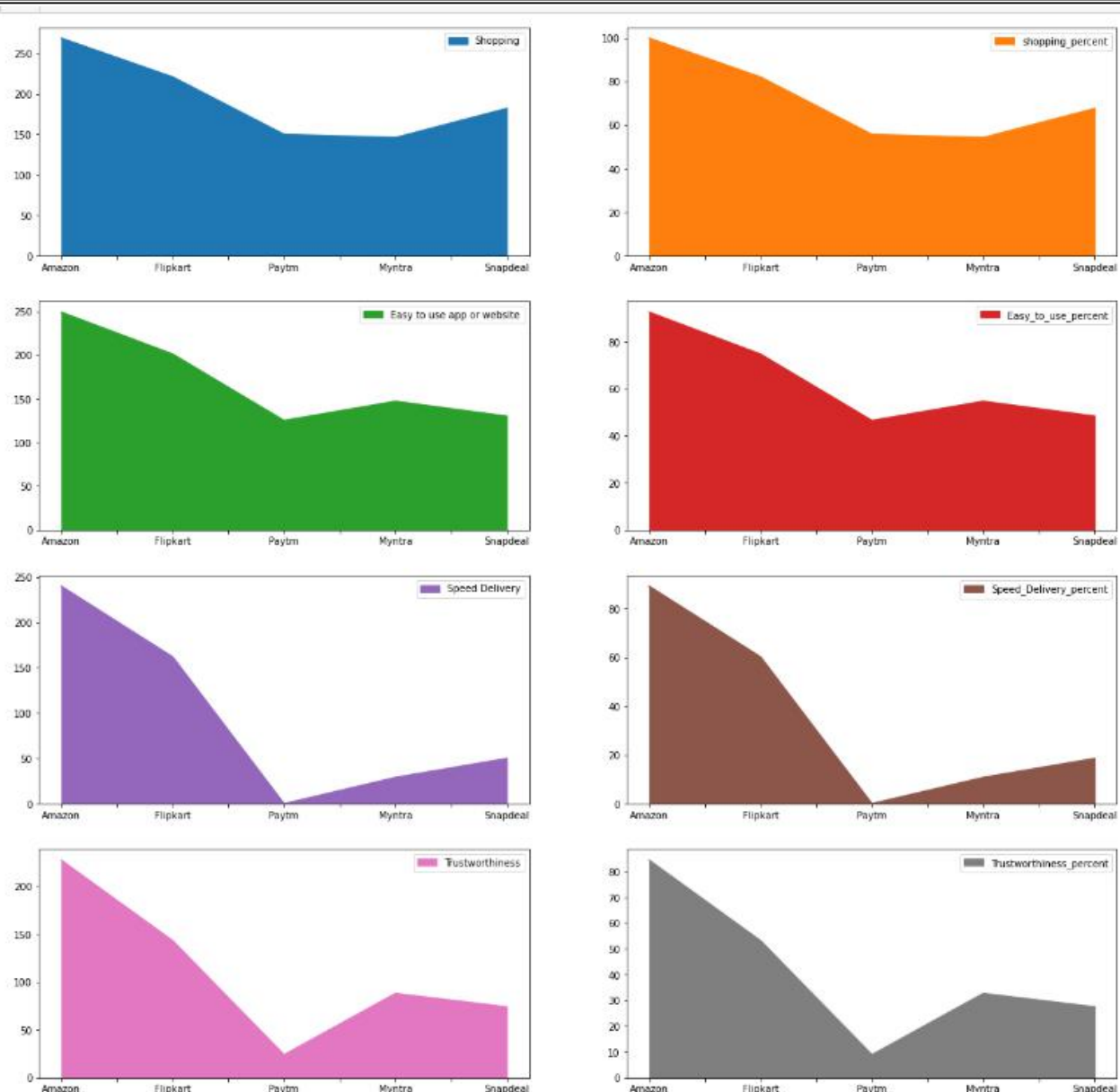
more than 50% of the respondent believes that monetary saving is one of the reason for shopping online

30 Online shopping gives monetary benefit and discounts 41 Monetary savings 39 Offering a wide variety of listed product in several category

Strongly Agree	39.03	55.02	41.26
Agree	31.60	27.88	34.94
Indifferent	18.59	5.58	21.19
Strongly Disagree	6.69	NaN	NaN
Disagree	4.09	11.52	2.60

by looking at the above table we can say that people prefer online shopping because it provides monetary discounts and savings and also because they get wide variety of product when compared to shopping in person

	Shopping	shopping_percent	Easy to use app or website	Easy_to_use_percent	Speed Delivery	Speed_Delivery_percent	Trustworthiness	Trustworthiness_percent
Amazon	269	100.00	249	92.57	240.0	89.22	227	84.39
Flipkart	221	82.16	201	74.72	162.0	60.22	143	53.16
Paytm	150	55.76	125	46.47	0.0	0.00	24	8.92
Myntra	146	54.28	147	54.65	29.0	10.78	88	32.71
Snapdeal	182	67.66	130	48.33	50.0	18.59	74	27.51



from the list of following features : speed, delivery, shopping and trustworthiness we can see that amazon is the most preferred shopping app or website because 100% of the respondent have used amazon for their shopping needs flipkart is the second preferred choice after amazon

more than 80% of the respondent believes that amazon have easy to use interface, provide fast delivery and have trustworthiness element

however, for flipkart the average rating is 70% for the above same parameters

least preferred brand of all is paytm, and in terms of delivery speed all the 269 believes that paytm have issues with the delivery speed

Conclusion

From the above analysis we can conclude that the buying behaviour and patterns of a consumer highly depends on the demographic details, for instance spending habits for male and female are completely differently, similarly consumer from smaller town or a new consumer payment methods can be completely different from a person who is purchasing from a metro cities or have spent years shopping online,

One more thing we can conclude from the above analysis is that trust on these shopping website or apps gradually increases from time to time, for example, new consumer are bit reluctant in sharing their financial information hence uses COD as the payment mode, however old consumer preferred using credit cards or ewallet