



Customer Retention Analysis

For Indian e-commerce companies

Declaration:

I would like to take a moment to show my gratitude for my mentors from DataTrained and FlipRobo for pushing me through challenges and getting me out of my comfort zone to be able to reach this point.

The learnings and credit goes to my family, Mentors and Managers at current job, without whose support It would be next to impossible to able to pursue this Internship and PG.

References:

1. <https://seaborn.pydata.org/tutorial.html>
2. <https://www.geeksforgeeks.org/python-pearsons-chi-square-test/>
3. <https://www.ngdata.com/what-is-customer-retention/>

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1. What is Customer Retention
2. How it affects the companies
3. The Survey and Population
4. Customer expectations to confidently shop online
5. Answers on the e-commerce sites with comparison
6. Conclusion

Hardware and Software Requirements and Tools Used

1. Python – Jupyter Notebook for notebook environment to view better results
2. Pandas – Manipulating the dataset by using info, crosstab, head
3. Numpy – Numerical operations on the provided dataset
4. Scipy.stats module - Chi2 test to test the relation between the variable
5. Seaborn – Histograms (histplot), count plot to understand the data distribution visually.

1. What is Customer Retention:

Customer retention refers to the activities and actions companies and organizations take to reduce the number of customer defections. The goal of customer retention programs is to help companies retain as many customers as possible, often through customer loyalty and brand loyalty initiatives. It is important to remember that customer retention begins with the first contact a customer has with a company and continues throughout the entire lifetime of the relationship.

2. Customer Retention Benefits:

While most companies traditionally spend more money on customer acquisition because they view it as a quick and effective way of increasing revenue, customer retention often is faster and, on average, costs up to seven times less than customer acquisition. Selling to customers with whom you already have a relationship is often a more effective way of growing revenue because companies don't need to attract, educate, and convert new ones.

Companies that shift their focus to customer retention often find it to be a more efficient process because they are marketing to customers who already have expressed an interest in the products and are engaged with the brand, making it easier to capitalize on their experiences with the company. In fact, retention is a more sustainable business model that is a key to sustainable growth. The proof is in the numbers: according to studies done by Bain & Company, increasing customer retention by 5% can lead to an increase in profits of 25% – 95%, and the likelihood of converting an existing customer into a repeat customer is 60% – 70%, while the probability of converting a new lead is 5% – 20%, at best.

2.1. Motivation for the Problem Undertaken

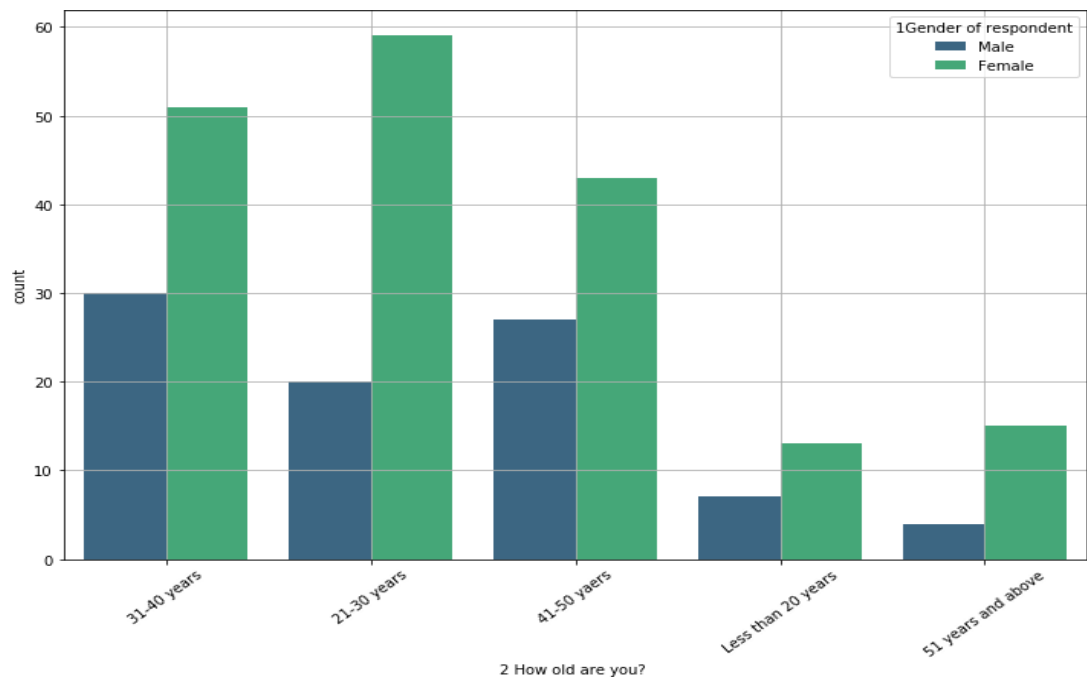
Customer satisfaction has emerged as one of the most important factors that guarantee the success of online store; it has been posited as a key stimulant of purchase, repurchase intentions and customer loyalty.

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.

3. The Survey and Population

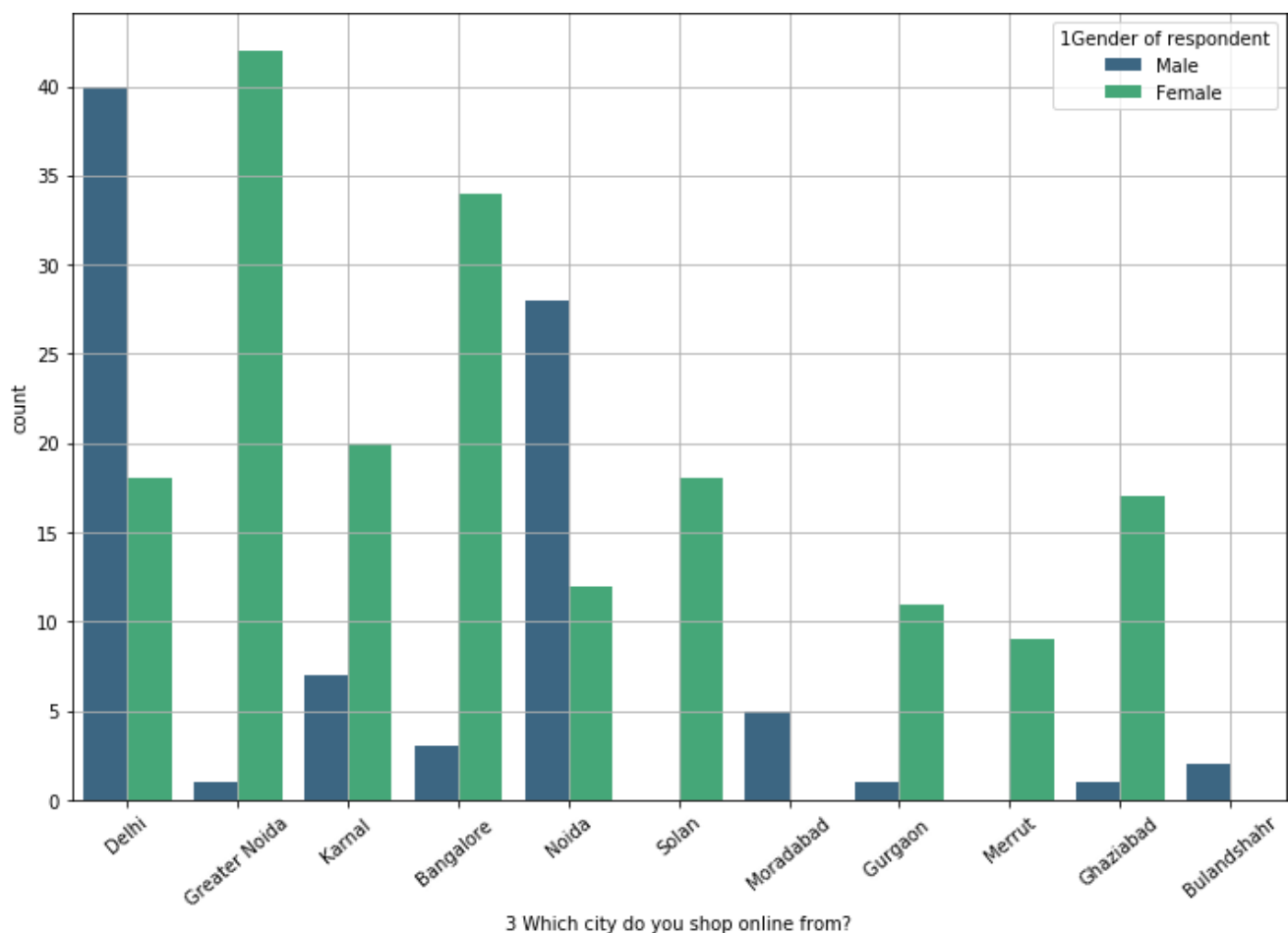
The Analysis is for the Indian e-commerce websites and the survey was randomly made from the buyers of different states of India. The population data consists of surveys from both male

and female buyers with all age ranges, which is used to determine the factors that influence the customer retention rate.



From the previous figure, we can clearly see that the majority of the population is from the age range of 21-50 years and Female are highest in numbers.

Below are the cities the data is collected from.

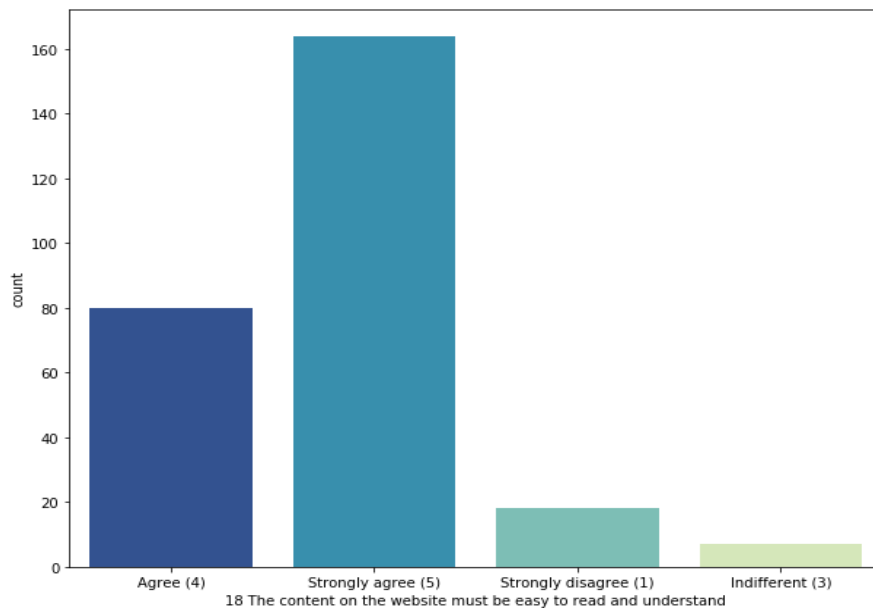


Upon reviewing, the data, we can see that most of the data is collected from Delhi (58), Greater Noida (43) and Noida (40).

4. Customer expectations to confidently shop online

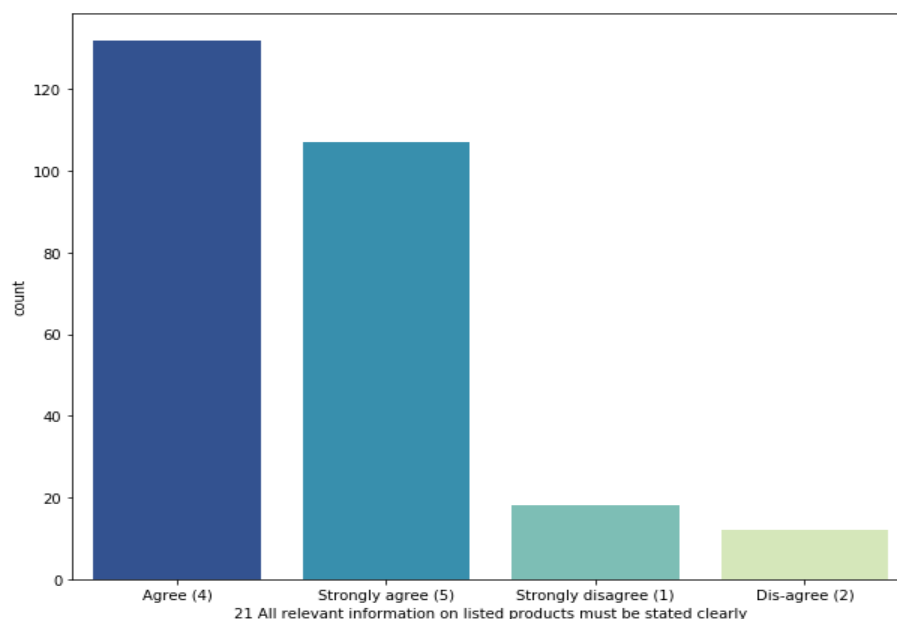
a. The content on the website must be easy to read and understand

```
Strongly agree (5)      164
Agree (4)              80
Strongly disagree (1)   18
Indifferent (3)         7
Name: 18 The content on the website must be easy to read and understand, dtype: int64
```



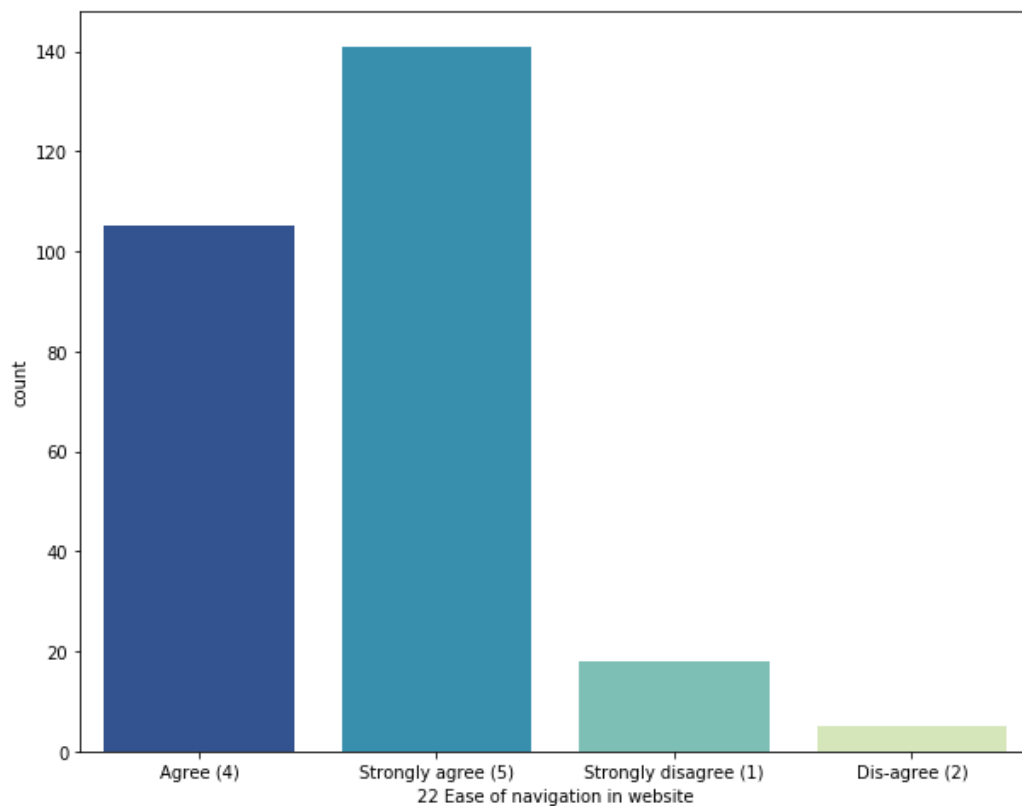
Out of the survey population more than 50% of the buyers agree to the point that website must be easy to read and understand and all information on listed products must be stated clearly.

```
Agree (4)              132
Strongly agree (5)     107
Strongly disagree (1)  18
Dis-agree (2)          12
Name: 21 All relevant information on listed products must be stated clearly, dtype: int64
```



b. Ease of navigation in website along with loading and processing speed

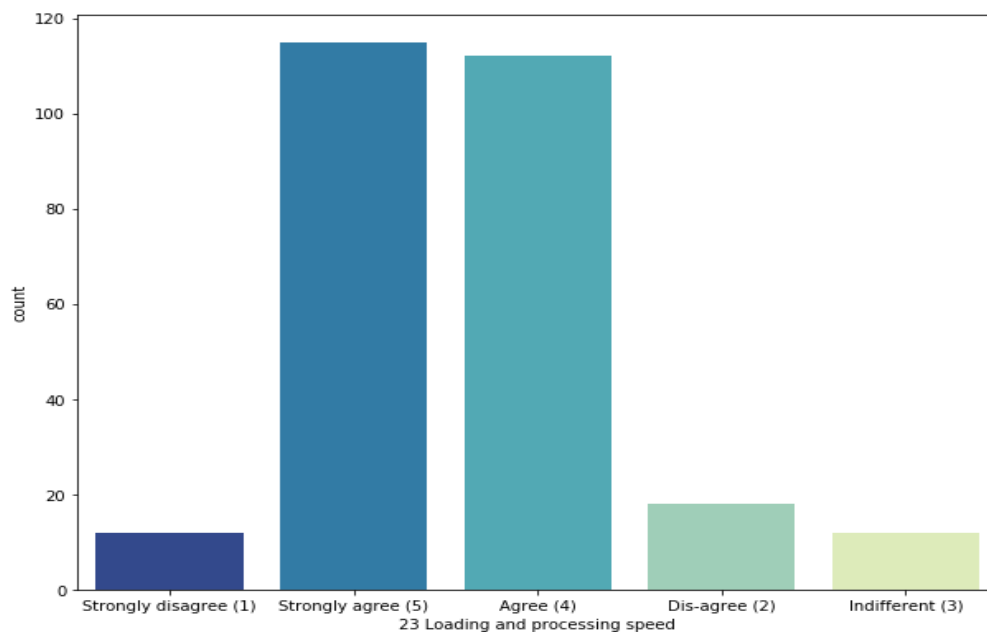
```
Strongly agree (5)    141
Agree (4)             105
Strongly disagree (1)  18
Dis-agree (2)         5
Name: 22 Ease of navigation in website, dtype: int64
```



We can see that more than 50% of the population of the buyers agree to the fact that ease of navigation in the websites is necessary in order to shop online, likewise customers agree to that loading and processing speed is important too.

Strongly agree (5)	115
Agree (4)	112
Dis-agree (2)	18
Strongly disagree (1)	12
Indifferent (3)	12

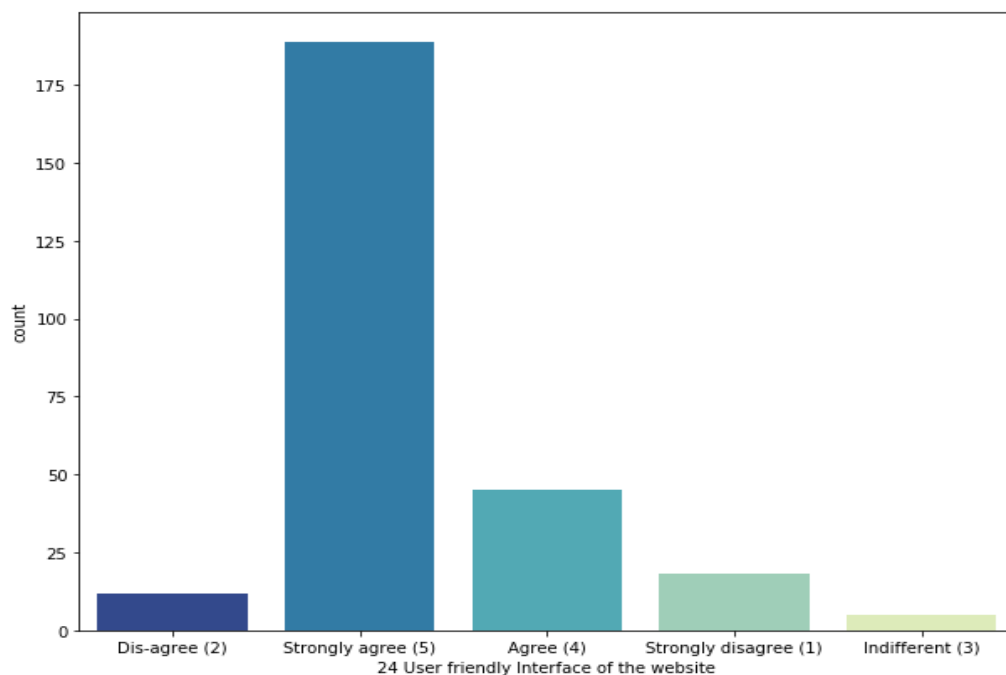
Name: 23 Loading and processing speed, dtype: int64



c. User friendly interface and convenient payment methods

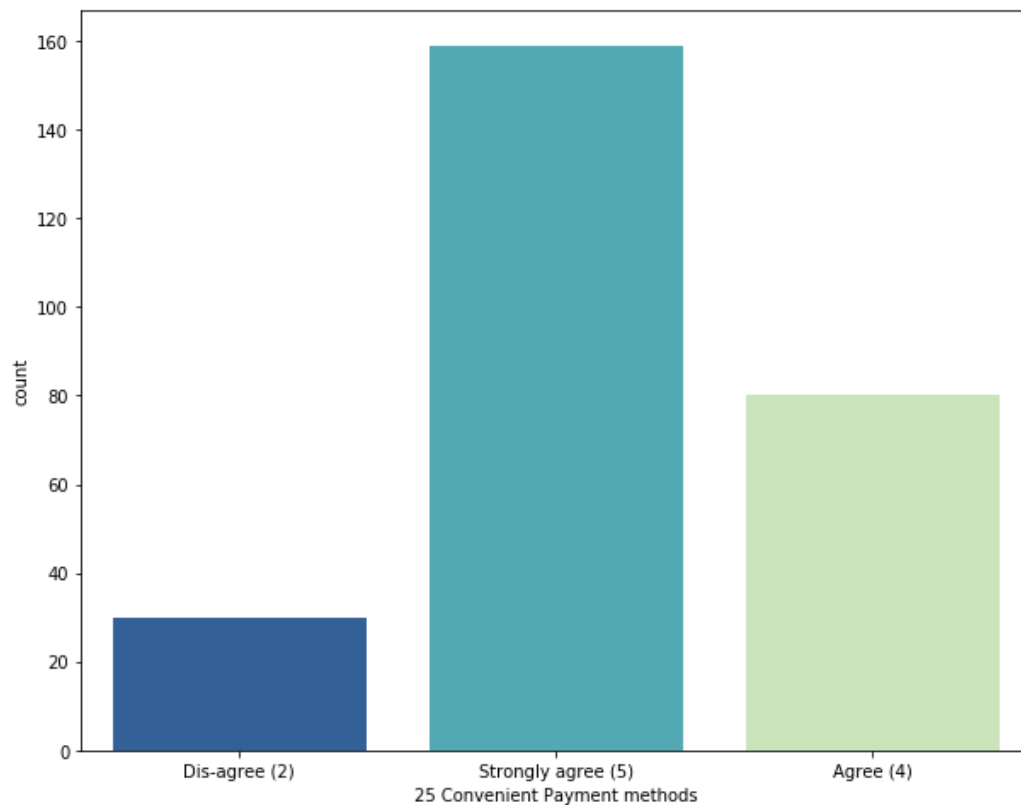
Strongly agree (5)	189
Agree (4)	45
Strongly disagree (1)	18
Dis-agree (2)	12
Indifferent (3)	5

Name: 24 User friendly Interface of the website, dtype: int64



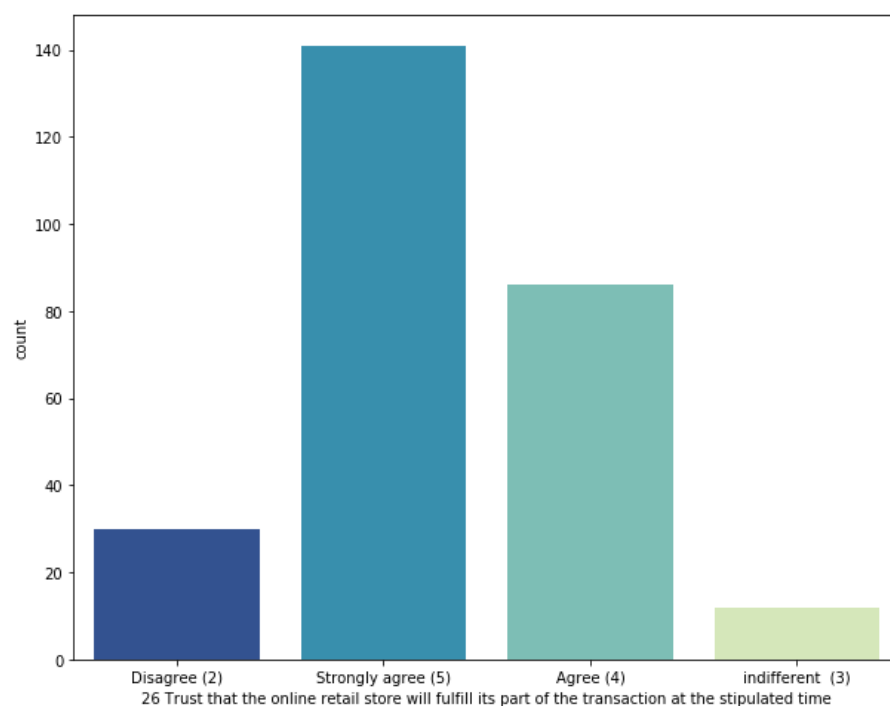
Majority of the customers agree that user friendly interface is necessary to shop online and almost every one strongly agree to the fact that convenient payment methods should be available.

Strongly agree (5) 159
 Agree (4) 80
 Dis-agree (2) 30
 Name: 25 Convenient Payment methods, dtype: int64



- d. Trust that the online retail store will fulfil its part of the transaction at the stipulated time and readiness to assist with queries (customer service)

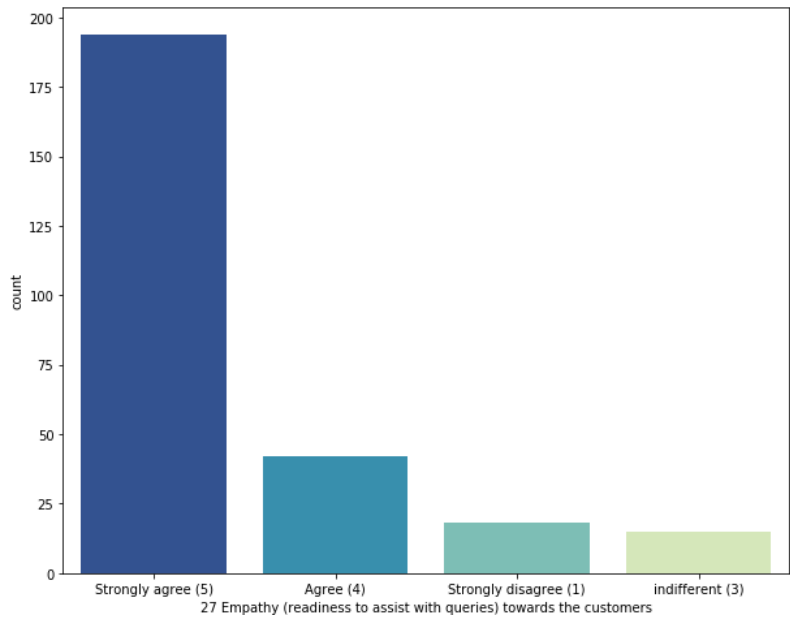
Strongly agree (5) 141
 Agree (4) 86
 Disagree (2) 30
 indifferent (3) 12
 Name: 26 Trust that the online retail store will fulfill its part of the transaction a



Here trust plays a major role, once the order is placed the e-commerce store will have to fulfil its part of the transaction. I.e., timely updates and delivery of the products on time and more than 60% of the buyers strongly agree.

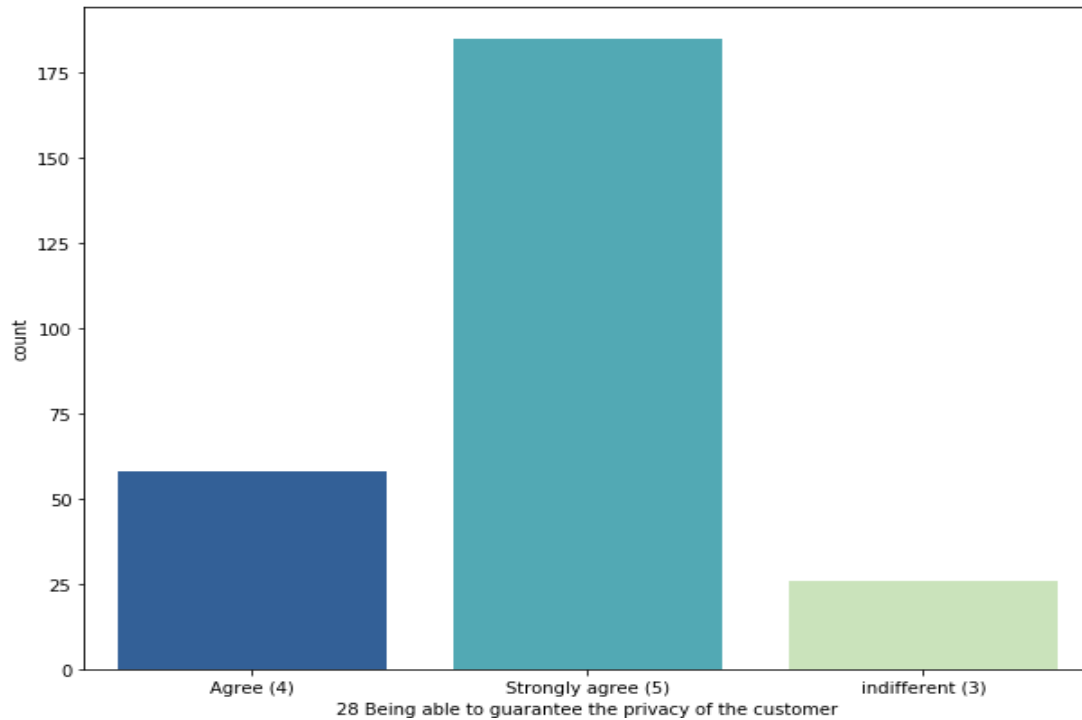
There cannot be zero margin of error in any business. However once there is some concern with the buyer, the online store should be able to troubleshoot the same with a good customer service team (with empathy).
More than 70% of the buyers agree to the same.

```
Strongly agree (5)      194
Agree (4)              42
Strongly disagree (1)   18
indifferent (3)        15
Name: 27 Empathy (readiness to assist with queries) towards the customers, dtype: int6
```



e. Online retail shops should be able to provide complete privacy to its customers.

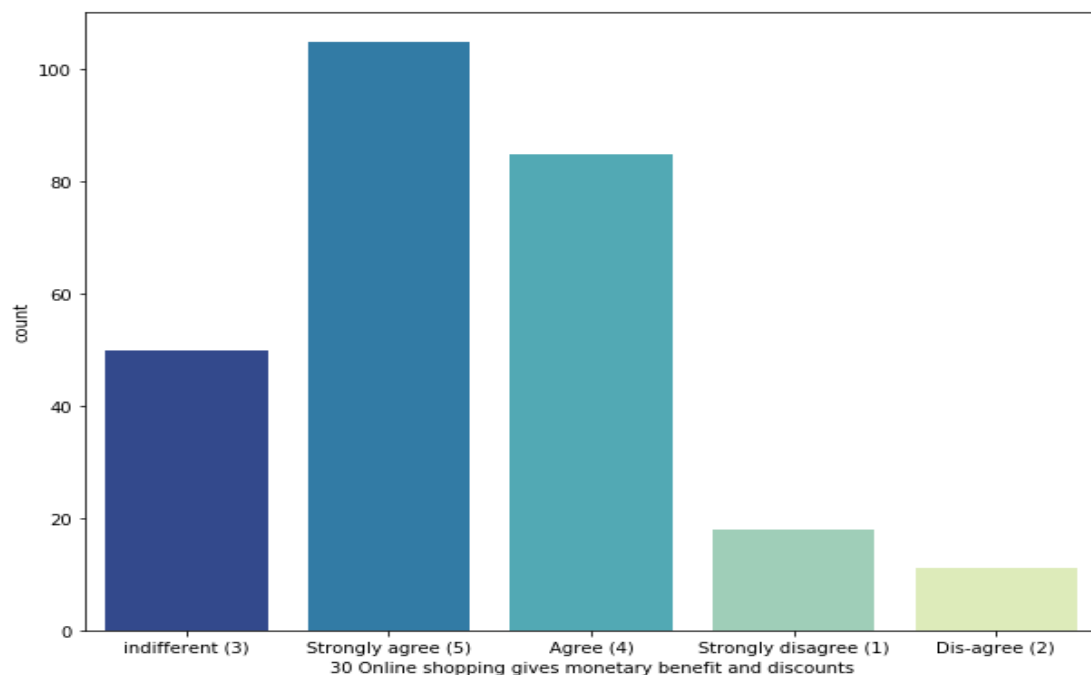
```
Strongly agree (5)    185
Agree (4)             58
indifferent (3)       26
Name: 28 Being able to guarantee the privacy of the customer, dtype: int64
```



Privacy is the major factor that an online retail store should guarantee its buyers and no one disagrees to the same.

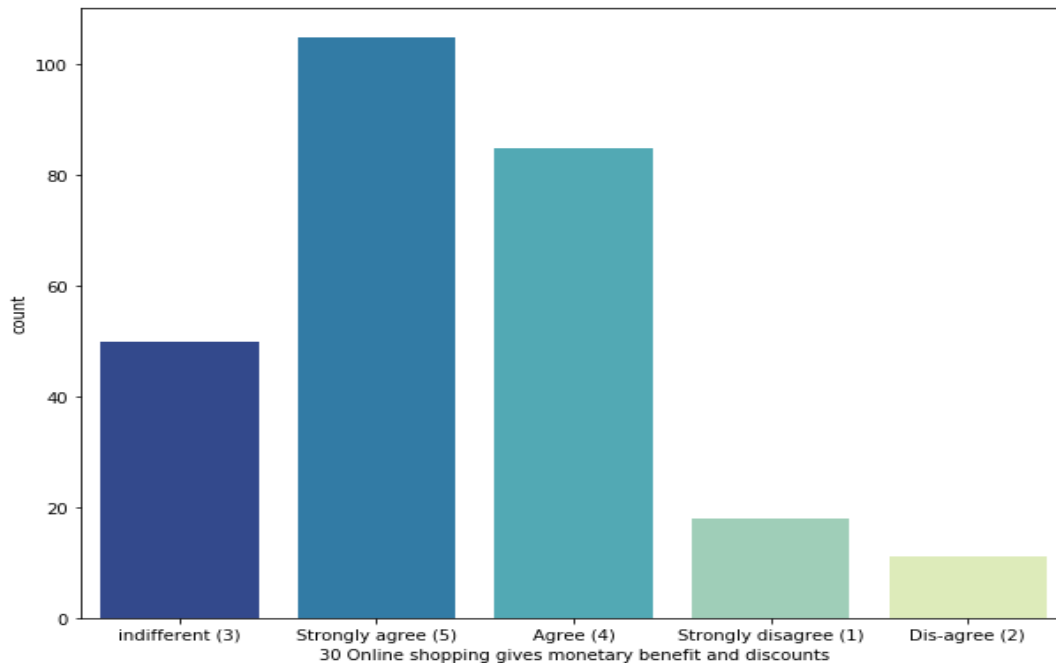
f. Responsiveness, is another major factor that buyer agrees that an e-commerce website should provide to its buyers

```
Strongly agree (5)    105
Agree (4)             85
indifferent (3)       50
Strongly disagree (1)  18
Dis-agree (2)         11
Name: 30 Online shopping gives monetary benefit and discounts, dtype: int64
```



g. Online shopping provides monetary benefits

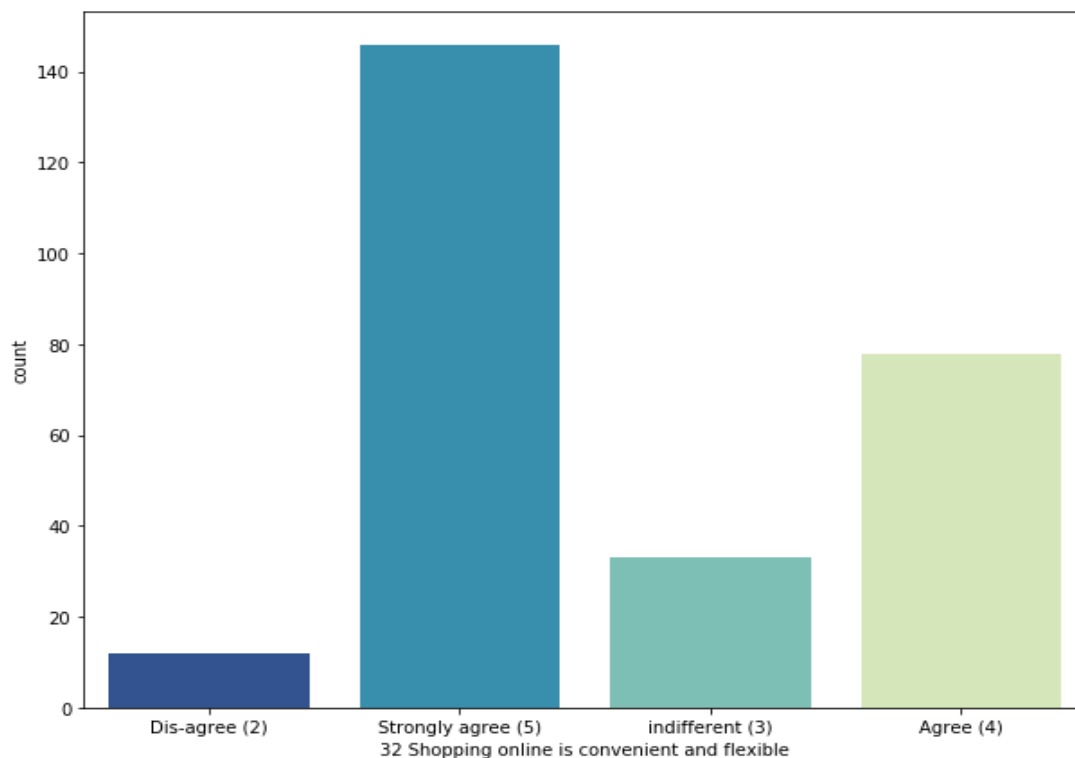
```
Strongly agree (5)    105
Agree (4)             85
indifferent (3)       50
Strongly disagree (1) 18
Dis-agree (2)         11
Name: 30 Online shopping gives monetary benefit and discounts, dtype: int64
```



Most of the people agree to the fact that online shopping provides monetary benefits

h. People shop online because it's convenient and flexible and more than 60% buyers agree to it

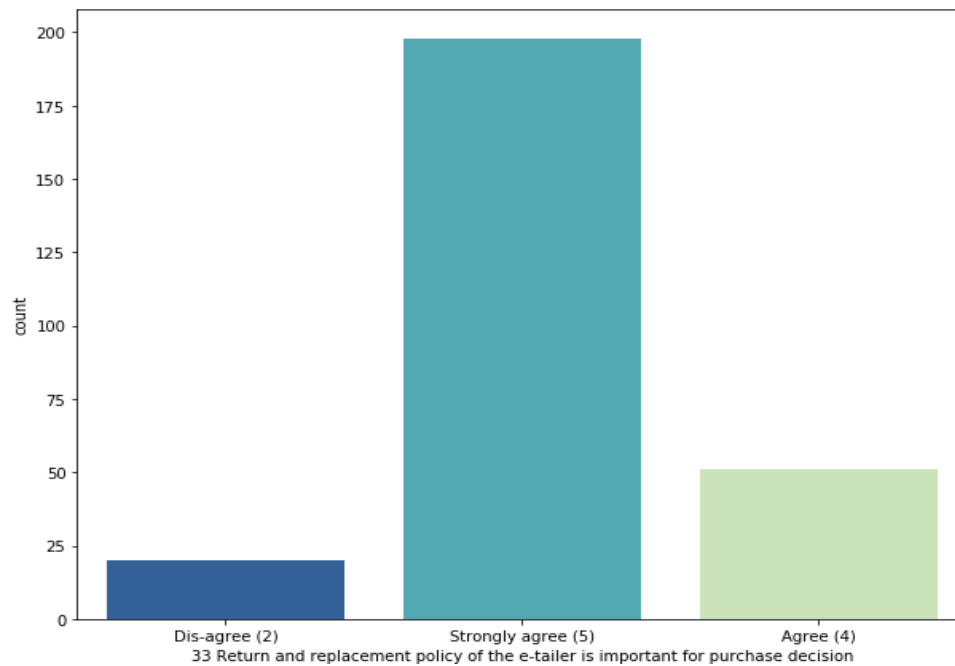
```
Strongly agree (5)    146
Agree (4)             78
indifferent (3)       33
Dis-agree (2)         12
Name: 32 Shopping online is convenient and flexible, dtype: int64
```



- i. Return and replacement policy of the e-tailer is important for purchase decision and no one from the survey dis-agrees to the same.

Strongly agree (5) 198
 Agree (4) 51
 Dis-agree (2) 20

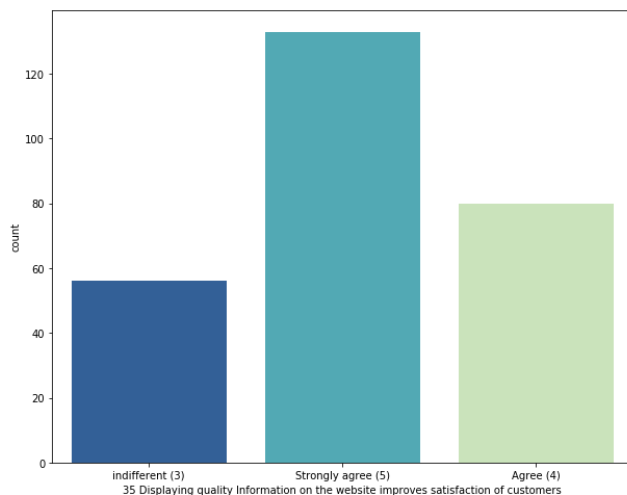
Name: 33 Return and replacement policy of the e-tailer is important for purchase decision,



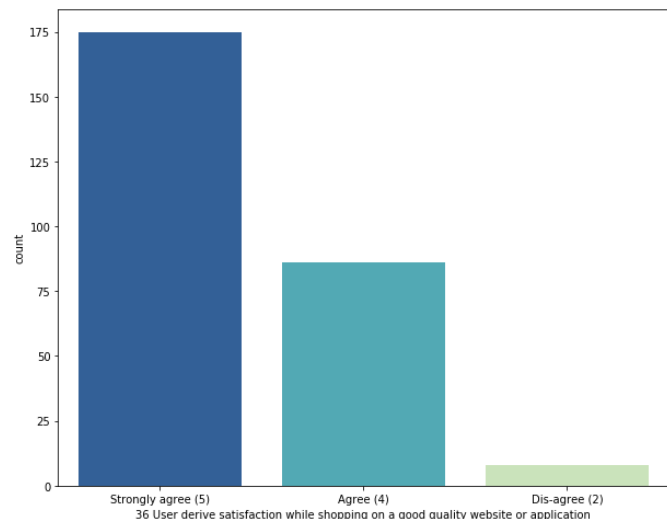
- j. Displaying quality Information on the website improves satisfaction of customers and derive satisfaction while shopping on a good quality website or application

None of the buyers dis-agree to this

Strongly agree (5) 133
 Agree (4) 80
 indifferent (3) 56
 Name: 35 Displaying quality Information on the website improves satisfaction of cust

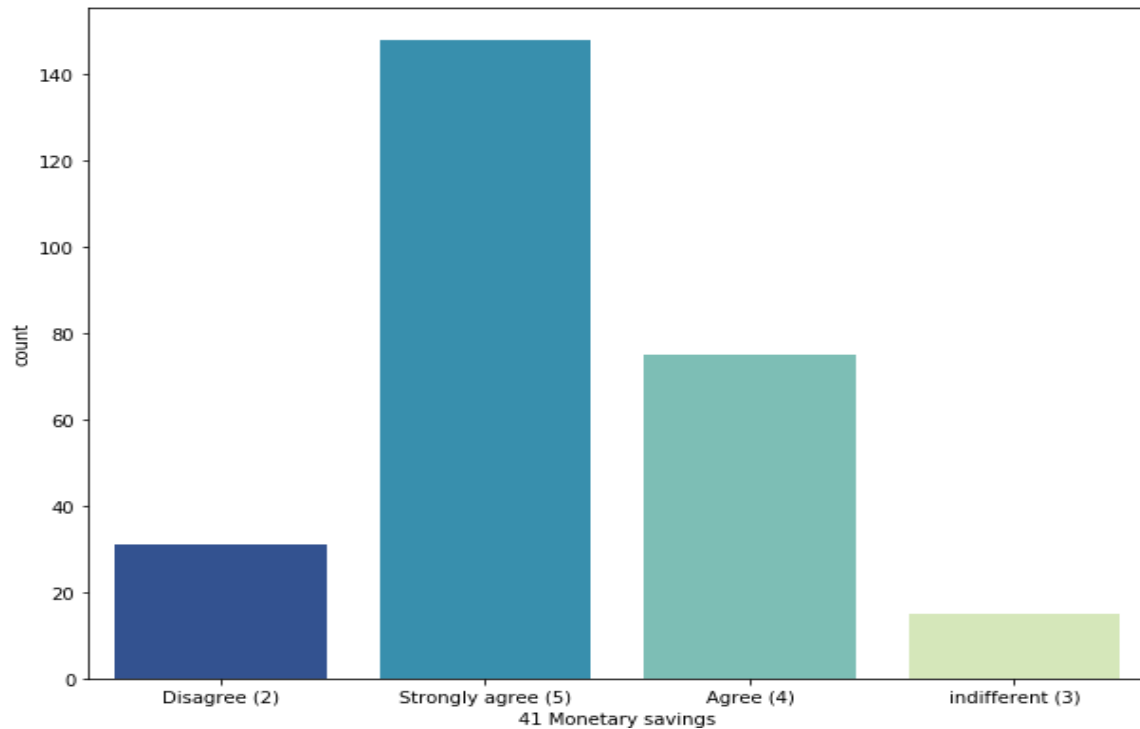


Strongly agree (5) 175
 Agree (4) 86
 Dis-agree (2) 8
 Name: 36 User derive satisfaction while shopping on a good quality website or appl

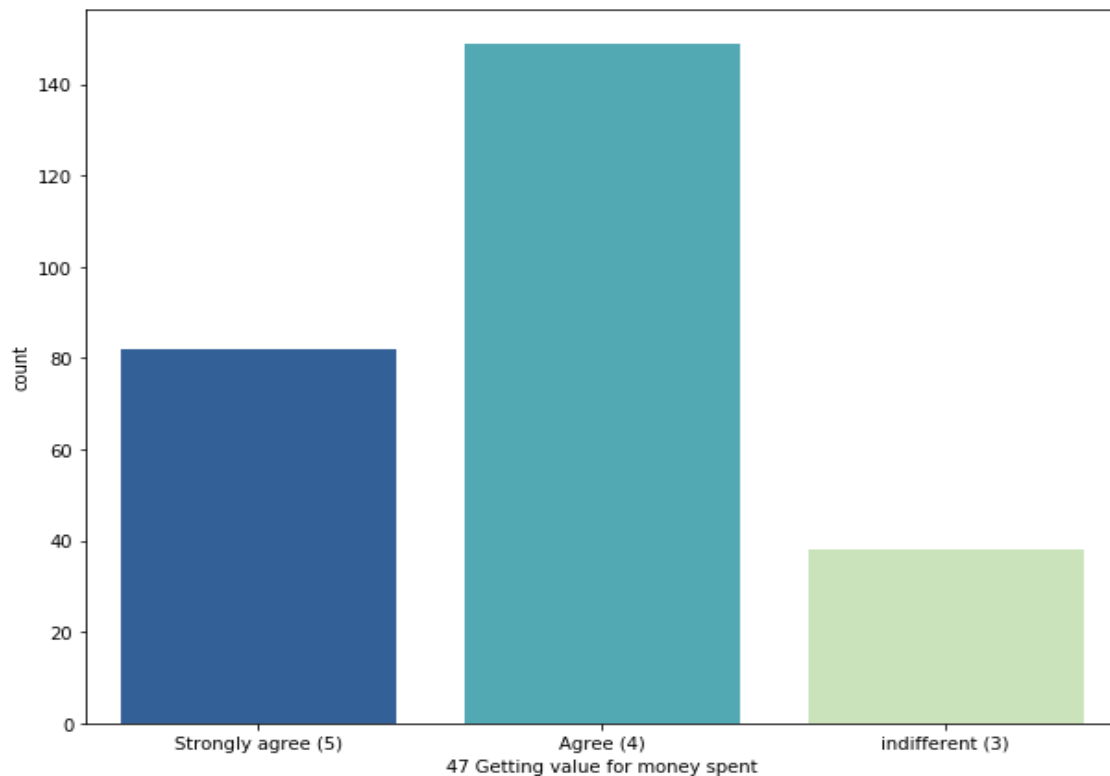


k. Customers voted that buying online should provide monetary savings and getting value for the money spent.

```
Strongly agree (5)    148
Agree (4)             75
Disagree (2)          31
indifferent (3)       15
Name: 41 Monetary savings, dtype: int64
```



```
Agree (4)             149
Strongly agree (5)    82
indifferent (3)       38
Name: 47 Getting value for money spent, dtype: int64
```



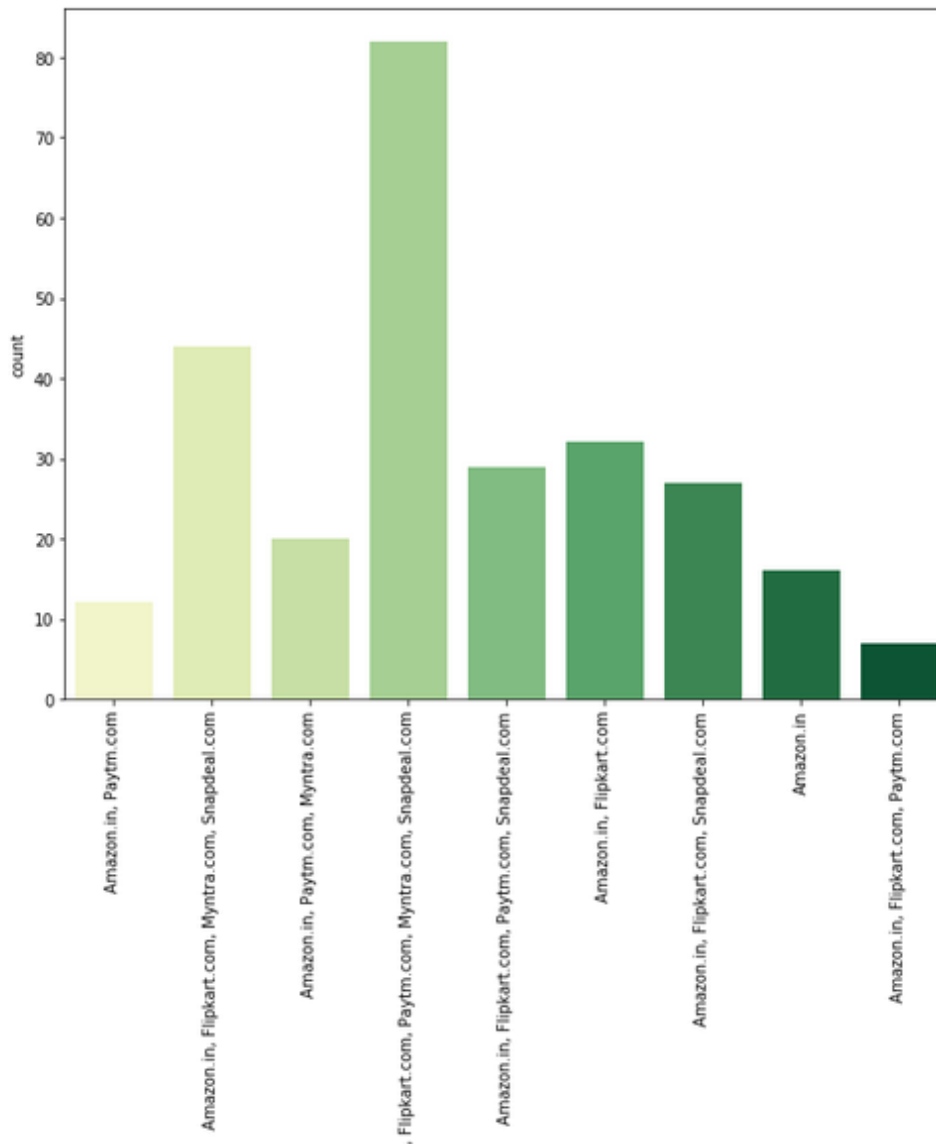
Less than 1% buyers disagree that the buying online should bring monetary benefit and none of the surveyors disagree that buying online should get value for the money spent.

5. Answers on the e-commerce sites

Now that, we have analysed what factors that a buyer considers in an e-commerce website before making a purchase decision. We can see the answers from the buyers towards the popular e-commerce websites to see the retention rate based on the answers they have provided.

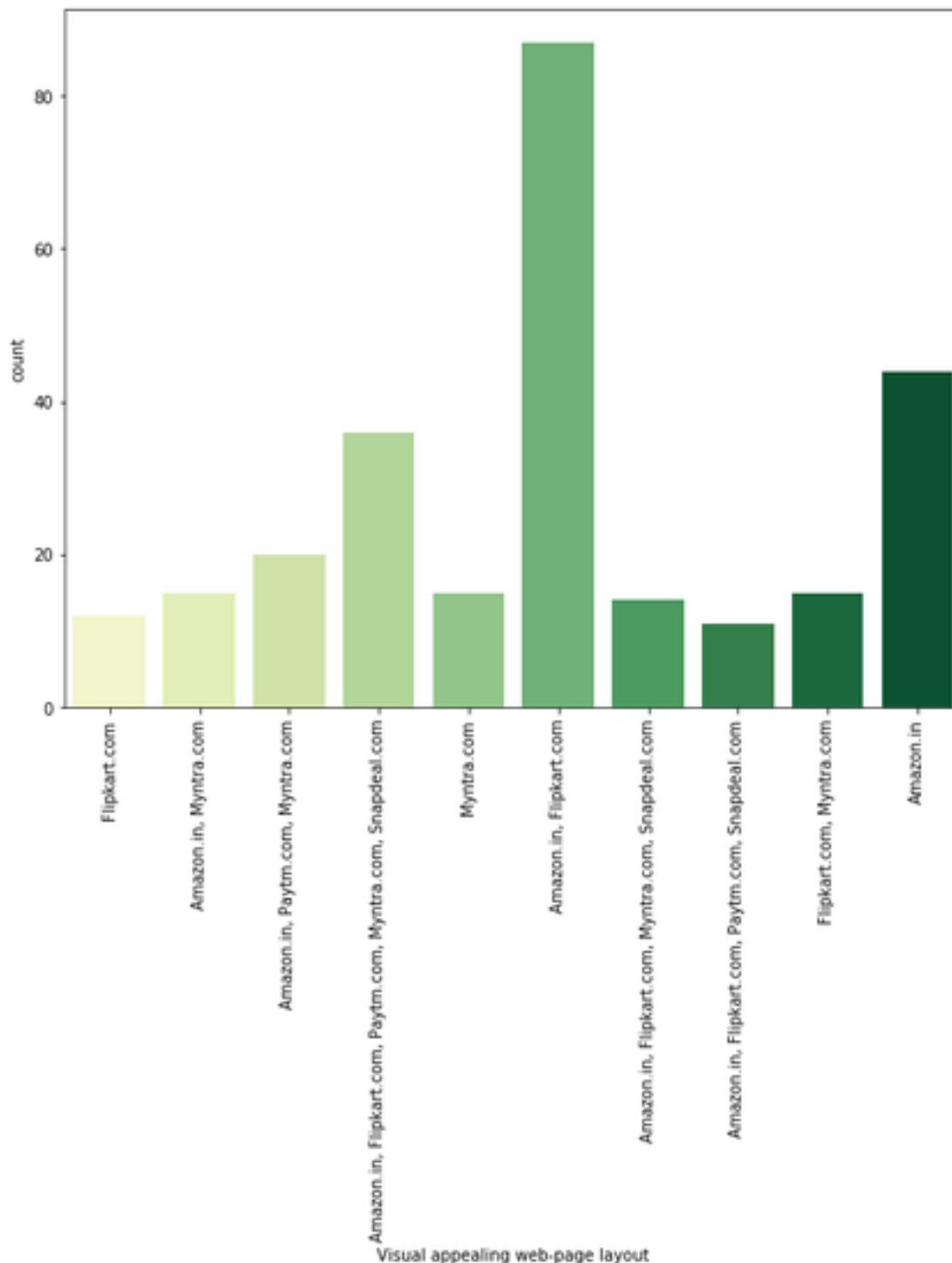
Most of the buyers have purchased from Amazon.in, Flipkart.com, Paytm.com, Myntra.com, Snapdeal.com and everyone has shopped from Amazon.in. The next majority with the categories would be flipkart.

```
Amazon.in, Flipkart.com, Paytm.com, Myntra.com, Snapdeal.com    82
Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com              44
Amazon.in, Flipkart.com                                         32
Amazon.in, Flipkart.com, Paytm.com, Snapdeal.com               29
Amazon.in, Flipkart.com, Snapdeal.com                          27
Amazon.in, Paytm.com, Myntra.com                                20
Amazon.in                                                        16
Amazon.in, Paytm.com                                            12
Amazon.in, Flipkart.com, Paytm.com                              7
Name: From the following, tick any (or all) of the online retailers you have
, dtype: int64
```



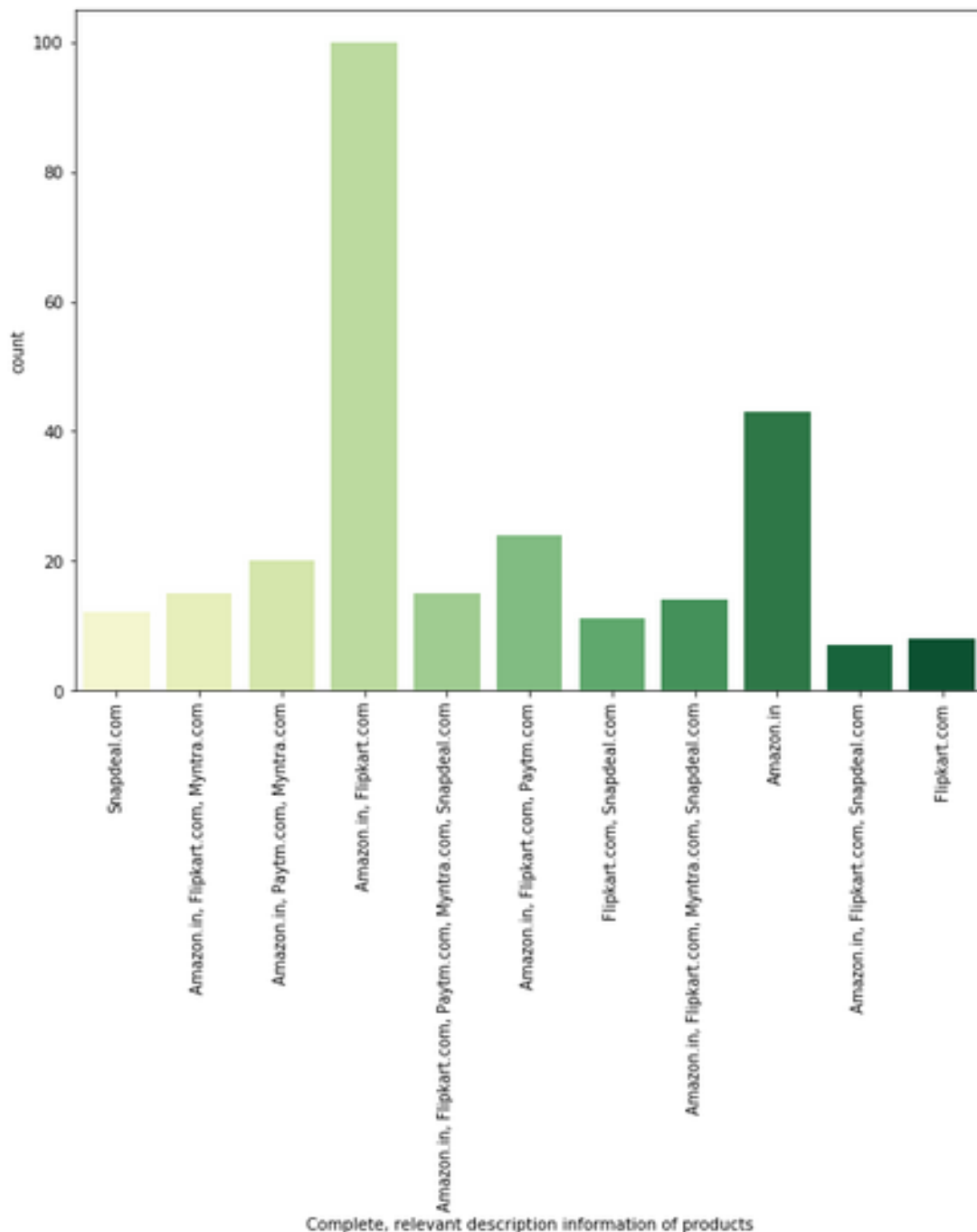
Again, almost every website is easy to use according to buyers, when it comes to visually most appealing websites Amazon.in and Flipkart.com tops the list.

```
Amazon.in, Flipkart.com      87
Amazon.in                   44
Amazon.in, Flipkart.com, Paytm.com, Myntra.com, Snapdeal.com  36
Amazon.in, Paytm.com, Myntra.com  20
Amazon.in, Myntra.com        15
Myntra.com                   15
Flipkart.com, Myntra.com      15
Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com  14
Flipkart.com                 12
Amazon.in, Flipkart.com, Paytm.com, Snapdeal.com  11
Name: Visual appealing web-page layout, dtype: int64
```



When it comes to wild variety of products on offer, Complete relevant description information, Fast loading website/application, Reliability, Interface, Availability of payment options, faster delivery, customer privacy, security, Trustworthiness, Customer support through multiple channels, time spent on a website, Website and application design updates and websites recommended to a friend most people voted for Amazon.in and Flipkart.com

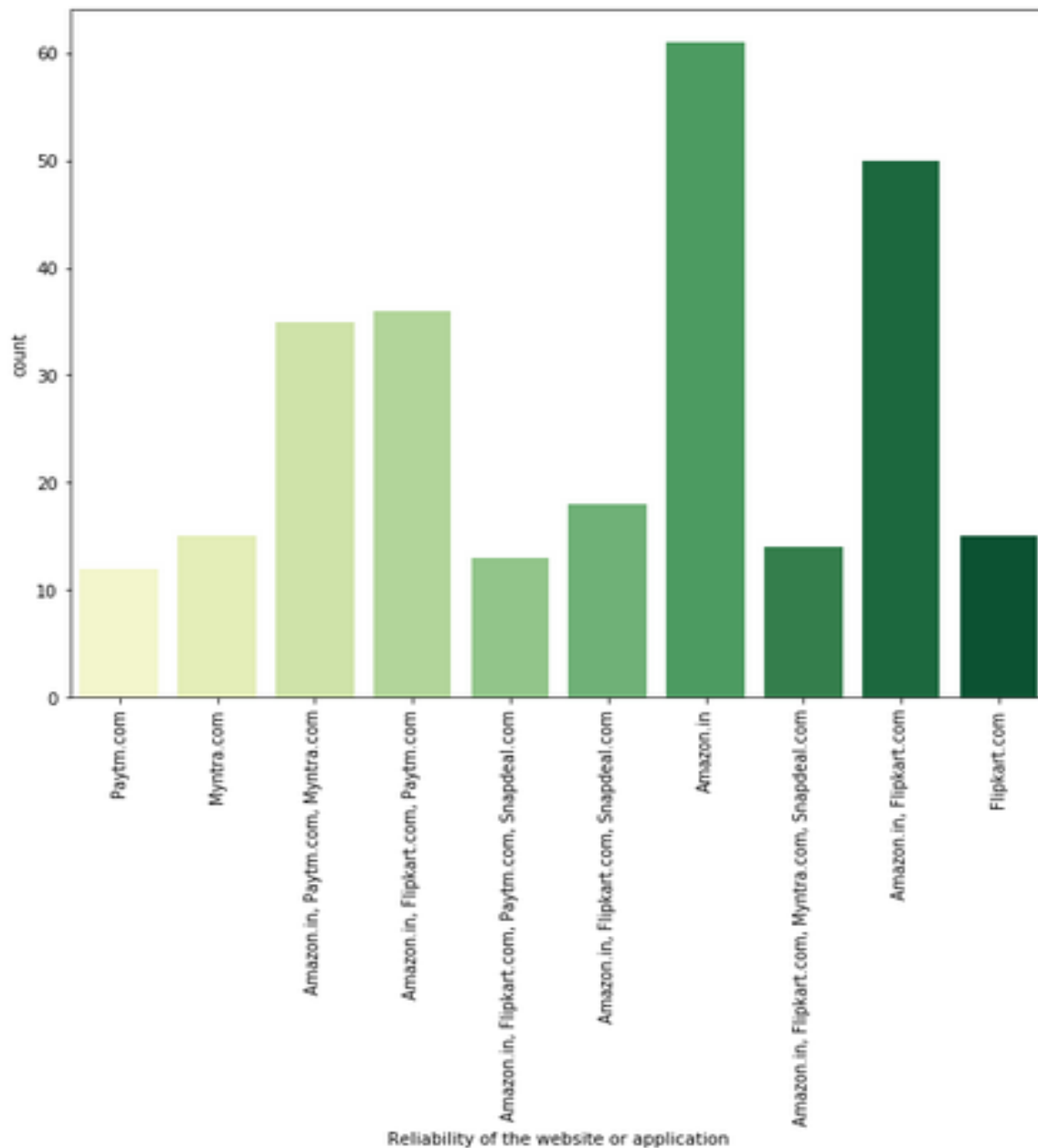
```
Amazon.in, Flipkart.com 100
Amazon.in 43
Amazon.in, Flipkart.com, Paytm.com 24
Amazon.in, Paytm.com, Myntra.com 20
Amazon.in, Flipkart.com, Myntra.com 15
Amazon.in, Flipkart.com, Paytm.com, Myntra.com, Snapdeal.com 15
Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com 14
Snapdeal.com 12
Flipkart.com, Snapdeal.com 11
Flipkart.com 8
Amazon.in, Flipkart.com, Snapdeal.com 7
Name: Complete, relevant description information of products, dtype: int64
```



```

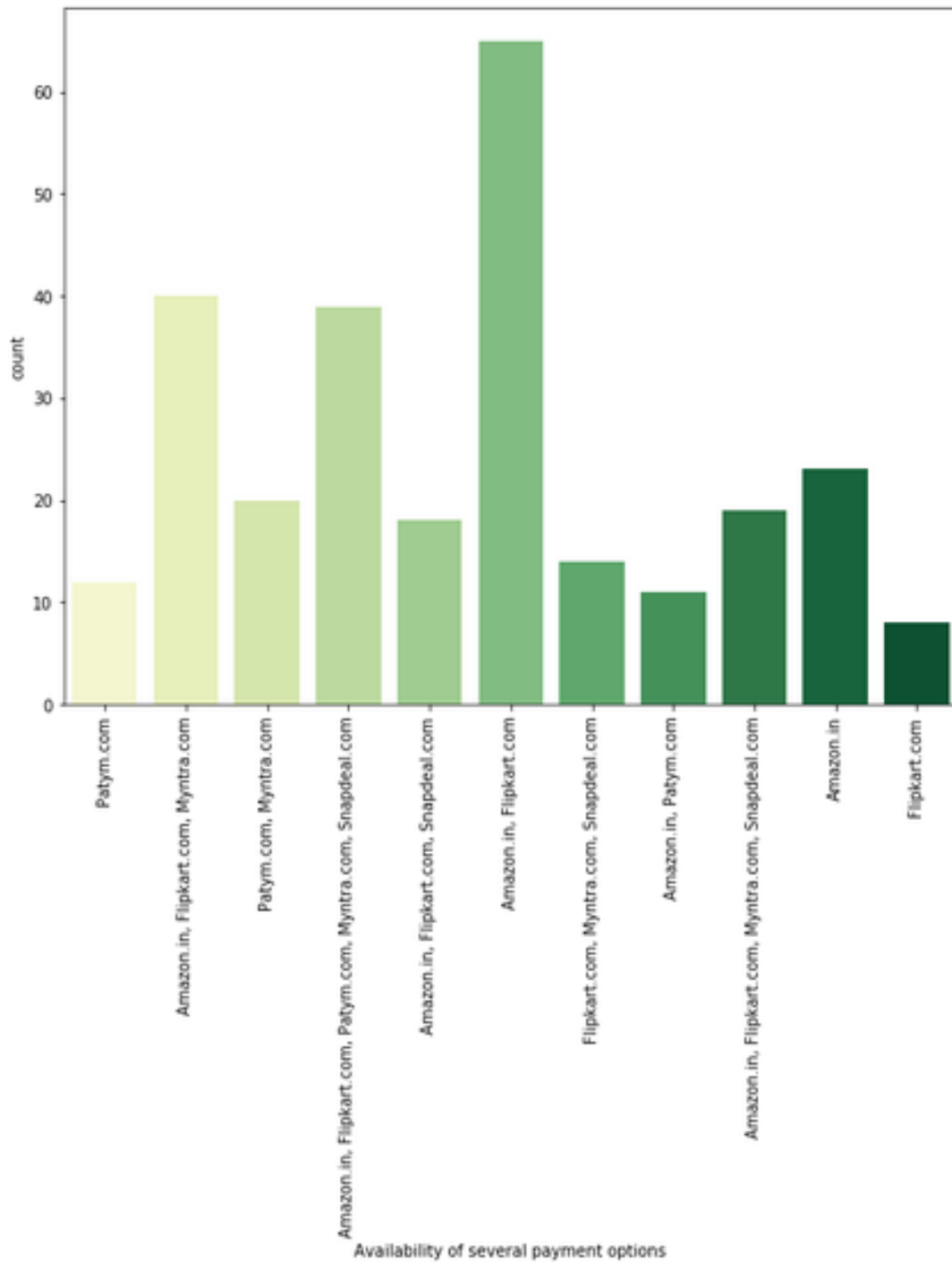
Amazon.in 61
Amazon.in, Flipkart.com 50
Amazon.in, Flipkart.com, Paytm.com 36
Amazon.in, Paytm.com, Myntra.com 35
Amazon.in, Flipkart.com, Snapdeal.com 18
Myntra.com 15
Flipkart.com 15
Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com 14
Amazon.in, Flipkart.com, Paytm.com, Snapdeal.com 13
Paytm.com 12
Name: Reliability of the website or application, dtype: int64

```



Amazon.in, Flipkart.com	65
Amazon.in, Flipkart.com, Myntra.com	40
Amazon.in, Flipkart.com, Patym.com, Myntra.com, Snapdeal.com	39
Amazon.in	23
Patym.com, Myntra.com	20
Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com	19
Amazon.in, Flipkart.com, Snapdeal.com	18
Flipkart.com, Myntra.com, Snapdeal.com	14
Patym.com	12
Amazon.in, Patym.com	11
Flipkart.com	8

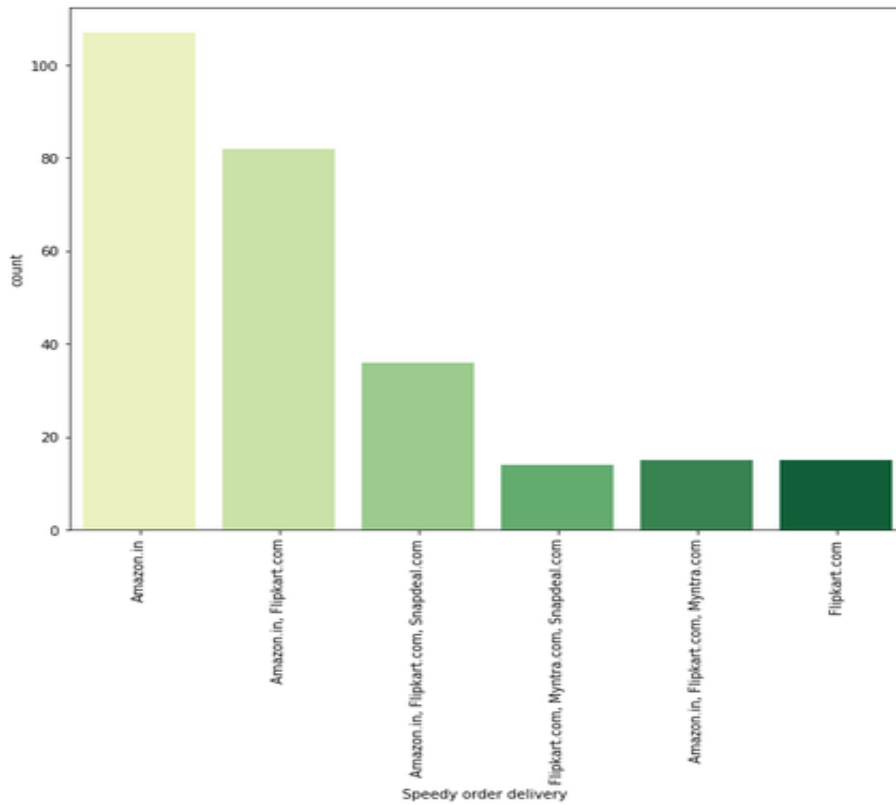
Name: Availability of several payment options, dtype: int64



```

Amazon.in 107
Amazon.in, Flipkart.com 82
Amazon.in, Flipkart.com, Snapdeal.com 36
Amazon.in, Flipkart.com, Myntra.com 15
Flipkart.com 15
Flipkart.com, Myntra.com, Snapdeal.com 14
Name: Speedy order delivery , dtype: int64

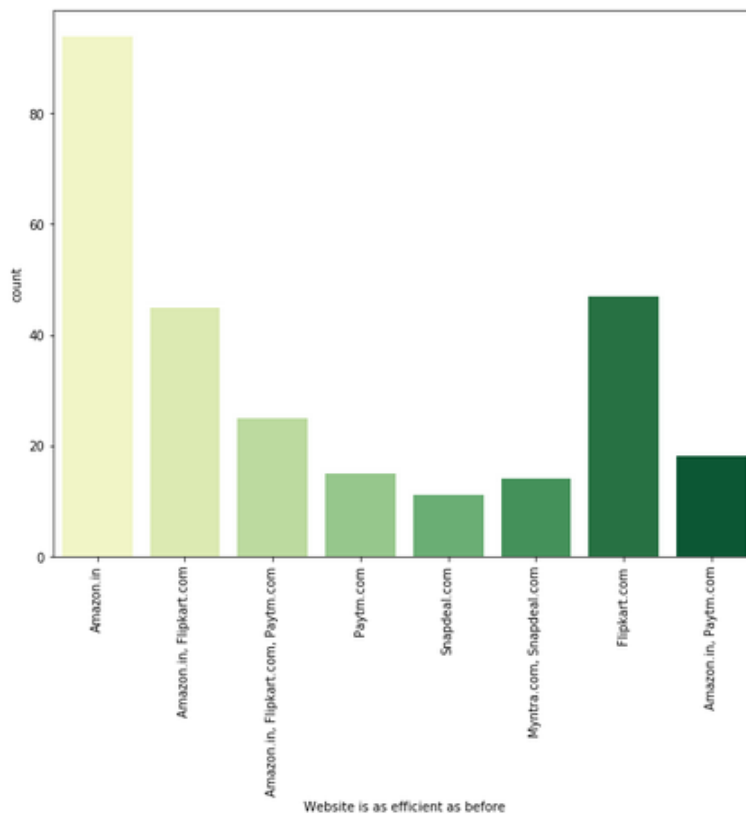
```



```

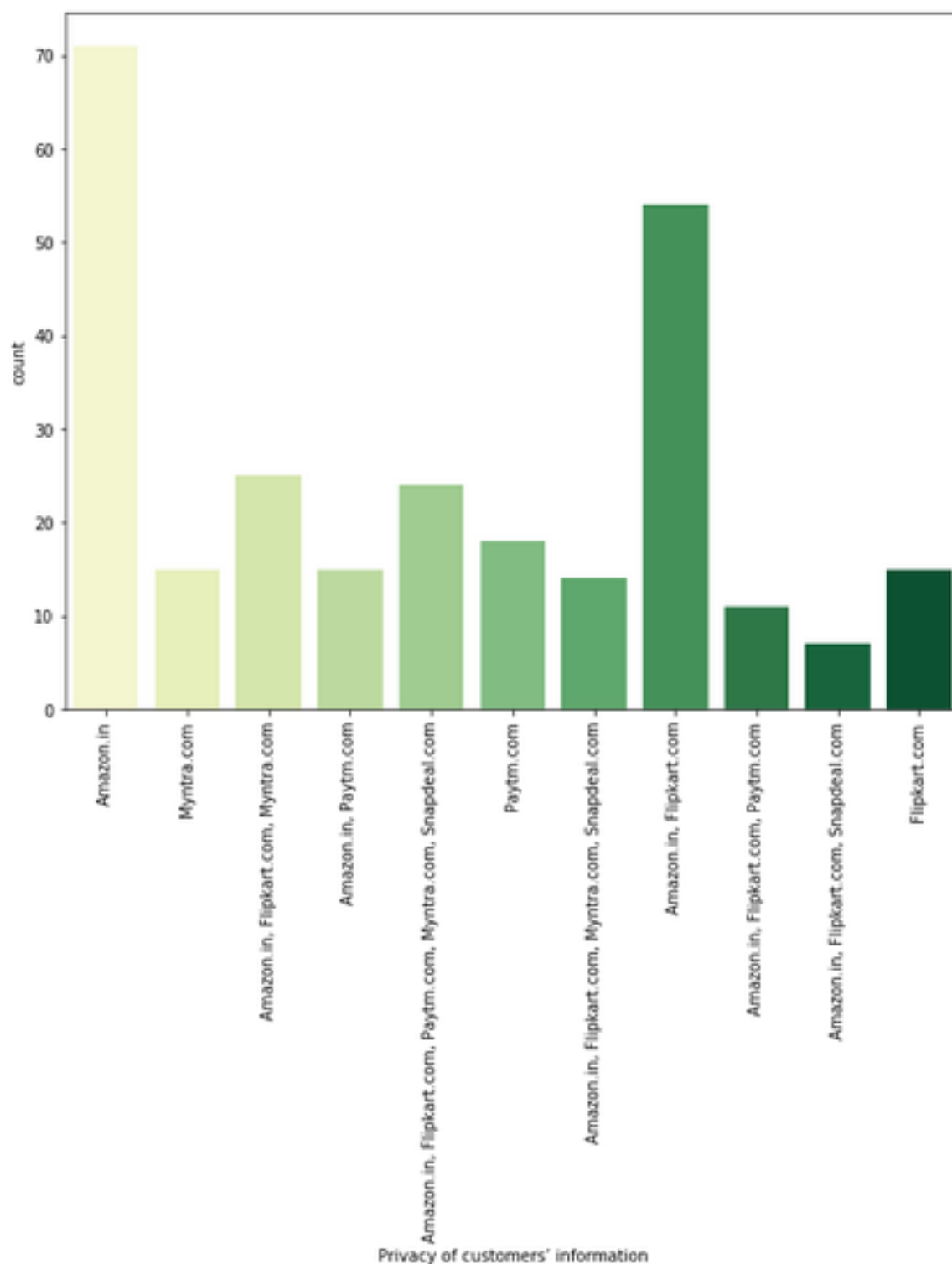
Amazon.in 94
Flipkart.com 47
Amazon.in, Flipkart.com 45
Amazon.in, Flipkart.com, Paytm.com 25
Amazon.in, Paytm.com 18
Paytm.com 15
Myntra.com, Snapdeal.com 14
Snapdeal.com 11
Name: Website is as efficient as before, dtype: int64

```



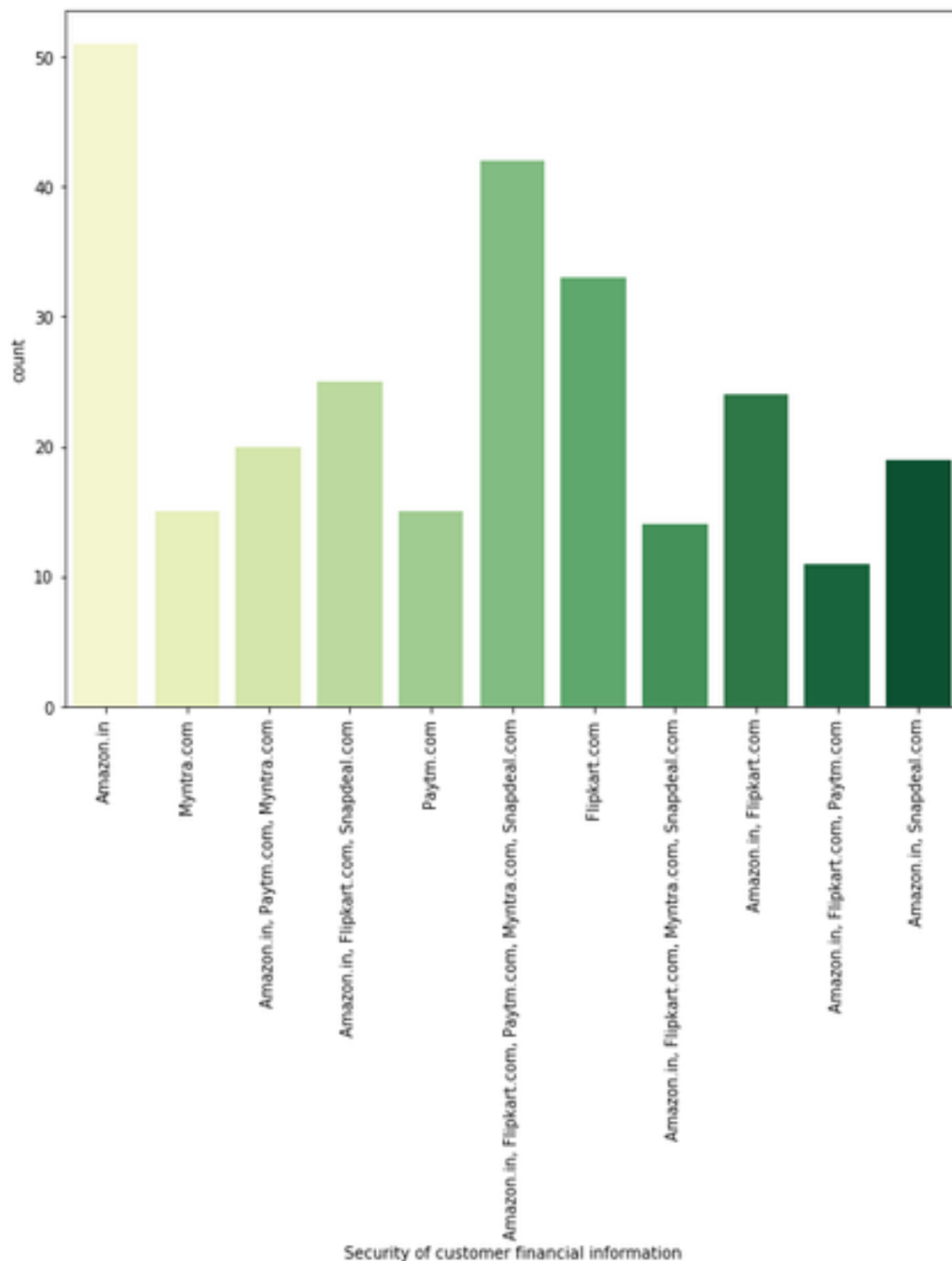
Amazon.in	71
Amazon.in, Flipkart.com	54
Amazon.in, Flipkart.com, Myntra.com	25
Amazon.in, Flipkart.com, Paytm.com, Myntra.com, Snapdeal.com	24
Paytm.com	18
Myntra.com	15
Amazon.in, Paytm.com	15
Flipkart.com	15
Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com	14
Amazon.in, Flipkart.com, Paytm.com	11
Amazon.in, Flipkart.com, Snapdeal.com	7

Name: Privacy of customers' information, dtype: int64

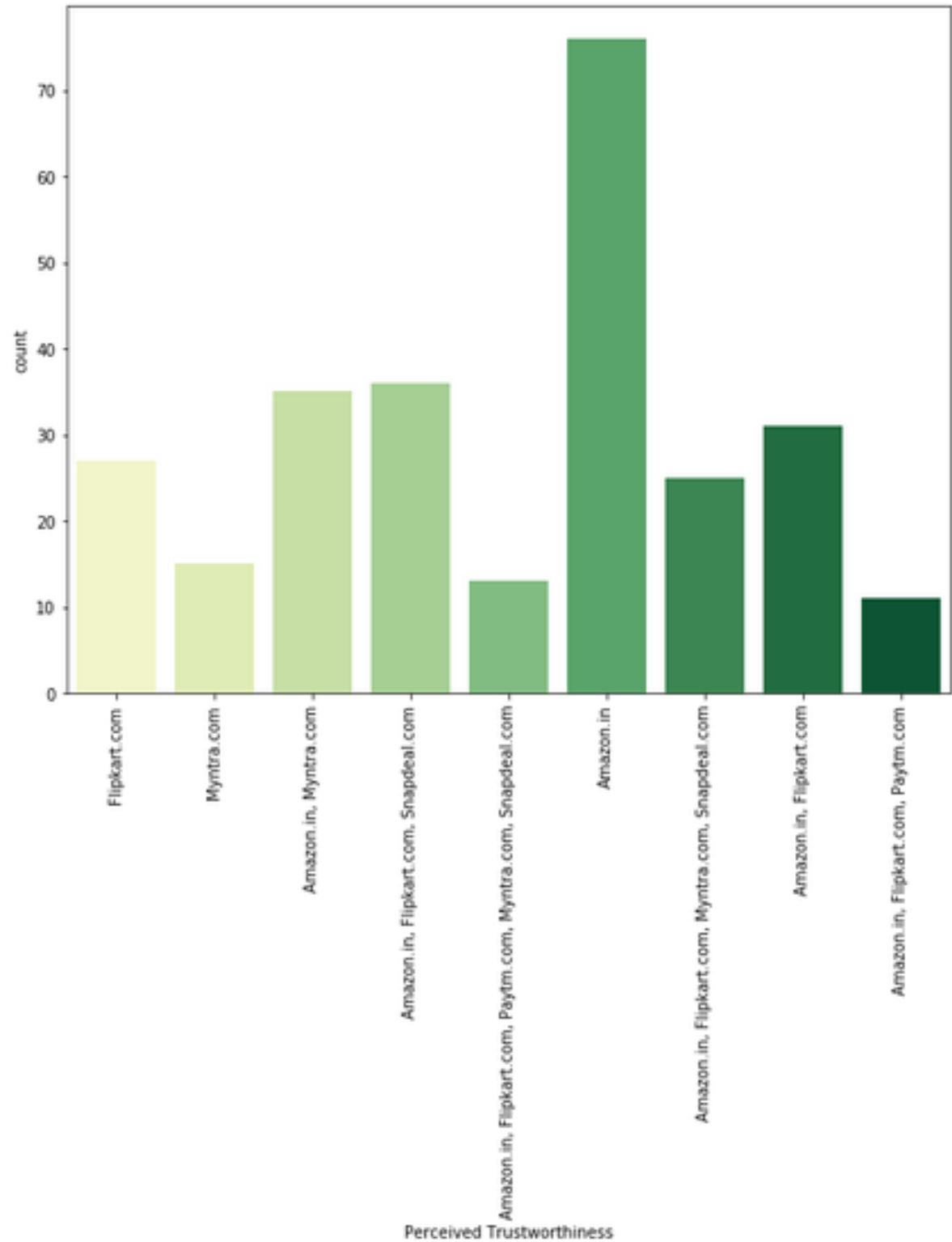


Amazon.in	51
Amazon.in, Flipkart.com, Paytm.com, Myntra.com, Snapdeal.com	42
Flipkart.com	33
Amazon.in, Flipkart.com, Snapdeal.com	25
Amazon.in, Flipkart.com	24
Amazon.in, Paytm.com, Myntra.com	20
Amazon.in, Snapdeal.com	19
Myntra.com	15
Paytm.com	15
Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com	14
Amazon.in, Flipkart.com, Paytm.com	11

Name: Security of customer financial information, dtype: int64

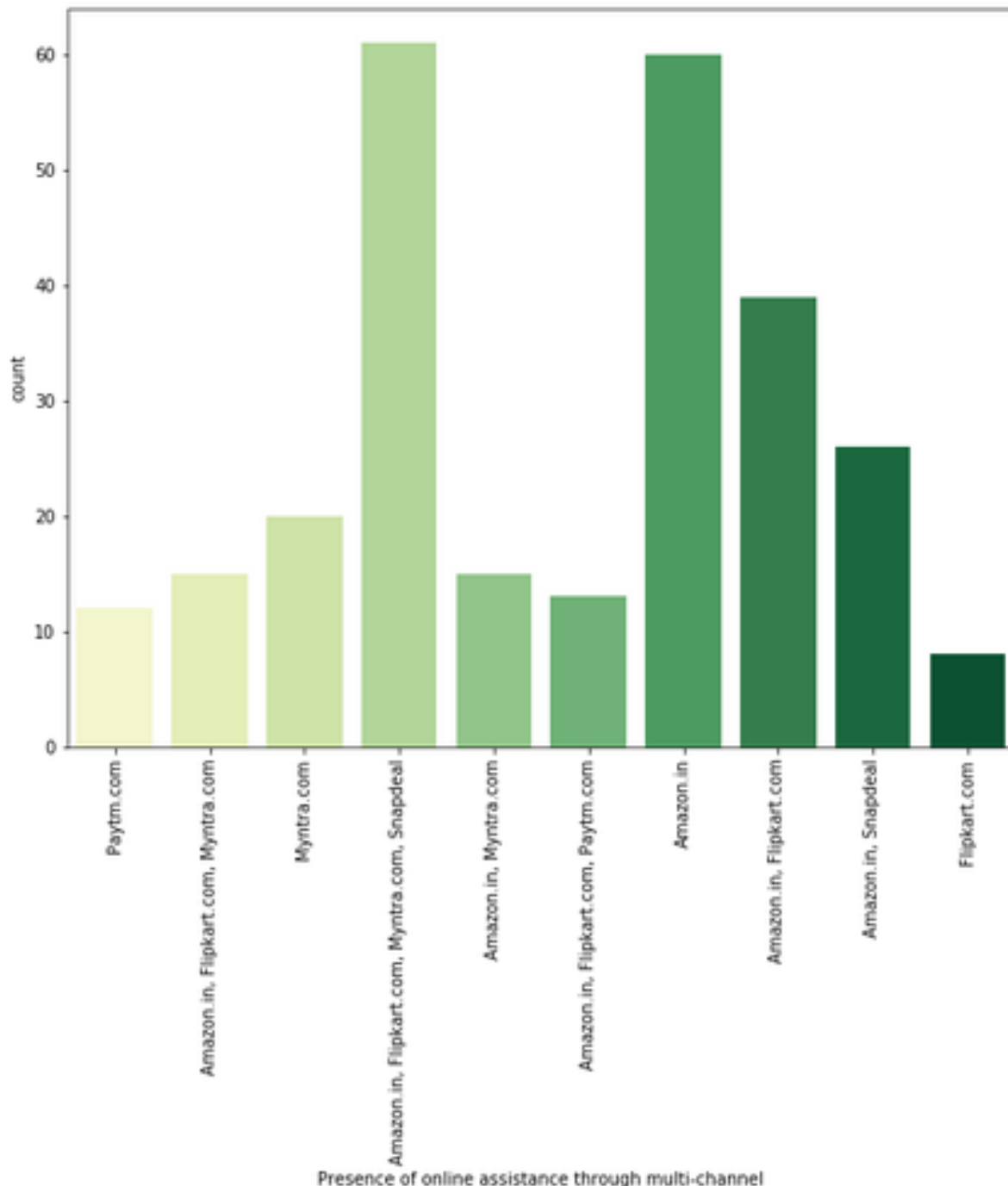


```
Amazon.in 76
Amazon.in, Flipkart.com, Snapdeal.com 36
Amazon.in, Myntra.com 35
Amazon.in, Flipkart.com 31
Flipkart.com 27
Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com 25
Myntra.com 15
Amazon.in, Flipkart.com, Paytm.com, Myntra.com, Snapdeal.com 13
Amazon.in, Flipkart.com, Paytm.com 11
Name: Perceived Trustworthiness, dtype: int64
```



Amazon.in, Flipkart.com, Myntra.com, Snapdeal	61
Amazon.in	60
Amazon.in, Flipkart.com	39
Amazon.in, Snapdeal	26
Myntra.com	20
Amazon.in, Flipkart.com, Myntra.com	15
Amazon.in, Myntra.com	15
Amazon.in, Flipkart.com, Paytm.com	13
Paytm.com	12
Flipkart.com	8

Name: Presence of online assistance through multi-channel, dtype: int64

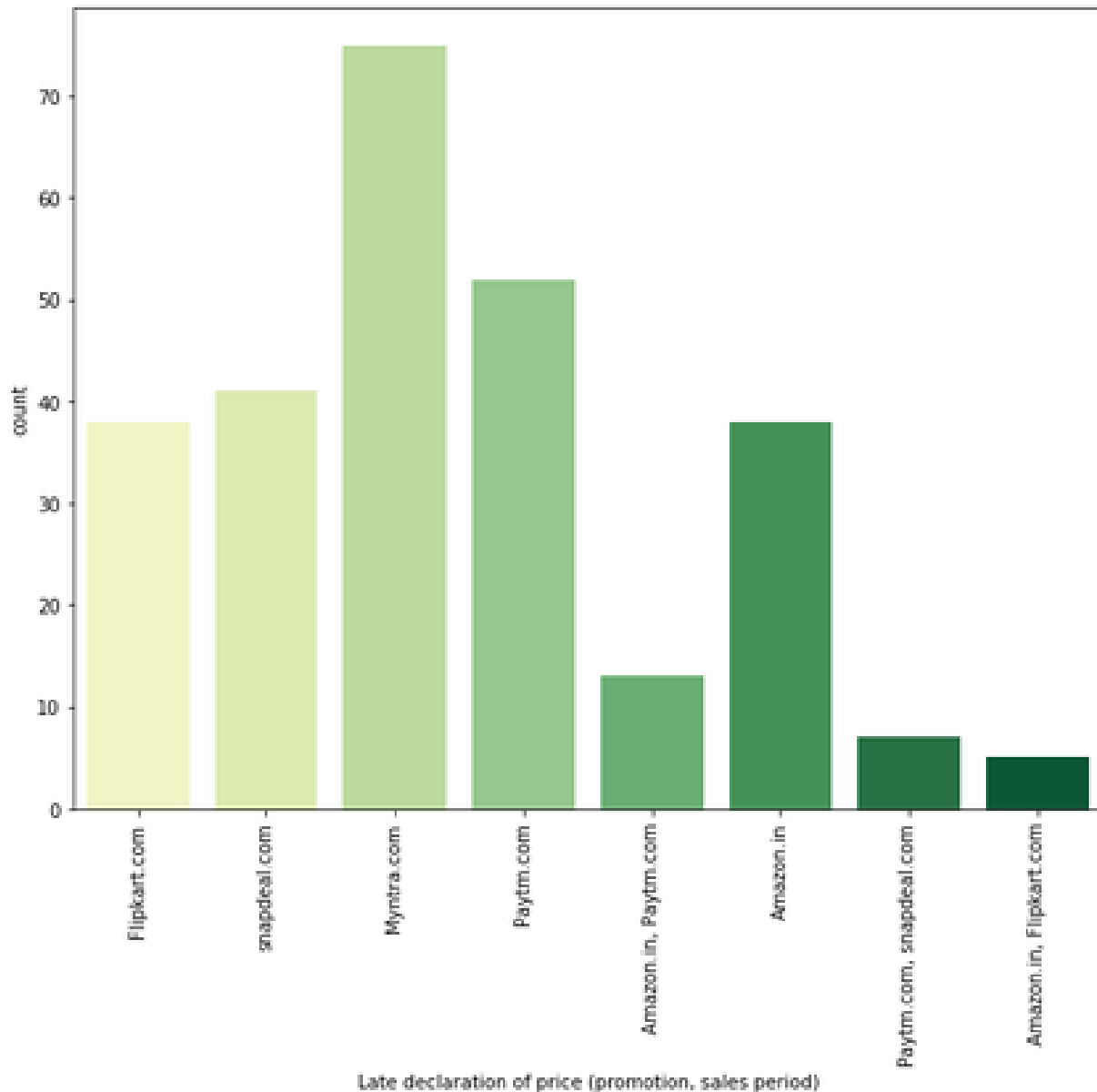


This above positives are a very good sign because as per the previous analysis on what people prefer for in an e-commerce website has been covered by Amazon and Flipkart and they can expect a higher retention rates when compared to other websites.


```

Myntra.com          75
Paytm.com           52
snapdeal.com        41
Flipkart.com        38
Amazon.in           38
Amazon.in, Paytm.com 13
Paytm.com, snapdeal.com 7
Amazon.in, Flipkart.com 5
Name: Late declaration of price (promotion, sales period), dtype: int64

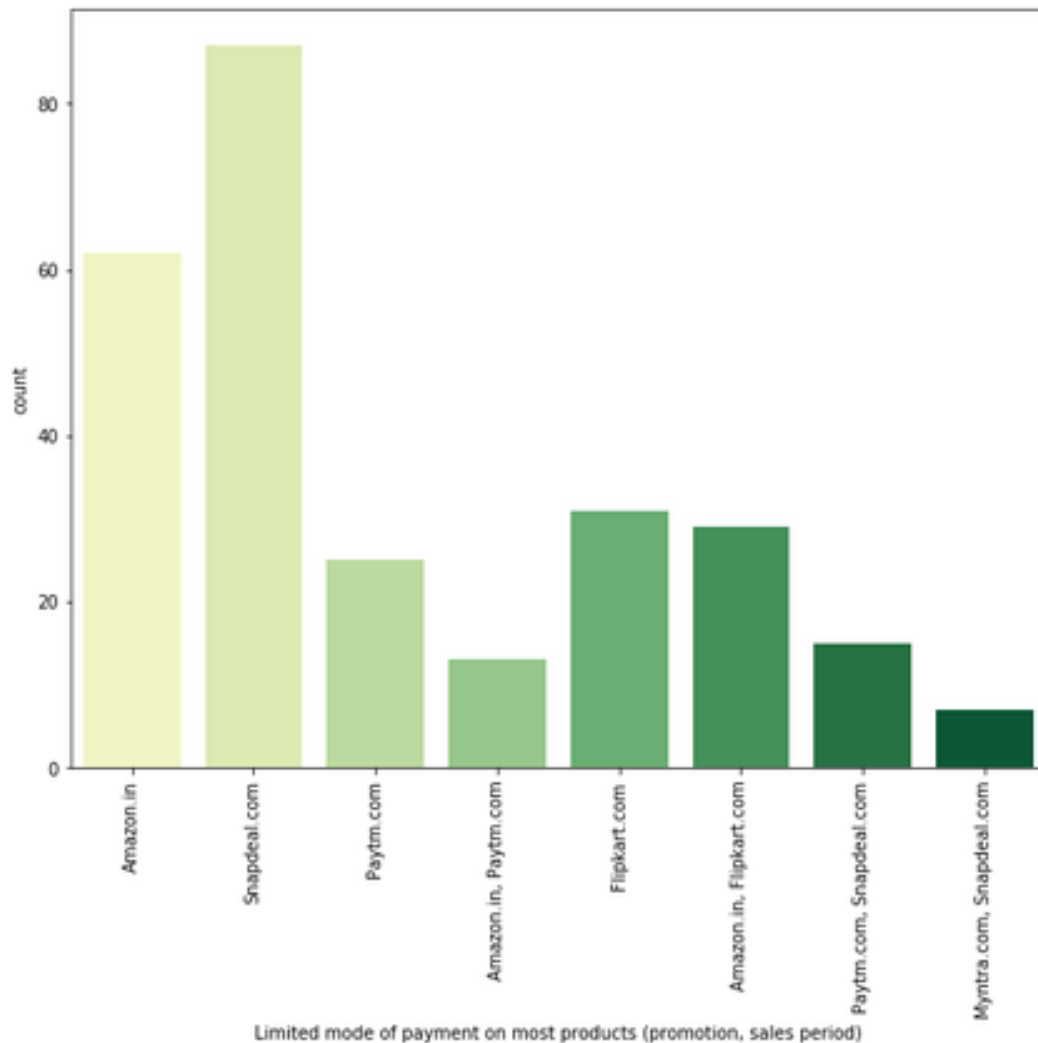
```



However, when we see analyse factors such as Late declaration of price and Longer page loading time Myntra and paytm tops the list and this promoting a bad buyer experience.

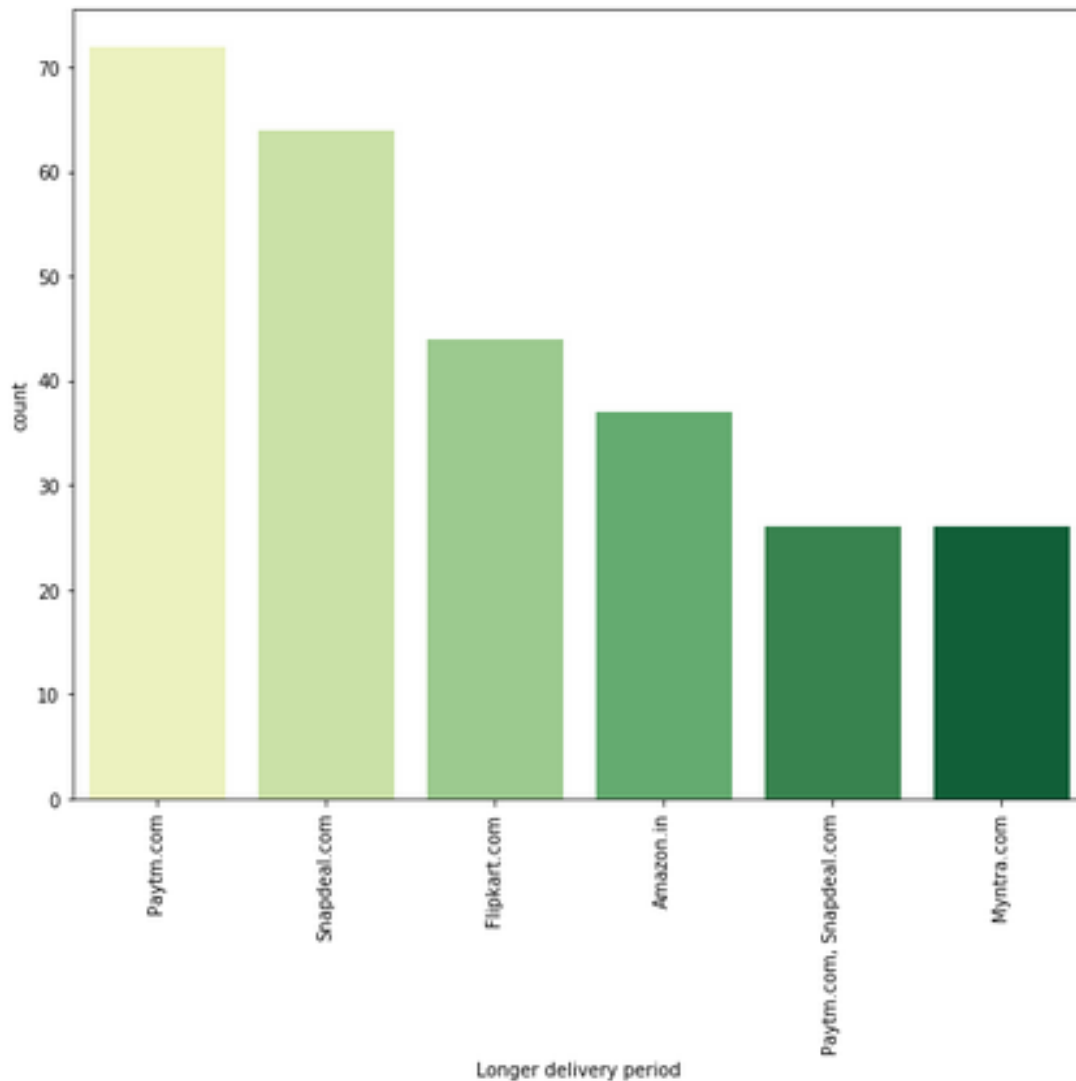
Snapdeal.com	87
Amazon.in	62
Flipkart.com	31
Amazon.in, Flipkart.com	29
Paytm.com	25
Paytm.com, Snapdeal.com	15
Amazon.in, Paytm.com	13
Myntra.com, Snapdeal.com	7

Name: Limited mode of payment on most products (promotion, sales period), dtype



Further, when it comes to Limited mode of payment on most products Snapdeal tops the list followed by Amazon. Here is the only place Amazon needs to improve as we can see from the customer preferences, more options on payment mode is required.

```
Paytm.com          72
Snapdeal.com       64
Flipkart.com       44
Amazon.in          37
Paytm.com, Snapdeal.com  26
Myntra.com         26
Name: Longer delivery period, dtype: int64
```



When it comes to longer delivery period, Paytm and Snapdeal tops the list which is not in line with the customer expectations.

When it comes to frequent disruptions, Amazon, Myntra and Snapdeal tops the list.

Statistics used to validate the above correlation statements:

I used chi2 test on most important variables that contributed for website recommendation to a friend, which we initially considered that is the major factor that determines whether the buyer is retained with the experience provided.

- In this chi-squared test, the alpha value considered was 0.05 (5%).
- For every 2 categorical variable test the Null Hypothesis assumption was the variables were independent of the variable “Website recommended to a friend”.
- And the Alternate hypothesis was the variables tested were actually dependent on the “Website recommended to a friend”.

The results of the chi2 test clearly pointed that the p value for all the variables were less than the alpha value (0.05) confirming the dependency of the variables over the “Website recommended to a friend”.

6. Conclusion:

- a. From the above analysis, I can say that the companies with highest retention and customer satisfaction rates are Amazon.in and Flipkart.com because their positives are in line with the buyer preferences and they are most likely to use this websites for purchases in future.
- b. The company with moderate retention rate is Myntra.com
- c. Further, the company with very low retention rate and customer satisfaction is with Paytm and Snapdeal because most of the factors are not in line with the customer preferences and they are less likely to use this website again for online purchase.
- d. Customer satisfaction plays a major role in retention, A company should first understand what customers expects while purchasing online (e-commerce) and build a better buying experience which will in turn retain the customer. An unforgettable experience is what drives customers to buy again and again.

The main factors that drives customer satisfaction are.

- Easy to read and understandable content
- Relevant information on all the products
- Easier website design and navigation
- User friendly Interface
- Convenience in payment methods
- Trust and On-Time Delivery.
- Better Customer Service
- Secure and offers complete privacy to their customers
- Discounts and Monetary Benefits
- Wide range of options and product selections
- Flexibility in their offers and services
- Return and Replacement policies
- Quality information on websites
- Website Quality
- Value for the money spent

Limitations of this work and Scope for Future Work:

There is one major limitation to the analysis, due to the minimum data there are 50% more female surveyors when compared to male and this margin is huge.

Further the data is very less to come to a sure conclusion on the retention rate. And if we are analysing the retention, it would be fair to ask the surveyors the direct question on which websites are they are likely to buy from the websites in future.