



**E-RETAIL FACTORS FOR CUSTOMER ACTIVATION AND  
RETENTION: A CASE STUDY FROM INDIAN E-COMMERCE  
CUSTOMERS**

Submitted by:

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## **ACKNOWLEDGMENT**

This project includes the professional reference of much external research analysis, done by various organizations and individuals. Such references are mentioned below:

1. Consumer's perceptions of website's utilitarian and hedonic attributes and online purchase intentions: A cognitive–affective attitude approach  
<https://www.sciencedirect.com/science/article/pii/S2444969516300191>
2. <https://journals.vgtu.lt/index.php/BTP/article/view/12143>
3. Hedonic and Utilitarian Aspects of Consumer Behavior: an attitudinal  
<https://www.acrwebsite.org/volumes/6348/volumes/v12/NA>
4. <https://www.geeksforgeeks.org>
5. <https://en.wikipedia.org/wiki/Wiki>
6. <https://www.bigcommerce.com/blog/ecommerce-customer-analytics/#use-customer-analytics-to-optimize-your-online-business>
7. <https://supermetrics.com/blog/ecommerce-analytics>
8. <https://acquireconvert.com/ecommerce-data-analysis/>

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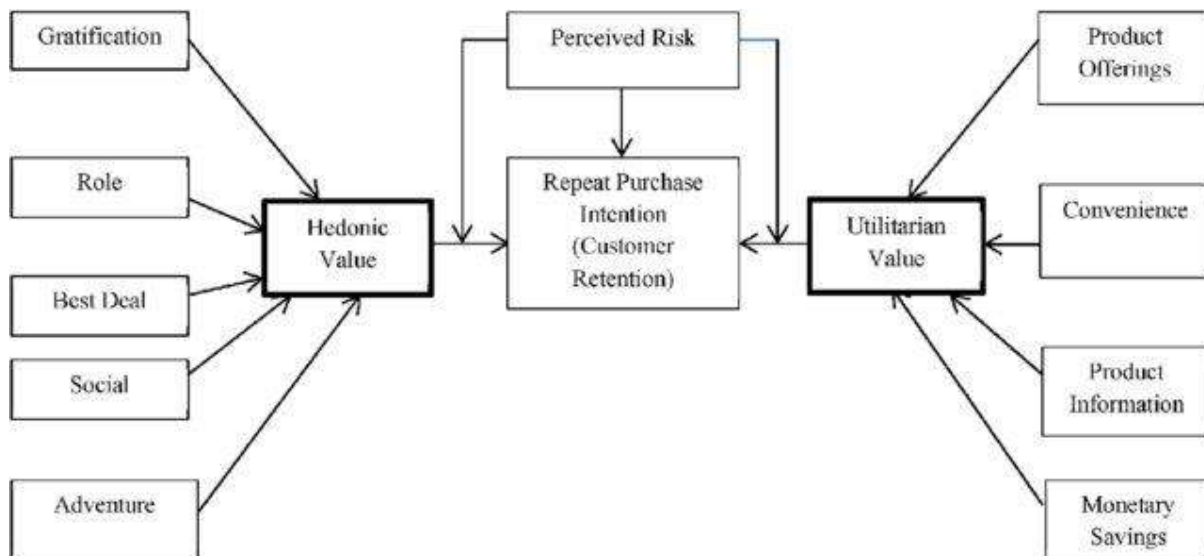
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## Case Study explanation

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

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 challenge:** Predicting the factors that impact the most or increase the probability of customer to return for repurchase from the same e-commerce website.

To successfully retain customers, it is often required to identify the customers who are less likely to return i.e. to point out the customers who require some kind of marketing action, to be retained. To the data scientist, this is an analytical challenge of finding the factors impacting retention probability of each customer in the customer base.

## Introduction

Electronic commerce or commonly known as e-commerce, in simple terms, is buying, selling and exchange of services through internet. In the last decade with the increased penetration of internet and smartphones, e-commerce technology has developed rapidly which made easier for people to purchase anything from anywhere. Convenience of shopping, sitting at home or office with competitive prices and fast delivery, has largely encouraged the people to shop online. Trust has been found to be crucial for turning site visitors into buyers (i.e. activation of customer).

Consumer activation helps in promoting the retailer-customer relationship and helps companies create much more well-versed and informed strategies. It gives companies an idea into how they can consistently improve their quality of content so that the customers remain engaged with them. Customer activation strategy involves detailed planning to motivate existing customers to proceed to the next level of their lifecycle faster. It can be for an existing active customer, a dormant customer, customer turning into an advocate, or also for a one-time customer that recently turned into a frequent user.

Activation or acquisition and retention are like the two wings of a bird: if either one is missing, then flight becomes impossible. In the same way, a company needs to both acquire and then retain customers in order to achieve success in the subscription world. Acquisition grows customer base whereas retention grows a customer's lifetime value.

In this digital world, we can take into consideration the behavior of the customer regardless of their numbers. Understanding the customers by their demographic data shows the location of the customer. But understanding their behavior shows what interests them, we need to understand their reactions. If we send irrelevant content repeatedly, chances are high that customer will unsubscribe the website, never visit or purchase from the website in future.

When we have a customer's behavioral data, we can get a strong impression of their next step in the lifecycle. The browsing, searching, and social activities of a persona can indicate their interest. The medium, that they use to get the information about the e-commerce company, shows what are the channels they prefer and the content they need. Knowing the customer encourages repeat purchases, cross-selling, and upselling other products/services from the company and ultimately, turns them into brand advocates.

**Getting an order from a current customer is easier and less expensive than attracting and converting someone new. High customer churn with low customer retention means customers are going out quicker than customers are coming-in.** Customer retention rate measures how many existing customers are still with the company at the end of the certain period. So, it is important to acquire new customer but it is more important to retain old customers as most of the part of the company revenue comes from old customers.

In this study, efforts being made to read and analyze the impact of different factors on customer activation and retention and also tried to know the customer's choice of e-retailer.

## **Analytical problem framing and understanding:**

Problem framing is the foundation of all of the analytics, for if we cannot clarify a problem and articulate it in such a way that leads to a shared understanding of its significance, then we fall short of leading analytics change.

Analytic problem framing involves translating the business problem in terms that can be addressed analytically via data and modeling. Analytic problem framing is the antithesis of merely working with the ready-to-hand data and seeing what comes of it, hoping for something insightful. Typically, the process moves on from here to data collection, cleansing and transformation, methodology selection and model building.

## **Understanding Business problem:**

Large numbers of customer are getting attracted towards online retailing; this is because e-stores usually offer them a variety of services and products according to their preferences. Convenience, round the clock availability, flexible pricing, discounts as well as free door step delivery are some of the major benefits of shopping online.

Today e-commerce has become very big and booming industry and is generating huge business through e-trading. The rapid growth of E-commerce sector has a huge impact on market. The success of e-commerce totally depends on the responses of consumers and their buying behaviour. Reduced middle level of business, competitive pricing and door step delivery are the keys to success. Many studies show that this industry has overcome the traditional marketing practices, giving incentives to consumers buying behaviour, leading to huge accumulation of higher demand in this sector.

Indian market is considered as potential market as e-commerce is extracting huge business from the same. The innovations in technology are coming out very fast and get adopted in market too. The adoption of technology in consumer's life can change their expectations as life progresses. Hence inventions in e-commerce and its business style can be responsible for change in the buying behaviour.

This project attempts to understand and study the impact of e-commerce on consumer buying behaviour and what all factors can impact customer retention.

For better understanding of the problem it is necessary to know basics about the Consumer Behaviour.

## **Consumer Behavior in e-Commerce:**

First and foremost, e-commerce has changed consumers' expectations. Today's consumers expect a seamless personalized shopping experience. Customer experience is required to be consistent (no matter what device they are using), engaging, and relevant.

Secondly, shopping has become even more of a social activity. With the explosion of social media over the past decade, it is only natural; people would want to share their shopping

experience with others. Digital marketing and online shopping platforms have made it easier for consumers to share their recent purchase or wish-list items, turning shopping into a social activity. Moreover, consumers are actively researching, seeking and relying on others' opinions and reviews.

According to a 2017 research by the Spiegel Research Centre, about 95% of people read customer reviews before making a purchase decision. Thanks to e-commerce platforms and social media, this task has become a piece of cake. Consumers have immediate, unlimited, and super-fast access to those reviews, with social platforms and online review sites a click away.

The bottom line is that along with the traditional consumer behavior, in e-commerce era consumers are more social and connected – being more susceptible to those social factors, but at the same time able to do more research and tap into the rational aspect of decision making.

### **Factors Influencing Consumer Behaviour :**

Consumer behavior is influenced by three major factors:

- **Personal factors** – Demographics (like age, gender, culture, socio-economic status, etc.).
- **Psychological factors** – A person's perceptions and attitudes. Consumer behavior is often influenced by a person's set of perceptions, likes, and dislikes, priorities, morals, and values.
- **Social factors** – Family, friends, social media; Peer pressure has a significant influence on consumer behavior. What our family members, classmates, neighbors, and acquaintances like, think, or do can play a major role in our decisions.

### **Explanation of terms used**

#### **Perceived Value:**

Perceived value has been conceptualized as what consumers get for what they give, or the consumer's overall evaluation of the utility of a product or service provision based on perceptions of what one receives for what one gives.

In general, consumers perceive value divided into utilitarian value by acquiring the product that necessitated the shopping trip while simultaneously and perceiving hedonic value associated with the enjoyment of the shopping experience itself.

Thus, perceived value is one of the most important concepts for understanding customers in the service industry. Value itself plays important role in predicting customers' choice and future repurchase intention.

### **Perceived Risk:**

Perceived risk is the uncertainty a **consumer** has when buying items. Every time a consumer considers buying a product, he or she has certain doubts about the product.

**Risk perception** is a **subjective** judgment that people make about the characteristics and severity of a **risk**. Risk perceptions are different for the real risks since they are affected by a wide range of **affective** (emotions, feelings, moods, etc.), **cognitive** (gravity of events, media coverage, risk-mitigating measures, etc.), contextual (framing of risk information, availability of alternative information sources, etc.), and individual (personality traits, previous experience, age, etc.) factors.

### **Customer Perceived Risk**

Risk concept is significant to comprehend the customer's evaluating and decision making to choose a particular brand. Perceived risk is so powerful in the customer behavior because customers are motivated to avoid making mistakes more than maximizing the purchasing utility. Risk perception and risk taking are a part of choice costs and it makes an important part of making a decision. In 1960 for the first time, Bauer defined the perceived risk as "Perceived risk subjectively in a situation of making choice purchasing behavior" and various researchers followed him to refine, develop and expand it until today. Definitions of risk showed that the risk perception is multidimensional and subjective. Customer's perceived risk could be a threat for firms as it reduces the customer's satisfaction.

Researchers found two-sided correlation between the customer's satisfaction and perceived risk. They noted that perceived risk has influence on the customer's satisfaction and on the other hand, customer's satisfaction affects the customer's perceived risk in future transaction. Thus, it is important for companies to increase their customer's satisfaction in order to increase the customer's future purchasing intention and gaining more profit for the company.

### **Understanding customer activation and retention and why they are important for e-commerce:**

Prospective customers continuously engage with the company and are impressed when they are offered appealing products. When even the most critical and effective marketing strategies are unable to lure the target audience into buying company's products, how customers can keep engaged and bring them back into buying the products? Here is where customer activation comes in.

### **Customer Activation:**

Customer Activation involves inspiring and driving customers to move into the next stage of the marketing cycle. It employs distinct ways of attracting new clients or re-engaging the old clients.

### **Importance of Customer activation:**

Consumer activation plays an important role in engaging customers and increasing sales. Here are two main benefits of customer activation:

1. Customer activation is important in a world where customers seek trust and relationship with a brand. They are looking for a long-term solution to their problems and a brand to relate with.



2. Consumer activation enables and complements other marketing communication tools. Since this activity has customers at its center point, once company reached a customer and appealed to them, engaging them again becomes easier. It is akin to creating a path towards a customer. Once that path is created, reaching customers with other forms of communication become simpler.

### **Customer Retention:**

Customer retention refers to a company's ability to turn customers into repeat buyers and prevent them from switching to a competitor. It indicates whether a company's product and the quality of service please their existing customers. It's also the lifeblood of most subscription-based companies and service providers. Customer retention strategies are the processes and initiatives businesses put in place to build customer loyalty and improve customer lifetime value.

Focusing on customer retention is important because it not only looks at how good a company is at acquiring new customers but also how good they are at keeping those customers. While you may have the best acquisition process in the business, if company's customer retention is terrible then it's all worthless.

### **Why is customer retention important?**

Keeping current customers happy is generally more cost-effective for any company than acquiring the first-time customers. According to the Harvard Business Review, acquiring a new customer can be 5 to 25 times more expensive than holding on to an existing one. Companies need not to spend big on marketing, advertising, or sales outreach. It is easier to turn existing customers into repeating ones, since they already trust the brand from previous purchases. New customers, however, often require more convincing when it comes to that initial sale. Customer loyalty won't just give repeat business; loyal customers are more likely to give free recommendations to their colleagues, friends, and family. Creating that cycle of retained customers and buzz marketing is one way the company can cultivate customer loyalty for long-term success.

### **Customer retention benefits:**

- **Cost savings:** Customer retention is generally more cost-effective than acquiring first-time customers.
- **Positive word of mouth marketing:** Loyal customers are more likely to tell their friends and family about the brand.
- **A better bottom line:** Increasing retention rates by just 5 percent can increase revenue by 25 percent to 95 percent.

### **Utilitarian Value:**

Utilitarian value is task oriented and cognitive in nature, consumers perceive utilitarian value by acquiring the product that necessitated the shopping trip. Therefore A consumer receives utilitarian shopping value when he or she obtains the needed product, and this value increases as the consumer obtains the product more effortlessly. Utilitarian purchasing behaviour is more logical, rational, planned, part of daily routine and always includes in purchases.

### **Hedonic Value:**

Compared to utilitarian value, hedonic shopping value is more subjective and individualistic. Its value is perceived through fun and pleasure as opposed to goal achievement. Hedonic consumption signifies the joy and pleasure the consumer expects from shopping. As the expectation from shopping is different for each consumer, so is the feeling experienced during shopping. Some of the consumers are affected by various motivational aspects in order to get joy and pleasure from shopping. Hedonic shopping value reflects the pleasure, joy and emotional worth of shopping. Hedonic consumption is based on hedonism.

### **Customer Loyalty:**

The key to building lasting customer relationships is to create superior customer value and satisfaction, customer satisfaction is one of the determinants of customer loyalty, driving force in sales growth, sales and a strong multi-channel strategy where each channel is optimized to meet customers' needs. Researcher says that some satisfied customers are more likely to be loyal customers and to give the company larger share of their business. Loyalty is without doubt a crucial construct in marketing and has major implications for any businesses, since in the modern world it is not sufficient to merely attract new customers – retention and repurchase is a key component of success. Loyalty of customers is extremely important to any business because it is considered to be one of the main factors of the business success, particularly because loyal customers exhibit repurchase behaviour, spend more money with the organization and worth of mouth.

### **Tools, Libraries and Packages used:**

- . Python
- . Seaborn
- . Jupyter Notebook
- . Scipy
- . Pandas
- . Matplotlib

### **About Dataset:**

1. The dataset is about the experience and preferences of the customers shopping online.
2. The dataset is of likert scale data type.
3. The dataset is having 71 columns (or variables) and 269 records.
4. The given dataset does not have any Null values.
5. Coded dataset has already given for the respected dataset.
6. For numerical work, coded data set (code\_data) has been used and normal dataset has been used for visualization.

## **DATA VISUALIZATION**

### **UNIVARIATE DATA VISUALIZATION:**

It is a good practice to segment the retention actions based on the customer experience reviews. For segmentation, the dataset has to be recognized or grouped in a set of responses of a particular category. These possible categories could be:

1. Perceived Risk
2. Utilitarian Value
3. Hedonic Value
4. Customer Experience

Thoroughly going through the given dataset, we can see that responses or set of variables can be divided into aforesaid categories.

Univariate visualization has been done in the following sections:

Sec-1 Customer demographics (i.e., age, gender)

Sec-2 Utilitarian transactions

Sec-3 Hedonic transactions

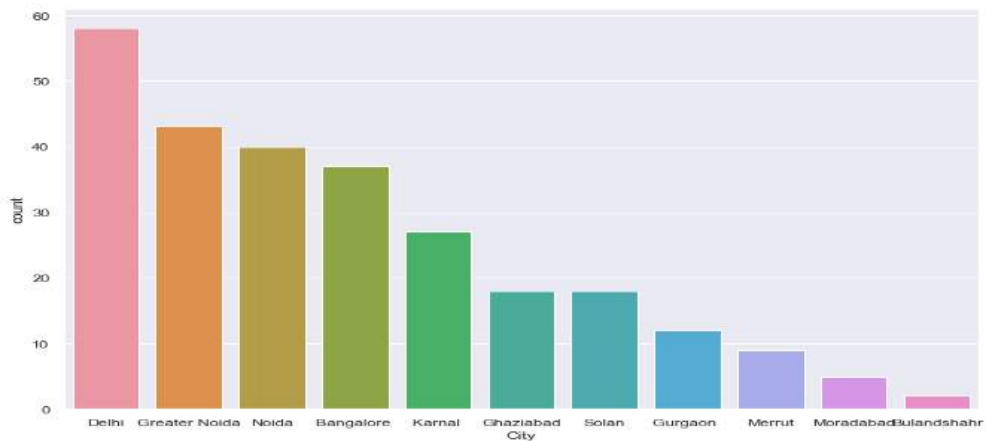
Sec-4 Perceived risk

Sec-5 Customer Experience (review after transaction)

## SECTION - 1: Analysis of Customer Demographics

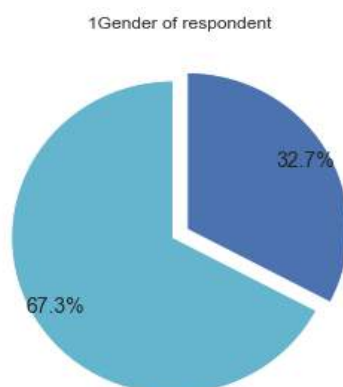
### 1. NUMBER OF LOGINS WITH RESPECT TO CITIES

- Maximum numbers of logins are from Delhi followed by Greater Noida and Noida. Bangalore is also having sufficiently large number of logins.



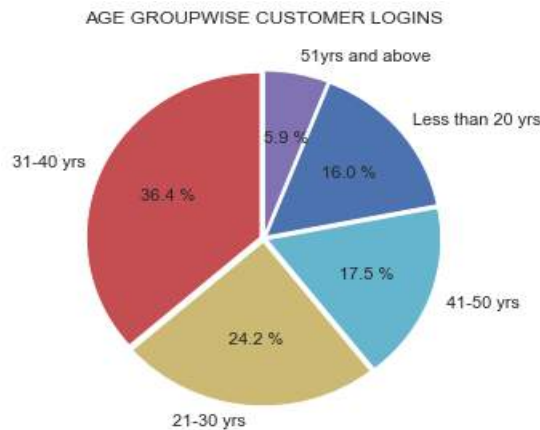
### 2. SHOPPING OR LOGIN RATIO WITH RESPECT TO GENDER

- From this plot; (as per the given dataset) it is clear that Females are more inclined towards online shopping as compare to males.



### 3. RATIO OF CUSTOMERS WITH RESPECT TO AGE-GROUP:

- As per the given dataset, the largest customer segment is of the age group of 31-40 years followed by 21-30 years age group and the customer segment of the age 51 yrs and above is the smallest in size.
- This indicates that customers of age 51 yrs or more have less faith on online shopping. More efforts are needed by the online shopping portals to engage customers of this segment.



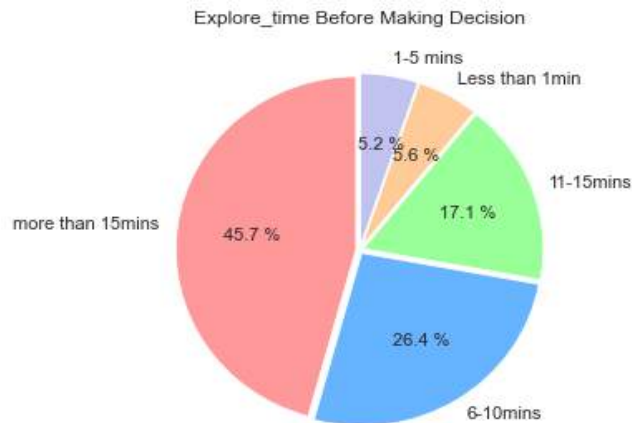
### 4. RATIO OF LOGINS/CUSTOMERS WITH RESPECT TO THE ONLINE SHOPPING RELATION:

- As per the given dataset; most of the customers making online shopping decision, are having online shopping relationship of above 4 years.
- This implies that long term relationship between customers and shopping portals brings trust.



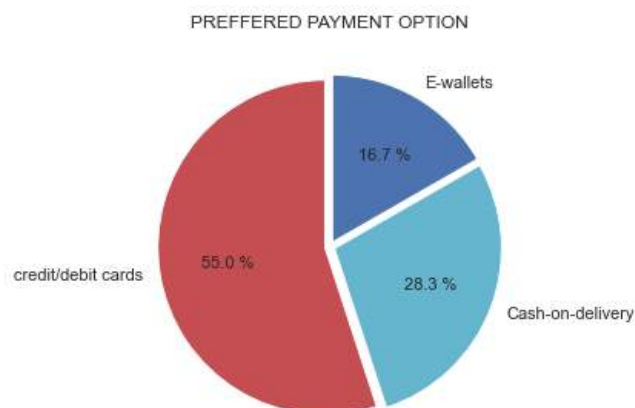
## 5. EXPLORING TIME ON E-RETAIL STORE BEFORE MAKING DECISION:

- From the plot below; it is seen that most of the customers explore more than 15 minutes before making a purchase decision.



## 6. RATIO WITH RESPECT TO PREFERRED PAYMENT OPTION:

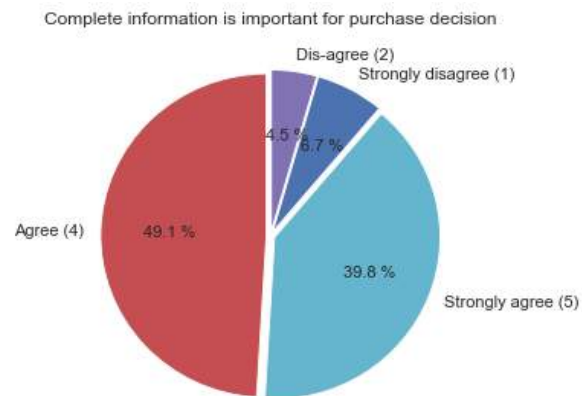
- Below chart shows that the most of the customers (out of the given dataset) prefer payment through credit or debit card.
- Also a good percentage of customers (out of the given dataset) believe in cash payments.



## SECTION- 2: Analysis of Utilitarian transactions

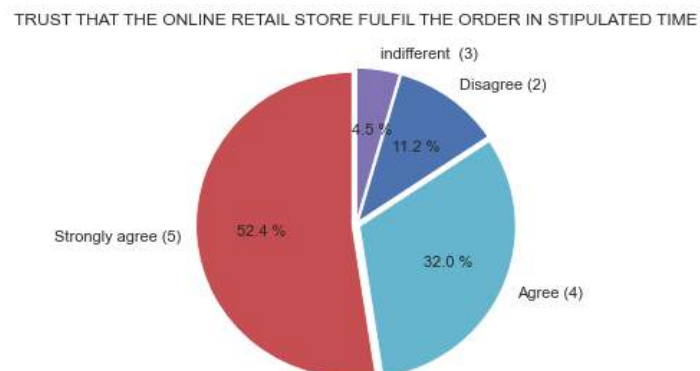
### **A) RATIO WITH RESPECT TO THE CONTENT/PRODUCT INFORMATION:**

- Below plot shows that, out of 269 customers, 49% + 39% customers believe that product information available on the shopping portals is import to make shopping decision.



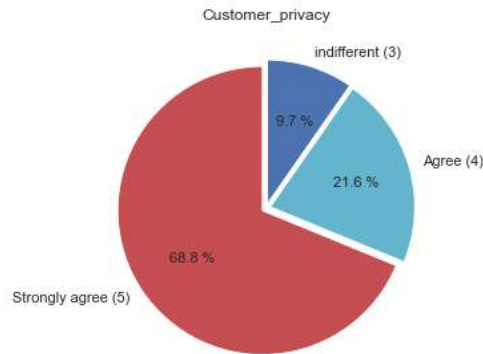
### **B) RATIO OF USERS WHO BELIEVE THAT TRUST THE ONLINE RETAIL STORE WILL FULFILL IT IN STIPULATED TIME:**

- From the plot below, it can be seen that more than 52% customers strongly agree, that trust of timely completion of the purchase has an impact on the decision making of the shopping.
- And, a good percentage of customers agree with the aforesaid trait of the shopping portal.



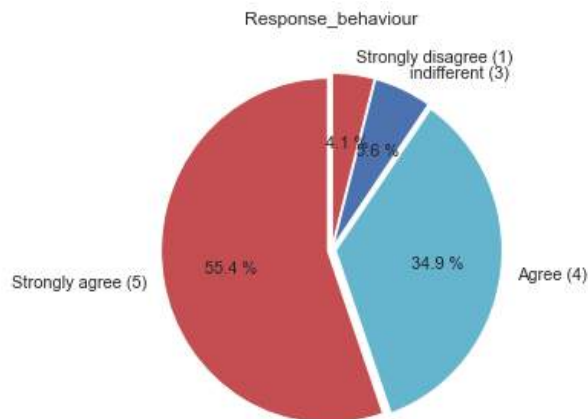
**C) RATIO OF USERS WHO BELIEVE THAT GUARANTEEING THE PRIVACY OF CUSTOMER IS IMPORTANT TO MAKE A DECISION:**

- It is clear from the below plot that the largest segment of the customer strongly agree with the attribute that customer privacy should be the priority of any online shopping portal.



**D) RATIO OF USERS WITH RESPECT TO RESPONSE BEHAVIOUR OF THE STORE:**

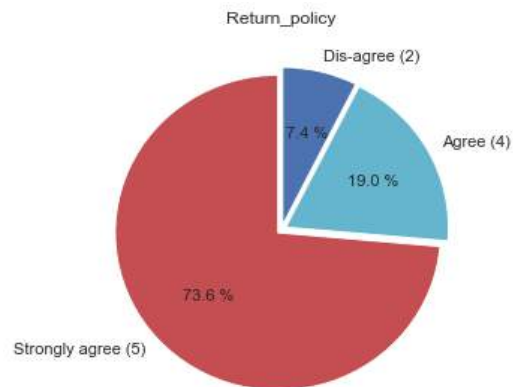
- It is found that in the given dataset of customers 55% are strongly agree and 35% are agreed that the behaviour of executives of the shopping portal or any type of communication between customer and online shopping portal affect the purchase decision.





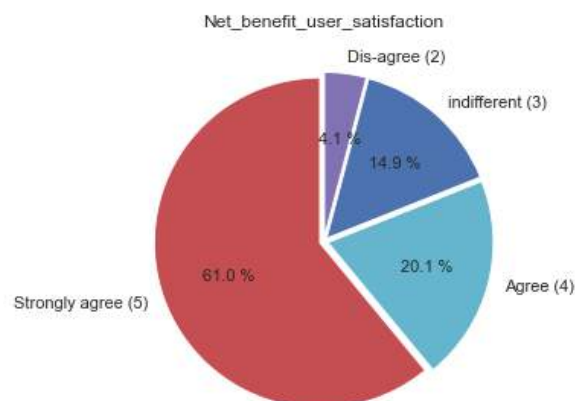
#### **E) RETURN AND REPLACEMENT POLICY OF THE E-TAILER IS IMPORTANT FOR PURCHASE DECISION:**

- Out of 269 customers approximate 74% are strongly agree that the return or replacement policy of the shopping portals impact their purchase decision from a particular website.



#### **F) RATIO OF CUSTOMERS BELIEVING THAT NET BENEFIT BRINGS USER SATISFACTION:**

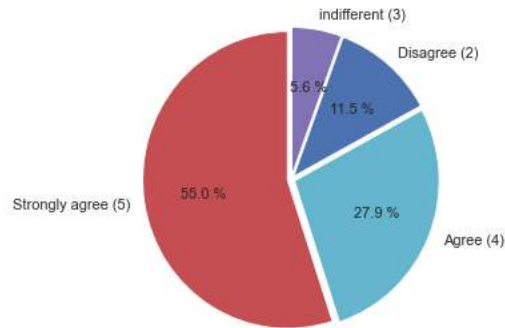
- 61% customers out of 269 customers in the given dataset are strongly agree that the net benefit from the online shopping brings satisfaction to the user of the shopping portal.



### G) IMPORTANCE OF MONETARY SAVINGS IN MAKING A PURCHASE DECISION:

- 55% of the customers from the given dataset are strongly believed that monetary savings getting from the online shopping is important to make shopping decision.

IMPORTANCE OF MONETARY SAVINGS IN MAKING A PURCHASE DECISION

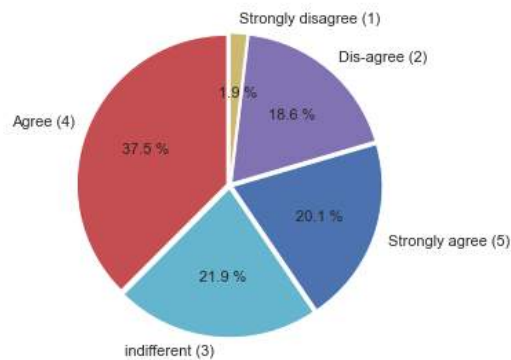


## SECTION - 3 Hedonic Transactions

### A) RATIO OF CUSTOMERS BELEIVING ONLINE SHOPPING IS ADVENTUROUS:

- 20% customers out of 269 customers strongly agree with the factor that online shopping gives a sense of adventure while only 1.9% customers are strongly disagree with this factor.

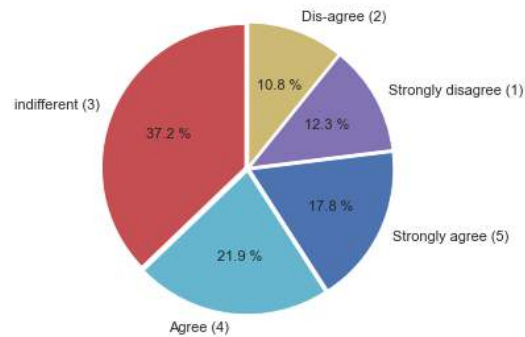
RATIO OF CUSTOMERS BELEIVING ONLINE SHOPPING IS ADVENTUROUS



## B) RATIO OF CUSTOMERS BELIEIVING ONLINE SHOPPING ENHANCES SOCIAL STATUS:

- 17.8% are agreed with the factor that online shopping positively affects their social status. However, a major part of 37.2% of customers is indifferent with this.

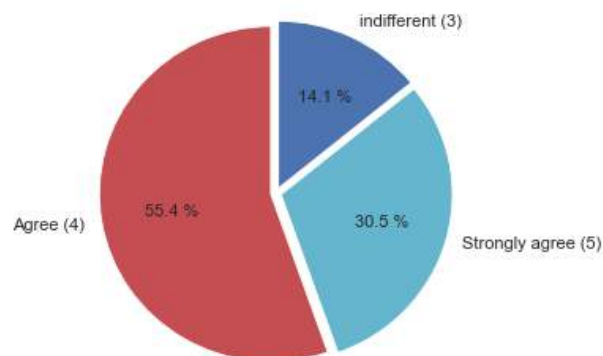
RATIO OF CUSTOMERS BELIEIVING ONLINE SHOPPING ENHANCE SOCIAL STATUS



## C) RATIO OF CUSTOMERS BELIEIVING GETTING VALUE FOR MONEY IS A SIGNIFICANT FACTOR TO MAKE SHOPPING DECISION:

- 30.5% customers of the given dataset believe that the value of a product is less effective than the value for money. Means they believe that if an expensive or more costly product works well, then the cost does affect the purchase decision.

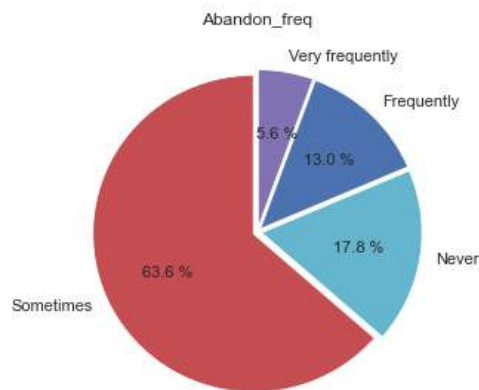
Getting value for money spent



## SECTION - 4 Perceived Risks

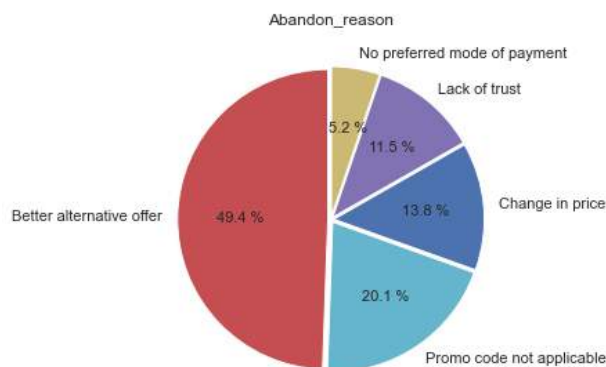
### A) How frequently do you abandon (selecting an items and leaving without making payment) your shopping cart?

- Shopping cart abandonment is an important aspect of the online shopping process that retailers pay careful attention to. The shopping cart abandonment rate is an important metric for e-commerce sites to keep track of because a high abandonment **rate could signal a poor user experience** or broken sales funnel.
- A big part of the given dataset of customers admitted that they abandon their shopping cart. There are only 17.8% customer are say that they never abandon their shopping cart.



### B) Why did you abandon the “Bag”, “Shopping Cart”?

- There are many reasons why shoppers leave without paying, and here from the given dataset it can be observed that mostly customers are saying they found **better alternative elsewhere**. It shows how online buyers act when they visit an ecommerce store and it's a chance for e-retailer to display a better offer, or incentives to convince customers.



### SECTION-5 Customer Experience (review after transaction)

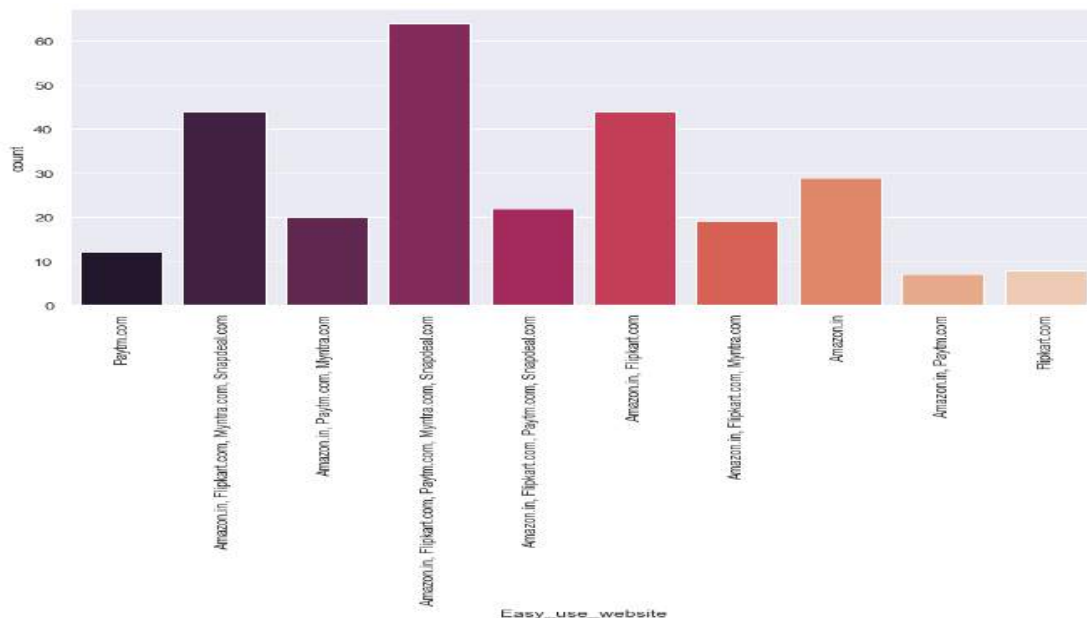
In this section, customer has been asked about their experience after the purchase transaction. For this customers were given the options of below mentioned online retailers.

From the following, tick any (or all) of the online retailers you have shopped from;

1. Amazon.in
2. Paytm.com
3. Flipkart.com
4. Myntra.com
5. Snapdeal.com

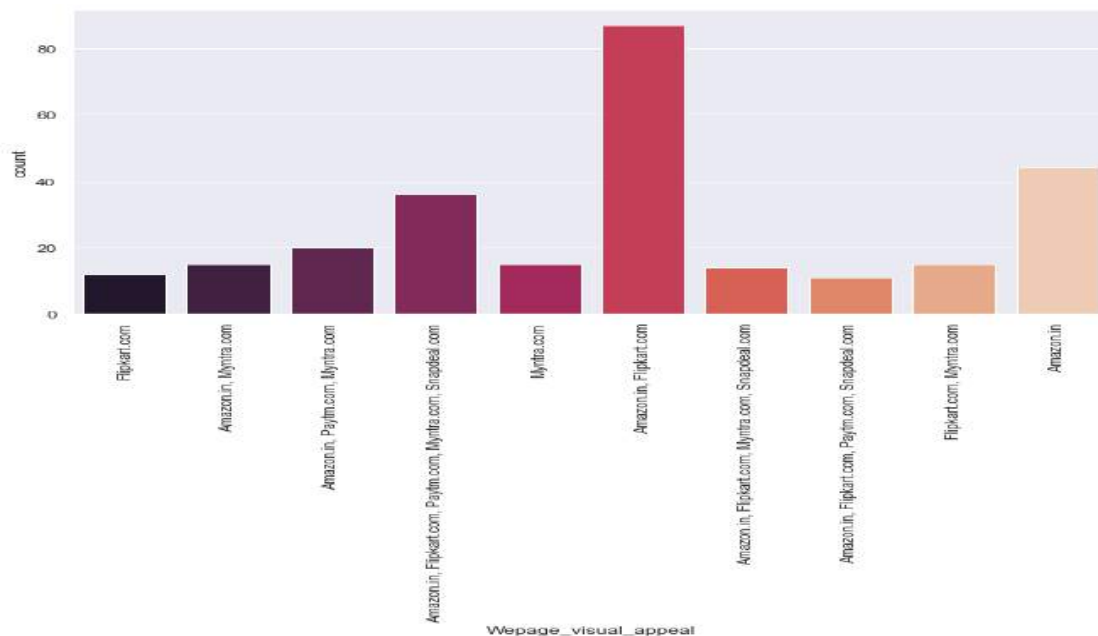
### Easy to use website or application:

- From the below plot it is clear that Amazon is the most liked and understandable website among the customers of the given dataset.



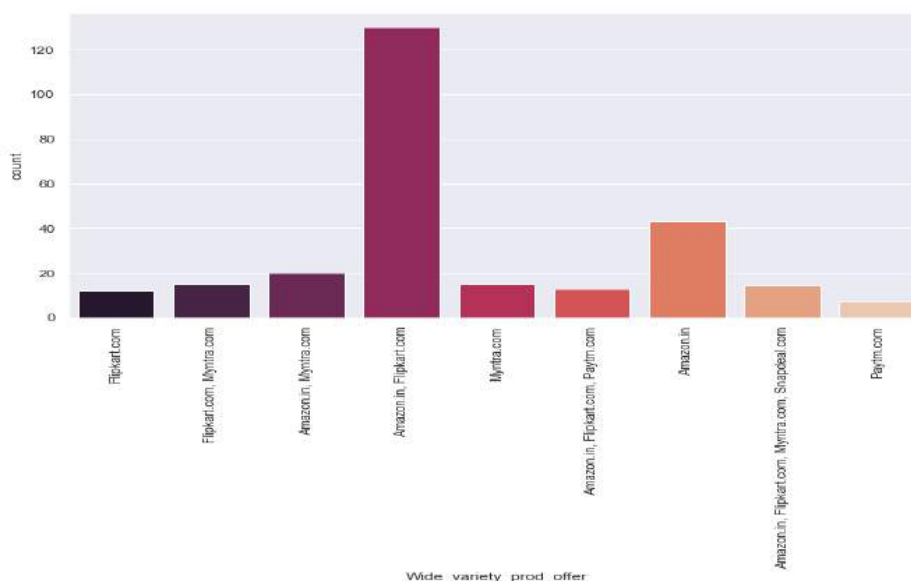
### Visually appealing web-page layout:

- In this factor, also Amazon is the most common choice of the customers. After Amazon, Flipkart is the website which is visually appealing to the customers.



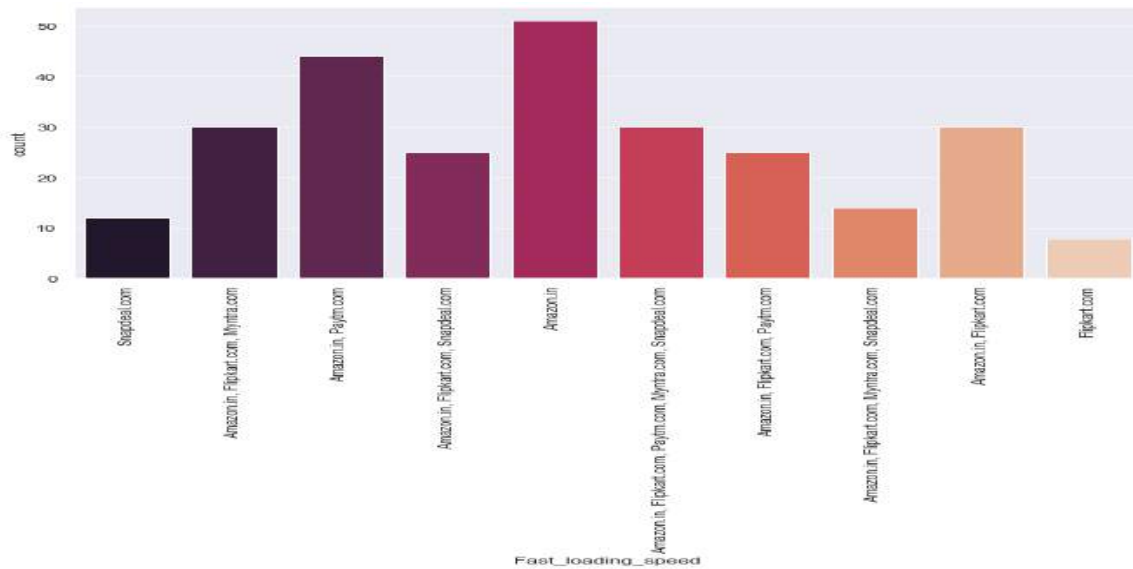
### Wide variety of product on offer:

- Most of the customers of the given dataset believe that Amazon has wide variety of product on offer. Flipkart is the second choice of the customers on this factor.



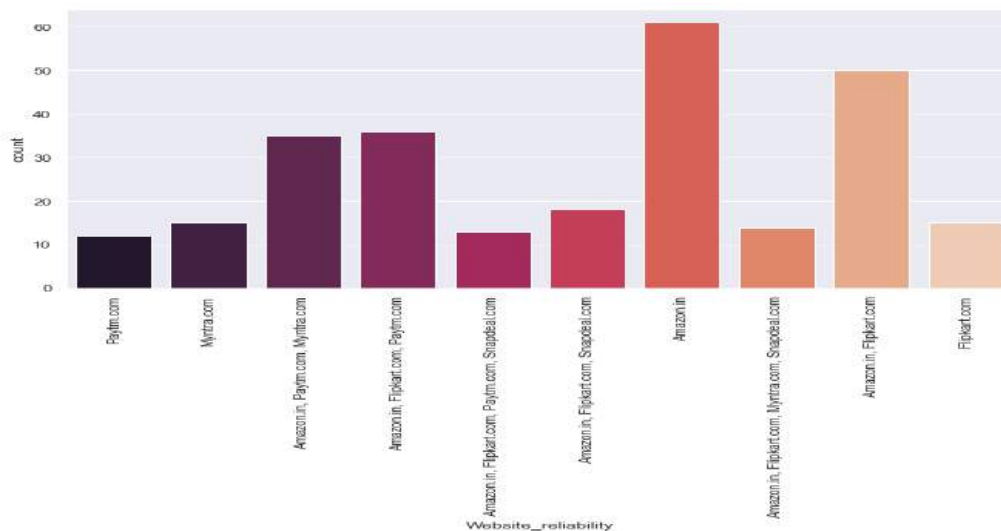
## Fast loading website speed of website and application:

- Amazon is again the most popular website with respect to this attribute as well followed by Flipkart.



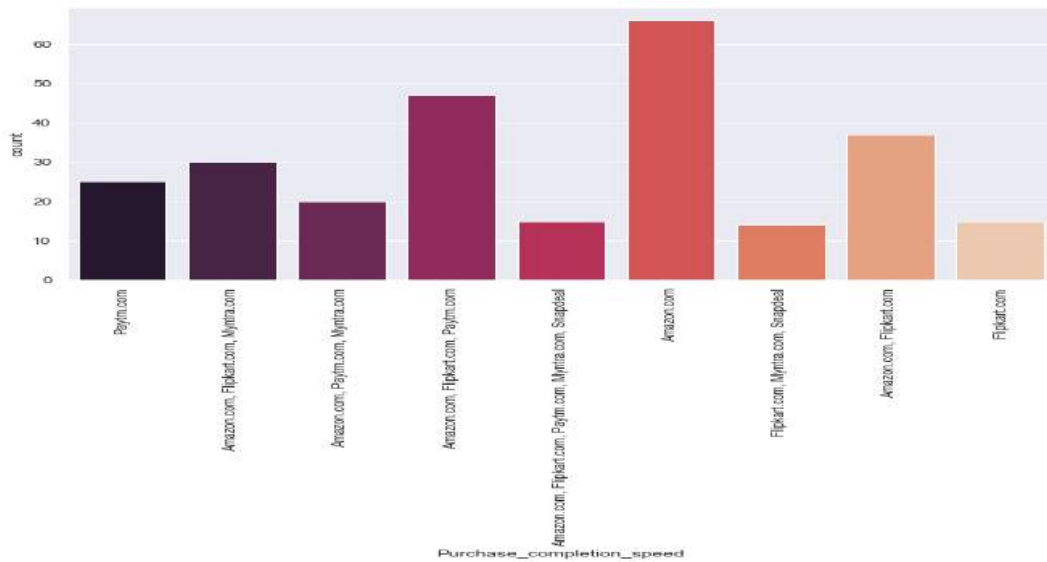
## Reliability of the website or application:

- As per the given dataset of customers, Amazon is the most reliable shopping website followed by Flipkart.



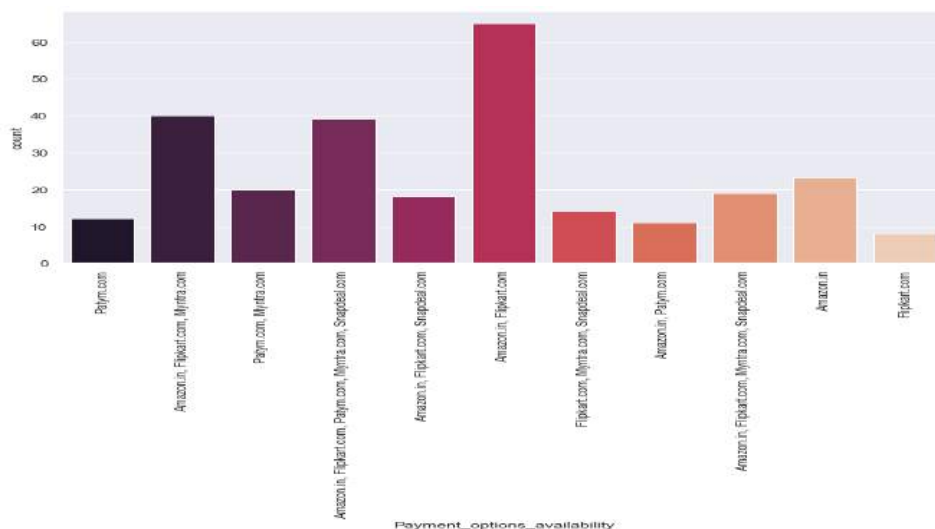
### Quickness to complete purchase:

- From below plot it can be seen that Flipkart is working good with respect to this factor. However, Amazon the most popular website with respect to the completion of purchase i.e. from placing order to fulfilling it by the delivery, Amazon takes the minimum time.



### Availability of several payment options:

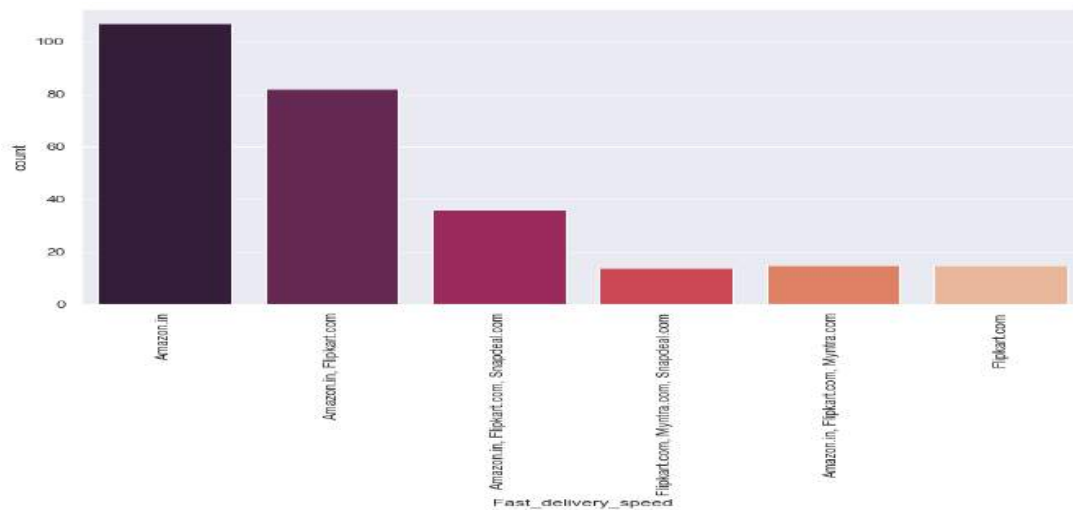
- As per the customer experience; Amazon is the choice for various payment options availability followed by Flipkart. Mynta is also a choice of a good number of customers.





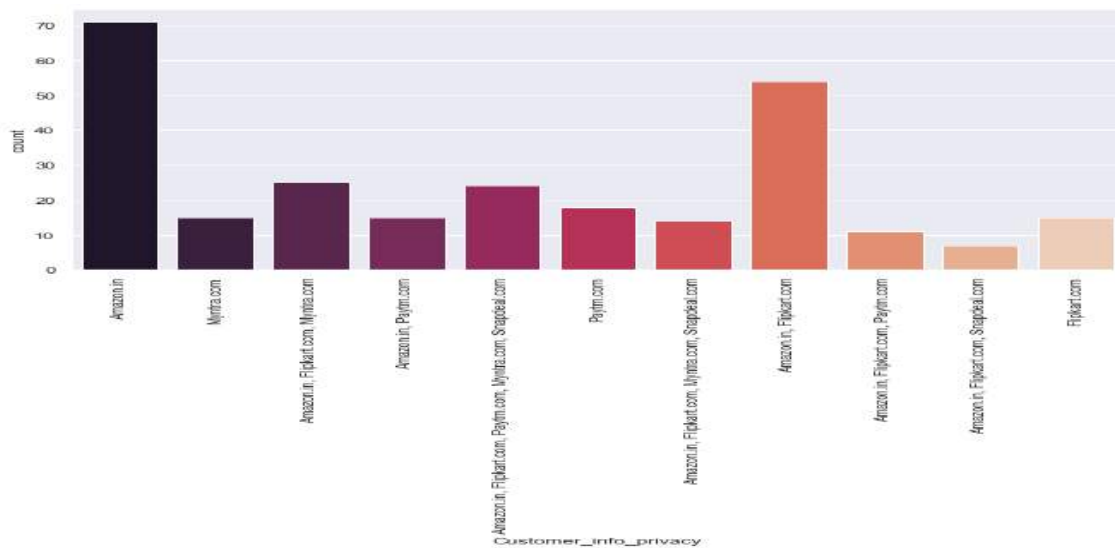
### Speedy order delivery:

- As per the given dataset; customers rely that Amazon has fastest delivery followed by Flipkart.



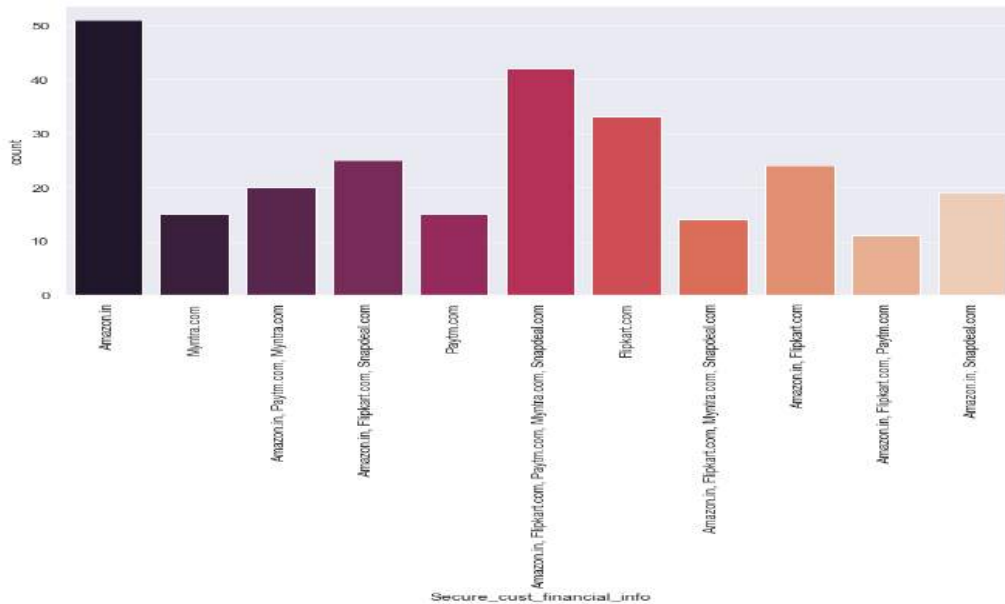
### Privacy of customers' information:

- Mostly customers have trust on Amazon that their information would not be leaked or shared for ill purposes.



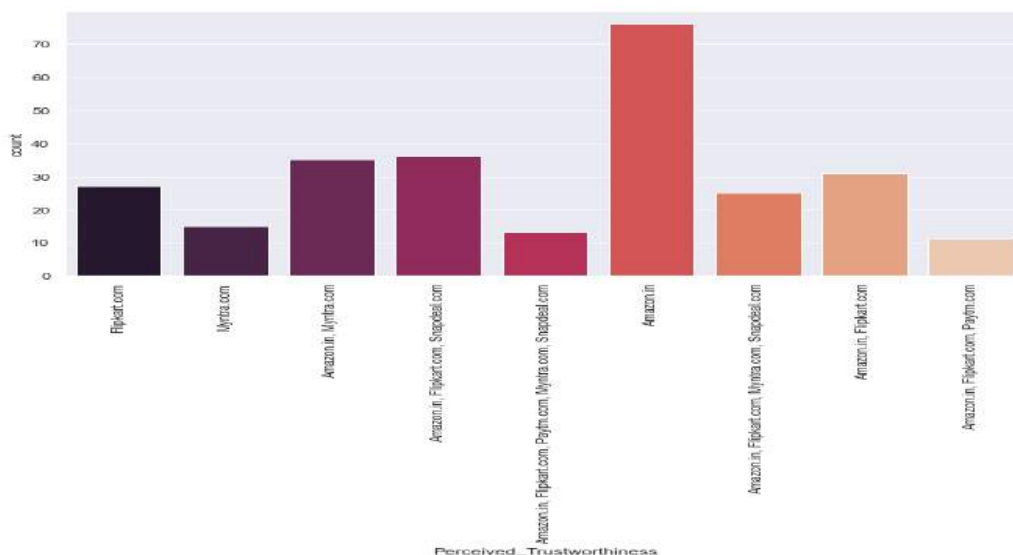
### Security of customer financial information:

- Amazon and Flipkart are having the highest faith of the customers that their financial information would not be misused.



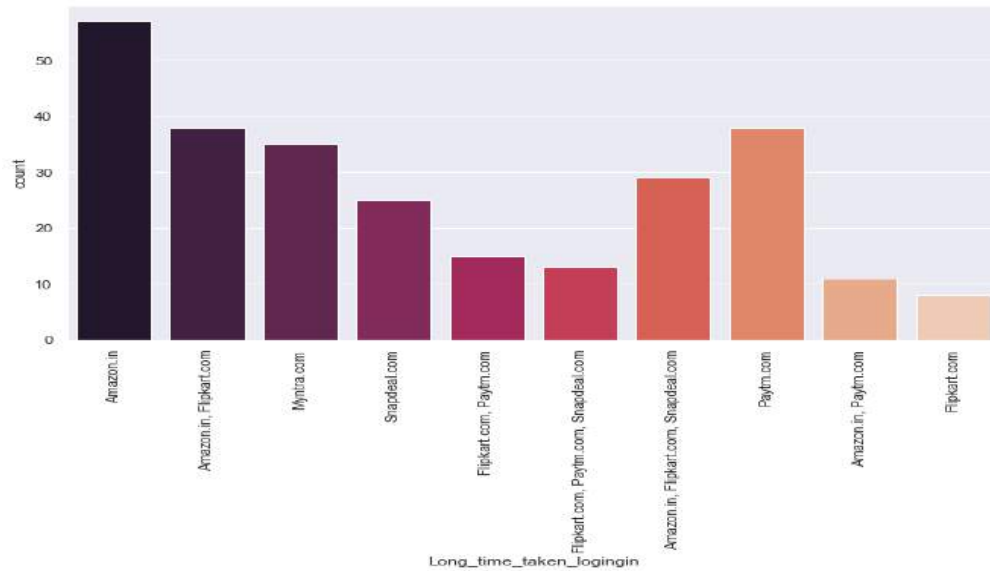
### Perceived Trustworthiness:

- Trustworthiness promotes both intention to buy and actual financial risk taking. Trustworthiness partially mediated the influence of perceived risk on intention to buy. From the below plot it can be seen that the scale for this attribute has highest value for Amazon.



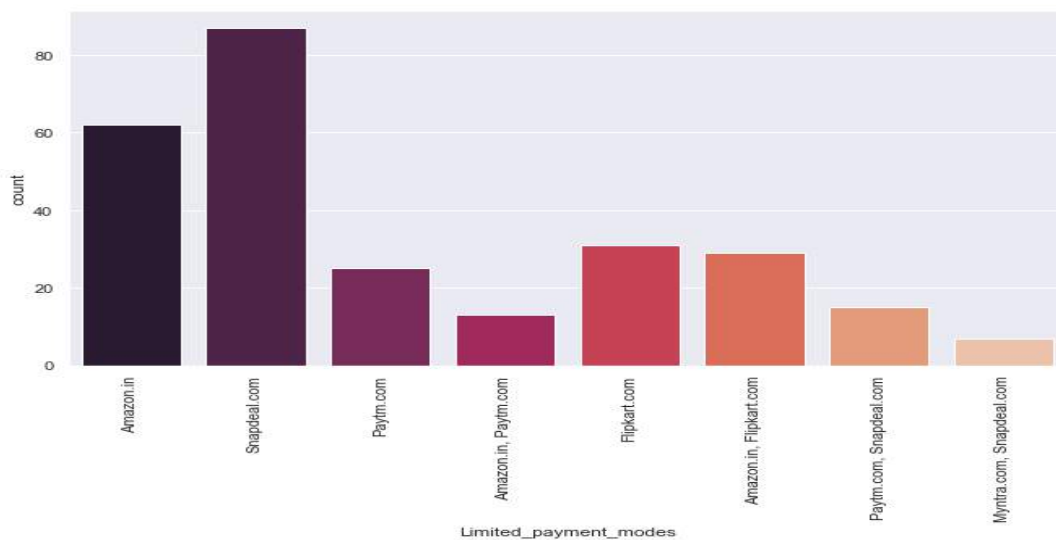
### Longer time to get logged in:

- For this factor customers have mixed reaction. It is not being clear that which website takes longer time to get logged in. May be it depends on the internet speed for particular customer.



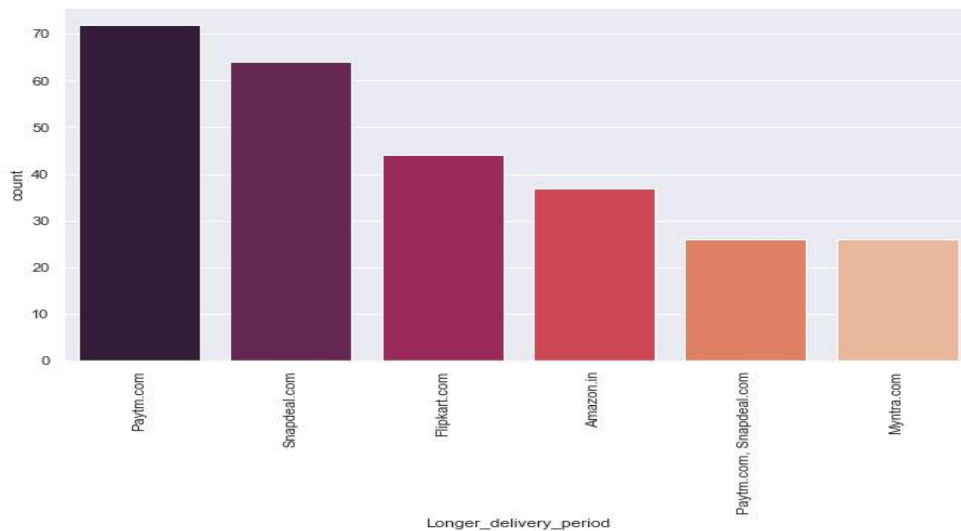
### Limited mode of payment on most products:

- As per the given dataset of customers' experience; Snapdeal has least number of modes of payments.



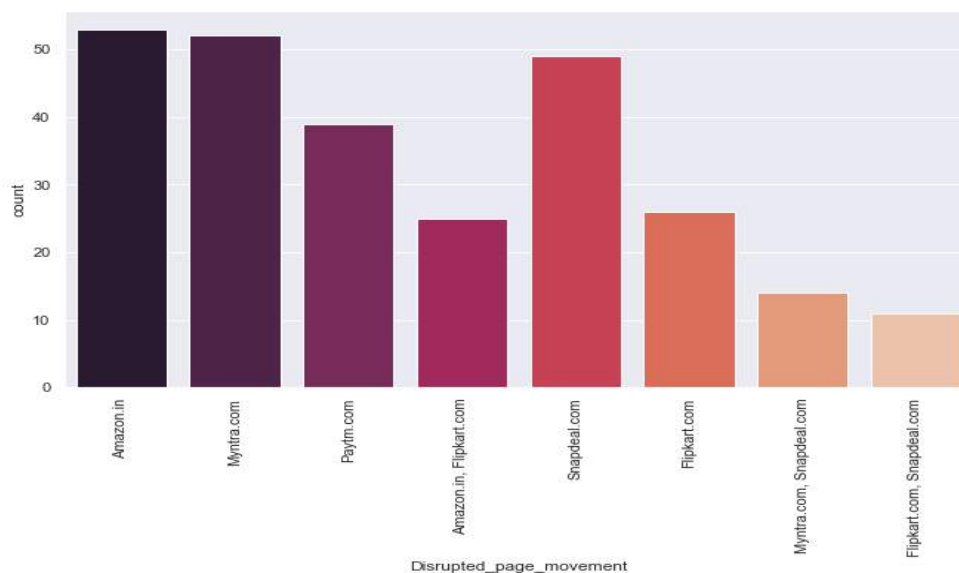
### Longer delivery period:

- The given set of customers' experience that Paytm.com takes longer time to deliver products. With Snapdeal also significant number of customers does not have good experience with respect to the delivery time of the products ordered.



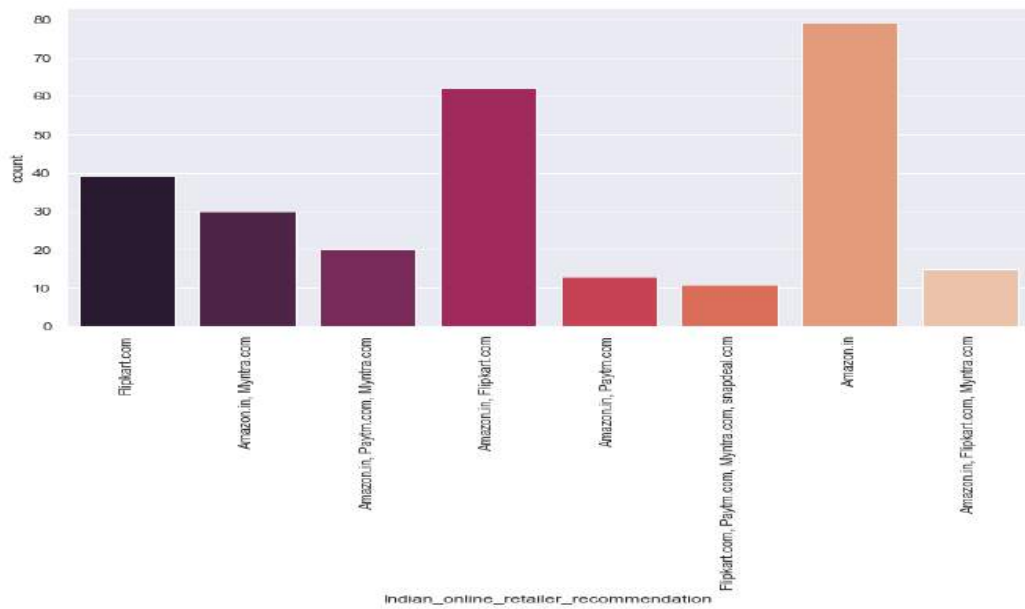
### Frequent disruption when moving from one page to another:

- It can be seen from the below plot that, customers face more problem while navigating through one page to another with Myntra and Snapdeal.



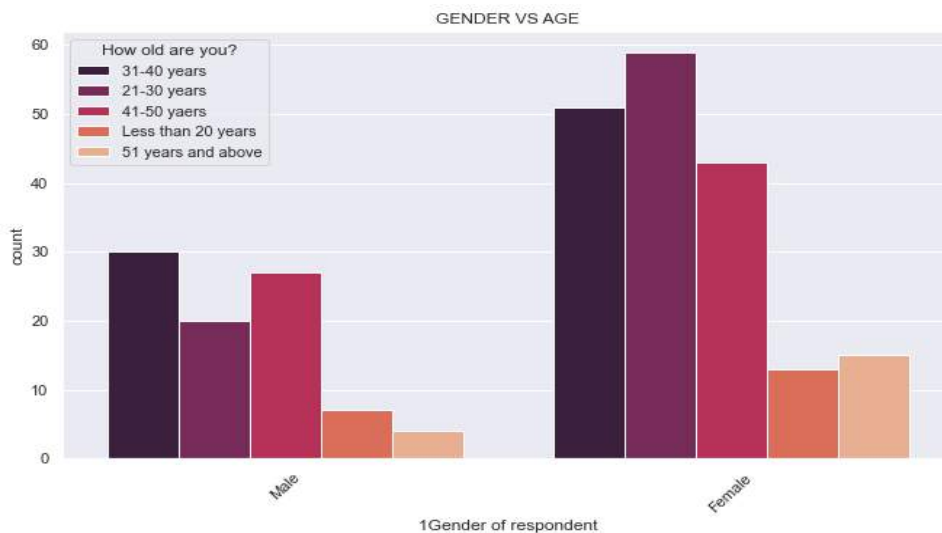
### The recommended online retailer:

- From the given dataset it can be observed that the highest recommended online retailer is Amazon followed by Flipkart.



## BIVARIATE VISUALIZATION

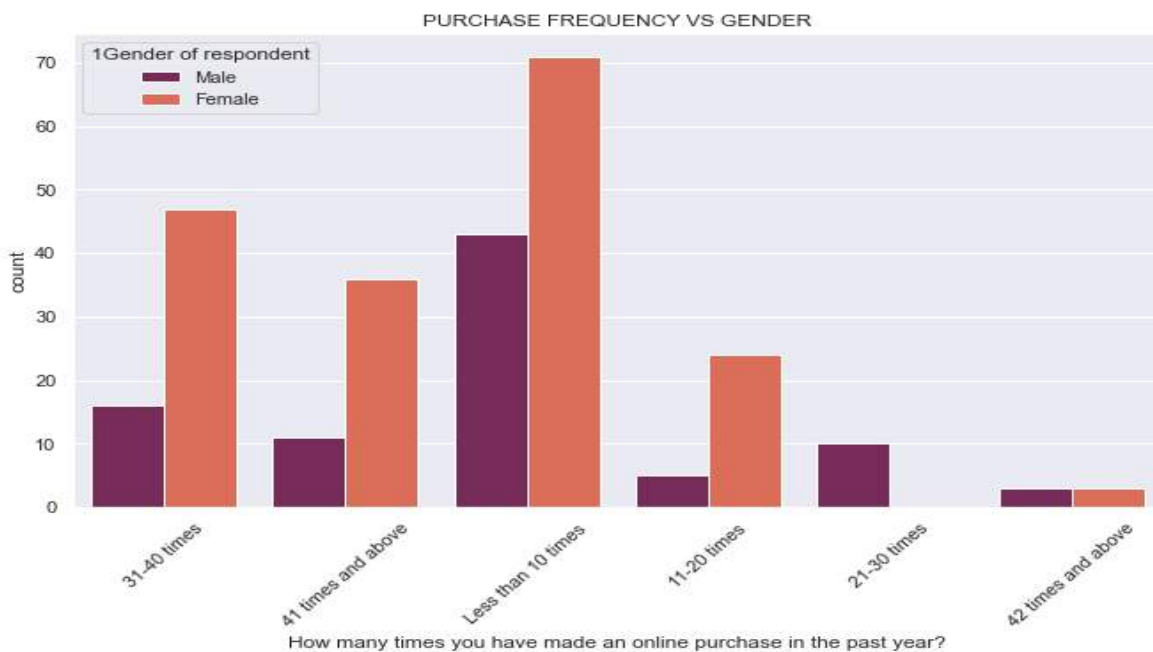
### 1. Analyzing online shopping logins of males and Females with respect to age:



#### **Findings:**

- i). Females are more inclined towards online shopping for every age group than that of males.
- ii). Males of age group of 21-30 years are doing less online shopping than the males of age group of 41-50 years. However, females of age group 21-30 are making more online shopping than the females of age group 31-40 years and 41-50 years.

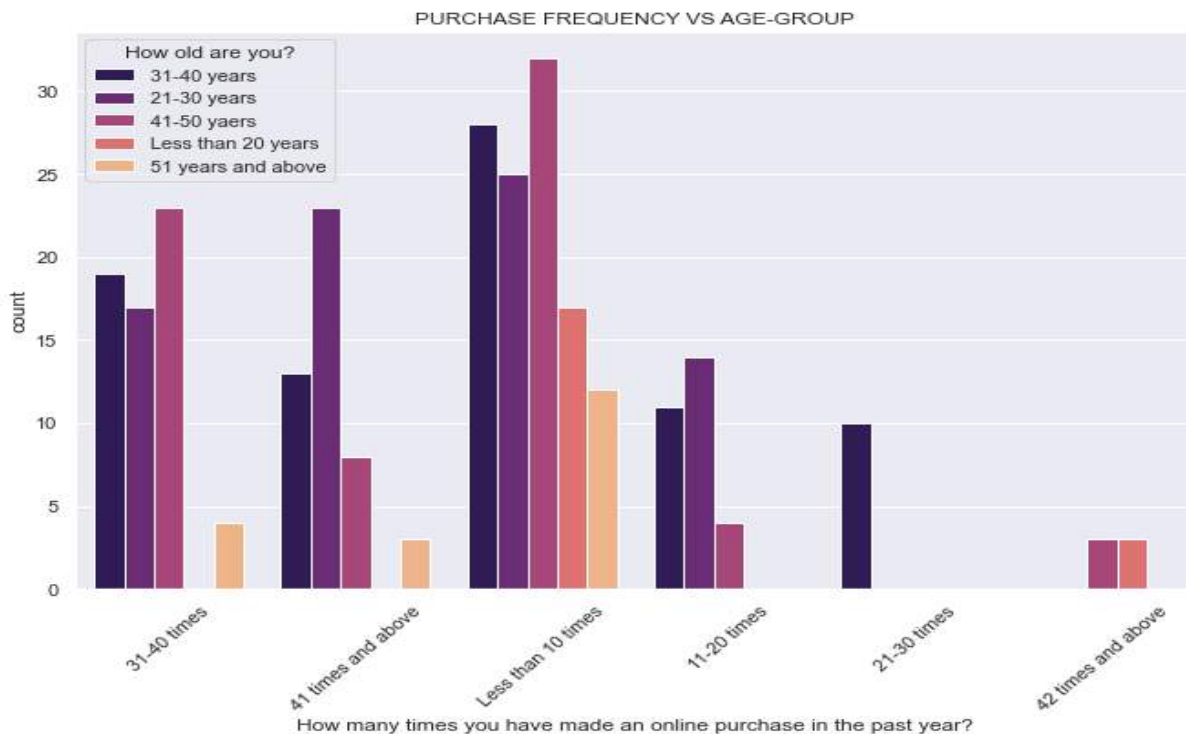
### 2. Analyzing purchase frequency with respect to the gender of the respondents :



### Findings:

- i) On an average more or less every group has equal ratio of male and females.
- ii) If we observe the gender of the respondents who made less than 10 purchases in last one year, there are a large number of females. Though earlier we have found that females are more inclined towards online shopping, here we see that there are sufficient numbers of females who have their logins but not have made purchase decision, which means there is a probability that they are abandon their shopping cart.

### 3. Analyzing purchase frequency with respect to the age group of the respondents:

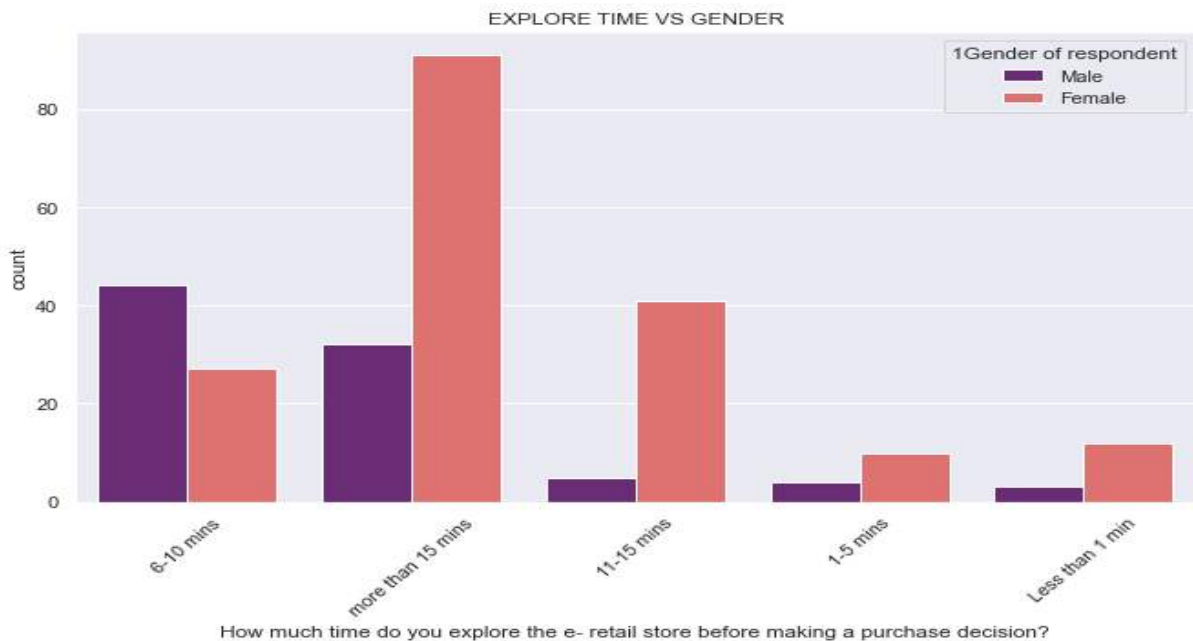


### Findings:

- i) It can be observed that very small ratio of respondents or shoppers is of the age group of less than 20 years. Though the ratio of such respondent is small but the point to be observed here that even teenagers are making purchases online.
- ii) Most of the shoppers are from the age group of 41-50 years. From here we can further study and analyze whether they are purchasing utilitarian kind of things (may be cause of higher responsibility) or hedonic (for their luxury purpose).
- iii) 31-40 years age group and 21-30 years of age group, on an average, are purchasing almost equal number of times.

#### 4. Analyzing explore time before making a purchase decision with respect to gender:

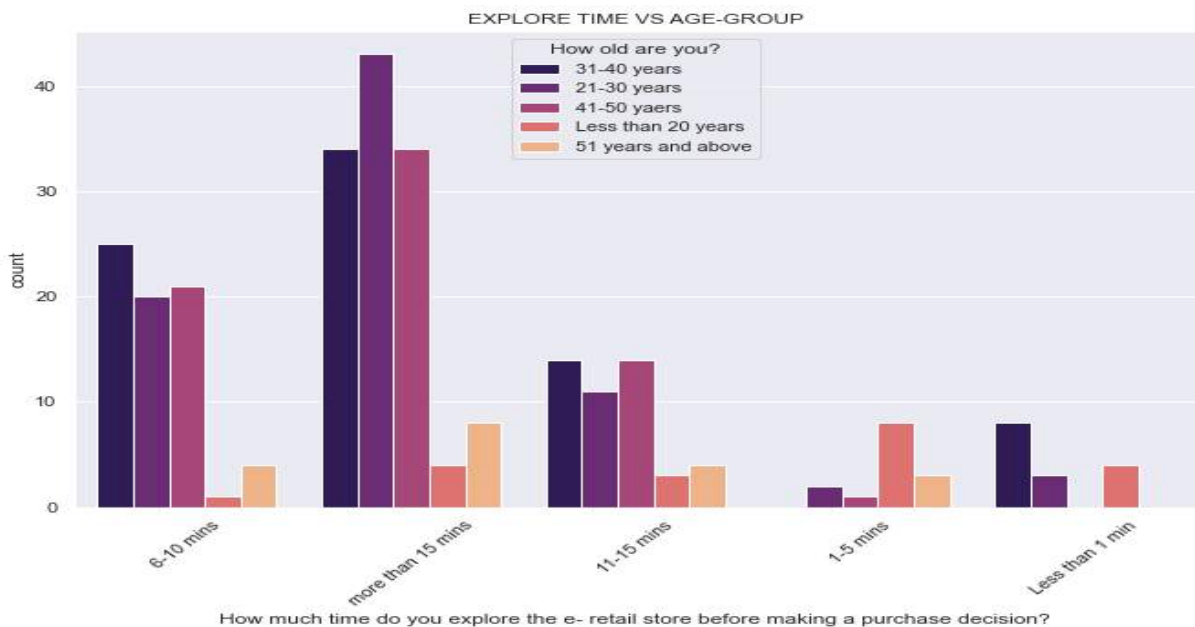
In the normal scenario it is a big issue of debate that who takes longer time in taking a purchase decision. Let's see the given dataset supports males or females.



#### Findings:

- From the above plot, according to given dataset; females are taking more time in making purchase decision as compared to males.
- It is also observed that mostly females are taking more than 15 minutes in making a purchase decision.

#### 5. Analyzing explore time before making purchase decision with respect to the age groups:

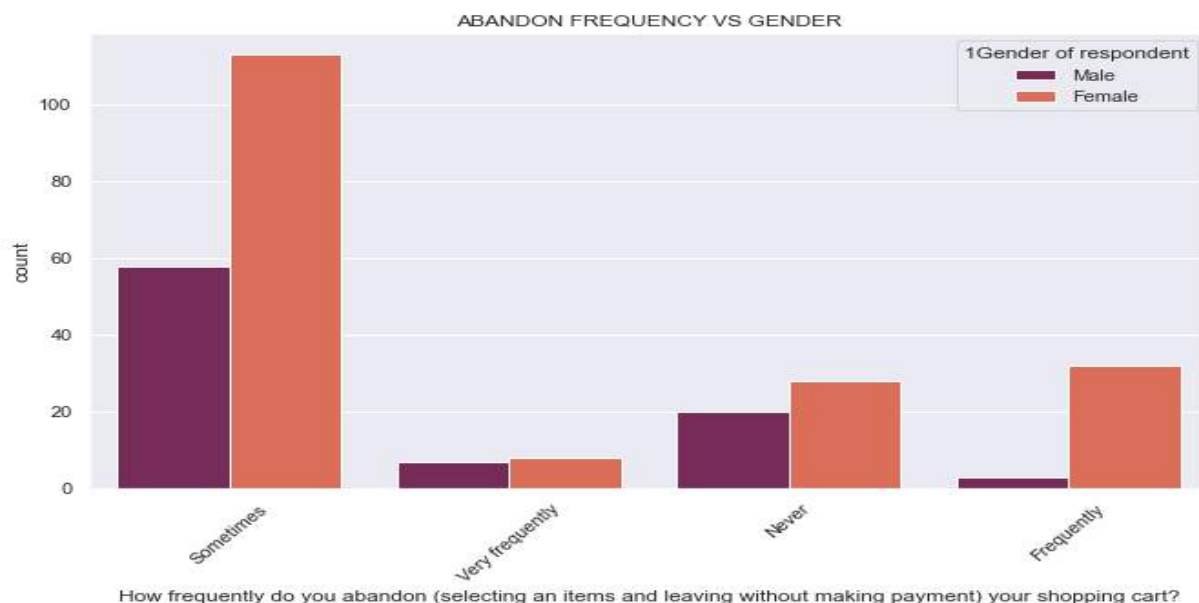




### Findings:

- i) The age group of 21-30 years is exploring for more than 15 minutes before making a purchase decision. It is a point of analysis that whether they are seriously taking so long to make purchases or they are exploring just for fun.
- ii) All other groups are taking more or less the same explore time.
- iii) One more point should be noted here, that there is very small ratio of respondents of age group of more than 51 years who are purchasing, but according to the given dataset this age group is taking the smallest explore duration to make a decision.

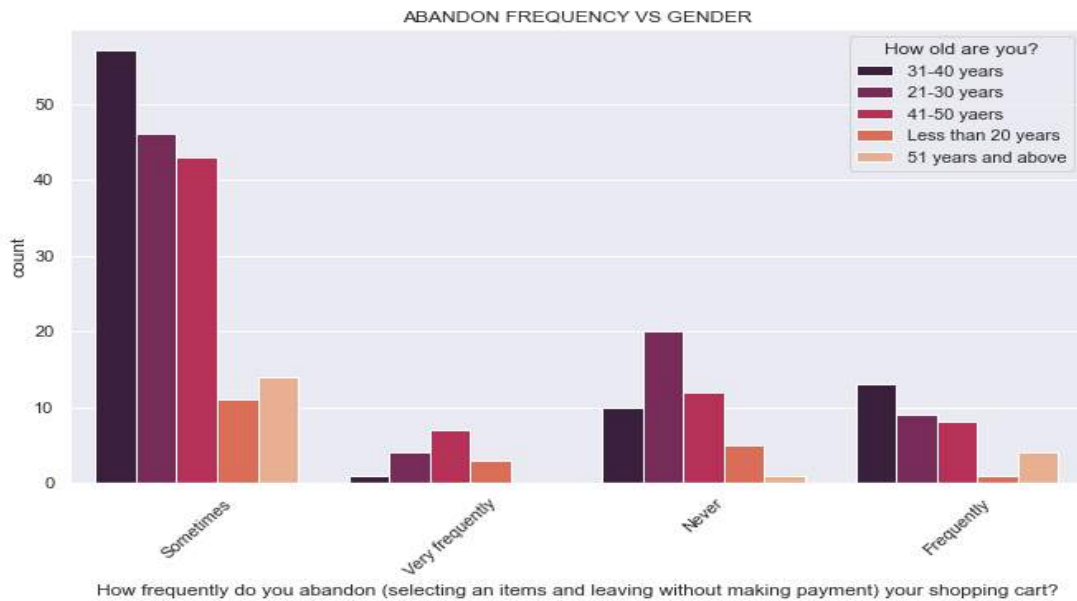
### 6. Analyzing abandon frequency with respect to the gender of the respondent:



### Findings:

- i) According to the given dataset there is a very small or negligible ratio of males who frequently abandon their shopping cart.
- ii) Females are more likely to abandon their shopping cart. Point of analysis here is; why they are doing so. May be they explore the website just for time pass or may be their expenditure limit is less as compared to males.

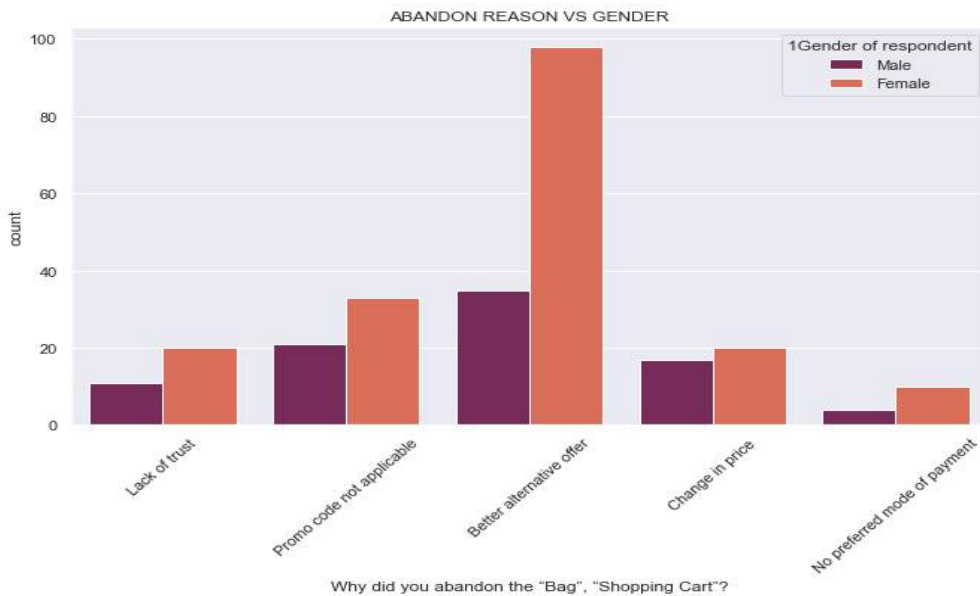
## 7. Analyzing abandon frequency with respect to the different age groups of respondents:



### Findings:

- i) The highest abandon frequency is 31-40 years of age group followed by the age group of 21-30 years, who we have already seen making most the online shopping.

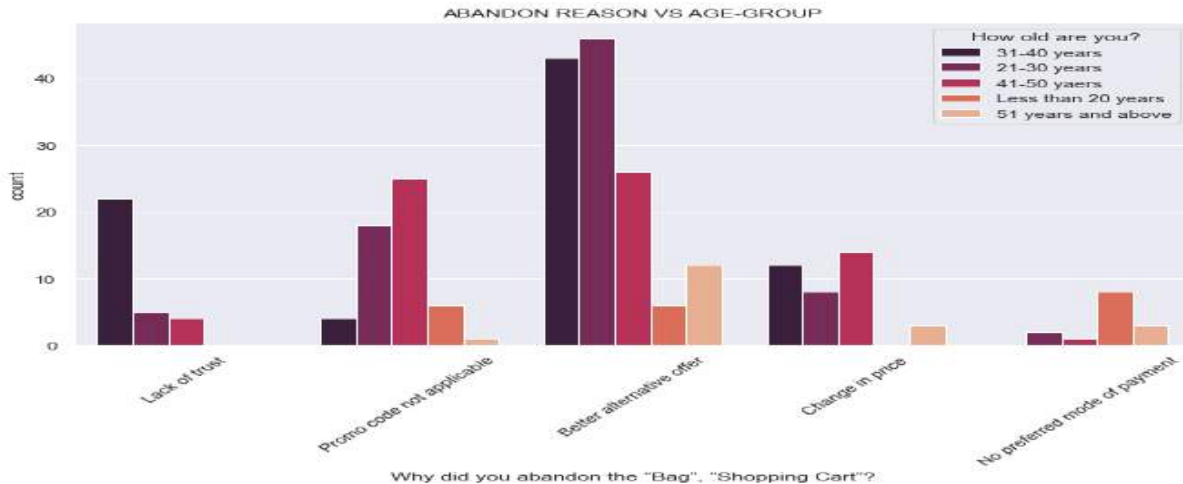
## 8. Analyzing abandon reason with respect to the gender of respondents:



### Findings:

- i) From the plot above; it can be noted that the factor impacting the most, on abandoning the cart is "Better alternative offer" and percentage of females abandoning the cart is very much on the higher side as compared to males.
- ii) Not applicability of promo code and Lack of trust are also significantly affecting the abandoning the shopping cart.

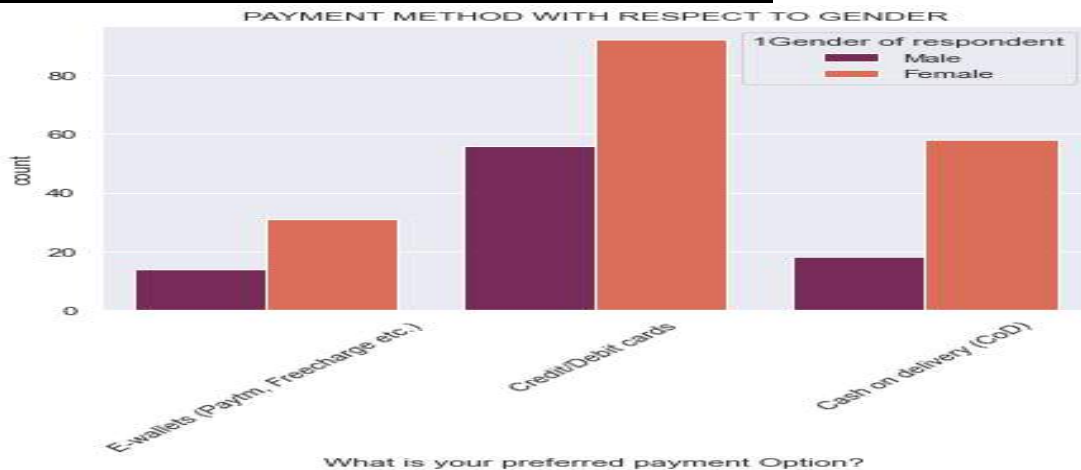
## 9. Analyzing abandon reason with respect to the age group of respondents:



### Findings:

- If we see the most affecting factor on abandoning the shopping cart with respect to the age group is "Better alternative offer". This means that for every age group and gender, as we saw previously, Better alternative offer has the highest weightage among all the abandon reasons.
- As per the given dataset; "Lack of trust" is also a factor behind abandoning the shopping cart for age group of 31-40 years.
- And for the customers of age group of 41-50 years, it seems that "Applicability of promo code" is equally responsible for abandoning the cart as "Better alternative offer".

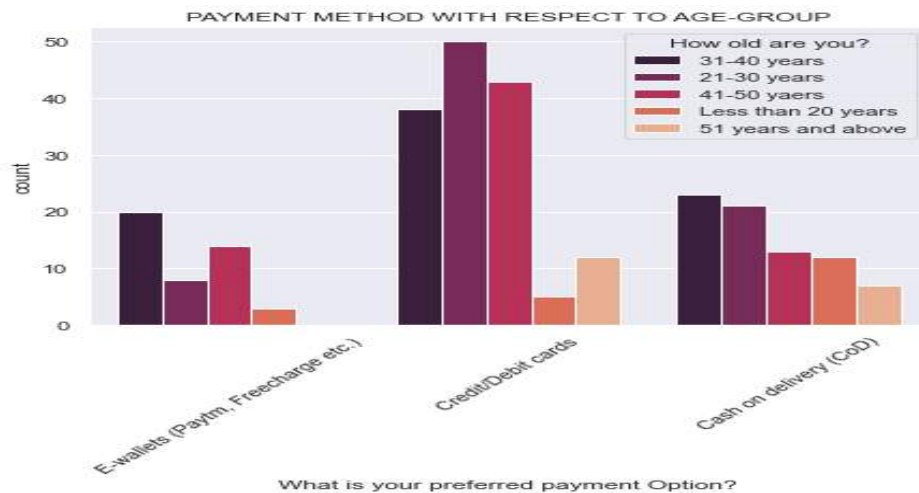
## 10. Analyzing preferred payment options with respect to gender:



### Findings:

- From the above plot; it can be observed that males and females both are preferring payment through credit/debit cards. May be there would be some offers on making payments via credit/debit cards.  
In today's scenario; this factor becomes more important as customers prefer no contact delivery.
- It is also observed that there are very few customers using E-wallets as their preferred payment option; the point here is that people started believing E-wallets.

### 11. Analyzing payment methods with respect to age group of respondents:



#### Findings:

- i) Observations here are similar with that of payment options vs gender; most preferred payment option is credit/debit card.

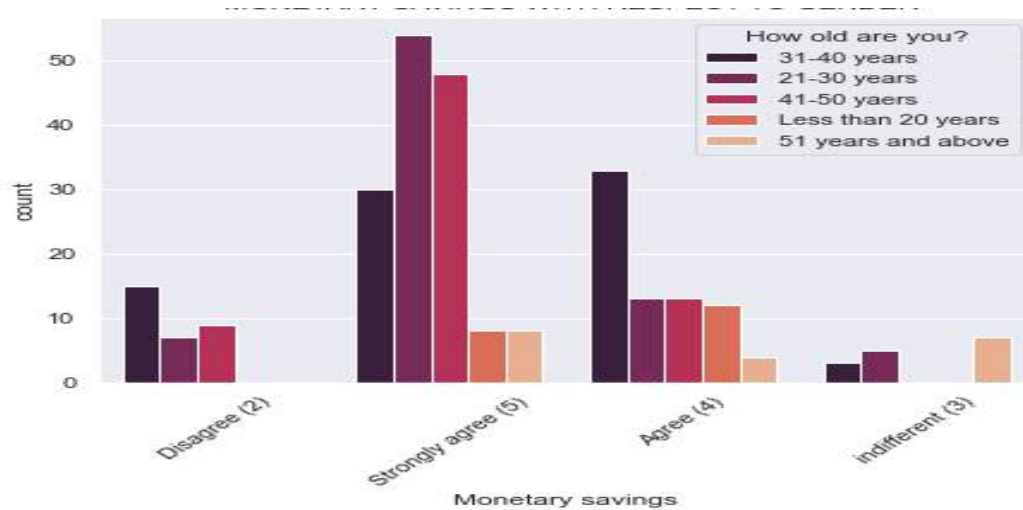
### 12. Analyzing importance of Monetary savings with respect to the gender:



#### Findings:

- i) From the above plot; it is observed that percentage of females who strongly believe that monetary savings is an important factor to make purchase decision, is highest.
- ii) And out of all males highest percentage of males is strongly agree that monetary savings is an important factor.

### 13. Analyzing importance of monetary savings with respect to age groups:



#### Findings:

- i) Almost for all the age groups monetary savings is one of an important factor to make a purchase decision.

### 14. Analyzing value for money with respect to gender:



#### Findings:

- i) Males and females both are agree with the factor that value for money affect their purchase decision.

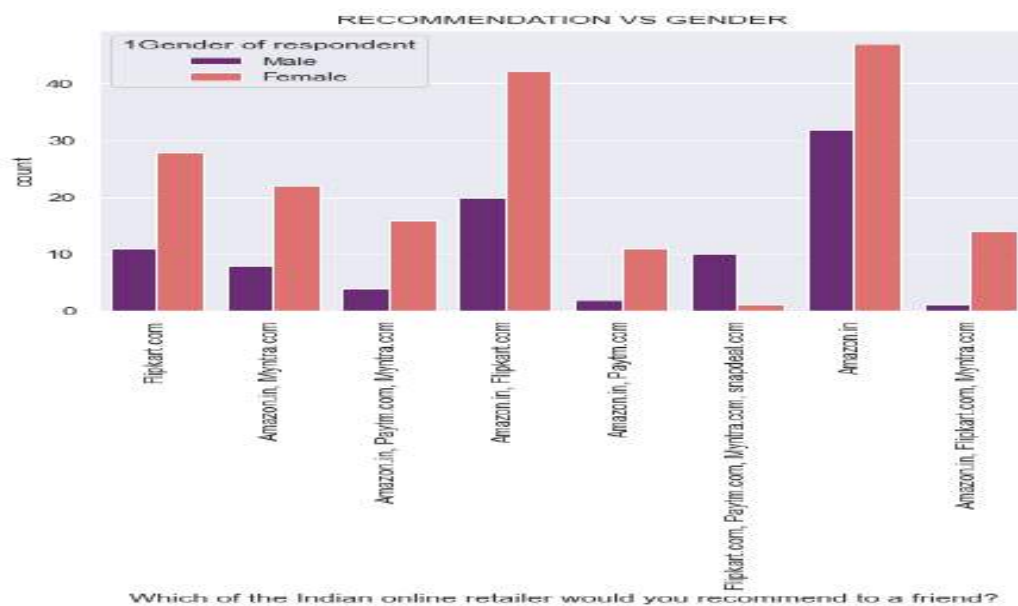
**15. Analyzing value for money with respect to different age groups:**



**Findings:**

- i) Value for money is important factor for all the age groups to make a purchase decision.

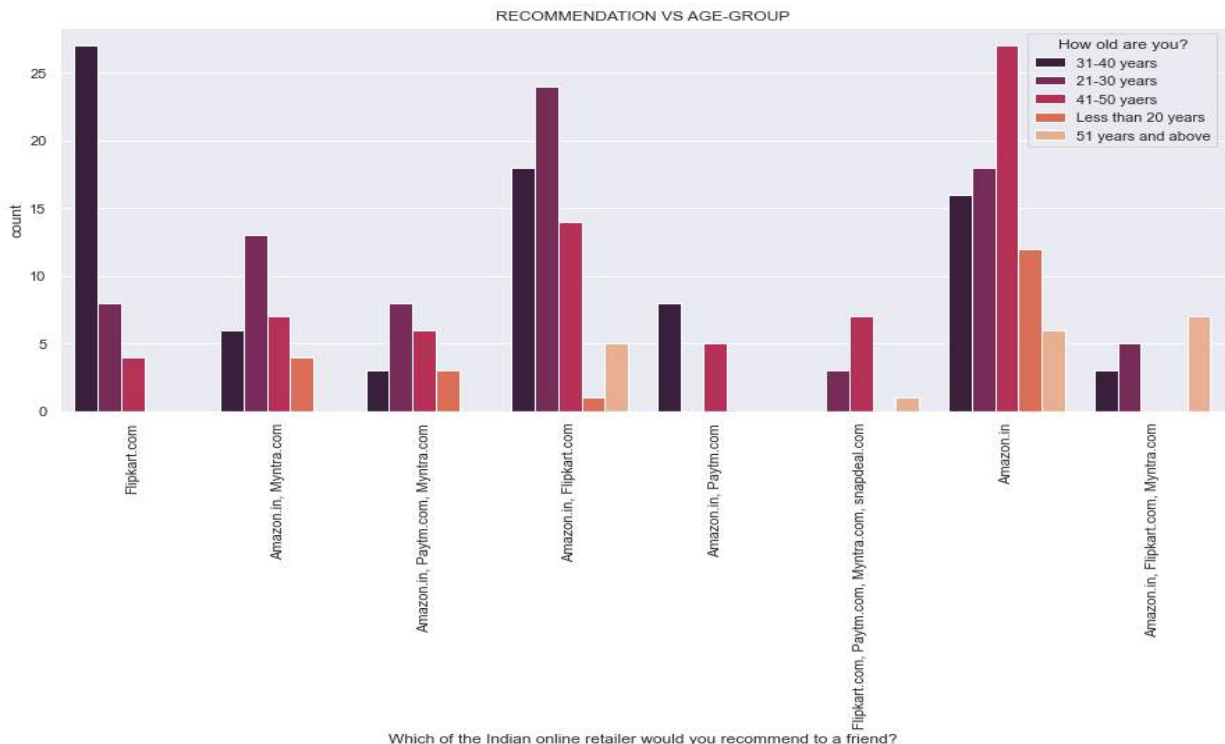
**16. Analyzing customers recommendation based on their experience with e-retailors, with respect to gender:**



**Findings:**

- i) It is clear from the above part that Amazon is the most common choice of customers.
- ii) Flipkart is on the second position in customer's recommendation.

**17. Analyzing customers recommendation based on their experience with e-retailors, with respect to gender:**



**Findings:**

- i) Recommendation on the basis of age group has mixed responses; however Amazon is the most common e-commerce website in all the age groups.

**CONCLUSION:**

This study has been done to find out that how the factors, in the given dataset, affect the customer retention and encourage him to ensure repurchase from the same e-retailer. And it has been observed that the clearly stated return policy, product quality guarantee, trust built-up by the e-retailer, monetary savings, responsiveness of the e-commerce company, are some of the major factors that bring customer satisfaction and loyalty.

One more thing has been observed that e-commerce website should be easily understandable and visually appealing; as if customer finds it difficult to navigate through the website or boring he would switch to the other e-commerce website. E-commerce Company should always try to increase the stickiness of the customer with the company.

It has also been found from the dataset that out of the given E-commerce websites Amazon is the choice of most of the customers with respect to almost all the given factors. Flipkart is also doing well though there are few factors in which company needs improvement.

**LIMITATIONS OF THE STUDY:**

1. Sample size should have been large to reach reliable results.
2. There are some important facts missing as income of the customer, living standard of the customer, number of family members etc. All these are very crucial factors to study the behaviour of the customer and to predict his future actions.
3. As the sample size is small it becomes difficult to treat outliers and multicollinearity.

**FUTURE SCOPE:**

1. Checking all the possible combinations of factors given in the data set and studies their pattern.
2. Treating multicollinearity within the dataset.
3. Model fitting.
4. Hyperparameter tuning can be done.