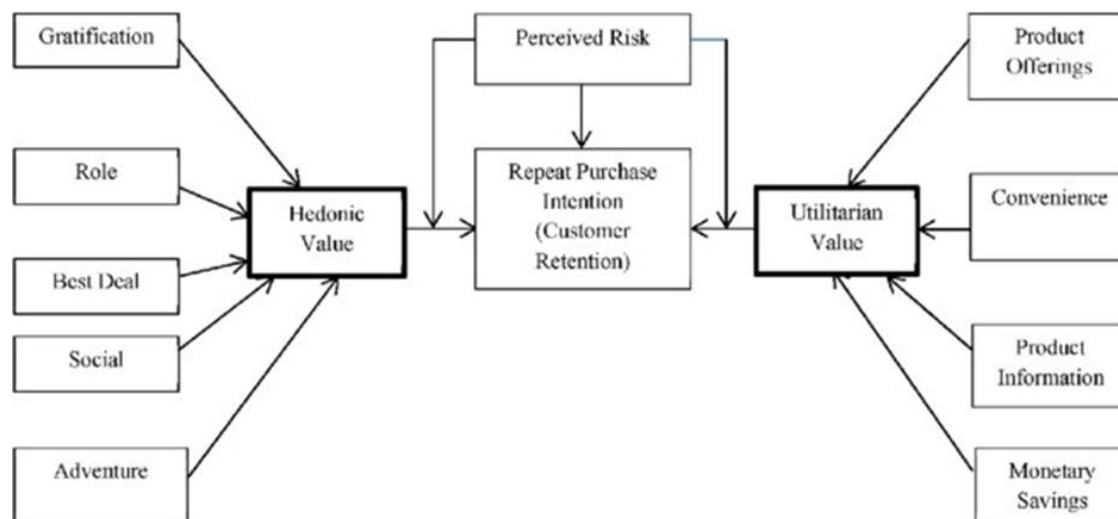


E-retail factors for customer activation and retention: A case study from Indian e-commerce customers

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. Be careful: There are two sheets (one is detailed) and second is encoded in the excel file. You may use any of them by extracting in separate excel sheet. The number of column(s) is more than 47. Read the column header carefully.



importing libraries

```
import pandas as pd
import numpy as np
```

#visualizing the data

```
import matplotlib.pyplot as plt
%matplotlib inline
import seaborn as sns
import plotly.graph_objects as go
from plotly.subplots import make_subplots
from sklearn.preprocessing import LabelEncoder
import plotly.express as px
```

#importing warnings

```
import warnings
warnings.filterwarnings("ignore")
```

Let's Load the dataset

```
data = pd.read_excel('customer_retention_dataset.xlsx', 'datasheet')
encoded_data = pd.read_excel('customer_retention_dataset.xlsx', 'codedsheet')

data.head()
```

1 Gender of respondent	2 How old are you?	3 Which city do you shop online from?	4 What is the Pin Code of where you shop online from?	5 Since How Long You are Shopping Online ?	6 How many times you have made an online purchase in the past 1 year?	7 How do you access the internet while shopping on-line?	8 Which device do you use to access the online shopping?	9 What is the screen size of your mobile device? (inches)	10 What is the operating system (OS) of your device? (inches)	11 Longer time to get logged in (promotion, sales period)	12 Longer time in displaying graphics and photos (promotion, sales period)	13 Late declaration of price (promotion, sales period)		
0	Male	31-40 years	Delhi	110009	Above 4 years	31-40 times	Dial-up	Desktop	Others	Window/windows Mobile	...	Amazon.in	Amazon.in	Flipkart.com
1	Female	21-30 years	Delhi	110030	Above 4 years	41 times and above	Wi-Fi	Smartphone	4.7 inches	iOS/Mac	...	Amazon.in, Flipkart.com	Myntra.com	snapdeal.com
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.com
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.com
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.com

```

'26 Trust that the online retail store will fulfill its part of the transaction at the
stipulated time',
'27 Empathy (readiness to assist with queries) towards the customers',
'28 Being able to guarantee the privacy of the customer',
'29 Responsiveness, availability of several communication channels (email, online rep,
twitter, phone etc.)',
'30 Online shopping gives monetary benefit and discounts',
'31 Enjoyment is derived from shopping online',
'32 Shopping online is convenient and flexible',
'33 Return and replacement policy of the e-tailer is important for purchase decision',
'34 Gaining access to loyalty programs is a benefit of shopping online',
'35 Displaying quality Information on the website improves satisfaction of customers',
'36 User derive satisfaction while shopping on a good quality website or application',
'37 Net Benefit derived from shopping online can lead to users satisfaction',
'38 User satisfaction cannot exist without trust',
'39 Offering a wide variety of listed product in several category',
'40 Provision of complete and relevant product information',
'41 Monetary savings',
'42 The Convenience of patronizing the online retailer',
'43 Shopping on the website gives you the sense of adventure',
'44 Shopping on your preferred e-tailer enhances your social status',
'45 You feel gratification shopping on your favorite e-tailer',
'46 Shopping on the website helps you fulfill certain roles',
'47 Getting value for money spent',
'From the following, tick any (or all) of the online retailers you have shopped from;
',
'Easy to use website or application',
'Visual appealing web-page layout', 'Wild variety of product on offer',
'Complete, relevant description information of products',
'Fast loading website speed of website and application',
'Reliability of the website or application',
'Quickness to complete purchase',
'Availability of several payment options', 'Speedy order delivery ',
'Privacy of customers' information',
'Security of customer financial information',
'Perceived Trustworthiness',
'Presence of online assistance through multi-channel',
'Longer time to get logged in (promotion, sales period)',
'Longer time in displaying graphics and photos (promotion, sales period)',
'Late declaration of price (promotion, sales period)',
'Longer page loading time (promotion, sales period)',
'Limited mode of payment on most products (promotion, sales period)',
'Longer delivery period', 'Change in website/Application design',
'Frequent disruption when moving from one page to another',
'Website is as efficient as before',
'Which of the Indian online retailer would you recommend to a friend?'],
dtype='object')

```

Renaming the column names for efficient setup

Current Column names --- New Column Names :

1. Gender of respondent --- **gender**
2. How old are you? --- **age**
3. Which city do you shop online from? --- **city**
4. What is the Pin Code of where you shop online from? --- **pinCode**
5. Since How Long You are Shopping Online ? --- **shoppingSince**

6. How many times you have made an online purchase in the past 1 year? --- **shoppingFrequency**
7. How do you access the internet while shopping on-line? --- **internetAccessibility**
8. Which device do you use to access the online shopping? --- **deviceUsed**
9. What is the screen size of your mobile device? --- **screenSize**
10. What is the operating system (OS) of your device? --- **OS**
11. What browser do you run on your device to access the website? --- **browserUsed**
12. Which channel did you follow to arrive at your favorite online store for the first time? --- **channelFirstUsed**
13. After first visit, how do you reach the online retail store? --- **loginMode**
14. How much time do you explore the e- retail store before making a purchase decision? --- **timeSpentDeciding**
15. What is your preferred payment Option? --- **paymentMode**
16. How frequently do you abandon (selecting an items and leaving without making payment) your shopping cart?--
- **cancellingFrequency**
17. Why did you abandon the “Bag”, “Shopping Cart”? --- **cancellationReason**
18. The content on the website must be easy to read and understand --- **contentReadability**
19. Information on similar product to the one highlighted is important for product comparison ---
similarProductInfo
20. Complete information on listed seller and product being offered is important for purchase decision. ---
sellerProductInfo
21. All relevant information on listed products must be stated clearly --- **productInfoClarity**
22. Ease of navigation in website --- **navigationEase**
23. Loading and processing speed --- **loadingProcessingSpeed**
24. User friendly Interface of the website --- **userFrienlyInterface**
25. Convenient Payment methods --- **conveninetPaymentMode**
26. Trust that the online retail store will fulfill its part of the transaction at the stipulated time ---
timelyFulfilmentTrust
27. Empathy (readiness to assist with queries) towards the customers --- **custSupportResponse**
28. Being able to guarantee the privacy of the customer --- **custPrivacyGuarantee**
29. Responsiveness, availability of several communication channels (email, online rep, twitter, phone etc.) ---
variousChannelResponses
30. Online shopping gives monetary benefit and discounts --- **benefit**
31. Enjoyment is derived from shopping online --- **enjoy**
32. Shopping online is convenient and flexible --- **convenience**
33. Return and replacement policy of the e-tailer is important for purchase decision --- **returnReplacementPolicy**
34. Gaining access to loyalty programs is a benefit of shopping online --- **loyaltyProgramsAccess**

35. Displaying quality Information on the website improves satisfaction of customers --- **infoSatisfaction**
36. User derive satisfaction while shopping on a good quality website or application --- **siteQualitySatisfaction**
37. Net Benefit derived from shopping online can lead to users satisfaction --- **netBenefitSatisfaction**
38. User satisfaction cannot exist without trust --- **trust**
39. Offering a wide variety of listed product in several category --- **productSeveralCategory**
40. Provision of complete and relevant product information --- **relevantProductInfo**
41. Monetary savings --- **monetarySavings**
42. The Convenience of patronizing the online retailer --- **patronizingConvenience**
43. Shopping on the website gives you the sense of adventure --- **adventureSense**
44. Shopping on your preferred e-tailer enhances your social status --- **socialStatus**
45. You feel gratification shopping on your favorite e-tailer --- **gratification**
46. Shopping on the website helps you fulfill certain roles --- **roleFulfilment**
47. Getting value for money spent --- **moneyWorthy**
48. From the following, tick any (or all) of the online retailers you have shopped from --- **shoppedFrom**
49. Easy to use website or application --- **easyWebApp**
50. Visual appealing web-page layout --- **visuallyAppealingWebApp**
51. Wild variety of product on offer--- **productVariety**
52. Complete, relevant description information of products --- **completeProductInfo**
53. Fast loading website speed of website and application --- **fastWebApp**
54. Reliability of the website or application --- **reliableWebApp**
55. Quickness to complete purchase --- **quickPurchase**
56. Availability of several payment options --- **paymentOptionsAvailability**
57. Speedy order delivery --- **fastDelivery**
58. Privacy of customers information --- **custInfoPrivacy**
59. Security of customer financial information --- **finInfoSecurity**
60. Perceived Trustworthiness --- **perceivedTrustworthiness**
61. Presence of online assistance through multi-channel --- **multiChannelAssistance**
62. Longer time to get logged in (promotion, sales period) --- **longLoginTime**
63. Longer time in displaying graphics and photos (promotion, sales period) --- **longDisplayTime**
64. Late declaration of price (promotion, sales period) --- **latePriceDeclare**
65. Longer page loading time (promotion, sales period) --- **longLoadingTime**
66. Limited mode of payment on most products (promotion, sales period) --- **limitedPaymentMode**

67. Longer delivery period --- **lateDelivery**
68. Change in website/Application design --- **webAppDesignChange**
69. Frequent disruption when moving from one page to another --- **pageDisruption**
70. Website is as efficient as before --- **webAppEfficiency**
71. Which of the Indian online retailer would you recommend to a friend? --- **recommendation**

```
columns = ['gender','age','city','pinCode','shoppingSince','shoppingFrequency','internetAccessibility','deviceUsed',
'screenSize','OS','browserUsed','channelFirstUsed','loginMode','timeSpentDeciding','paymentMode','cancellingFrequency',
'cancellationReason','contentReadability','similarProductInfo','sellerProductInfo','productInfoClarity','navigationEase',
'loadingProcessingSpeed','userFrienlyInterface','conveninetPaymentMode','timelyFulfilmentTrust','custSupportResponse',
'custPrivacyGuarantee','variousChannelResponses','benefit','enjoy','convenience','returnReplacementPolicy','loyaltyProg',
'infoSatisfaction','siteQualitySatisfaction','netBenefitSatisfaction','trust','productSeveralCategory','relevantProduct',
'patronizingConvenience','adventureSense','socialStatus','gratification','roleFulfilment','moneyWorthy','shoppedFrom',
'visuallyAppealingWebApp','productVariety','completeProductInfo','fastWebApp','reliableWebApp','quickPurchase','paymer',
'fastDelivery','custInfoPrivacy','finInfoSecurity','perceivedTrustworthiness','multiChannelAssistance','longLoginTime',
'latePriceDeclare','longLoadingTime','limitedPaymentMode','lateDelivery','webAppDesignChange','pageDisruption','webApp',
'recommendation']

data.columns = columns
encoded_data.columns = columns
data.head()
```

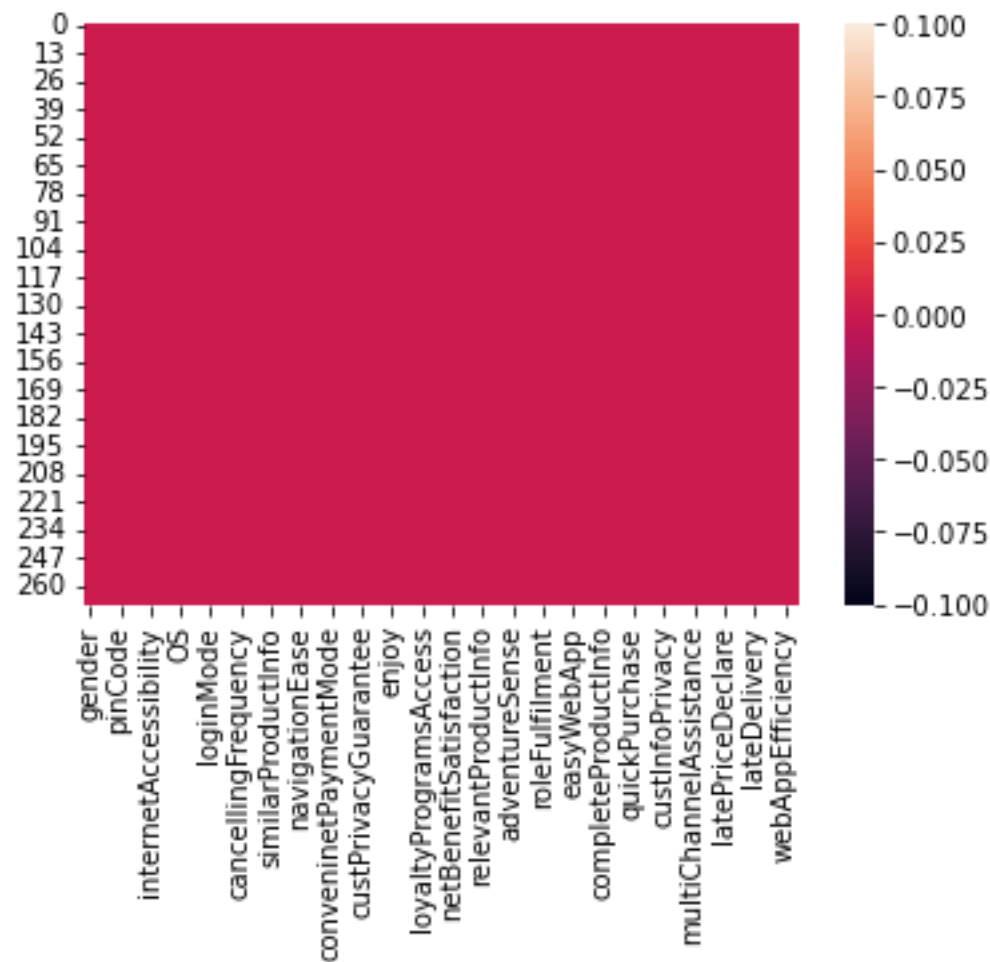
	gender	age	city	pinCode	shoppingSince	shoppingFrequency	internetAccessibility	deviceUsed	screenSize	OS	...	longLoginTime	loi
0	Male	31-40 years	Delhi	110009	Above 4 years	31-40 times	Dial-up	Desktop	Others	Window/windows Mobile	...	Amazon.in	
1	Female	21-30 years	Delhi	110030	Above 4 years	41 times and above	Wi-Fi	Smartphone	4.7 inches	iOS/Mac	...	Amazon.in, Flipkart.com	
2	Female	21-30 years	Greater Noida	201308	3-4 years	41 times and above	Mobile Internet	Smartphone	5.5 inches	Android	...	Myntra.com	
3	Male	21-30 years	Karnal	132001	3-4 years	Less than 10 times	Mobile Internet	Smartphone	5.5 inches	iOS/Mac	...	Snapdeal.com	
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	

5 rows × 71 columns

```
data.isnull().sum()
```

```
gender          0
age             0
city            0
pinCode         0
shoppingSince   0
..
lateDelivery    0
webAppDesignChange  0
pageDisruption  0
webAppEfficiency  0
recommendation  0
Length: 71, dtype: int64
```

```
sns.heatmap(data.isnull());
```



There is no null value present in the dataset

Let's describe the object types

Let's describe the object types

data.describe(include='object')

	gender	age	city	shoppingSince	shoppingFrequency	internetAccessibility	deviceUsed	screenSize	OS	browserUsed	...	longLoginTim
count	269	269	269	269	269	269	269	269	269	269	...	26
unique	2	5	11	5	6	4	4	4	3	4	...	1
top	Female	31-40 years	Delhi	Above 4 years	Less than 10 times	Mobile internet	Smartphone	Others	Window/windows Mobile	Google chrome	...	Amazon.i
freq	181	81	58	98	114	142	141	134	122	216	...	5

4 rows × 70 columns

```
data.describe()
```

	pinCode
count	269.000000
mean	220465.747212
std	140524.341051
min	110008.000000
25%	122018.000000
50%	201303.000000
75%	201310.000000
max	560037.000000

#Lets check the value count of each column to see if there are any unexpected and unwanted entries present in the column.

```
for i in data.columns:  
    print(data[i].value_counts())  
    print('*****')
```

```
Female    181
```

```
Male       88
```

```
Name: gender, dtype: int64
```

```
*****
```

```
31-40 years    81
```

```
21-30 years    79
```

```
41-50 yaers    70
```

```
Less than 20 years    20
```

```
51 years and above    19
```

```
Name: age, dtype: int64
```

```
*****
```

```
Delhi    58
```

```
Greater Noida    43
```

```
Noida    40
```

```
Bangalore    37
```

```
Karnal    27
```

```
Solan    18
```

```
Ghaziabad    18
```

```
Gurgaon    12
```

```
Merrut    9
```

```
Moradabad    5
```

```
Bulandshahr    2
```

```
Name: city, dtype: int64
```

```
*****
```

```
201308    38
```

```
132001    19
```

```
201310    18
```

```
110044    16
```

```
250001    9
```

```
173229    9
```

```
173212    9
```

```
560010    8
```

```
132036    8
```

```
122018    8
```

```
560037    8
```

```
110008    7
```

```
110011    7
```

```
201306    7
```

```
110014    6
```

```
110018    6
```


201305	5
201008	5
201009	5
201312	5
244001	5
530068	5
122009	4
201001	4
560003	4
201304	4
110009	4
201303	4
560002	4
560018	4
110042	4
110030	4
201005	4
110039	4
560013	3
203001	2
203202	1
560001	1
203207	1

Name: pinCode, dtype: int64

Above 4 years	98
2-3 years	65
3-4 years	47
Less than 1 year	43
1-2 years	16

Name: shoppingSince, dtype: int64

Less than 10 times	114
31-40 times	63
41 times and above	47
11-20 times	29
21-30 times	10
42 times and above	6

Name: shoppingFrequency, dtype: int64

Mobile internet	142
Wi-Fi	76
Mobile Internet	47
Dial-up	4

Name: internetAccessibility, dtype: int64

Smartphone	141
Laptop	86
Desktop	30
Tablet	12

Name: deviceUsed, dtype: int64

Others	134
5.5 inches	99
4.7 inches	29
5 inches	7

Name: screenSize, dtype: int64

Window/windows Mobile	122
Android	85
iOS/Mac	62

```

Name: OS, dtype: int64
*****
Google chrome      216
Safari             40
Opera              8
Mozilla Firefox    5
Name: browserUsed, dtype: int64
*****
Search Engine      230
Content Marketing  20
Display Adverts    19
Name: channelFirstUsed, dtype: int64
*****
Search Engine      87
Via application    86
Direct URL         70
E-mail            18
Social Media       8
Name: loginMode, dtype: int64
*****
more than 15 mins  123
6-10 mins         71
11-15 mins        46
Less than 1 min   15
1-5 mins          14
Name: timeSpentDeciding, dtype: int64
*****
Credit/Debit cards      148
Cash on delivery (CoD)   76
E-wallets (Paytm, Freecharge etc.) 45
Name: paymentMode, dtype: int64
*****
Sometimes          171
Never              48
Frequently         35
Very frequently    15
Name: cancellingFrequency, dtype: int64
*****
Better alternative offer      133
Promo code not applicable     54
Change in price               37
Lack of trust                 31
No preferred mode of payment  14
Name: cancellationReason, dtype: int64
*****
Strongly agree (5)      164
Agree (4)               80
Strongly disagree (1)   18
Indifferent (3)         7
Name: contentReadability, dtype: int64
*****
Strongly agree (5)      116
Agree (4)               92
Indifferent (3)         43
Dis-agree (2)           18
Name: similarProductInfo, dtype: int64
*****
Agree (4)               101
Strongly agree (5)      87
Indifferent (3)         52
Dis-agree (2)           18

```

```

Strongly disagree (1)      11
Name: sellerProductInfo, dtype: int64
*****
Agree (4)                  132
Strongly agree (5)         107
Strongly disagree (1)      18
Dis-agree (2)              12
Name: productInfoClarity, dtype: int64
*****
Strongly agree (5)         141
Agree (4)                  105
Strongly disagree (1)      18
Dis-agree (2)              5
Name: navigationEase, dtype: int64
*****
Strongly agree (5)         115
Agree (4)                  112
Dis-agree (2)              18
Strongly disagree (1)      12
Indifferent (3)            12
Name: loadingProcessingSpeed, dtype: int64
*****
Strongly agree (5)         189
Agree (4)                  45
Strongly disagree (1)      18
Dis-agree (2)              12
Indifferent (3)            5
Name: userFrienlyInterface, dtype: int64
*****
Strongly agree (5)         159
Agree (4)                  80
Dis-agree (2)              30
Name: conveninetPaymentMode, dtype: int64
*****
Strongly agree (5)         141
Agree (4)                  86
Disagree (2)              30
indifferent (3)            12
Name: timelyFulfilmentTrust, dtype: int64
*****
Strongly agree (5)         194
Agree (4)                  42
Strongly disagree (1)      18
indifferent (3)            15
Name: custSupportResponse, dtype: int64
*****
Strongly agree (5)         185
Agree (4)                  58
indifferent (3)            26
Name: custPrivacyGuarantee, dtype: int64
*****
Strongly agree (5)         149
Agree (4)                  94
indifferent (3)            15
Strongly disagree (1)      11
Name: variousChannelResponses, dtype: int64
*****
Strongly agree (5)         105
Agree (4)                  85
indifferent (3)            50
Strongly disagree (1)      18

```

```

Dis-agree (2)          11
Name: benefit, dtype: int64
*****
Strongly agree (5)     86
indifferent (3)       75
Agree (4)             59
Strongly disagree (1) 30
Dis-agree (2)         19
Name: enjoy, dtype: int64
*****
Strongly agree (5)     146
Agree (4)             78
indifferent (3)       33
Dis-agree (2)         12
Name: convenience, dtype: int64
*****
Strongly agree (5)     198
Agree (4)             51
Dis-agree (2)         20
Name: returnReplacementPolicy, dtype: int64
*****
Strongly agree (5)     115
Agree (4)             64
indifferent (3)       64
Dis-agree (2)         15
Strongly disagree (1) 11
Name: loyaltyProgramsAccess, dtype: int64
*****
Strongly agree (5)     133
Agree (4)             80
indifferent (3)       56
Name: infoSatisfaction, dtype: int64
*****
Strongly agree (5)     175
Agree (4)             86
Dis-agree (2)         8
Name: siteQualitySatisfaction, dtype: int64
*****
Strongly agree (5)     164
Agree (4)             54
indifferent (3)       40
Dis-agree (2)         11
Name: netBenefitSatisfaction, dtype: int64
*****
Strongly agree (5)     122
Agree (4)             117
Strongly disagree (1) 18
Dis-agree (2)         7
indifferent (3)       5
Name: trust, dtype: int64
*****
Strongly agree (5)     111
Agree (4)             94
indifferent (3)       57
Dis-agree (2)         7
Name: productSeveralCategory, dtype: int64
*****
Strongly agree (5)     135
Agree (4)             98
indifferent (3)       31
Disagree (2)          5

```


Amazon.in, Flipkart.com, Paytm.com, Snapdeal.com	22
Amazon.in, Paytm.com, Myntra.com	20
Amazon.in, Flipkart.com, Myntra.com	19
Paytm.com	12
Flipkart.com	8
Amazon.in, Paytm.com	7
Name: easyWebApp, dtype: int64	

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: visuallyAppealingWebApp, dtype: int64	

Amazon.in, Flipkart.com	130
Amazon.in	43
Amazon.in, Myntra.com	20
Flipkart.com, Myntra.com	15
Myntra.com	15
Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com	14
Amazon.in, Flipkart.com, Paytm.com	13
Flipkart.com	12
Paytm.com	7
Name: productVariety, dtype: int64	

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: completeProductInfo, dtype: int64	

Amazon.in	51
Amazon.in, Paytm.com	44
Amazon.in, Flipkart.com, Myntra.com	30
Amazon.in, Flipkart.com, Paytm.com, Myntra.com, Snapdeal.com	30
Amazon.in, Flipkart.com	30
Amazon.in, Flipkart.com, Snapdeal.com	25
Amazon.in, Flipkart.com, Paytm.com	25
Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com	14
Snapdeal.com	12
Flipkart.com	8
Name: fastWebApp, 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: reliableWebApp, dtype: int64	

Amazon.com	66
Amazon.com, Flipkart.com, Paytm.com	47
Amazon.com, Flipkart.com	37
Amazon.com, Flipkart.com, Myntra.com	30
Paytm.com	25
Amazon.com, Paytm.com, Myntra.com	20
Amazon.com, Flipkart.com, Paytm.com, Myntra.com, Snapdeal	15
Flipkart.com	15
Flipkart.com, Myntra.com, Snapdeal	14
Name: quickPurchase, 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: paymentOptionsAvailability, 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: fastDelivery, 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: custInfoPrivacy, 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: finInfoSecurity, 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: perceivedTrustworthiness, 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: multiChannelAssistance, dtype: int64
*****
Amazon.in                                                57
Amazon.in, Flipkart.com                                 38
Paytm.com                                                38
Myntra.com                                               35
Amazon.in, Flipkart.com, Snapdeal.com                   29
Snapdeal.com                                             25
Flipkart.com, Paytm.com                                 15
Flipkart.com, Paytm.com, Snapdeal.com                   13
Amazon.in, Paytm.com                                    11
Flipkart.com                                             8
Name: longLoginTime, dtype: int64
*****
Amazon.in, Flipkart.com                                 60
Amazon.in                                                39
Myntra.com                                               35
Snapdeal.com                                             34
Myntra.com, Snapdeal.com                                25
Flipkart.com, Snapdeal.com                              19
Paytm.com                                                15
Flipkart.com                                             15
Amazon.in, Myntra.com, Snapdeal.com                     14
Amazon.in, Paytm.com                                    13
Name: longDisplayTime, dtype: int64
*****
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: latePriceDeclare, dtype: int64
*****

```



```

Myntra.com 61
Paytm.com 59
Flipkart.com 32
Snapdeal.com 23
Amazon.in, Flipkart.com 18
Amazon.in 16
Paytm.com, Snapdeal.com 15
Amazon.in, Snapdeal.com 14
Amazon.in, Paytm.com 13
Flipkart.com, Snapdeal.com 11
Amazon.in, Paytm.com, Myntra.com 7
Name: longLoadingTime, dtype: int64
*****
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: limitedPaymentMode, dtype: int64
*****
Paytm.com 72
Snapdeal.com 64
Flipkart.com 44
Amazon.in 37
Paytm.com, Snapdeal.com 26
Myntra.com 26
Name: lateDelivery, dtype: int64
*****
Amazon.in 96
Paytm.com 63
Amazon.in, Flipkart.com 45
Myntra.com 30
Flipkart.com 20
Snapdeal.com 8
Flipkart.com, Myntra.com 7
Name: webAppDesignChange, dtype: int64
*****
Amazon.in 53
Myntra.com 52
Snapdeal.com 49
Paytm.com 39
Flipkart.com 26
Amazon.in, Flipkart.com 25
Myntra.com, Snapdeal.com 14
Flipkart.com, Snapdeal.com 11
Name: pageDisruption, 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: webAppEfficiency, dtype: int64
*****
Amazon.in

```

```

Amazon.in, Flipkart.com          62
Flipkart.com                     39
Amazon.in, Myntra.com            30
Amazon.in, Paytm.com, Myntra.com 20
Amazon.in, Flipkart.com, Myntra.com 15
Amazon.in, Paytm.com             13
Flipkart.com, Paytm.com, Myntra.com, snapdeal.com 11
Name: recommendation, dtype: int64
*****

```

From above it is evident that some columns have duplicate entries. So we need to replace them.

Grouping Duplicate entries:

```

#Grouping "shoppingFrequency" column
data["shoppingFrequency"].replace("42 times and above", "41 times and above", inplace=True)

```

```

#internetAccessibility column
data["internetAccessibility"].replace("Mobile internet", "Mobile Internet", inplace=True)

```

```

# Let's replace the redundant values

```

```

data.replace('indifferent (3)', 'Indifferent (3)', inplace=True)
data.replace('indifferent (3)', 'Indifferent (3)', inplace=True)
data.replace('Dis-agree (2)', 'Disagree (2)', inplace=True)

```

DATA VISUALIZATION

```

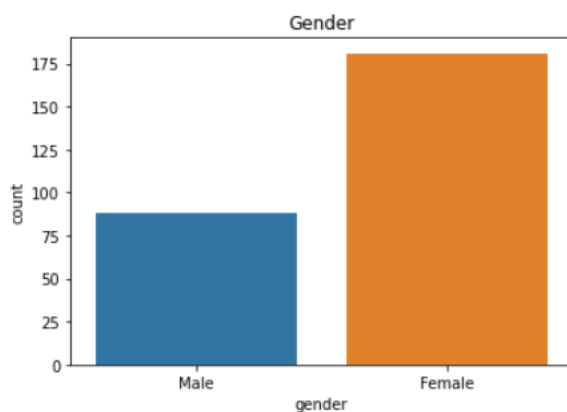
: sns.countplot(data['gender'])
  plt.title('Gender')
  print(round(data['gender'].value_counts()/269*100),2)

```

```

Female    67.0
Male      33.0
Name: gender, dtype: float64 2

```



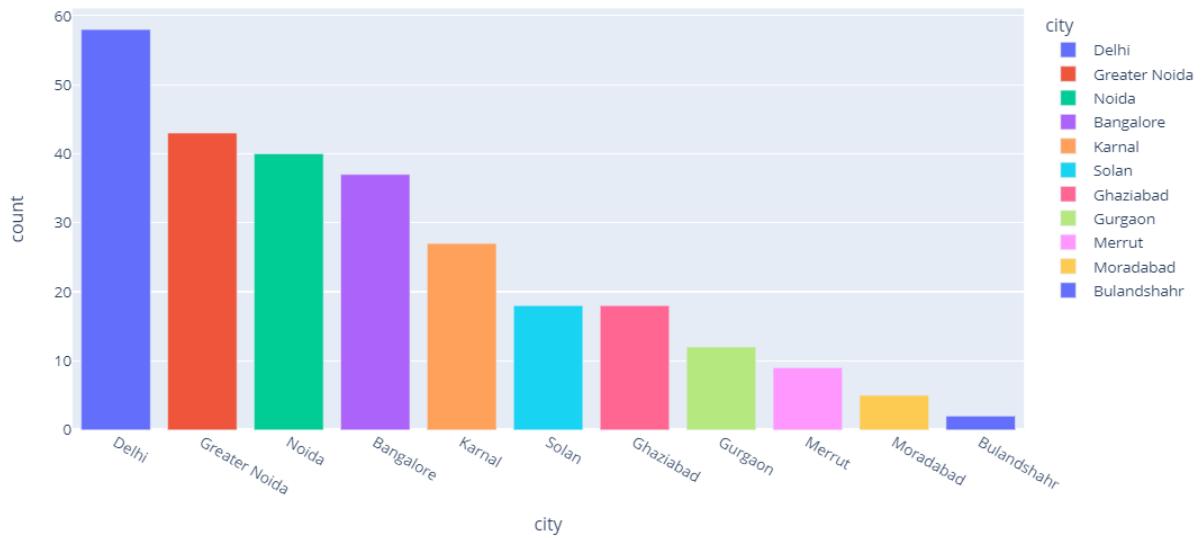
67% of customers are female

```
# Which city people shop the most

city_count = pd.DataFrame(data['city'].value_counts()).reset_index()
city_count.columns = ['city', 'count']

fig = px.bar(city_count, x='city', y='count',
             color='city',
             title = 'Online Shopping is preferred in which cities?')
fig.show(height=200,width=200)
```

Online Shopping is preferred in which cities?



Delhi Shops most online followed by Noida and Bangalore

```

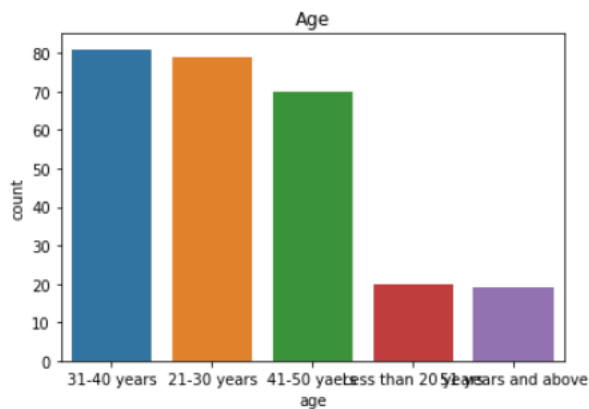
sns.countplot(data['age'])
plt.title('Age')
print(round(data['age'].value_counts()/269*100),2)

```

```

31-40 years      30.0
21-30 years      29.0
41-50 yaers      26.0
Less than 20 years  7.0
51 years and above  7.0
Name: age, dtype: float64 2

```

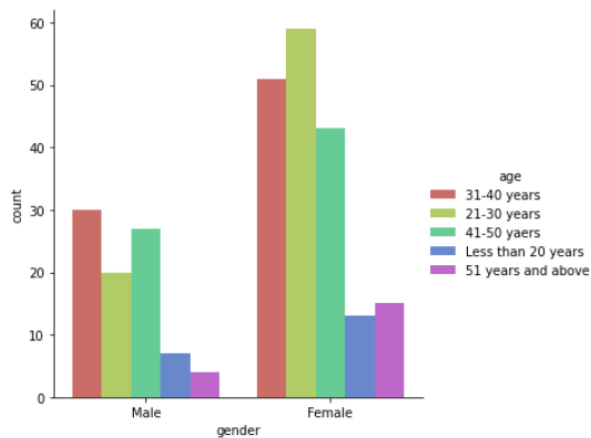


Customers aged between 21-50 yrs mostly doing online shopping.

```

#Factor plot for Gender
import seaborn as sns
sns.factorplot('gender', kind='count', data=data, hue='age', palette="hls")
plt.xticks(rotation=0);

```

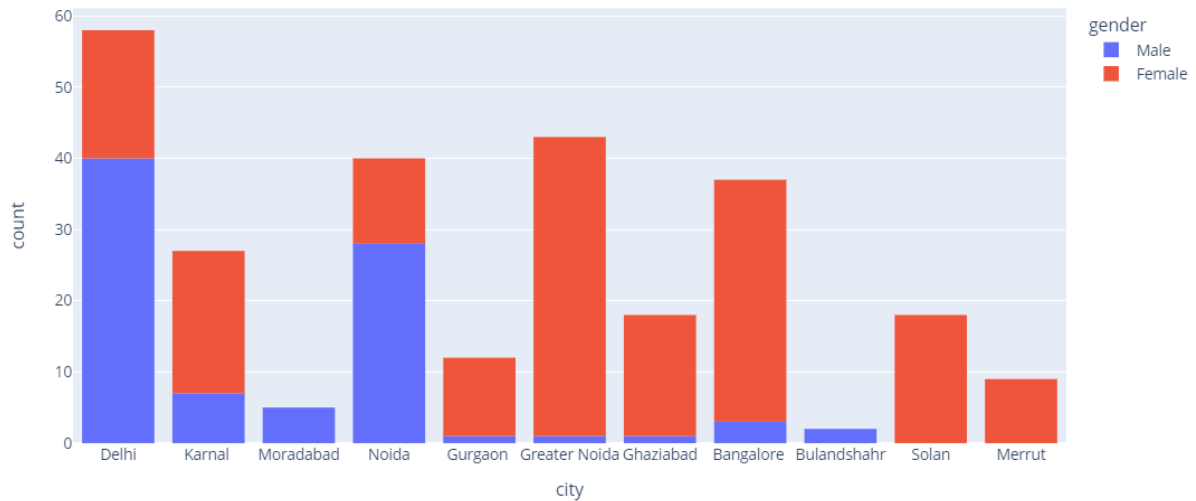


Females are doing more shopping compared to men and females with age group 21-30 and men of age group 31-40 are shopping more than other age groups.

```
dataset = data[['age','city','gender']]

fig = px.histogram(dataset,x='city',color='gender',title='Online shopping in cities based on Gender:')
fig.show()
```

Online shopping in cities based on Gender:

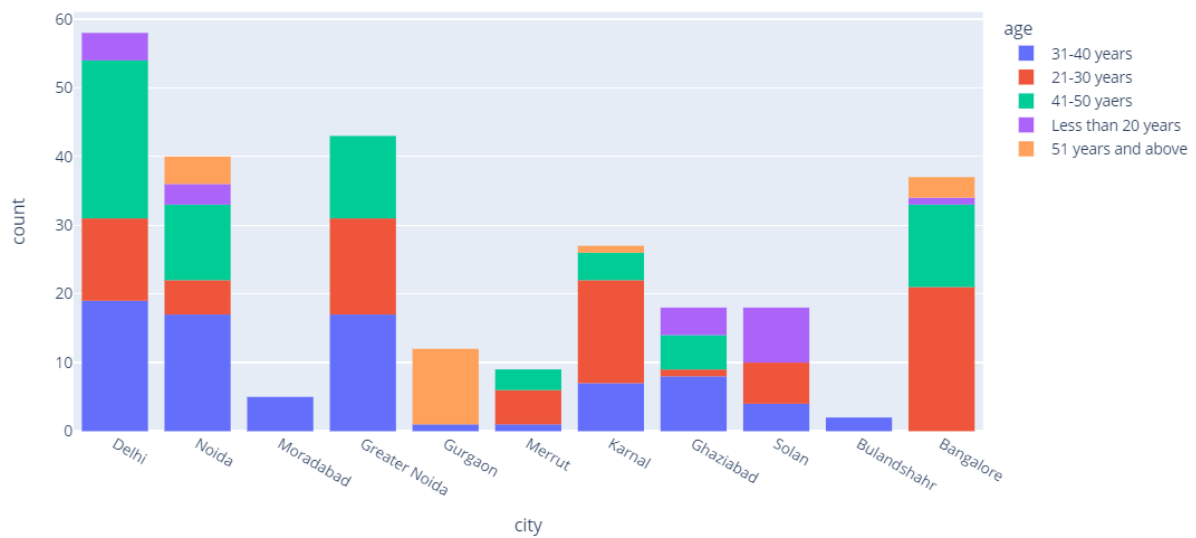


In Delhi and Noida, males prefer online shopping more than females.

In Bulandshahr and Moradabad, both cities in Uttar Pradesh has no female shoppers.

```
: fig = px.histogram(dataset,x='city',color='age',title='Online shopping in cities based on various age groups : ')
fig.show()
```

Online shopping in cities based on various age groups :



In Delhi, people aged between 41-50 years, prefer to shop on online more, when compared to other age groups.

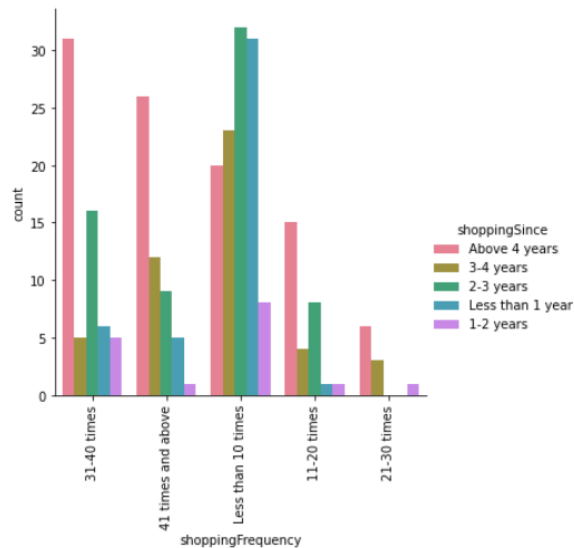
In Bangalore, it is people aged between 21-30 years of age.

In the rest of the cities, on an average, people aged between 31-40 years prefer online shopping, except Gurgaon where senior citizens are more involved.

```
# Average Shopping frequency in last 1 year
```

```
#Factor plot for Shopping_City
```

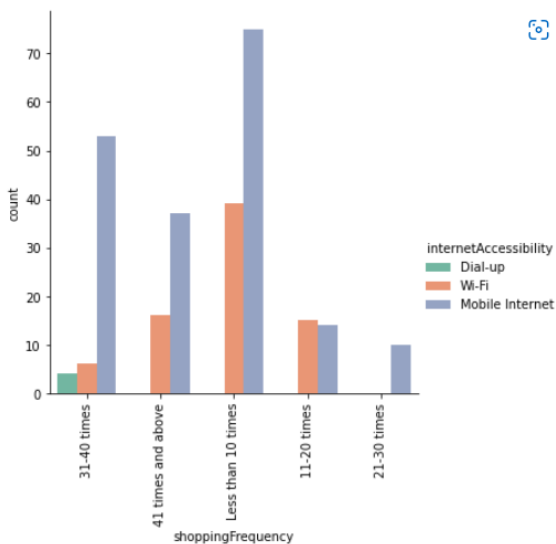
```
sns.factorplot('shoppingFrequency',kind='count',data=data,hue='shoppingSince',palette="husl")
plt.xticks(rotation=90);
```



In the past 1 year, on an average people have shopped approximately 30-40 times. From the data, we can see that, people who have been shopping for more then 3-4 years are the ones who frequently shops.

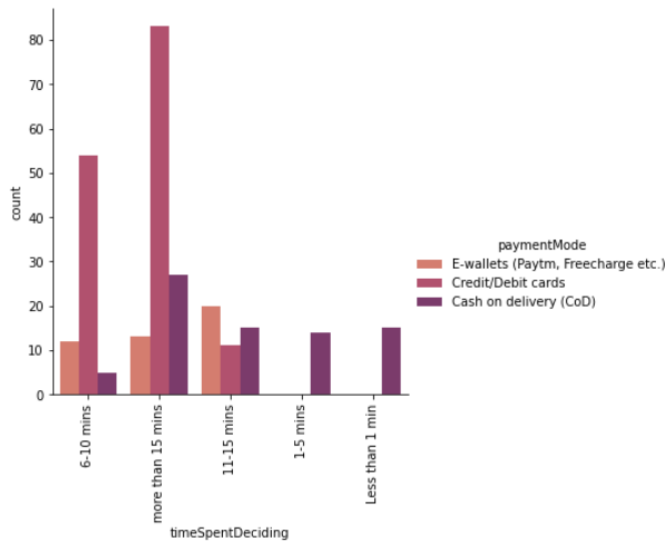
```
#Factor plot for Shopping_Frequency
```

```
sns.factorplot('shoppingFrequency',kind='count',data=data,hue='internetAccessibility',palette="Set2")
plt.xticks(rotation=90);
```



In all the frequencies of online purchase in past 1 year, the usage of mobile internet is high.

```
#Factor plot for TimeSpent_ForPurchase
sns.factorplot('timeSpentDeciding',kind='count',data=data,hue='paymentMode',palette="flare")
plt.xticks(rotation=90);
```



Maximum customers uses the e-retail shop for more than 15 mins to make purchase decision and max customers uses credit/debit card as payment option.

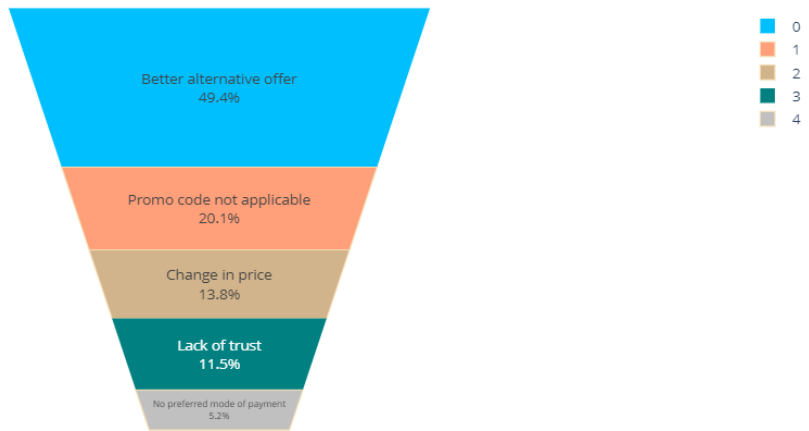
```
# the Cancellation reasons

reasons = pd.DataFrame(data['cancellationReason'].value_counts()).reset_index()
reasons.columns = ['Reason','Count']

fig = go.Figure(go.Funnelarea(
    text = reasons['Reason'],
    values = reasons['Count'],
    marker = {"colors": ["deepskyblue", "lightsalmon", "tan", "teal", "silver"],
              "line": {"color": ["wheat", "wheat", "wheat", "wheat", "wheat"], "width": [0, 1, 1, 0, 1]}}
))

fig.update_layout(title = 'Reasons for not purchasing any product :',title_x=0.5)
fig.show()
```

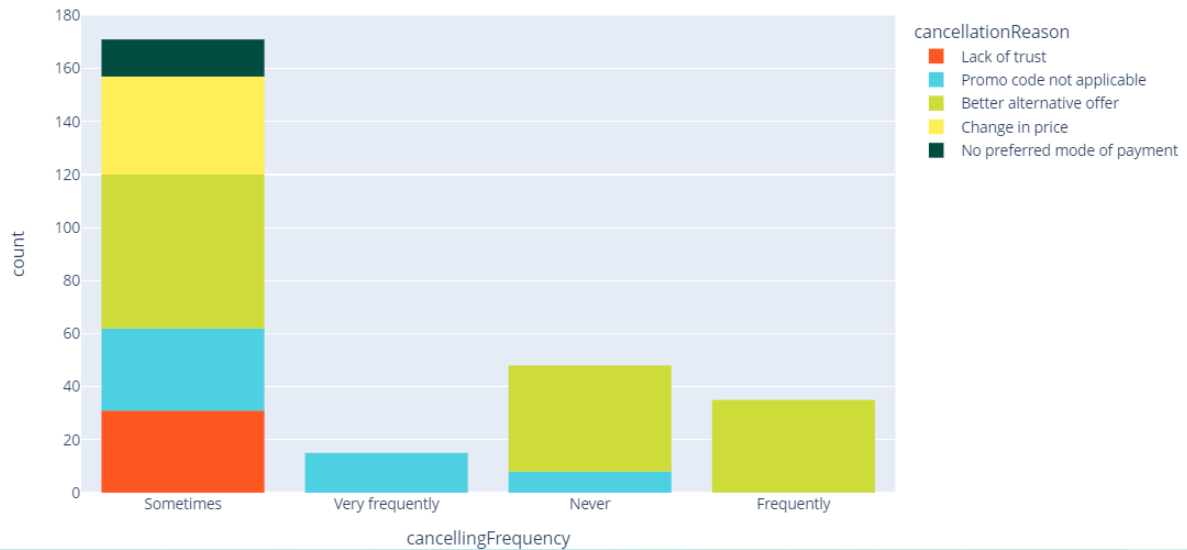
Reasons for not purchasing any product :



We can observe that most of the people, abandoned their cart as they were having better alternative offers.

```
fig = px.histogram(data,x='cancellingFrequency',color='cancellationReason',
                    color_discrete_map={'Lack of trust':'#FF5722','Promo code not applicable':'#4DD0E1',
                                         'Better alternative offer':'#CDDC39','Change in price':'#FFEE58',
                                         'No preferred mode of payment':'#004D40'})
fig.update_layout(title='How often do people abandon their carts? Reasons:', title_x=0.4)
fig.show()
```

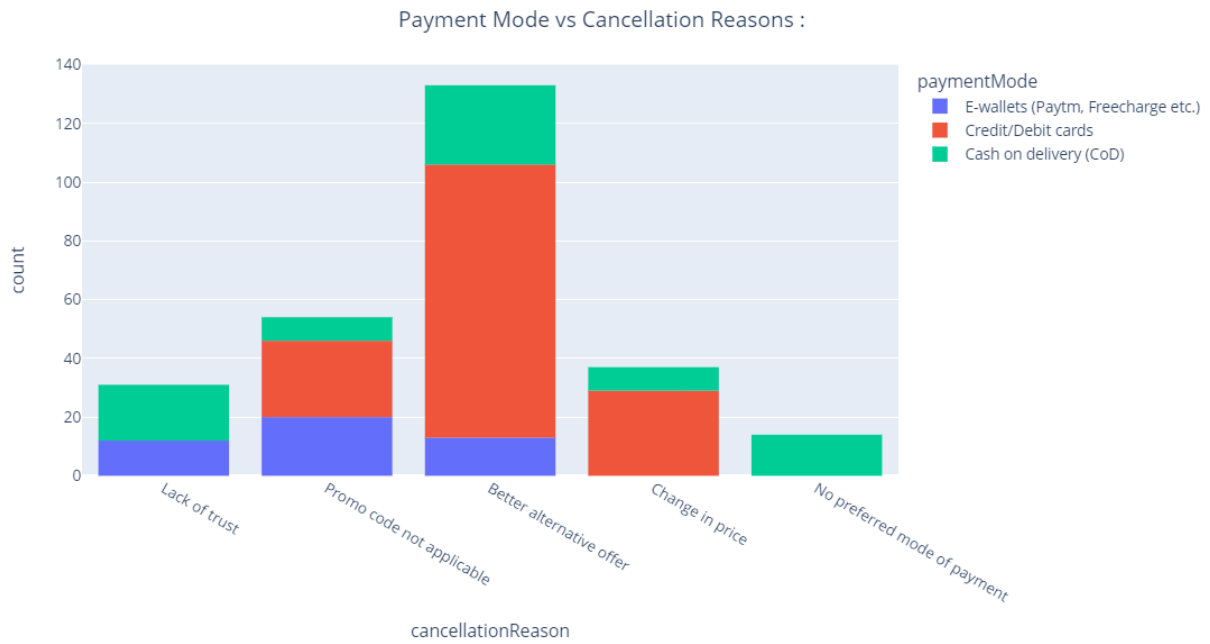
How often do people abandon their carts? Reasons:




```

fig = px.histogram(data,x='cancellationReason',color='paymentMode')
fig.update_layout(title='Payment Mode vs Cancellation Reasons : ', title_x=0.5)
fig.show()

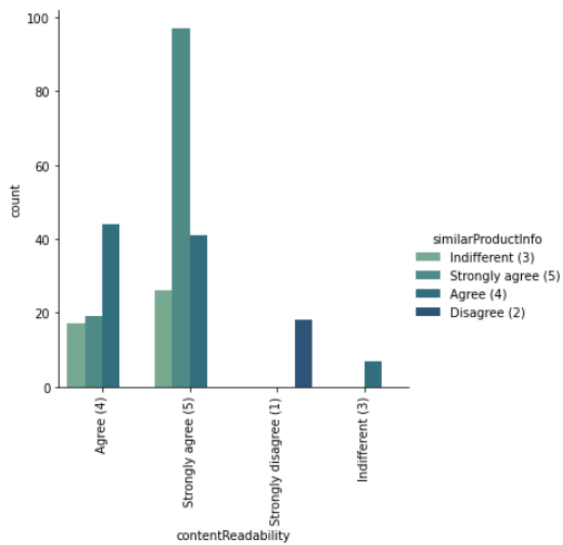
```



```

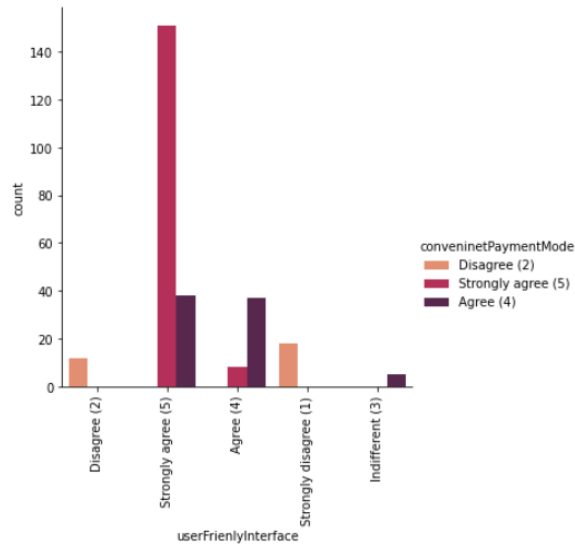
#Factor plot for contentReadability
sns.factorplot('contentReadability',kind='count',data=data,hue='similarProductInfo',palette="crest")
plt.xticks(rotation=90);

```



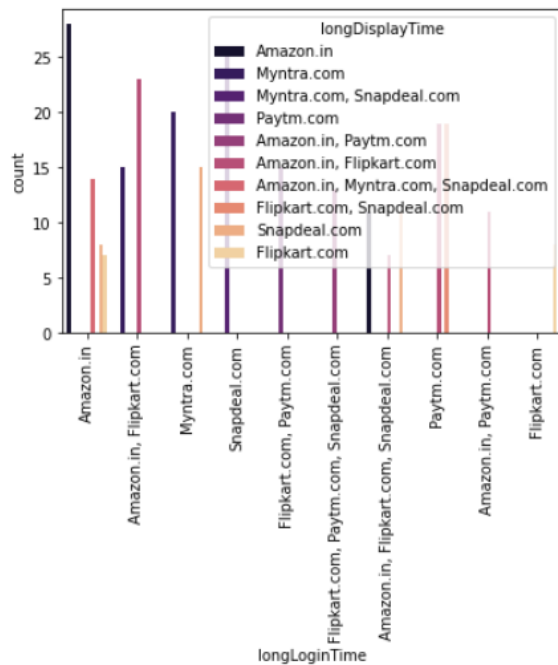
Maximum customers agrees to have the content on the web page to be easy to read and understand and also they agrees to get information on similar product to the one highlighted is important for product comparison.

```
: #Factor plot for userFrienlyInterface
sns.factorplot('userFrienlyInterface', kind='count', data=data, hue='conveninetPaymentMode', palette="rocket_r")
plt.xticks(rotation=90);
```



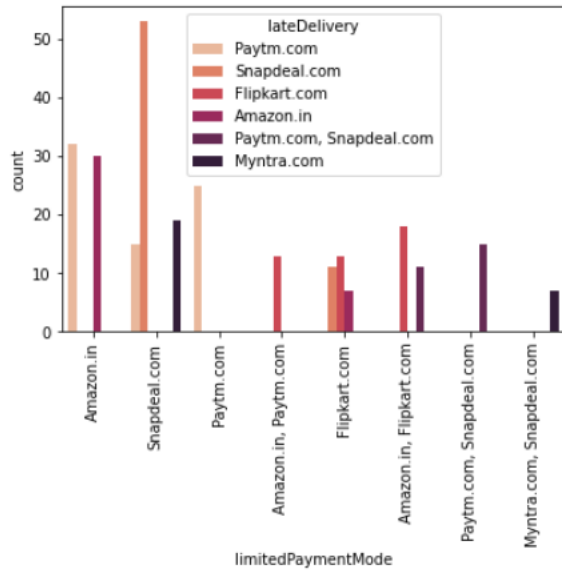
```
#Count plot for Long_LoginTime
```

```
sns.countplot('longLoginTime', data=data, hue='longDisplayTime', palette="magma")
plt.xticks(rotation=90);
```



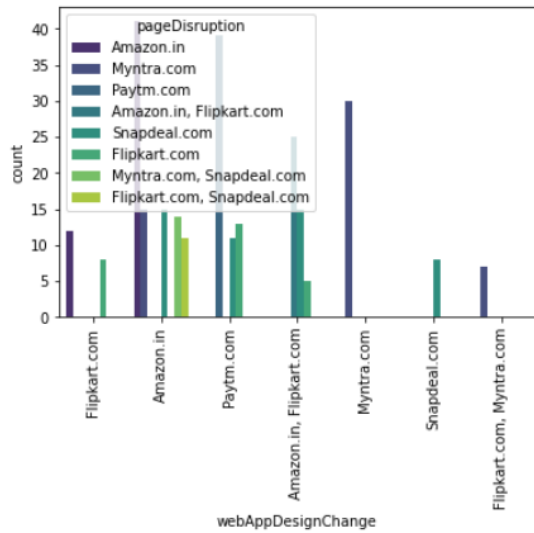
```
#Count plot for Limited_PaymentMode
```

```
sns.countplot('limitedPaymentMode',data=data,hue='lateDelivery',palette="rocket_r")
plt.xticks(rotation=90);
```



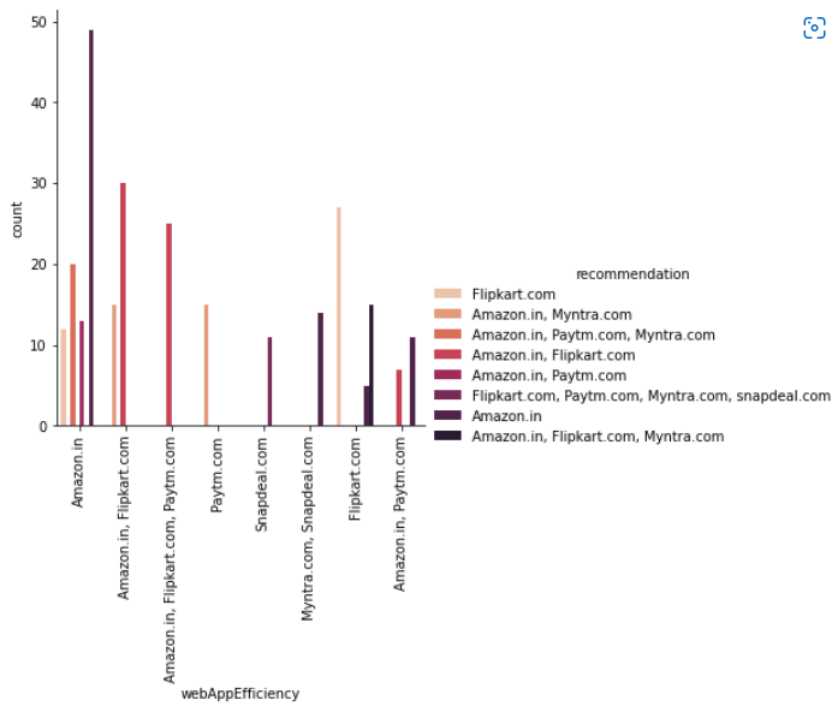
```
#Count plot for webAppDesignChange
```

```
sns.countplot('webAppDesignChange',data=data,hue='pageDisruption',palette="viridis")
plt.xticks(rotation=90);
```



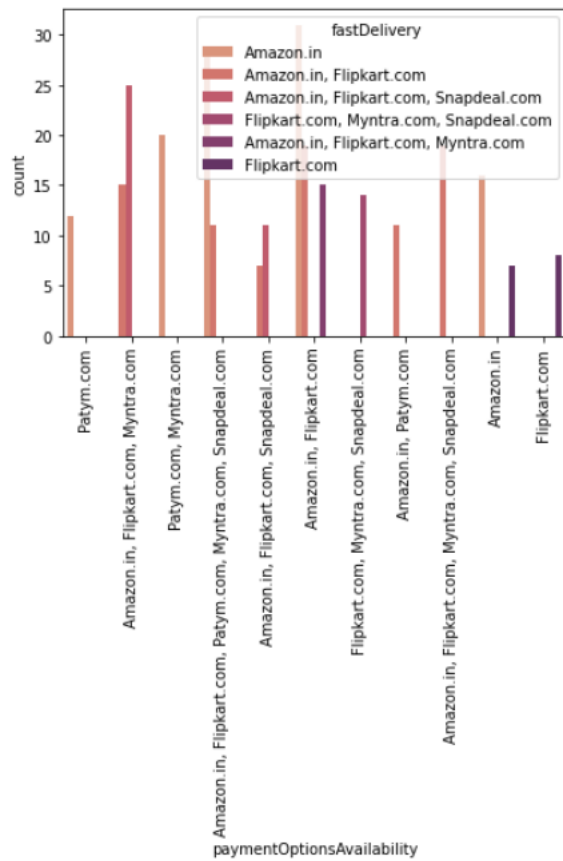
```
#Count plot for webAppEfficiency
sns.factorplot('webAppEfficiency',kind='count',data=data,hue='recommendation',palette="rocket_r")

plt.xticks(rotation=90);
```



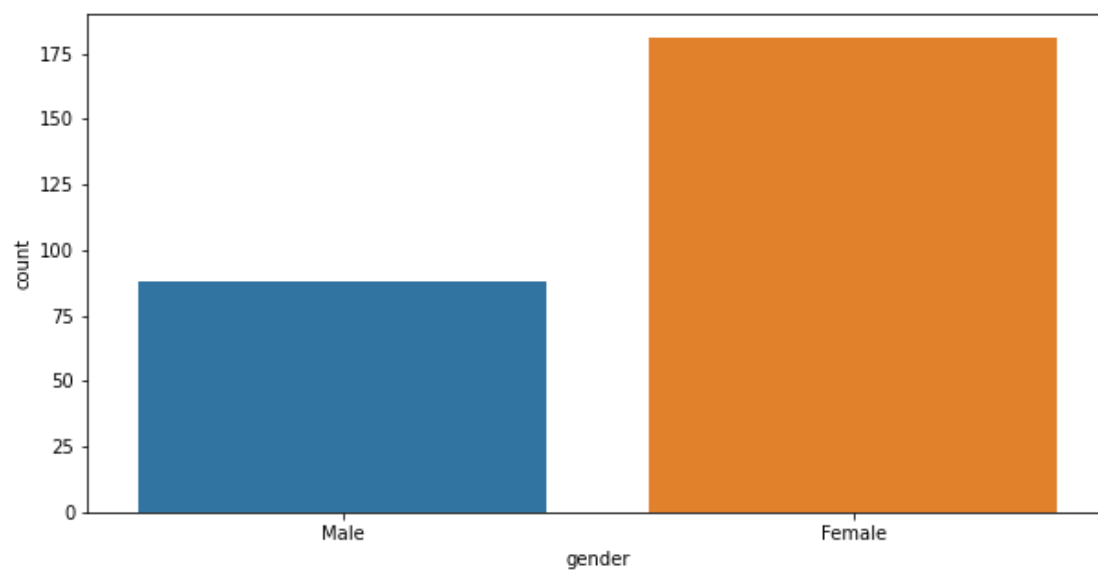
```
#Count plot for PaymentOptions_Availability
sns.countplot('paymentOptionsAvailability',data=data,hue='fastDelivery',palette="flare")

plt.xticks(rotation=90);
```

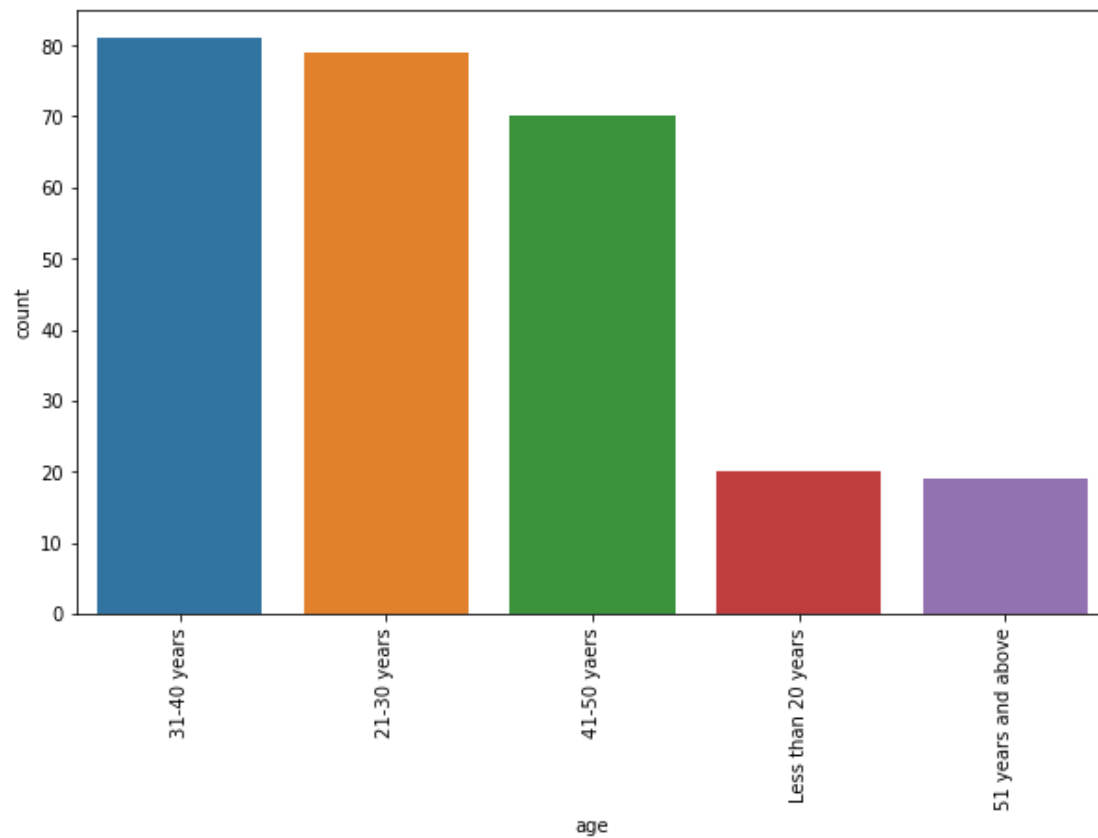


Let's check the percentage of data classification in each string attribute
 print(round(data[i].value_counts()/269*100),2)

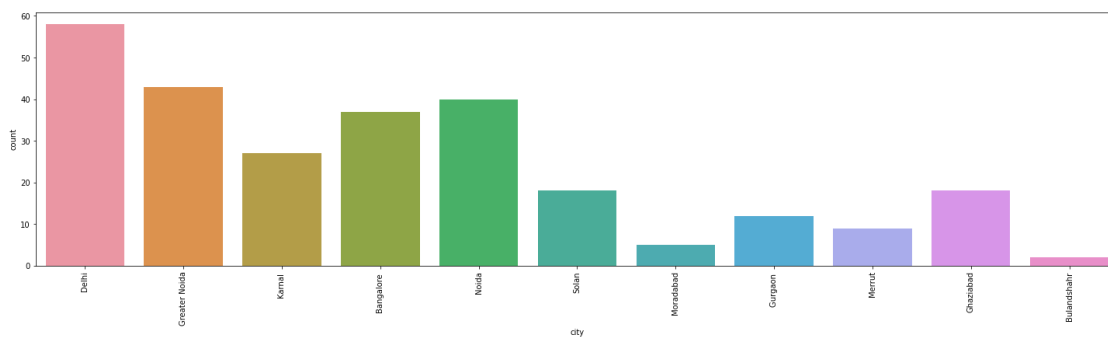
```
for i in categorical:
    value_count(i)
```



Female 67.0
 Male 33.0
 Name: gender, dtype: float64 2

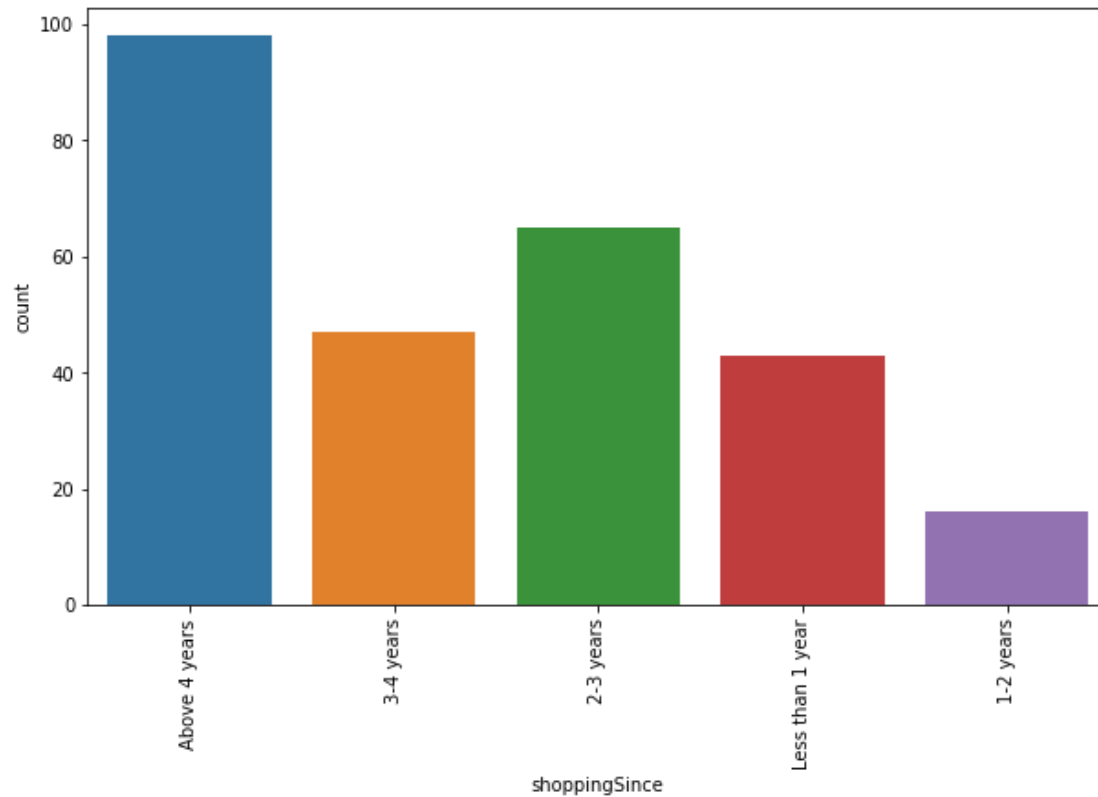


31-40 years 30.0
 21-30 years 29.0
 41-50 yaers 26.0
 Less than 20 years 7.0
 51 years and above 7.0
 Name: age, dtype: float64 2

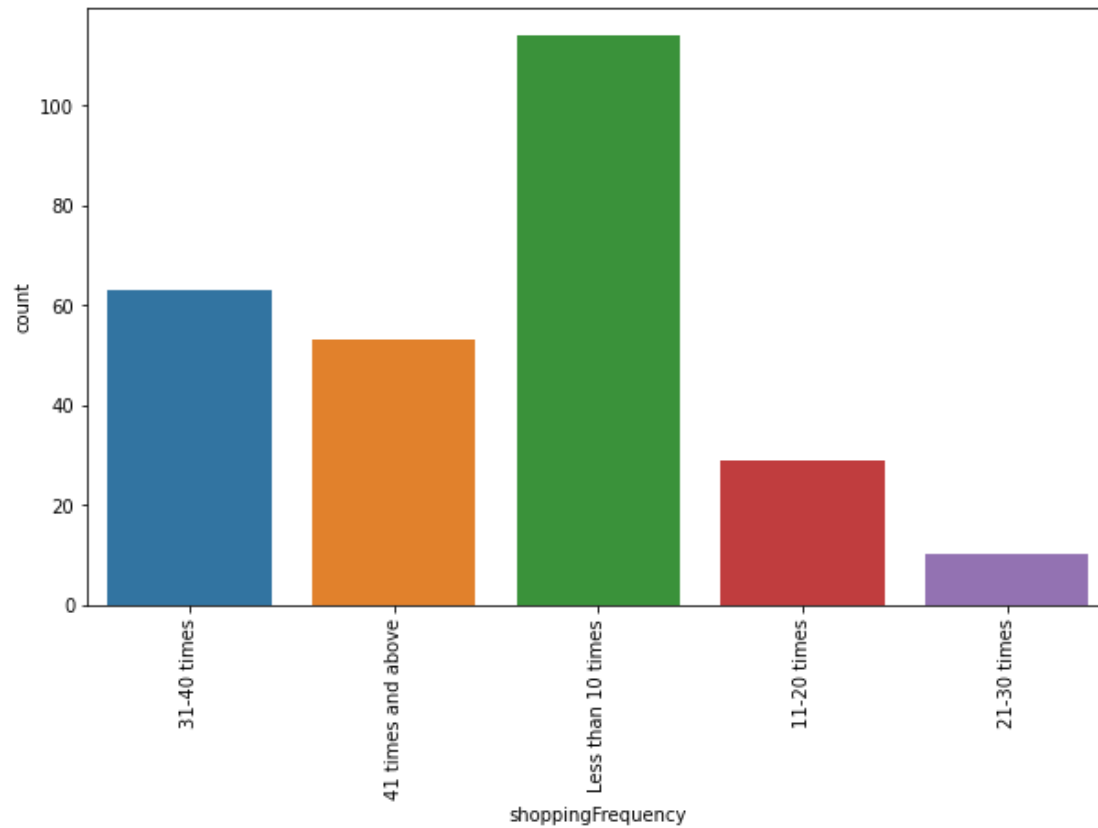


Delhi 22.0
 Greater Noida 16.0
 Noida 15.0
 Bangalore 14.0
 Karnal 10.0
 Soln 7.0

```
Ghaziabad      7.0
Gurgaon        4.0
Merrut         3.0
Moradabad      2.0
Bulandshahr    1.0
Name: city, dtype: float64 2
```



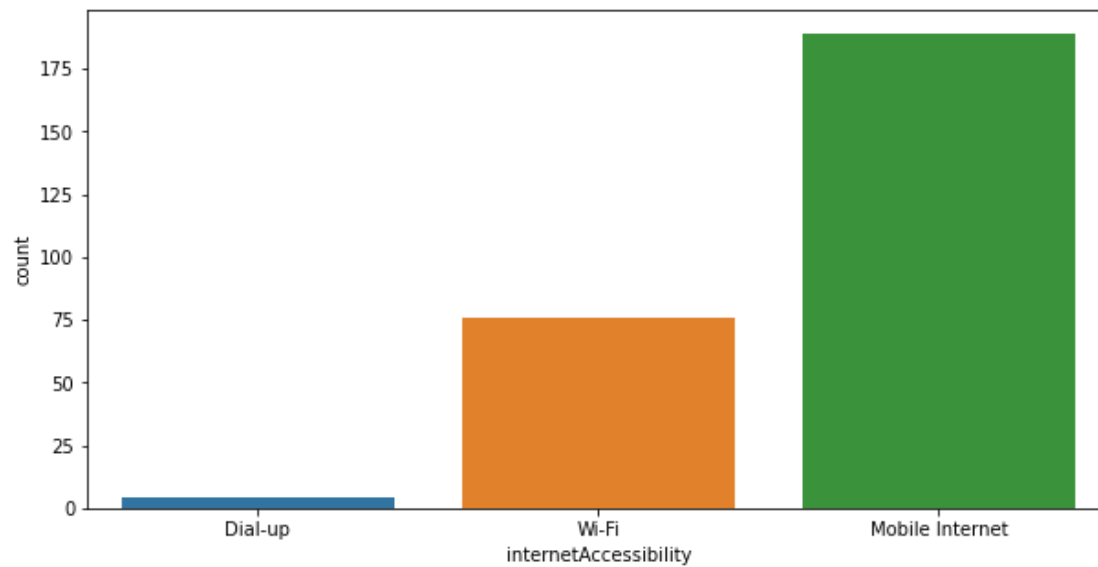
```
Above 4 years    36.0
2-3 years        24.0
3-4 years        17.0
Less than 1 year 16.0
1-2 years         6.0
Name: shoppingSince, dtype: float64 2
```



```

Less than 10 times    42.0
31-40 times          23.0
41 times and above   20.0
11-20 times          11.0
21-30 times           4.0
Name: shoppingFrequency, dtype: float64 2

```

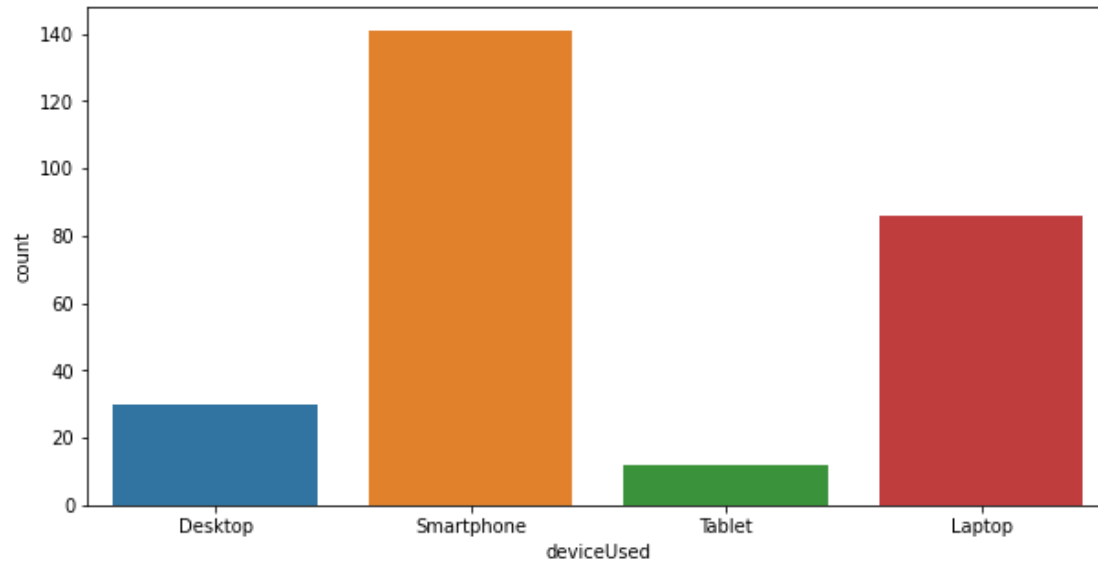


```

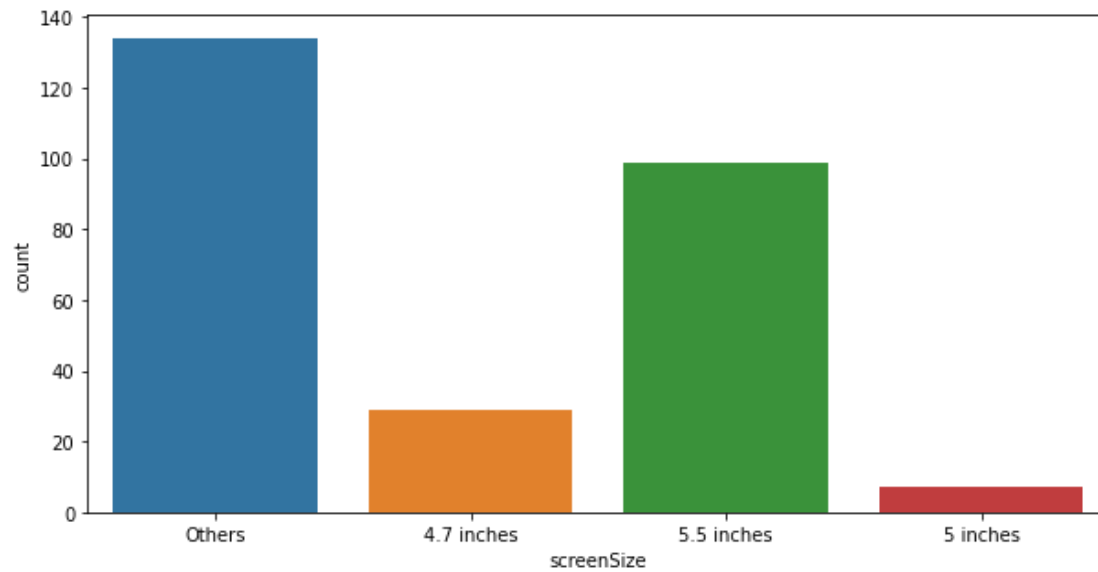
Mobile Internet    70.0
Wi-Fi              28.0

```

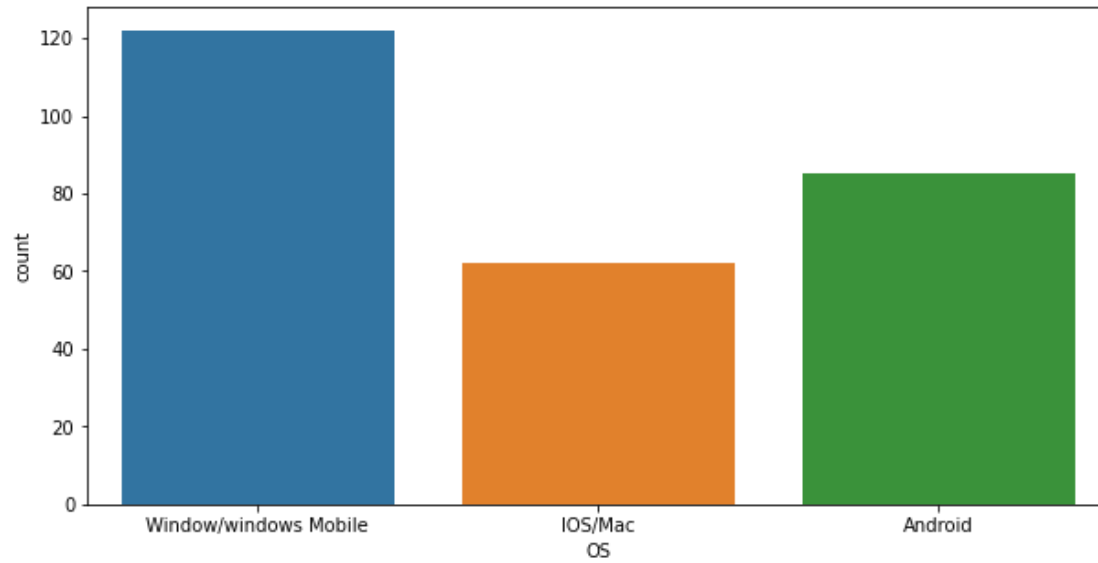

Dial-up 1.0
Name: internetAccessibility, dtype: float64 2



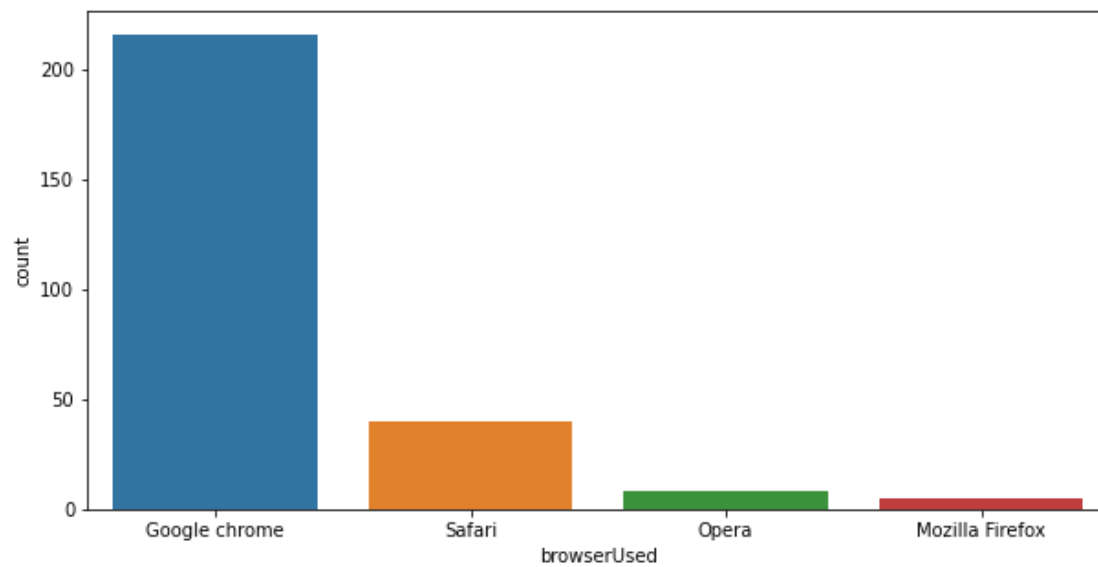
Smartphone 52.0
Laptop 32.0
Desktop 11.0
Tablet 4.0
Name: deviceUsed, dtype: float64 2



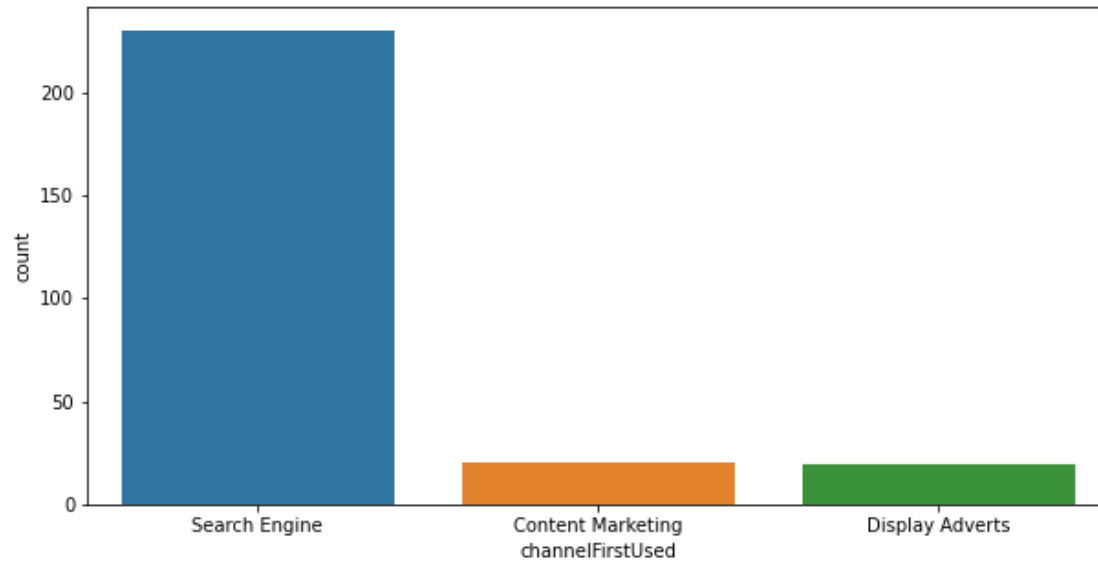
Others 50.0
5.5 inches 37.0
4.7 inches 11.0
5 inches 3.0
Name: screenSize, dtype: float64 2



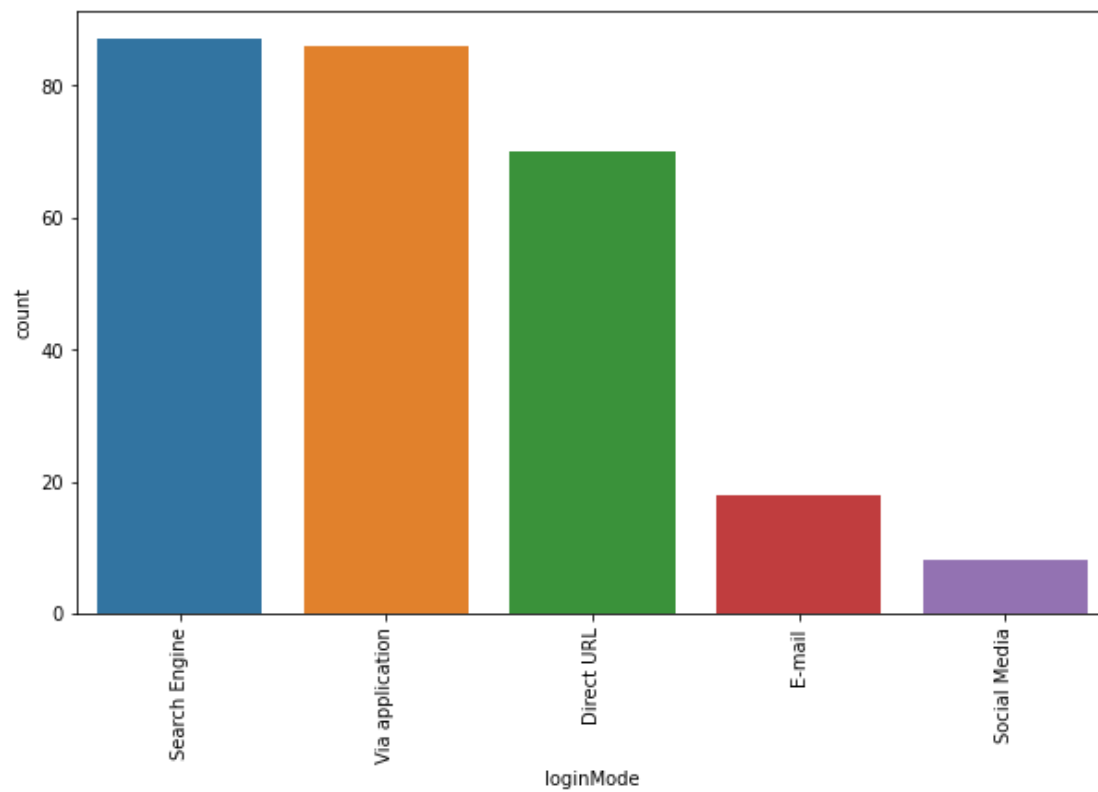
```
Window/windows Mobile    45.0  
Android                  32.0  
IOS/Mac                  23.0  
Name: OS, dtype: float64 2
```



```
Google chrome    80.0  
Safari           15.0  
Opera             3.0  
Mozilla Firefox  2.0  
Name: browserUsed, dtype: float64 2
```

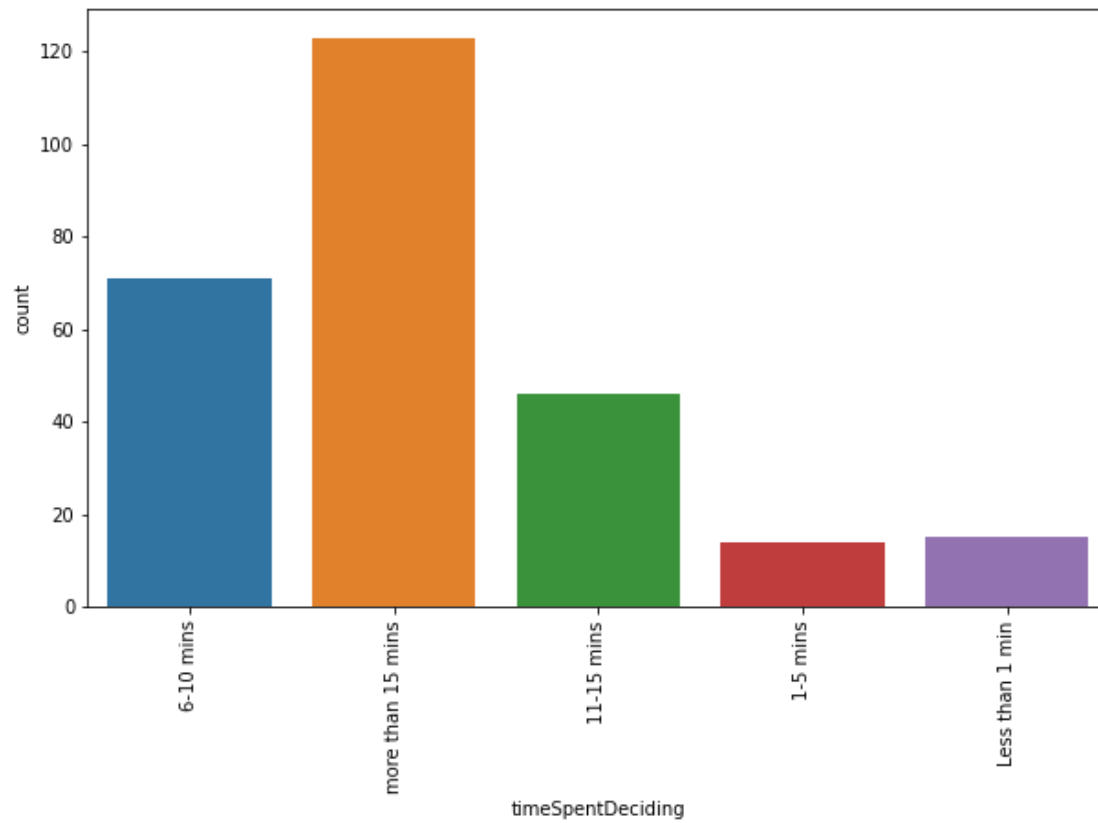


```
Search Engine      86.0
Content Marketing  7.0
Display Adverts    7.0
Name: channelFirstUsed, dtype: float64 2
```

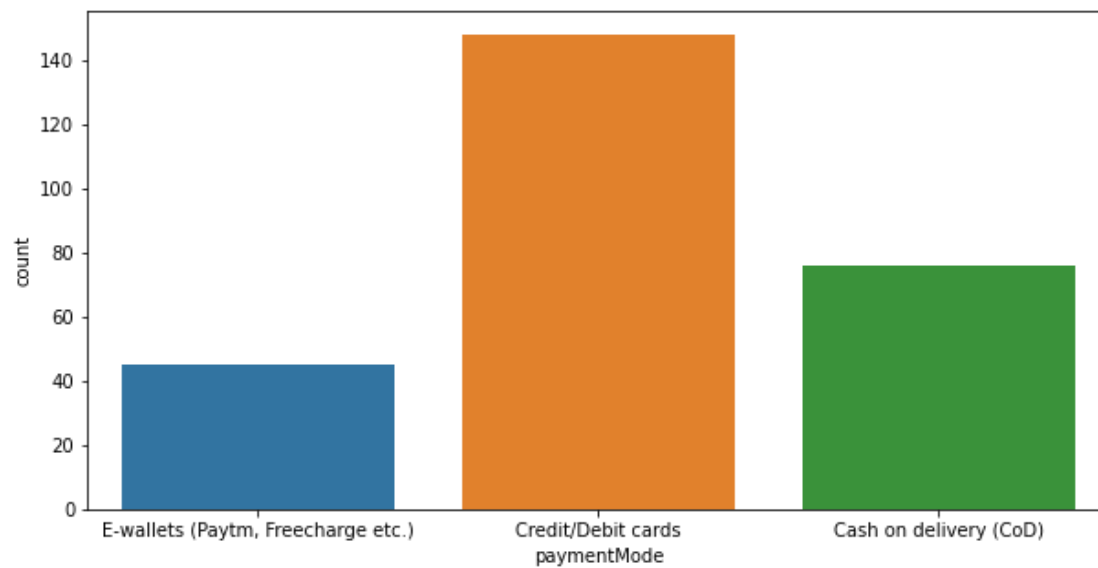


```
Search Engine      32.0
Via application    32.0
Direct URL         26.0
E-mail             7.0
```

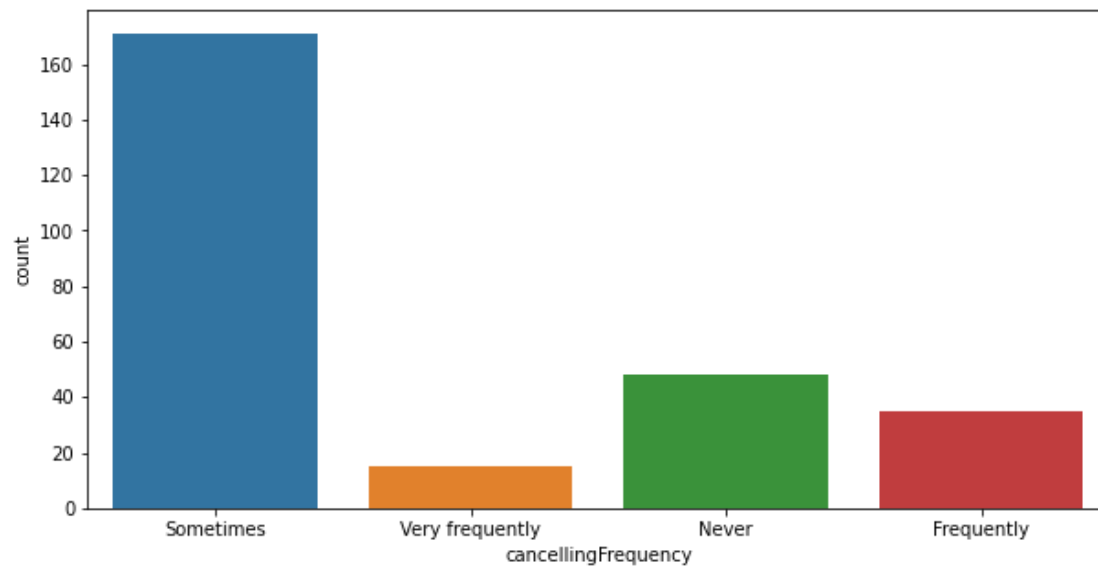
Social Media 3.0
Name: loginMode, dtype: float64 2



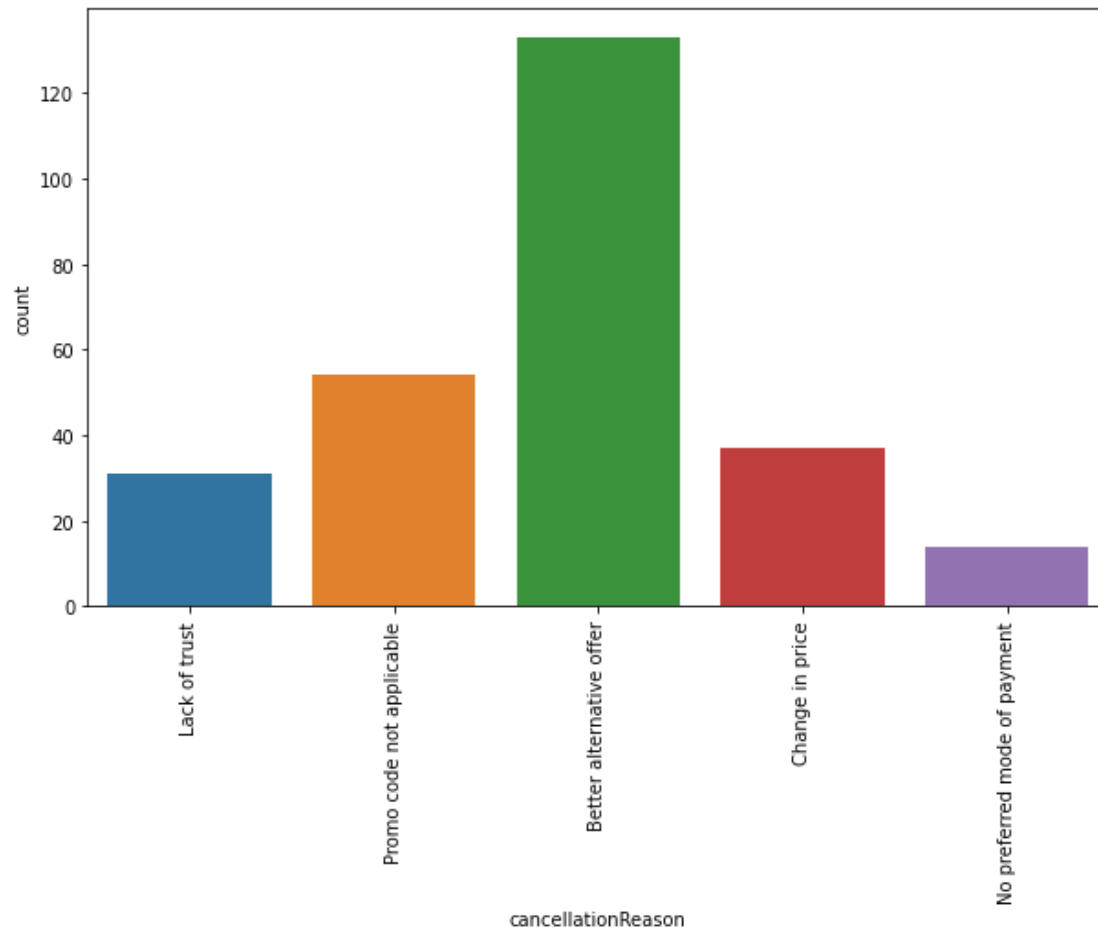
more than 15 mins 46.0
6-10 mins 26.0
11-15 mins 17.0
Less than 1 min 6.0
1-5 mins 5.0
Name: timeSpentDeciding, dtype: float64 2



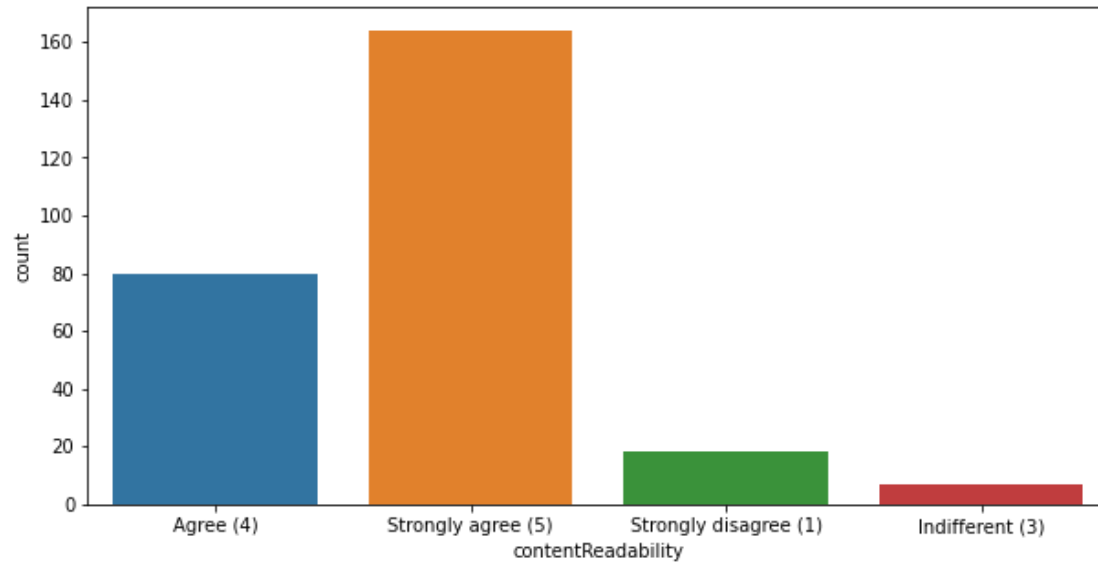
Credit/Debit cards 55.0
Cash on delivery (CoD) 28.0
E-wallets (Paytm, Freecharge etc.) 17.0
Name: paymentMode, dtype: float64 2



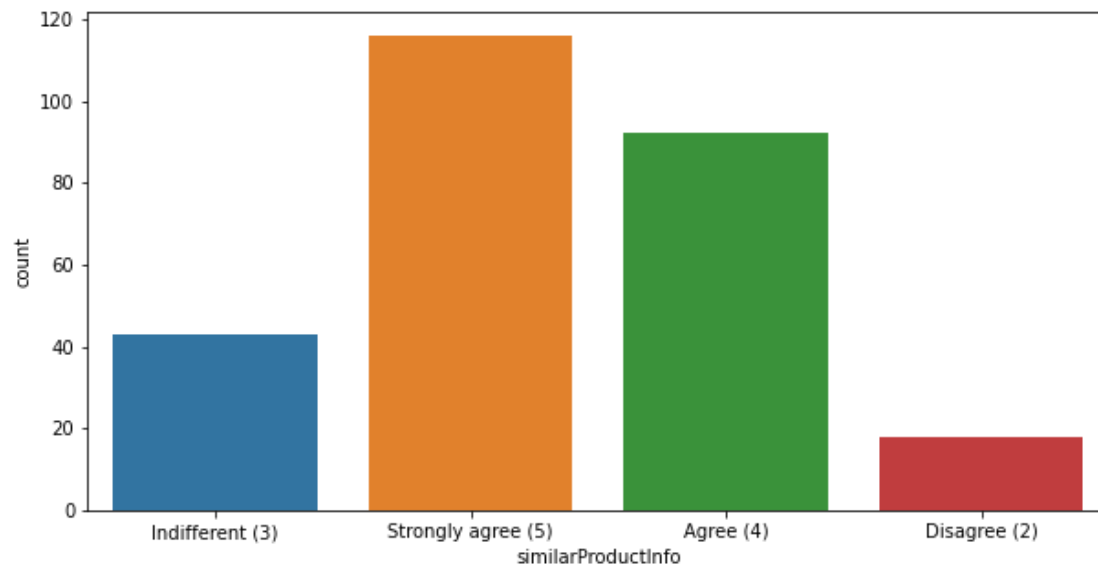
Sometimes 64.0
Never 18.0
Frequently 13.0
Very frequently 6.0
Name: cancellingFrequency, dtype: float64 2



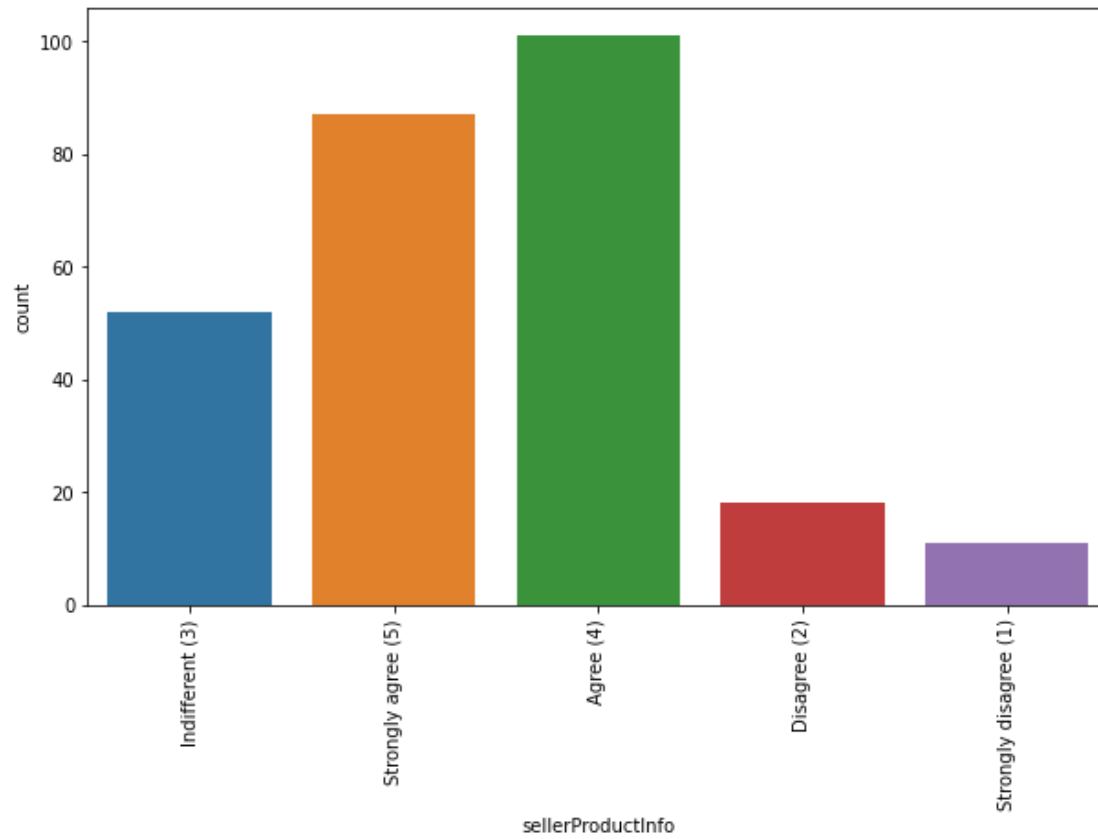
```
Better alternative offer    49.0
Promo code not applicable    20.0
Change in price             14.0
Lack of trust               12.0
No preferred mode of payment  5.0
Name: cancellationReason, dtype: float64 2
```



```
Strongly agree (5)    61.0
Agree (4)             30.0
Strongly disagree (1)  7.0
Indifferent (3)       3.0
Name: contentReadability, dtype: float64 2
```



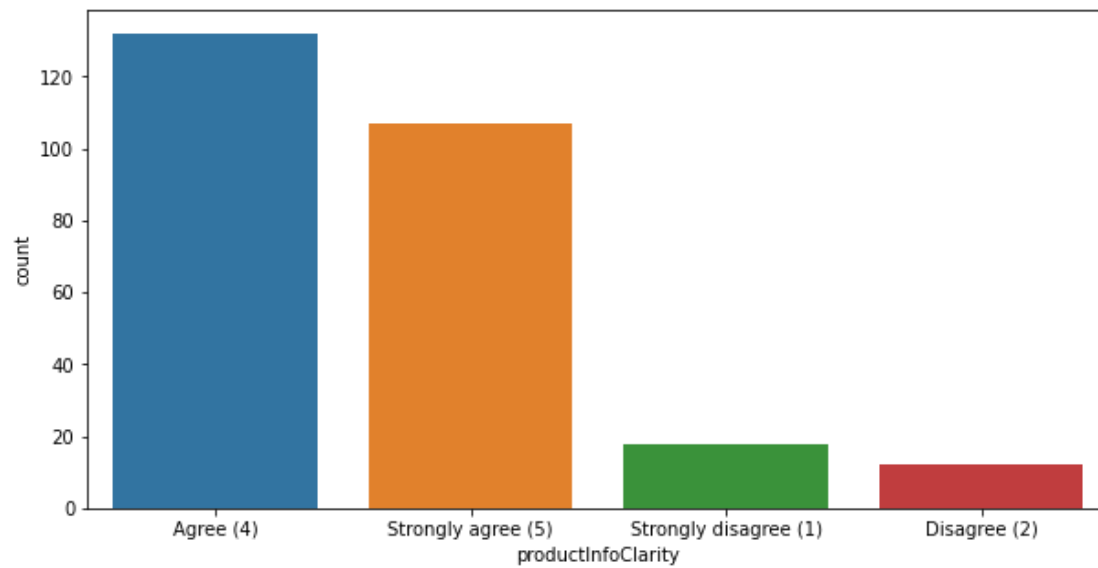
```
Strongly agree (5)    43.0
Agree (4)             34.0
Indifferent (3)       16.0
Disagree (2)          7.0
Name: similarProductInfo, dtype: float64 2
```



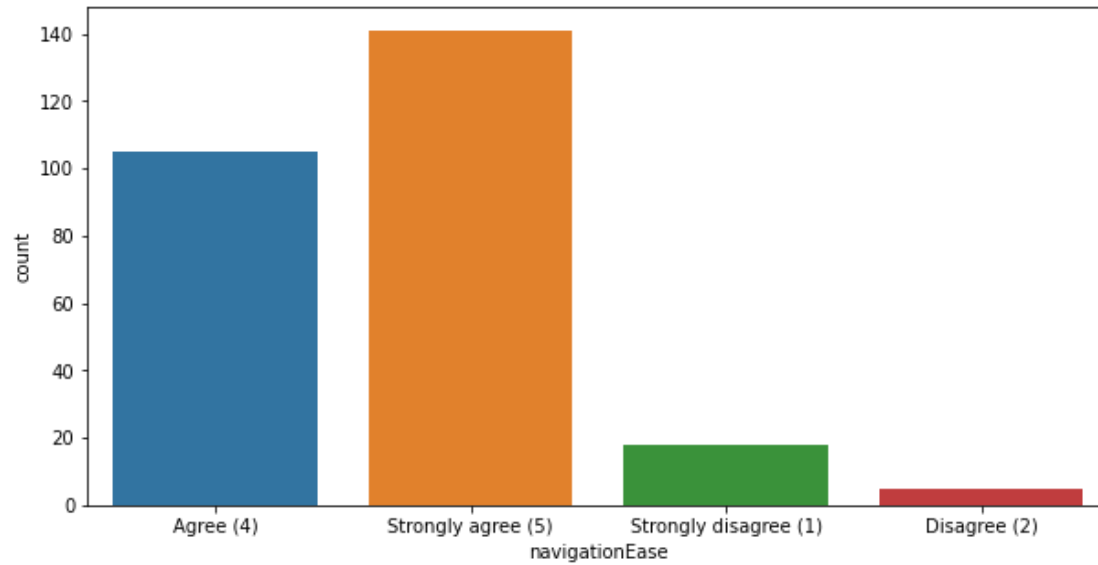
```

Agree (4)          38.0
Strongly agree (5) 32.0
Indifferent (3)    19.0
Disagree (2)       7.0
Strongly disagree (1) 4.0
Name: sellerProductInfo, dtype: float64 2

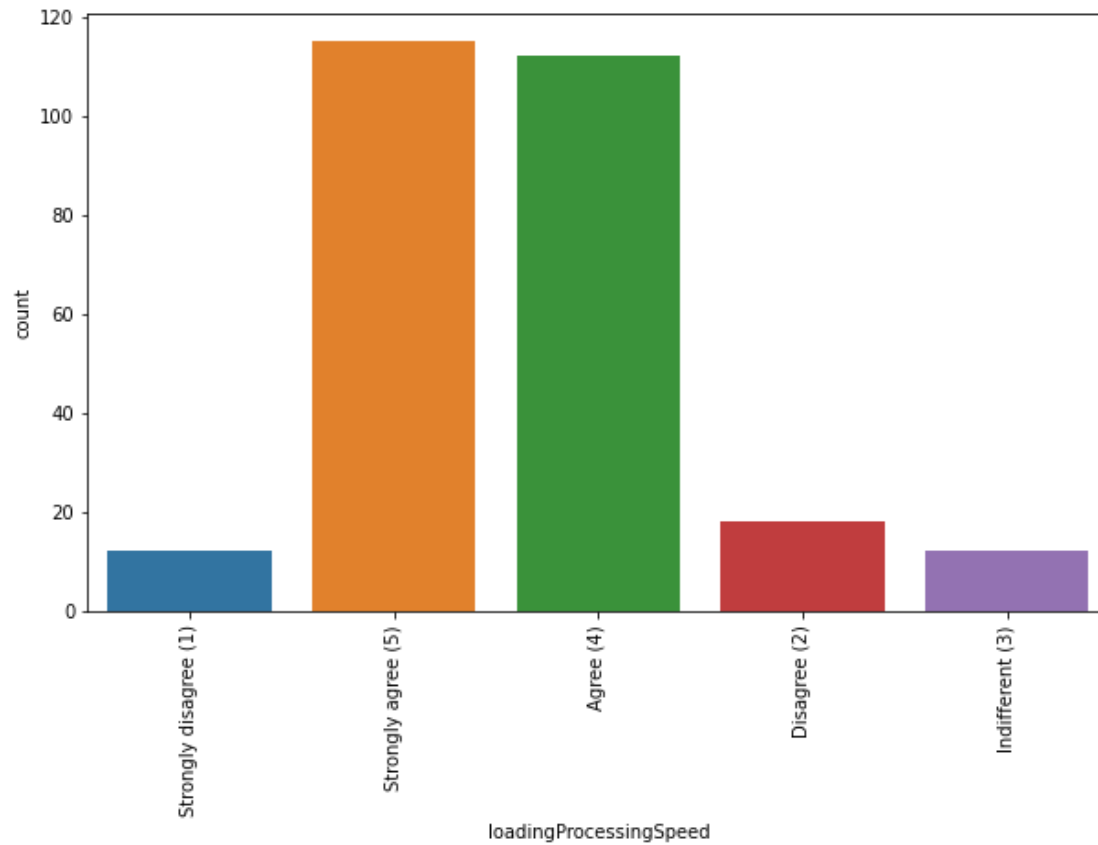
```



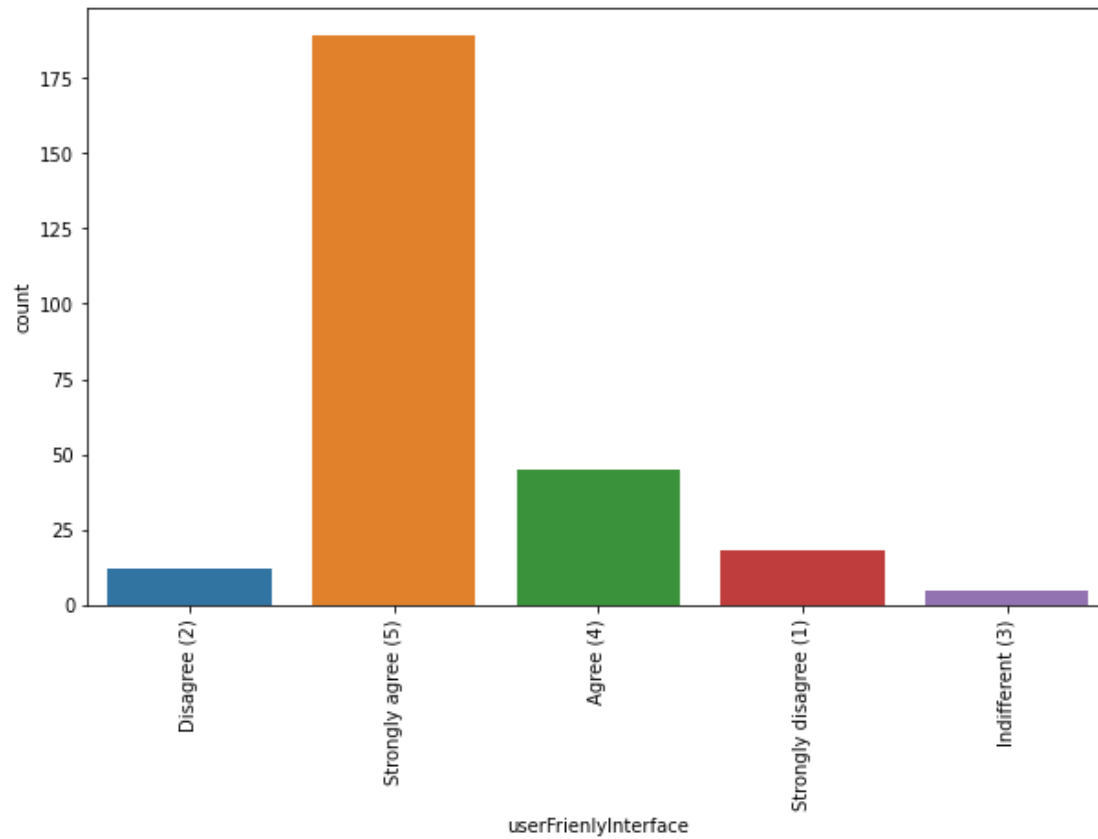

```
Agree (4)          49.0
Strongly agree (5) 40.0
Strongly disagree (1) 7.0
Disagree (2)       4.0
Name: productInfoClarity, dtype: float64 2
```



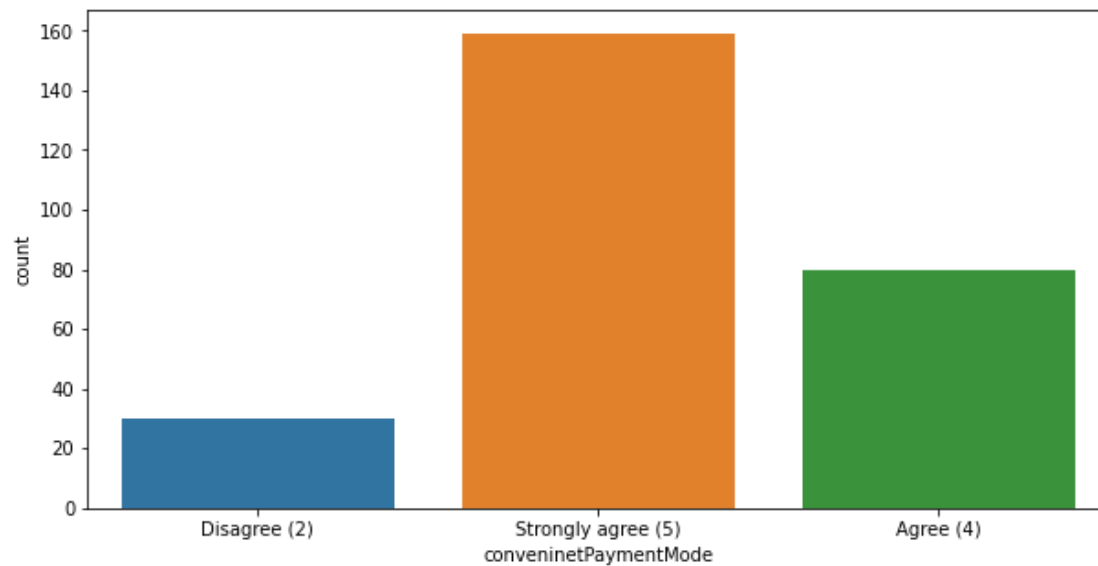
```
Strongly agree (5) 52.0
Agree (4)          39.0
Strongly disagree (1) 7.0
Disagree (2)       2.0
Name: navigationEase, dtype: float64 2
```



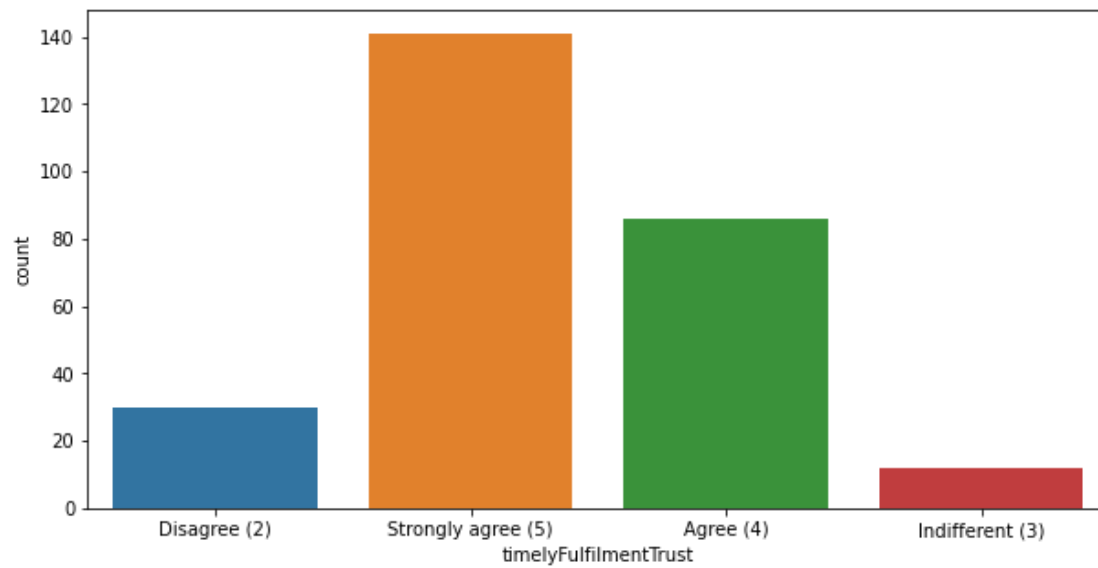
```
Strongly agree (5)    43.0
Agree (4)             42.0
Disagree (2)          7.0
Strongly disagree (1)  4.0
Indifferent (3)        4.0
Name: loadingProcessingSpeed, dtype: float64 2
```



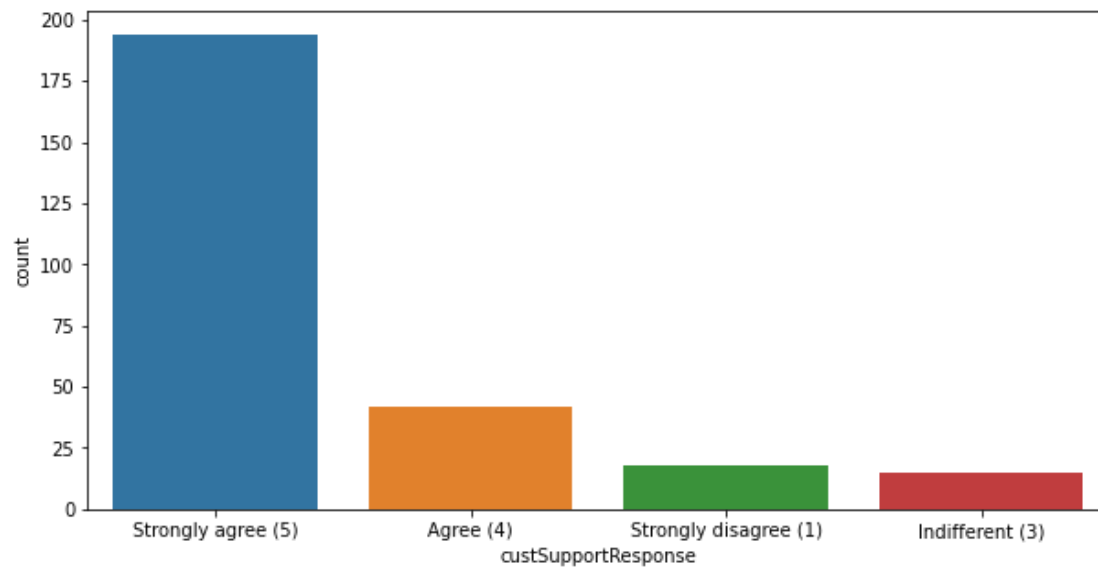
```
Strongly agree (5)    70.0
Agree (4)            17.0
Strongly disagree (1)  7.0
Disagree (2)         4.0
Indifferent (3)       2.0
Name: userFrienlyInterface, dtype: float64 2
```



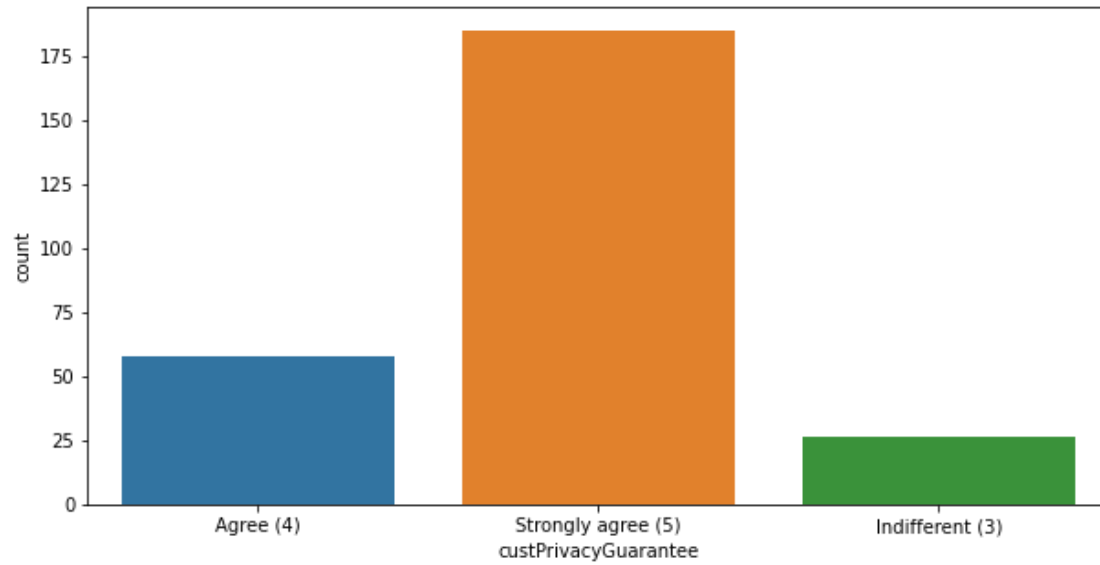
Strongly agree (5) 59.0
Agree (4) 30.0
Disagree (2) 11.0
Name: conveninetPaymentMode, dtype: float64 2



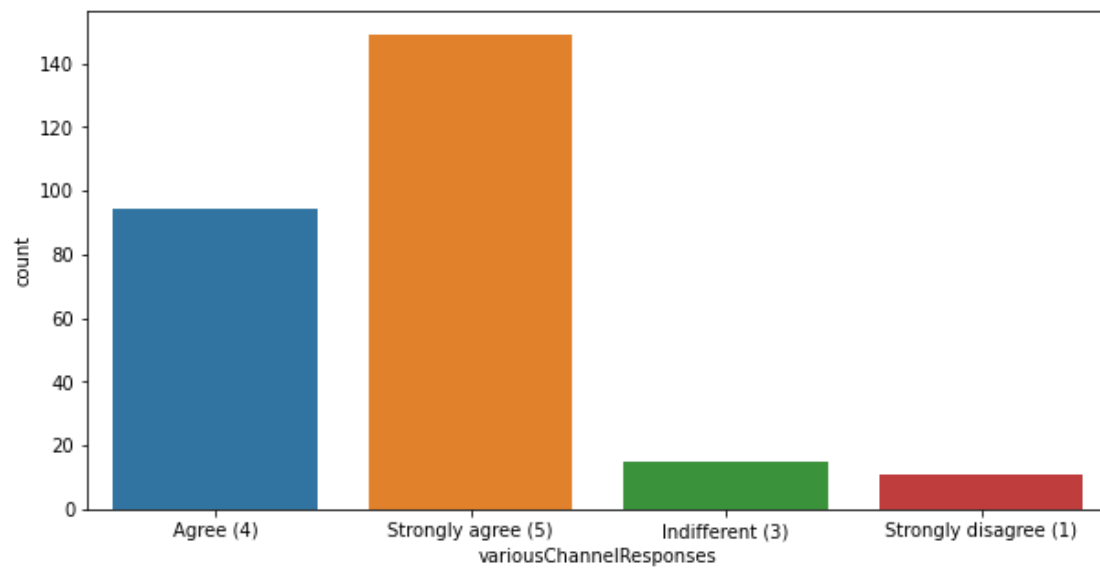
Strongly agree (5) 52.0
Agree (4) 32.0
Disagree (2) 11.0
Indifferent (3) 4.0
Name: timelyFulfilmentTrust, dtype: float64 2



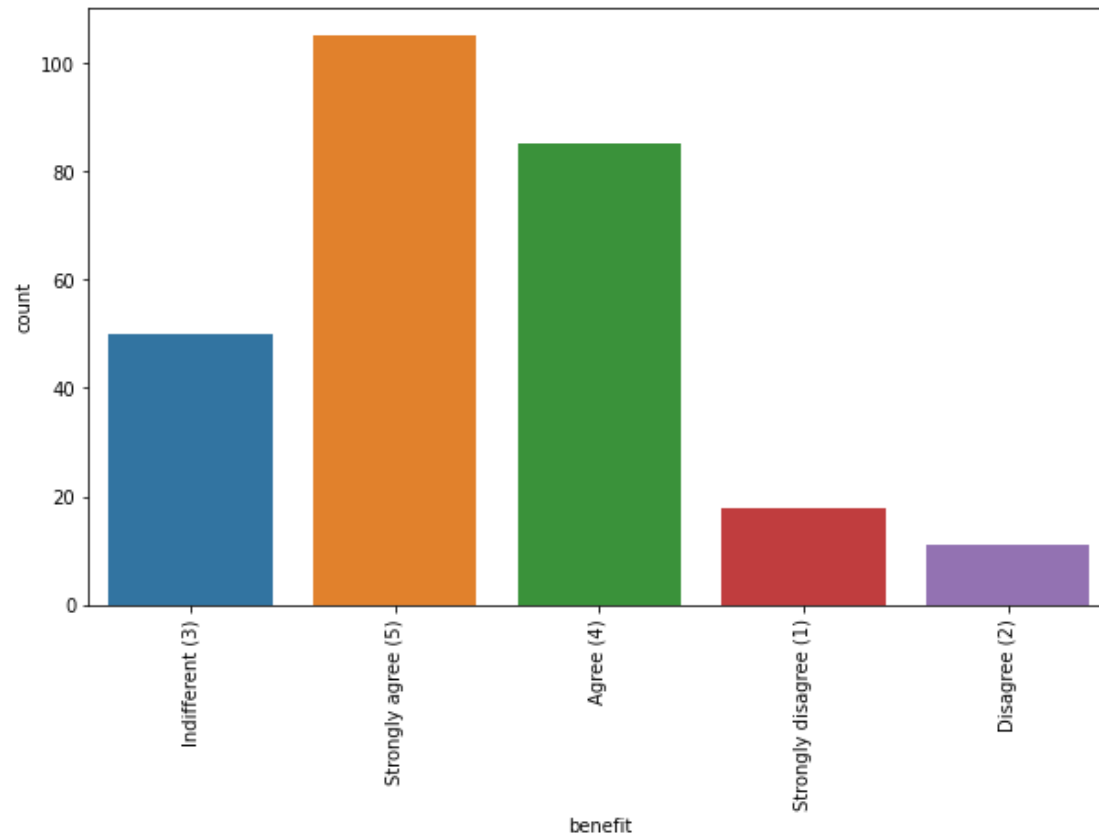
Strongly agree (5) 72.0
Agree (4) 16.0
Strongly disagree (1) 7.0
Indifferent (3) 6.0
Name: custSupportResponse, dtype: float64 2



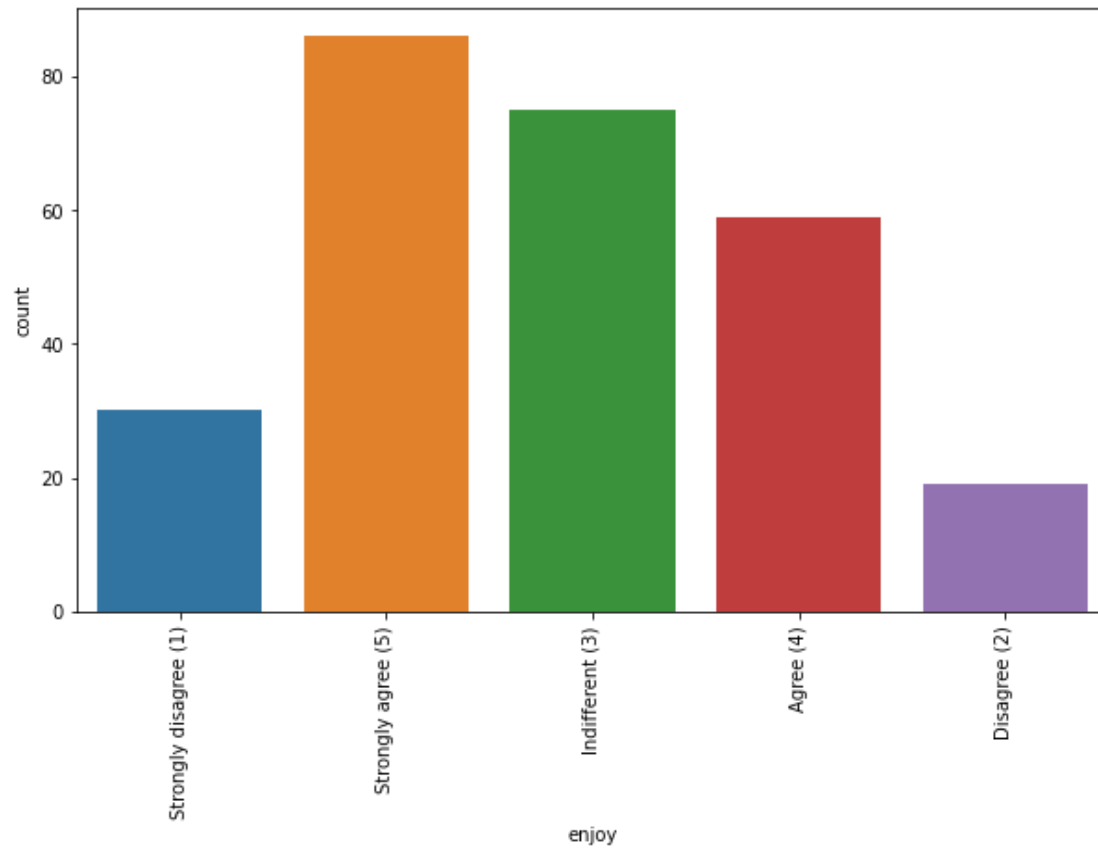
```
Strongly agree (5)    69.0
Agree (4)             22.0
Indifferent (3)       10.0
Name: custPrivacyGuarantee, dtype: float64 2
```



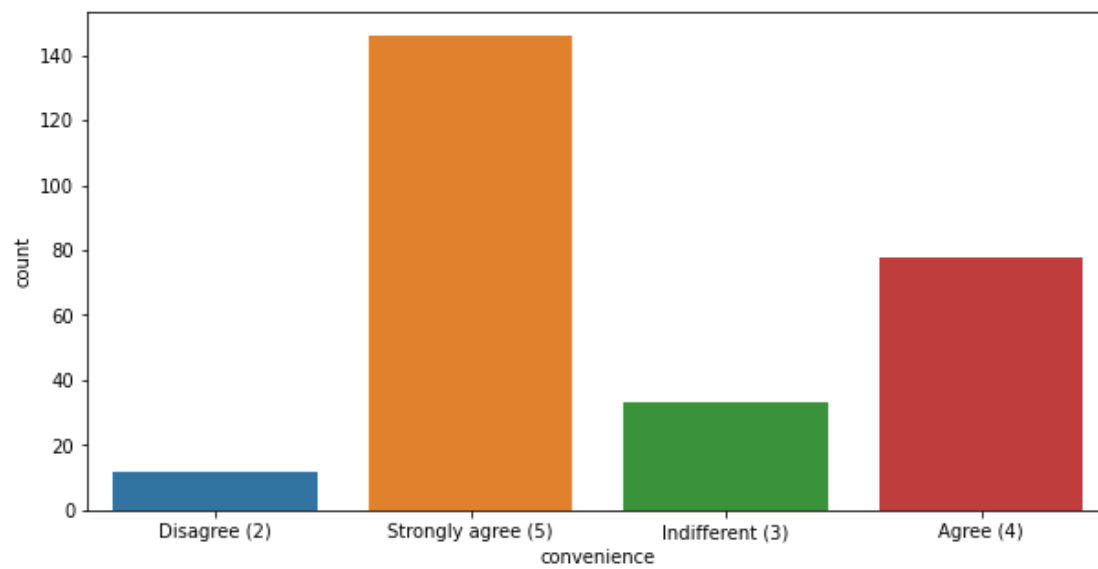
```
Strongly agree (5)    55.0
Agree (4)             35.0
Indifferent (3)        6.0
Strongly disagree (1)  4.0
Name: variousChannelResponses, dtype: float64 2
```



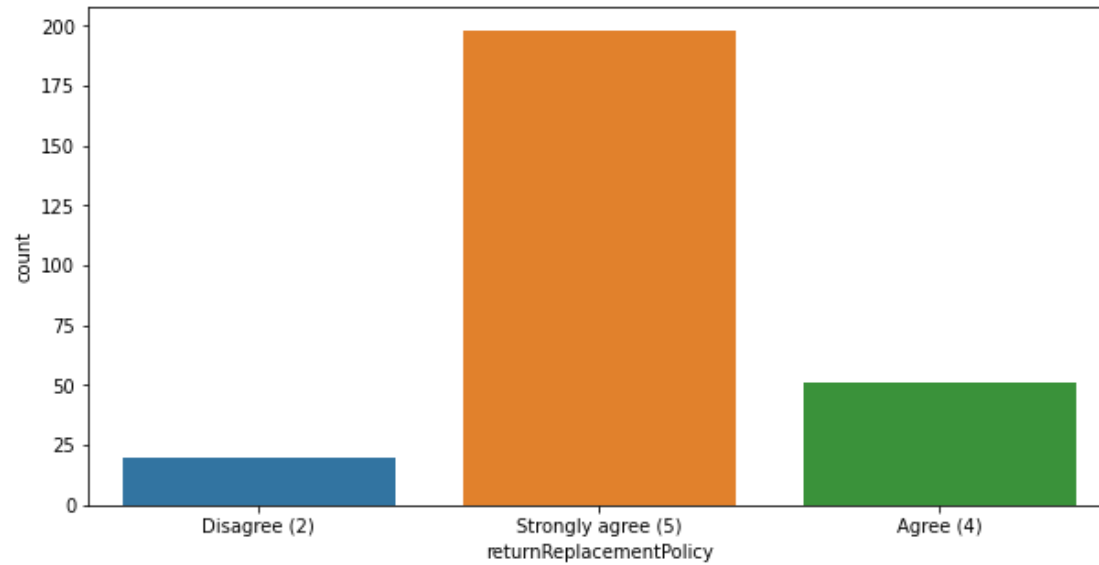
```
Strongly agree (5)    39.0
Agree (4)             32.0
Indifferent (3)       19.0
Strongly disagree (1)  7.0
Disagree (2)          4.0
Name: benefit, dtype: float64 2
```



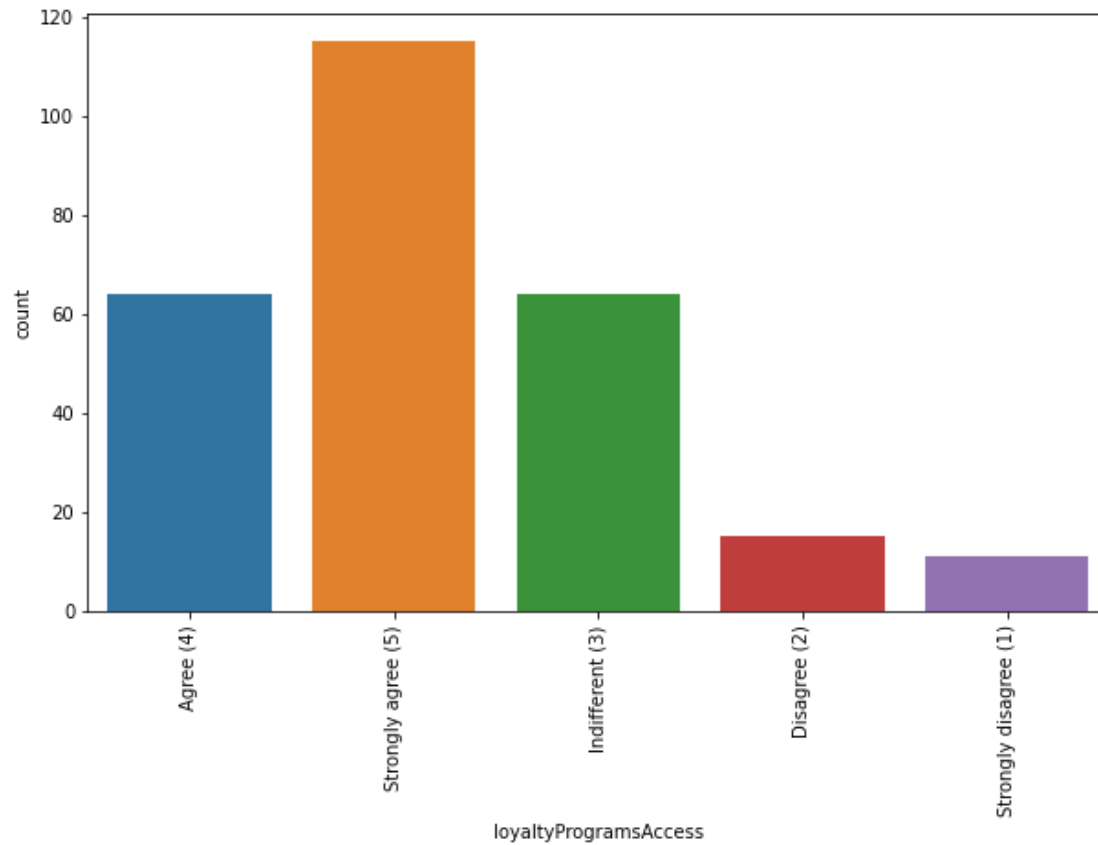
```
Strongly agree (5)    32.0
Indifferent (3)      28.0
Agree (4)            22.0
Strongly disagree (1) 11.0
Disagree (2)         7.0
Name: enjoy, dtype: float64 2
```



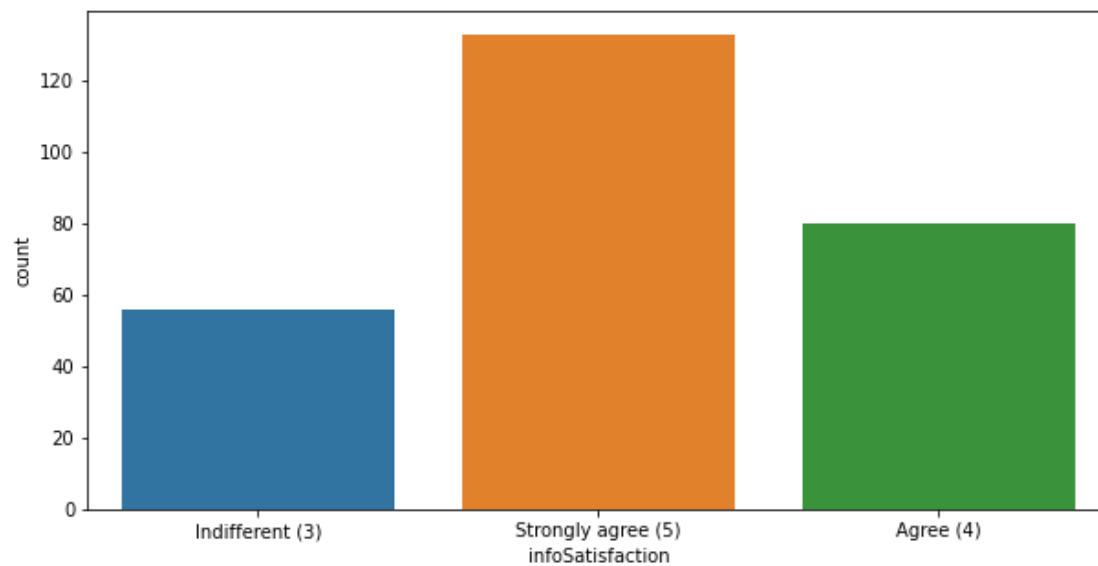
Strongly agree (5) 54.0
Agree (4) 29.0
Indifferent (3) 12.0
Disagree (2) 4.0
Name: convenience, dtype: float64 2



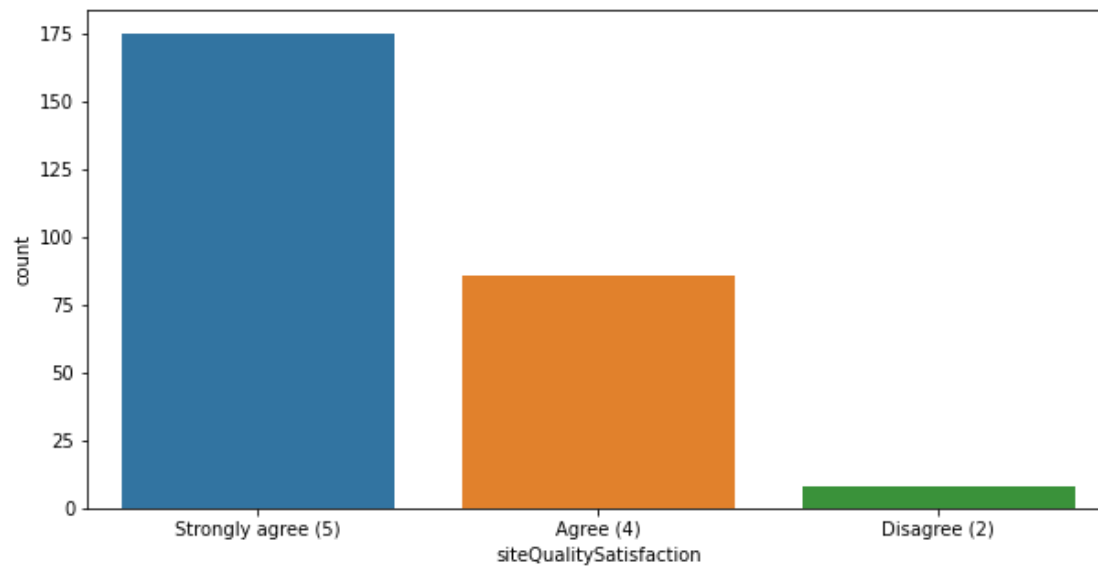
Strongly agree (5) 74.0
Agree (4) 19.0
Disagree (2) 7.0
Name: returnReplacementPolicy, dtype: float64 2



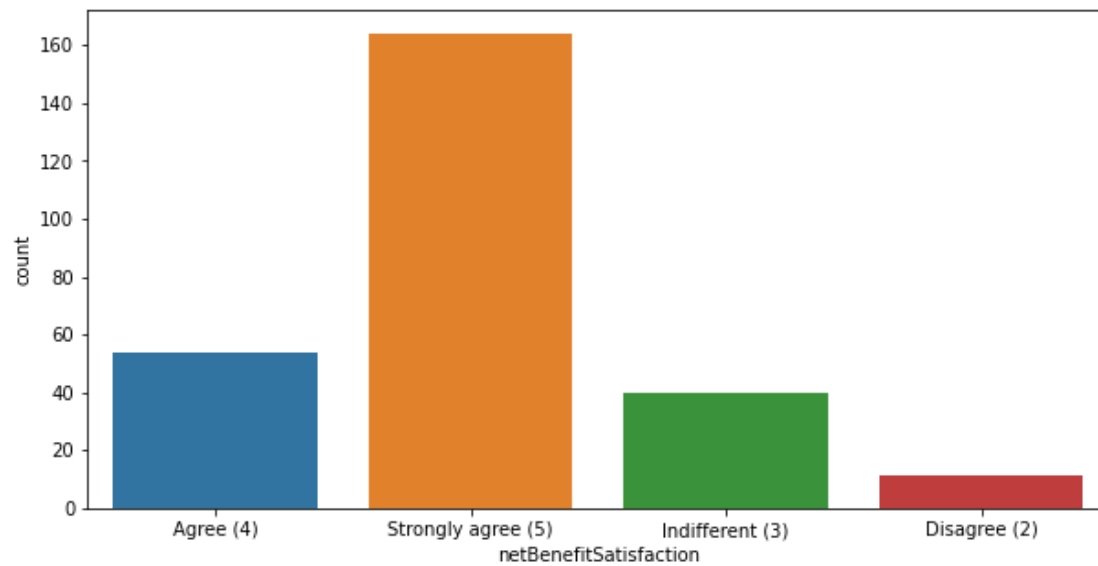
```
Strongly agree (5)    43.0
Agree (4)             24.0
Indifferent (3)       24.0
Disagree (2)          6.0
Strongly disagree (1) 4.0
Name: loyaltyProgramsAccess, dtype: float64 2
```



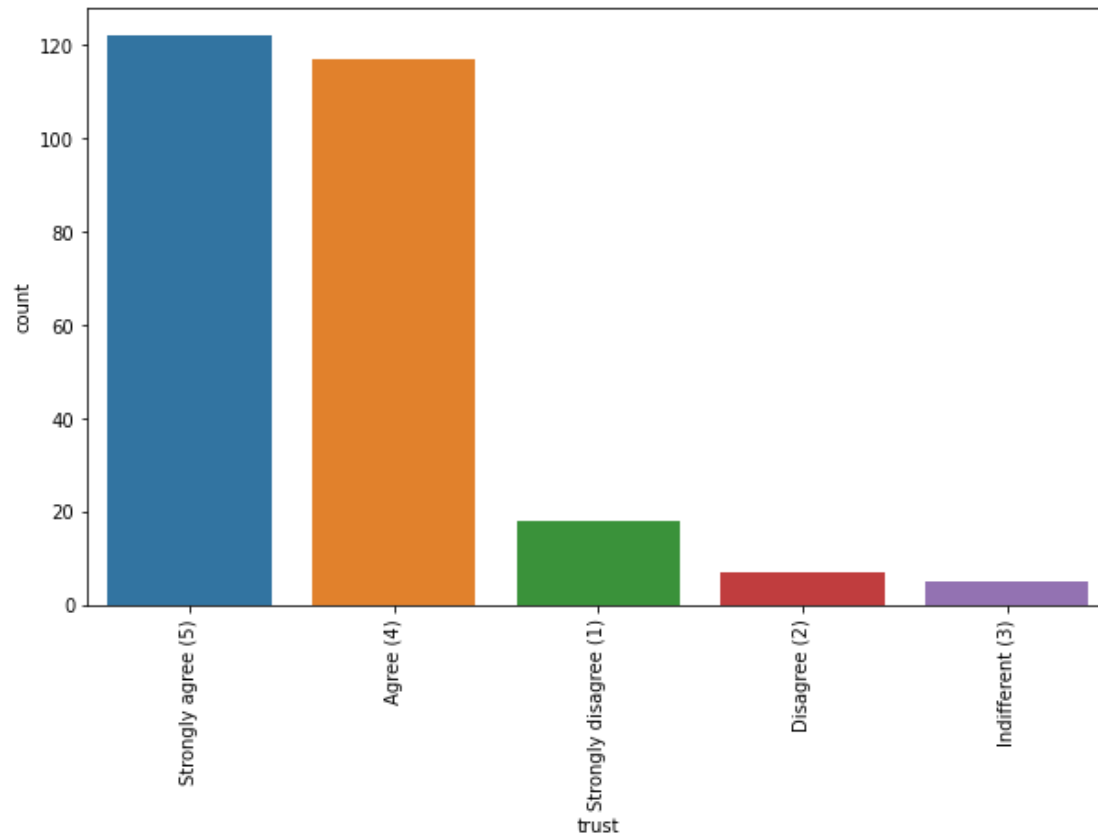
Strongly agree (5) 49.0
Agree (4) 30.0
Indifferent (3) 21.0
Name: infoSatisfaction, dtype: float64 2



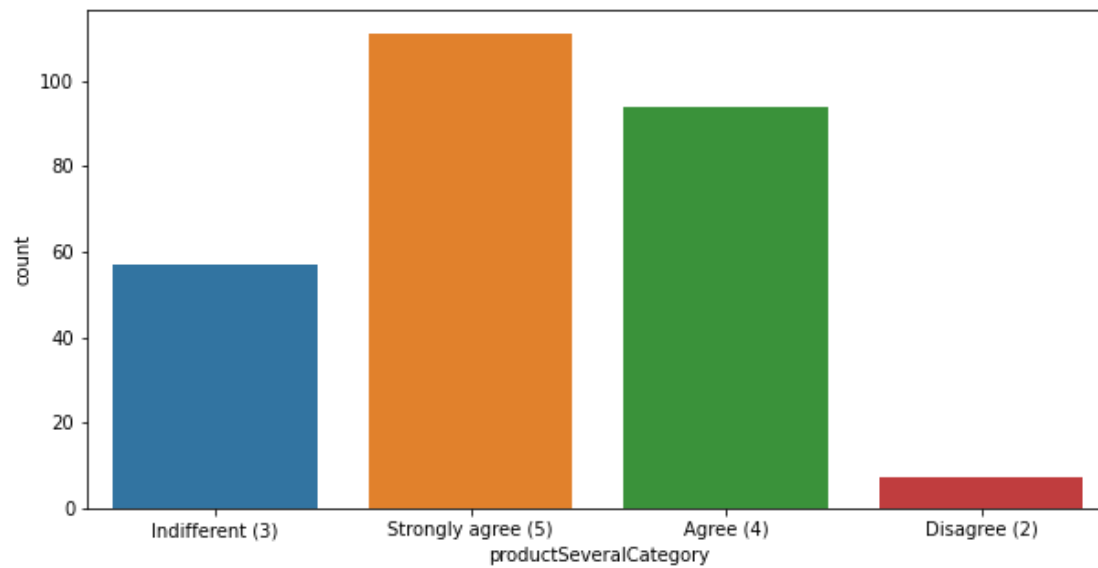
Strongly agree (5) 65.0
Agree (4) 32.0
Disagree (2) 3.0
Name: siteQualitySatisfaction, dtype: float64 2



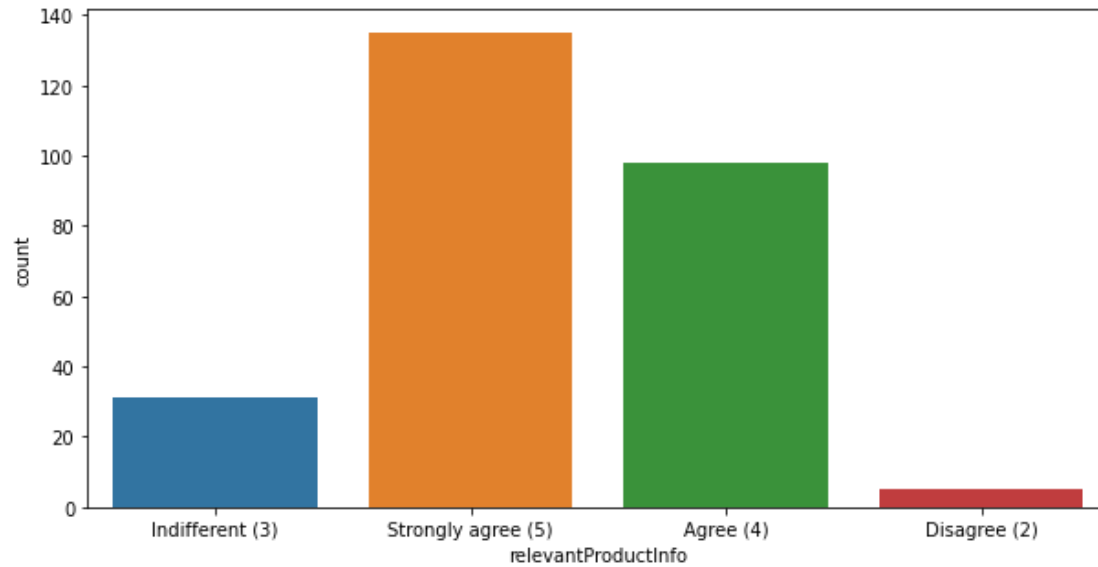
Strongly agree (5) 61.0
Agree (4) 20.0
Indifferent (3) 15.0
Disagree (2) 4.0
Name: netBenefitSatisfaction, dtype: float64 2



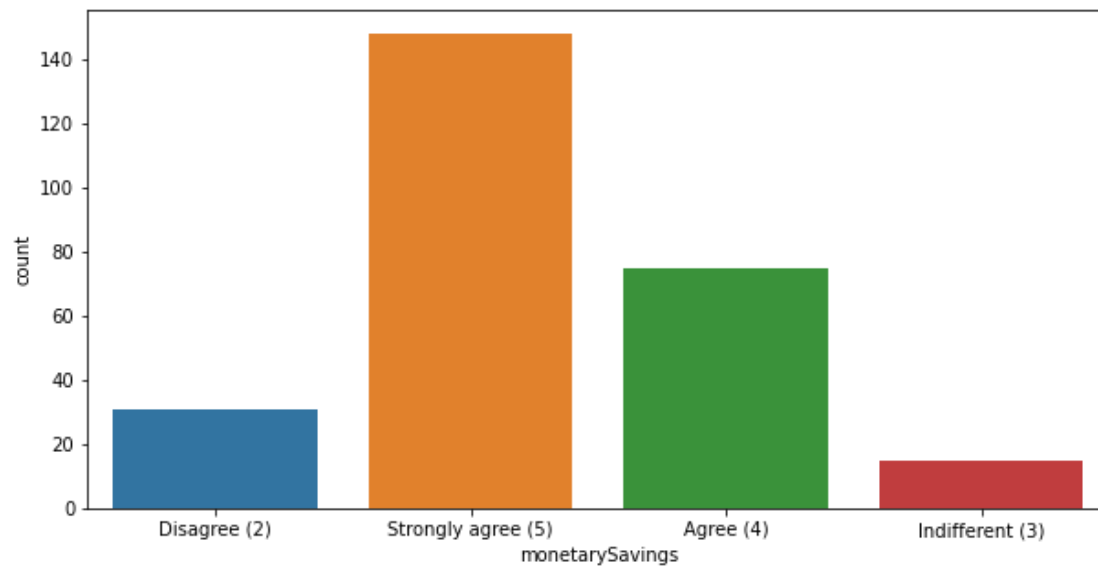
```
Strongly agree (5)    45.0
Agree (4)            43.0
Strongly disagree (1)  7.0
Disagree (2)         3.0
Indifferent (3)       2.0
Name: trust, dtype: float64 2
```



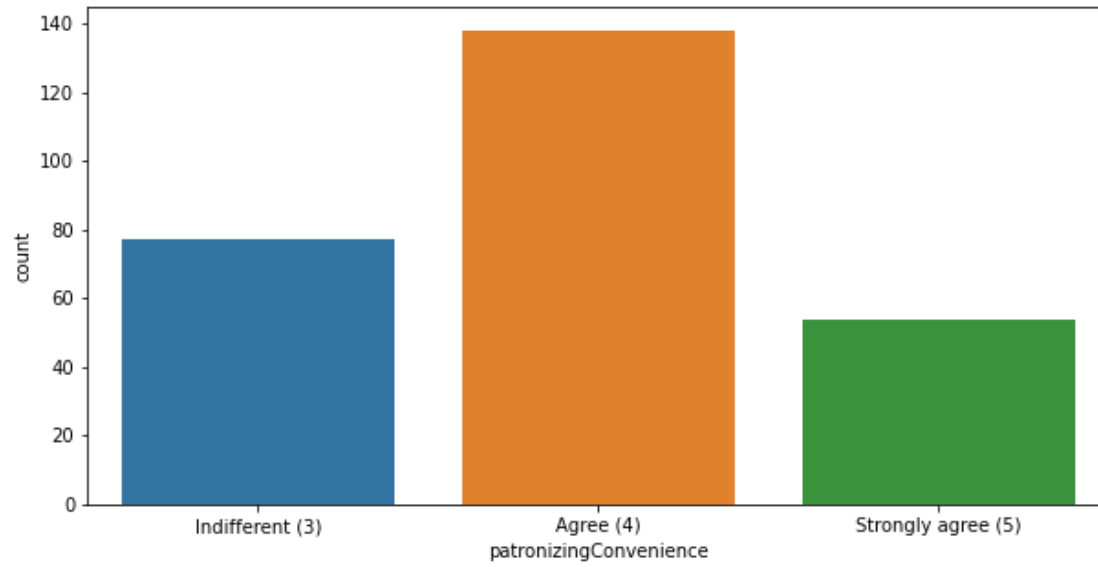
Strongly agree (5) 41.0
 Agree (4) 35.0
 Indifferent (3) 21.0
 Disagree (2) 3.0
 Name: productSeveralCategory, dtype: float64 2



Strongly agree (5) 50.0
 Agree (4) 36.0
 Indifferent (3) 12.0
 Disagree (2) 2.0
 Name: relevantProductInfo, dtype: float64 2



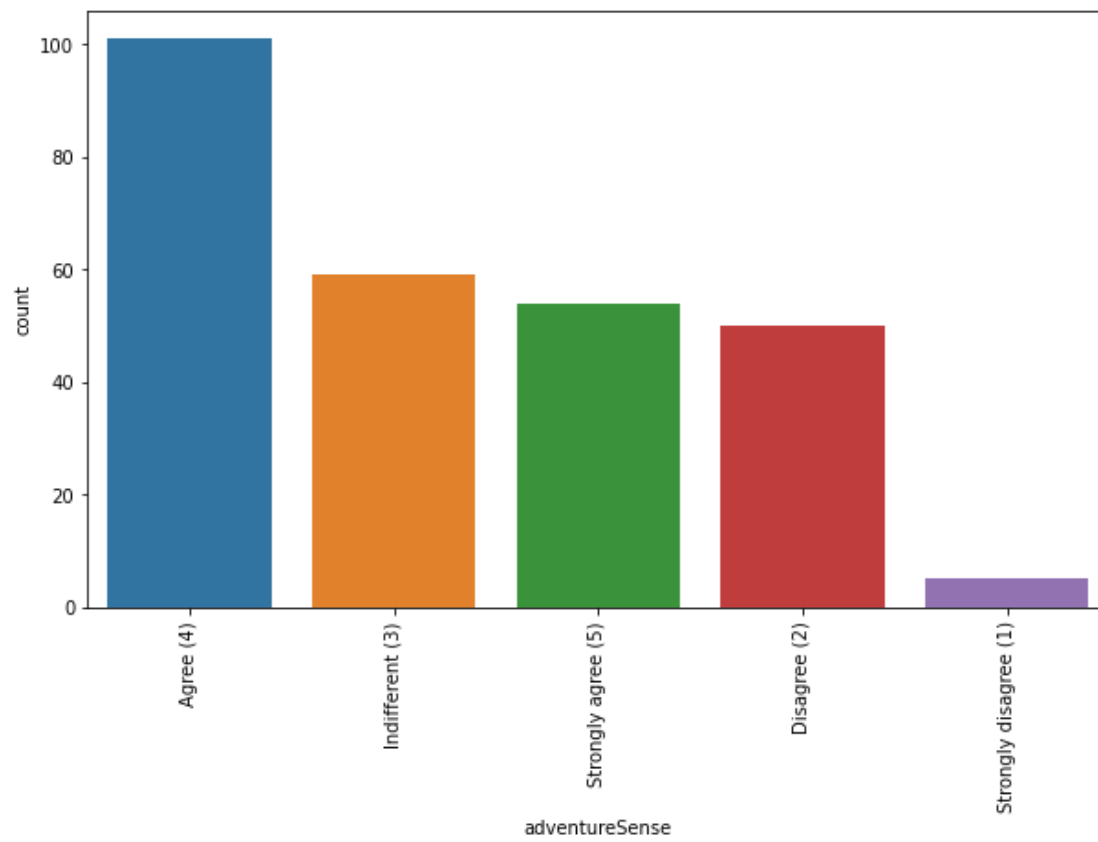
Strongly agree (5) 55.0
 Agree (4) 28.0
 Disagree (2) 12.0
 Indifferent (3) 6.0
 Name: monetarySavings, dtype: float64 2



```

Agree (4)          51.0
Indifferent (3)    29.0
Strongly agree (5) 20.0
Name: patronizingConvenience, dtype: float64 2

```

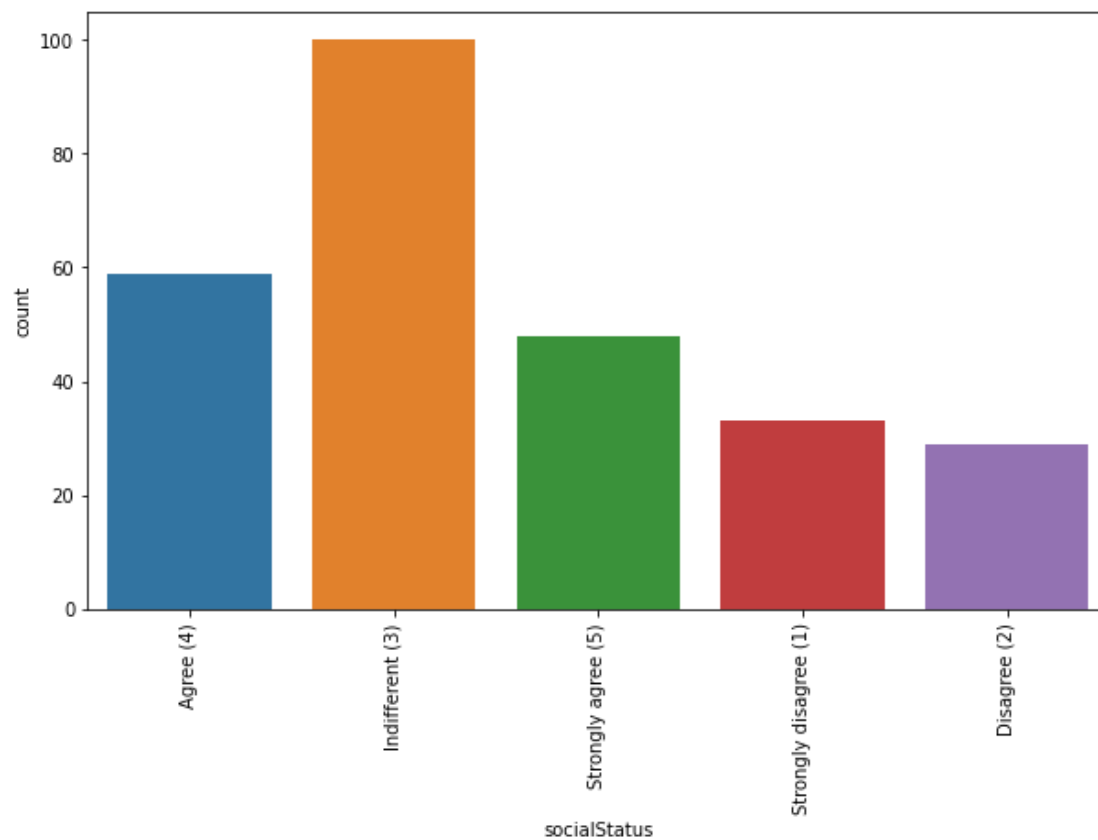


```

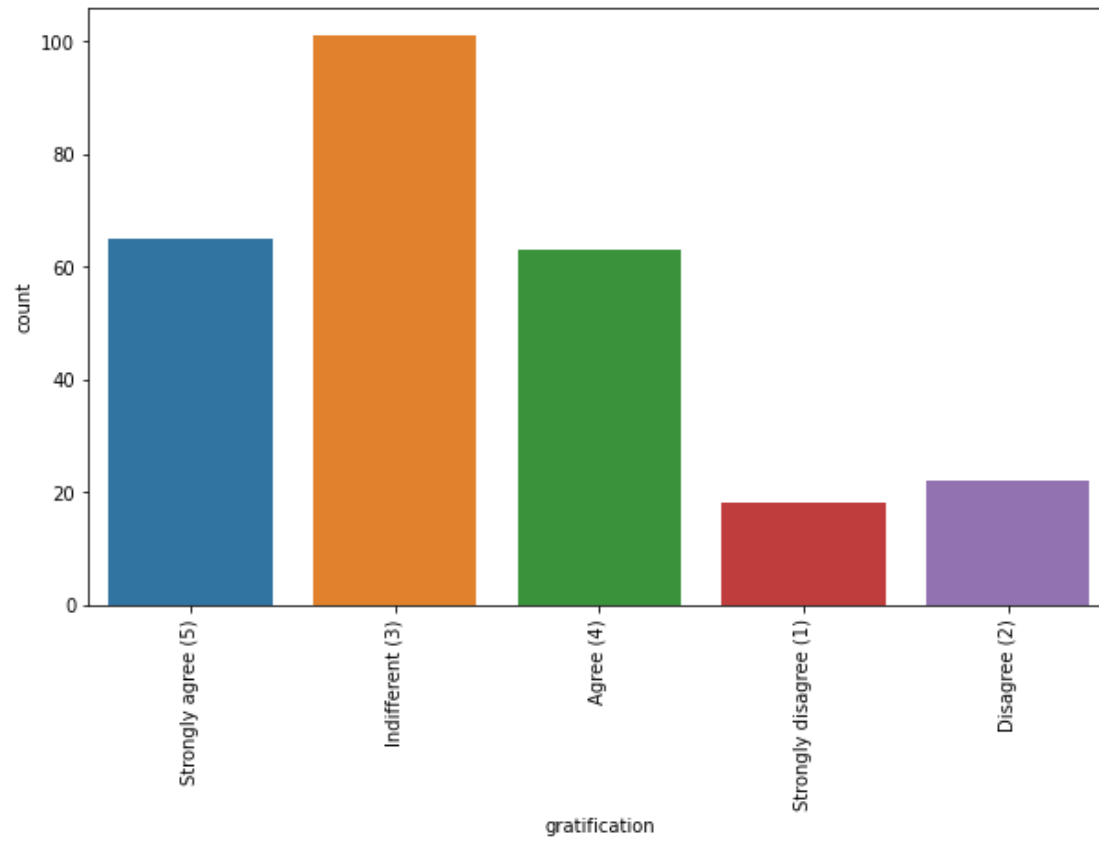
Agree (4)          38.0
Indifferent (3)    22.0
Strongly agree (5) 20.0

```

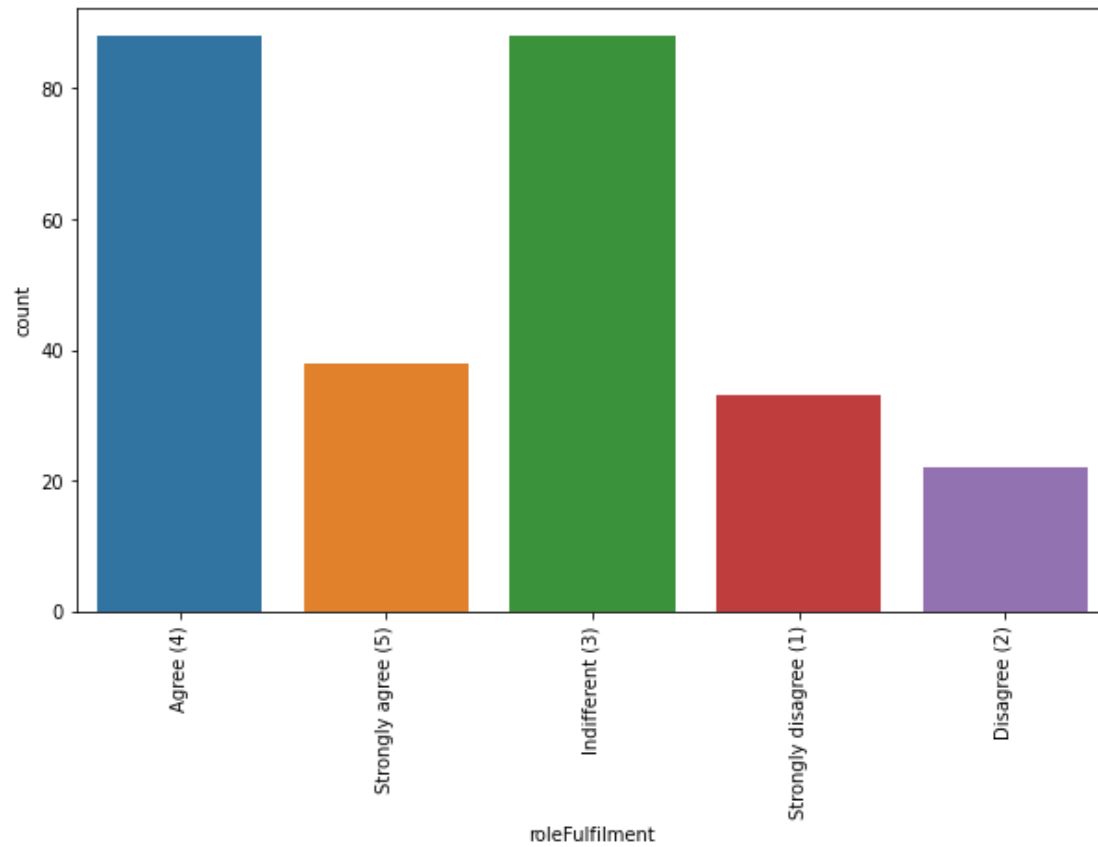
Disagree (2) 19.0
Strongly disagree (1) 2.0
Name: adventureSense, dtype: float64 2



Indifferent (3) 37.0
Agree (4) 22.0
Strongly agree (5) 18.0
Strongly disagree (1) 12.0
Disagree (2) 11.0
Name: socialStatus, dtype: float64 2



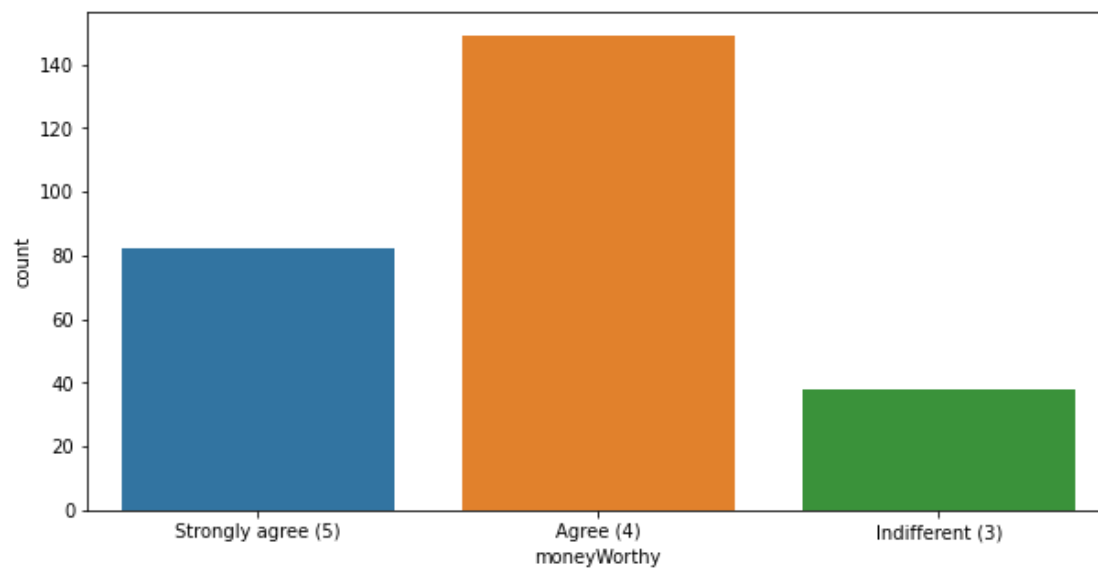
```
Indifferent (3)      38.0
Strongly agree (5)   24.0
Agree (4)            23.0
Disagree (2)         8.0
Strongly disagree (1) 7.0
Name: gratification, dtype: float64 2
```



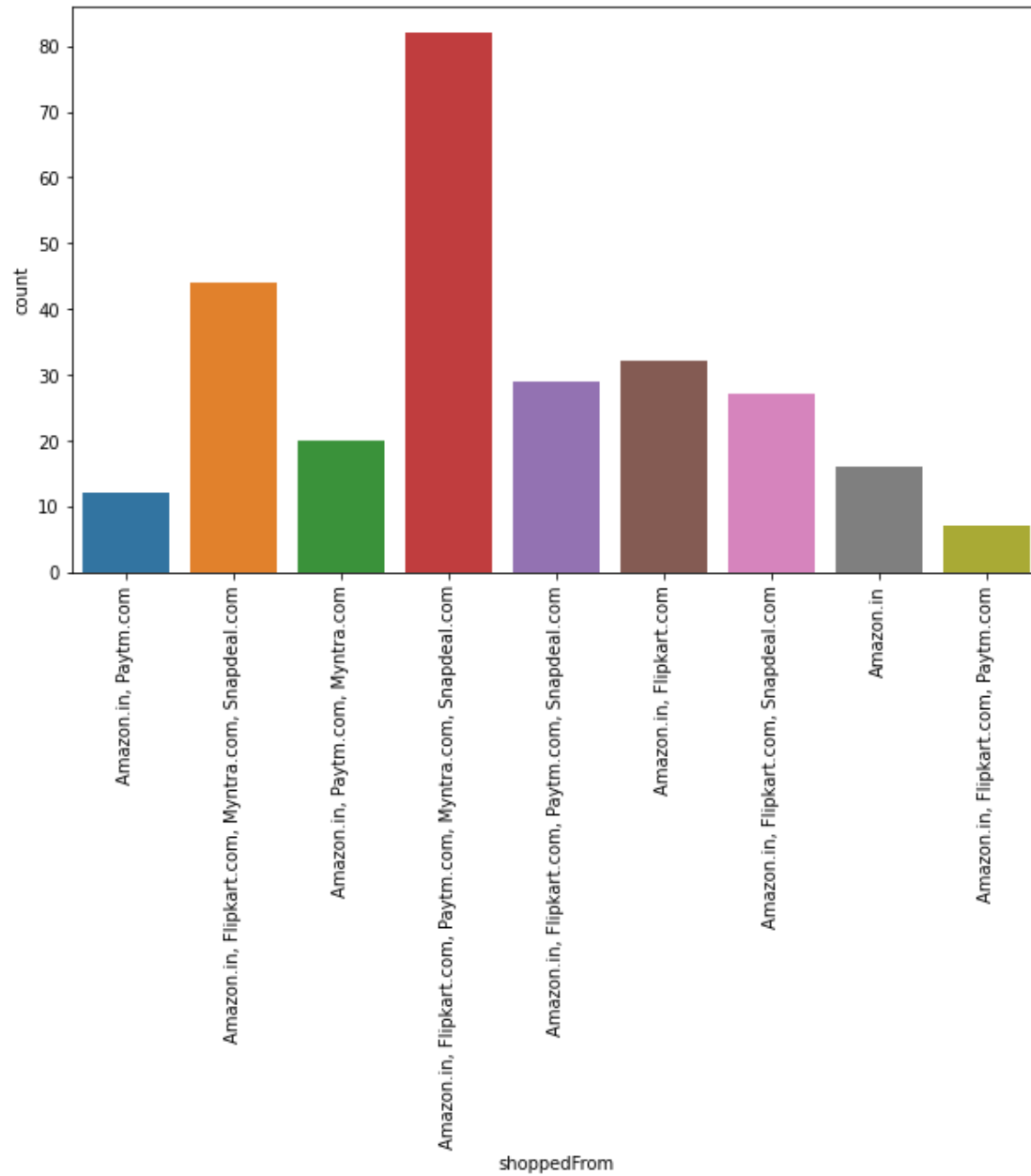
```

Agree (4)          33.0
Indifferent (3)    33.0
Strongly agree (5) 14.0
Strongly disagree (1) 12.0
Disagree (2)       8.0
Name: roleFulfilment, dtype: float64 2

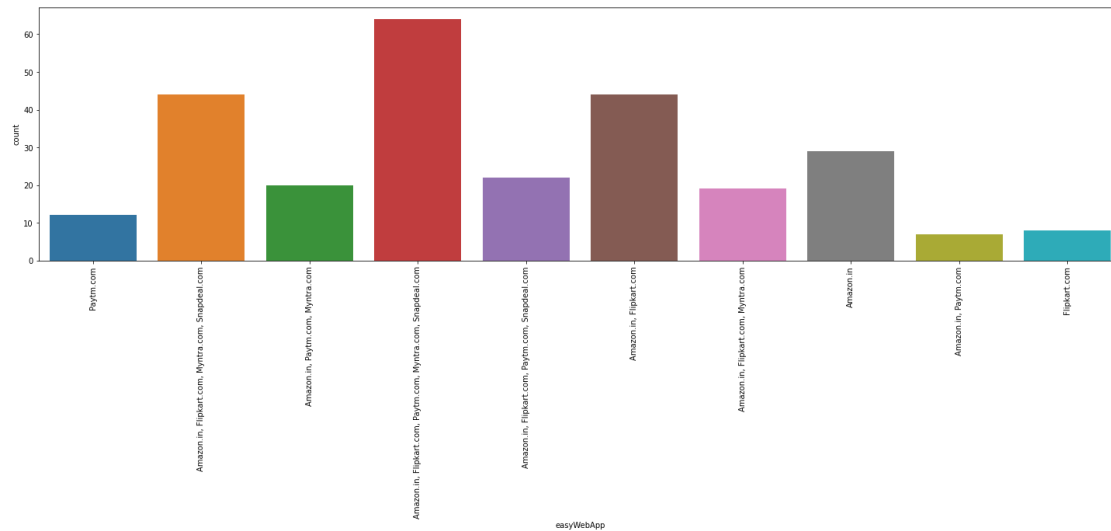
```



Agree (4) 55.0
 Strongly agree (5) 30.0
 Indifferent (3) 14.0
 Name: moneyWorthy, dtype: float64 2

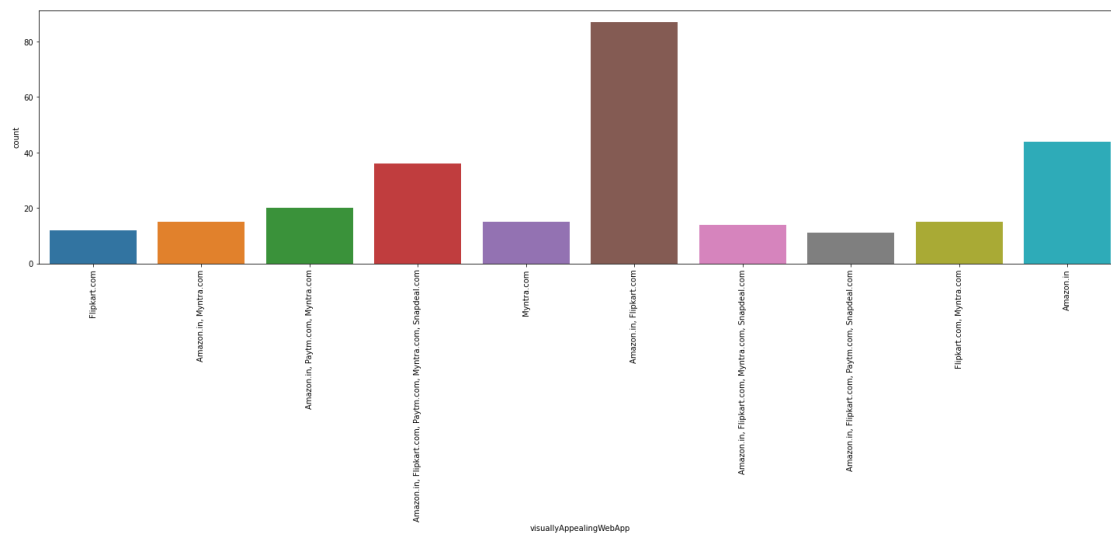


Amazon.in, Flipkart.com, Paytm.com, Myntra.com, Snapdeal.com 30.0
 Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com 16.0
 Amazon.in, Flipkart.com 12.0
 Amazon.in, Flipkart.com, Paytm.com, Snapdeal.com 11.0
 Amazon.in, Flipkart.com, Snapdeal.com 10.0
 Amazon.in, Paytm.com, Myntra.com 7.0
 Amazon.in 6.0
 Amazon.in, Paytm.com 4.0
 Amazon.in, Flipkart.com, Paytm.com 3.0
 Name: shoppedFrom, dtype: float64 2



Amazon.in, Flipkart.com, Paytm.com, Myntra.com, Snapdeal.com	24.0
Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com	16.0
Amazon.in, Flipkart.com	16.0
Amazon.in	11.0
Amazon.in, Flipkart.com, Paytm.com, Snapdeal.com	8.0
Amazon.in, Paytm.com, Myntra.com	7.0
Amazon.in, Flipkart.com, Myntra.com	7.0
Paytm.com	4.0
Flipkart.com	3.0
Amazon.in, Paytm.com	3.0

Name: easyWebApp, dtype: float64 2

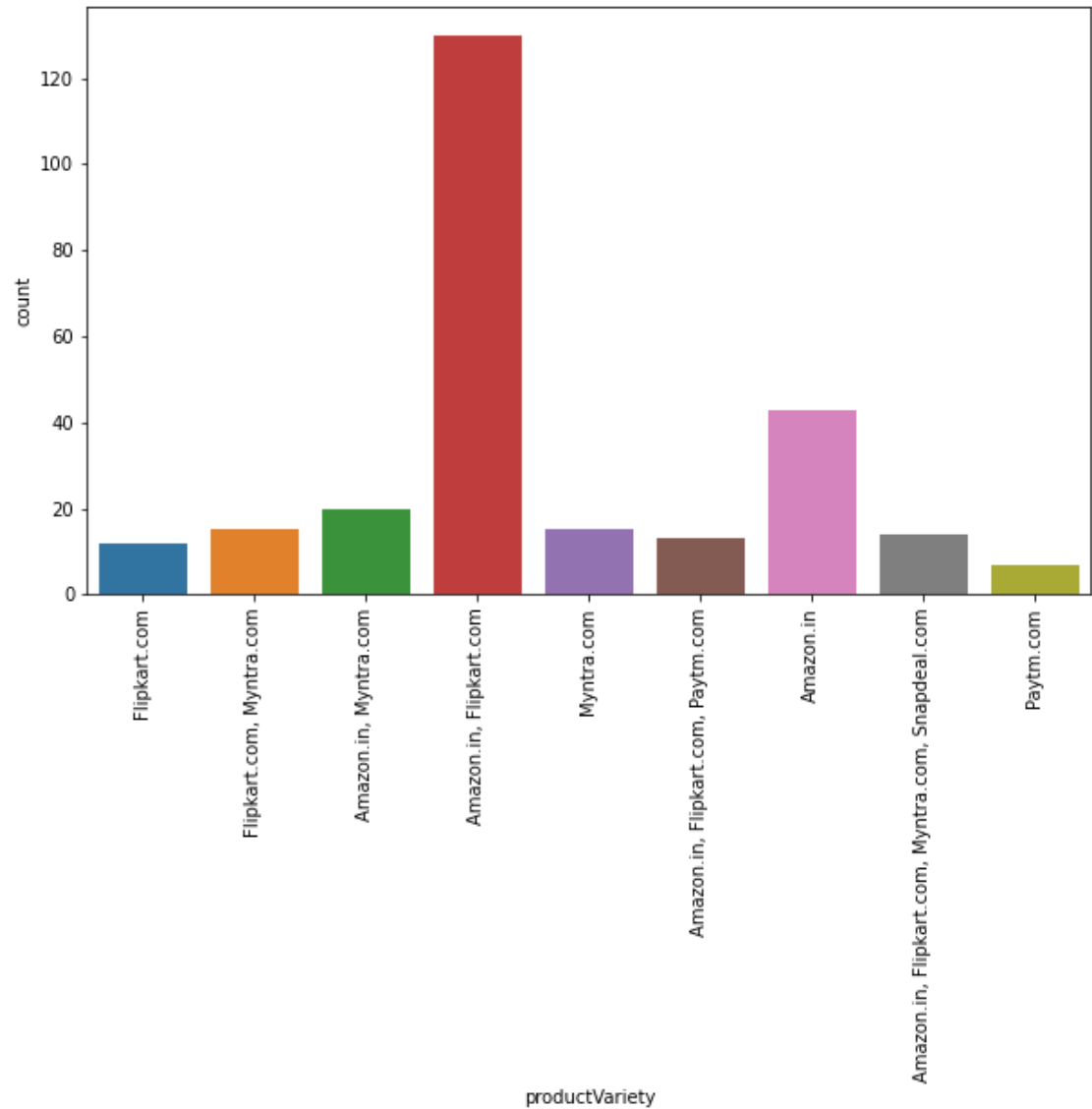


Amazon.in, Flipkart.com	32.0
Amazon.in	16.0
Amazon.in, Flipkart.com, Paytm.com, Myntra.com, Snapdeal.com	13.0
Amazon.in, Paytm.com, Myntra.com	7.0
Amazon.in, Myntra.com	6.0
Myntra.com	6.0
Flipkart.com, Myntra.com	6.0
Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com	5.0
Flipkart.com	4.0

Amazon.in, Flipkart.com, Paytm.com, Snapdeal.com

4.0

Name: visuallyAppealingWebApp, dtype: float64 2



Amazon.in, Flipkart.com

48.0

Amazon.in

16.0

Amazon.in, Myntra.com

7.0

Flipkart.com, Myntra.com

6.0

Myntra.com

6.0

Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com

5.0

Amazon.in, Flipkart.com, Paytm.com

5.0

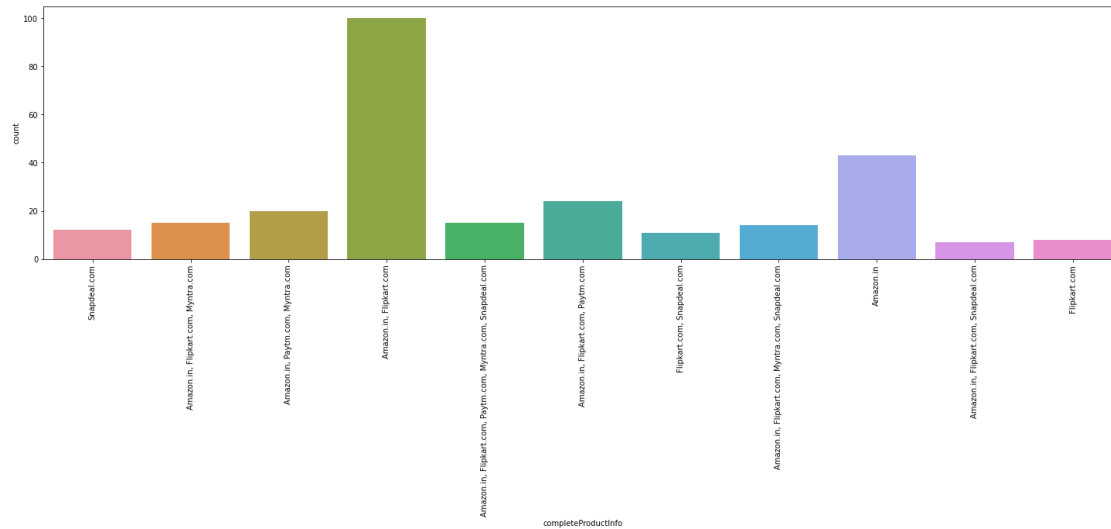
Flipkart.com

4.0

Paytm.com

3.0

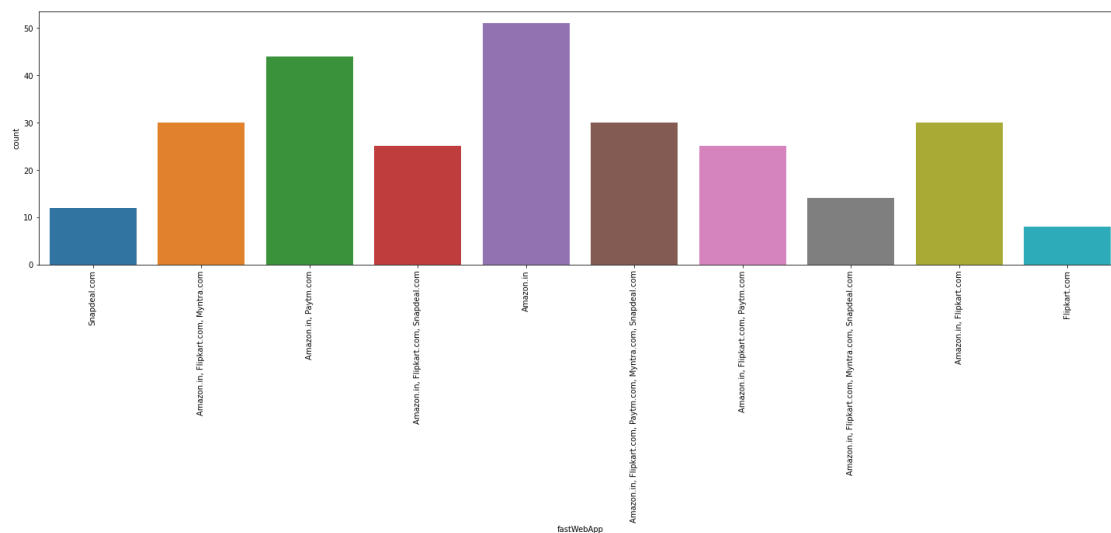
Name: productVariety, dtype: float64 2



```

Amazon.in, Flipkart.com          37.0
Amazon.in                        16.0
Amazon.in, Flipkart.com, Paytm.com  9.0
Amazon.in, Paytm.com, Myntra.com   7.0
Amazon.in, Flipkart.com, Myntra.com 6.0
Amazon.in, Flipkart.com, Paytm.com, Myntra.com, Snapdeal.com 6.0
Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com 5.0
Snapdeal.com                     4.0
Flipkart.com, Snapdeal.com        4.0
Flipkart.com                     3.0
Amazon.in, Flipkart.com, Snapdeal.com 3.0
Name: completeProductInfo, dtype: float64 2

```



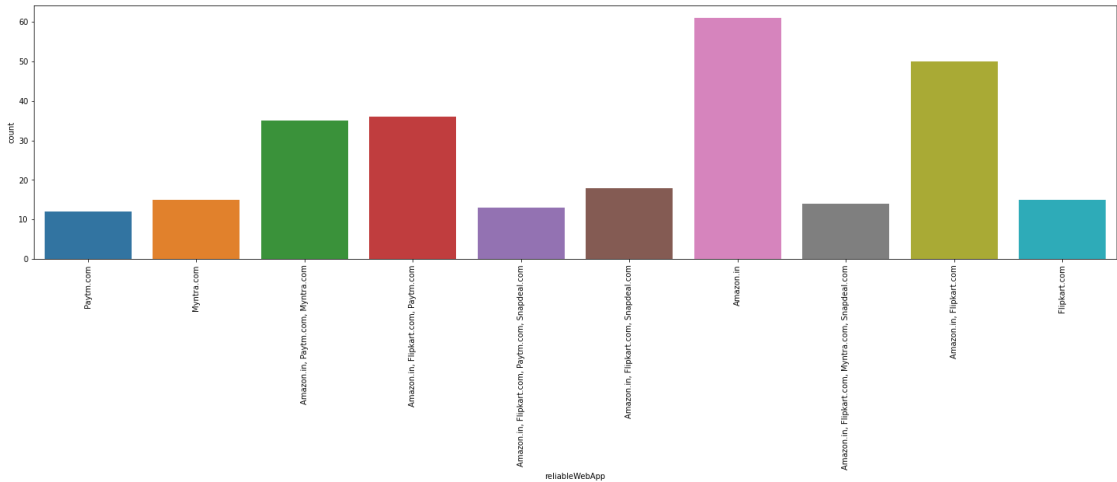
```

Amazon.in          19.0
Amazon.in, Paytm.com 16.0
Amazon.in, Flipkart.com, Myntra.com 11.0
Amazon.in, Flipkart.com, Paytm.com, Myntra.com, Snapdeal.com 11.0
Amazon.in, Flipkart.com 11.0
Amazon.in, Flipkart.com, Snapdeal.com 9.0
Amazon.in, Flipkart.com, Paytm.com 9.0
Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com 5.0
Snapdeal.com       4.0

```

Flipkart.com3.0

Name: fastWebApp, dtype: float64 2



Amazon.in23.0

Amazon.in, Flipkart.com19.0

Amazon.in, Flipkart.com, Paytm.com13.0

Amazon.in, Paytm.com, Myntra.com13.0

Amazon.in, Flipkart.com, Snapdeal.com7.0

Myntra.com6.0

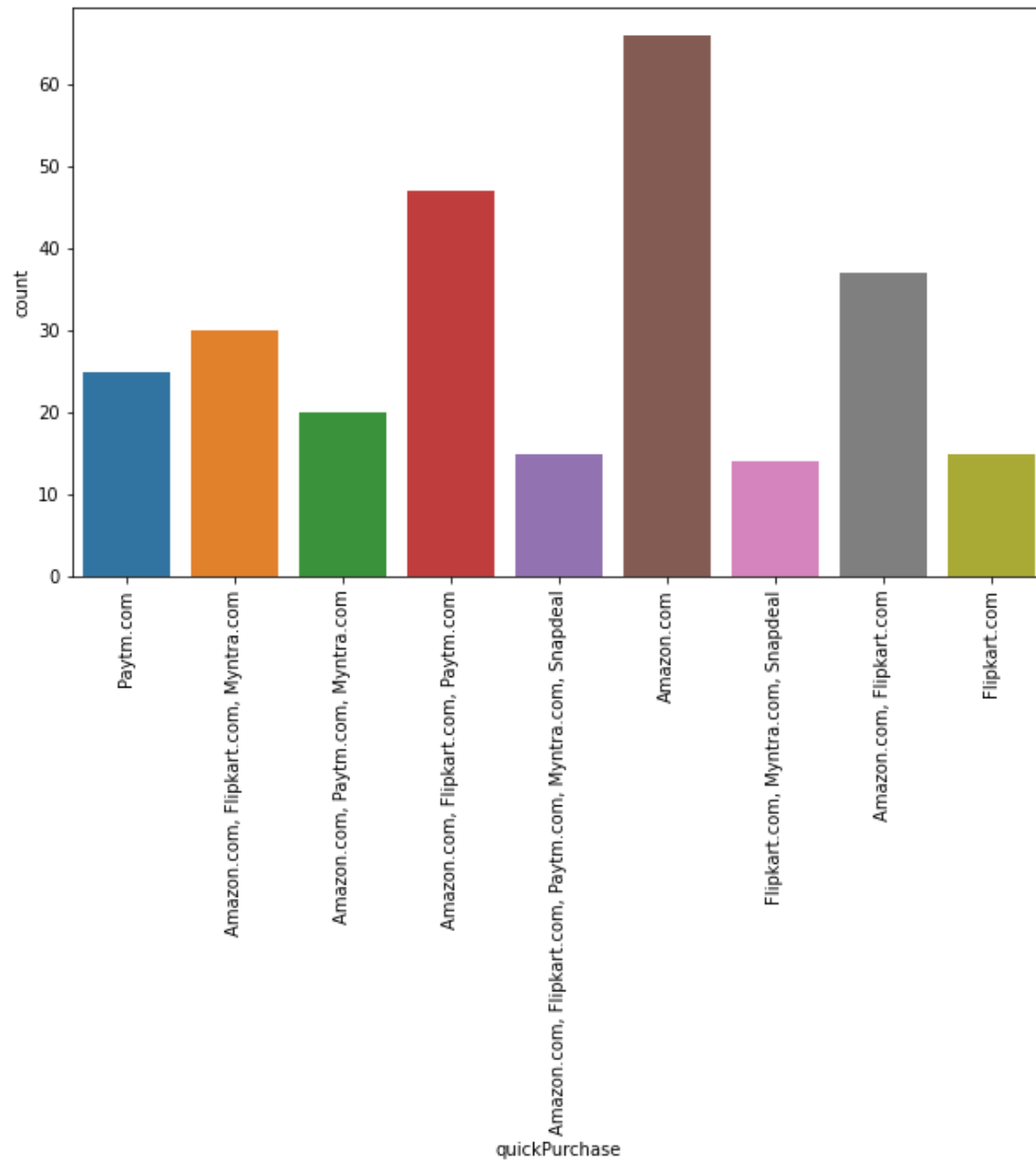
Flipkart.com6.0

Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com5.0

Amazon.in, Flipkart.com, Paytm.com, Snapdeal.com5.0

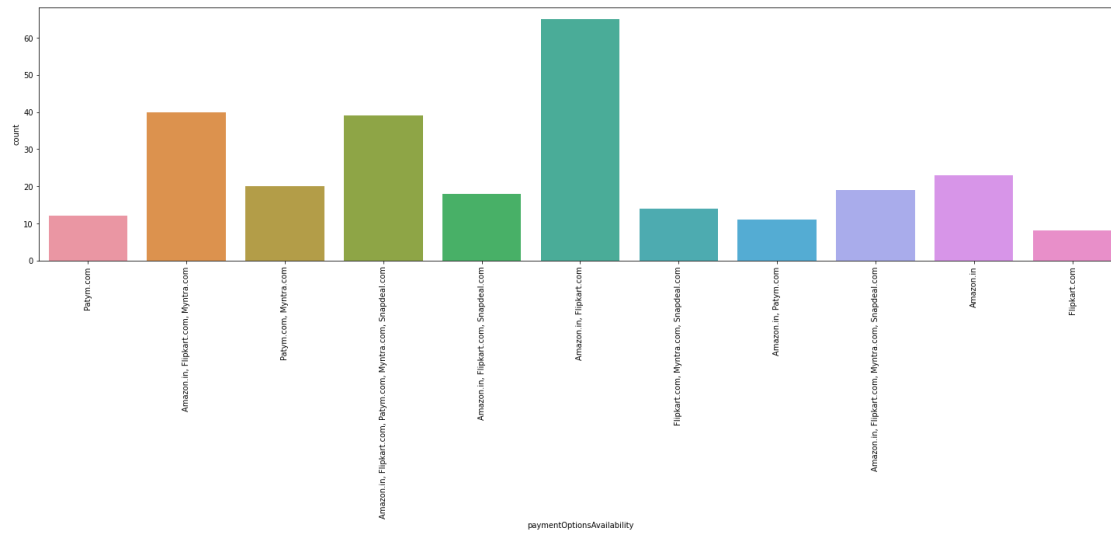
Paytm.com4.0

Name: reliableWebApp, dtype: float64 2



Amazon.com	25.0
Amazon.com, Flipkart.com, Paytm.com	17.0
Amazon.com, Flipkart.com	14.0
Amazon.com, Flipkart.com, Myntra.com	11.0
Paytm.com	9.0
Amazon.com, Paytm.com, Myntra.com	7.0
Amazon.com, Flipkart.com, Paytm.com, Myntra.com, Snapdeal	6.0
Flipkart.com	6.0
Flipkart.com, Myntra.com, Snapdeal	5.0

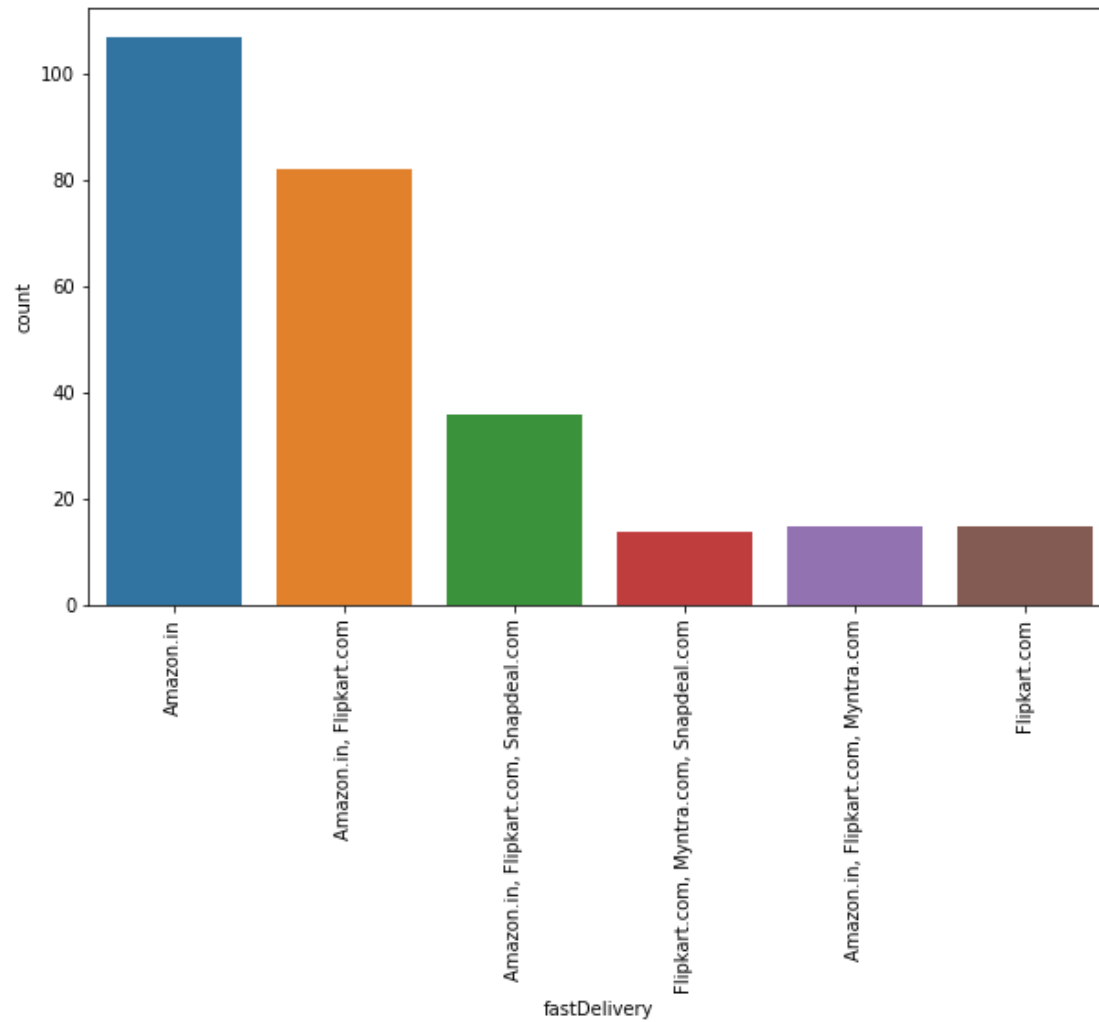
Name: quickPurchase, dtype: float64 2



```

Amazon.in, Flipkart.com                24.0
Amazon.in, Flipkart.com, Myntra.com    15.0
Amazon.in, Flipkart.com, Patym.com, Myntra.com, Snapdeal.com 14.0
Amazon.in                             9.0
Patym.com, Myntra.com                  7.0
Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com 7.0
Amazon.in, Flipkart.com, Snapdeal.com  7.0
Flipkart.com, Myntra.com, Snapdeal.com  5.0
Patym.com                             4.0
Amazon.in, Patym.com                   4.0
Flipkart.com                           3.0
Name: paymentOptionsAvailability, dtype: float64 2

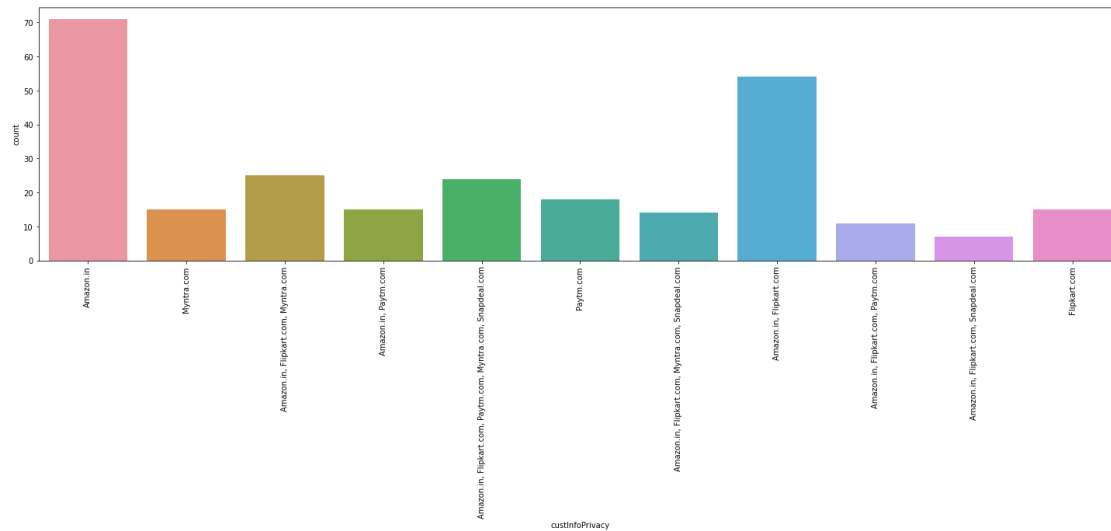
```



```

Amazon.in                                40.0
Amazon.in, Flipkart.com                  30.0
Amazon.in, Flipkart.com, Snapdeal.com    13.0
Amazon.in, Flipkart.com, Myntra.com       6.0
Flipkart.com                             6.0
Flipkart.com, Myntra.com, Snapdeal.com    5.0
Name: fastDelivery, dtype: float64 2

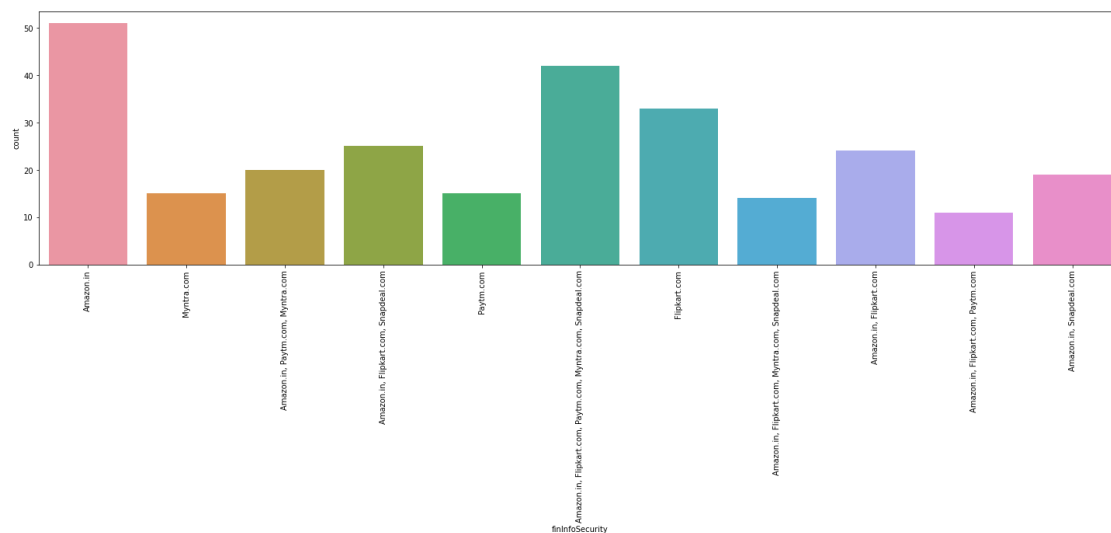
```

```

Amazon.in                                     26.0
Amazon.in, Flipkart.com                       20.0
Amazon.in, Flipkart.com, Myntra.com           9.0
Amazon.in, Flipkart.com, Paytm.com, Myntra.com, Snapdeal.com 9.0
Paytm.com                                     7.0
Myntra.com                                    6.0
Amazon.in, Paytm.com                          6.0
Flipkart.com                                  6.0
Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com 5.0
Amazon.in, Flipkart.com, Paytm.com            4.0
Amazon.in, Flipkart.com, Snapdeal.com         3.0
Name: custInfoPrivacy, dtype: float64 2

```

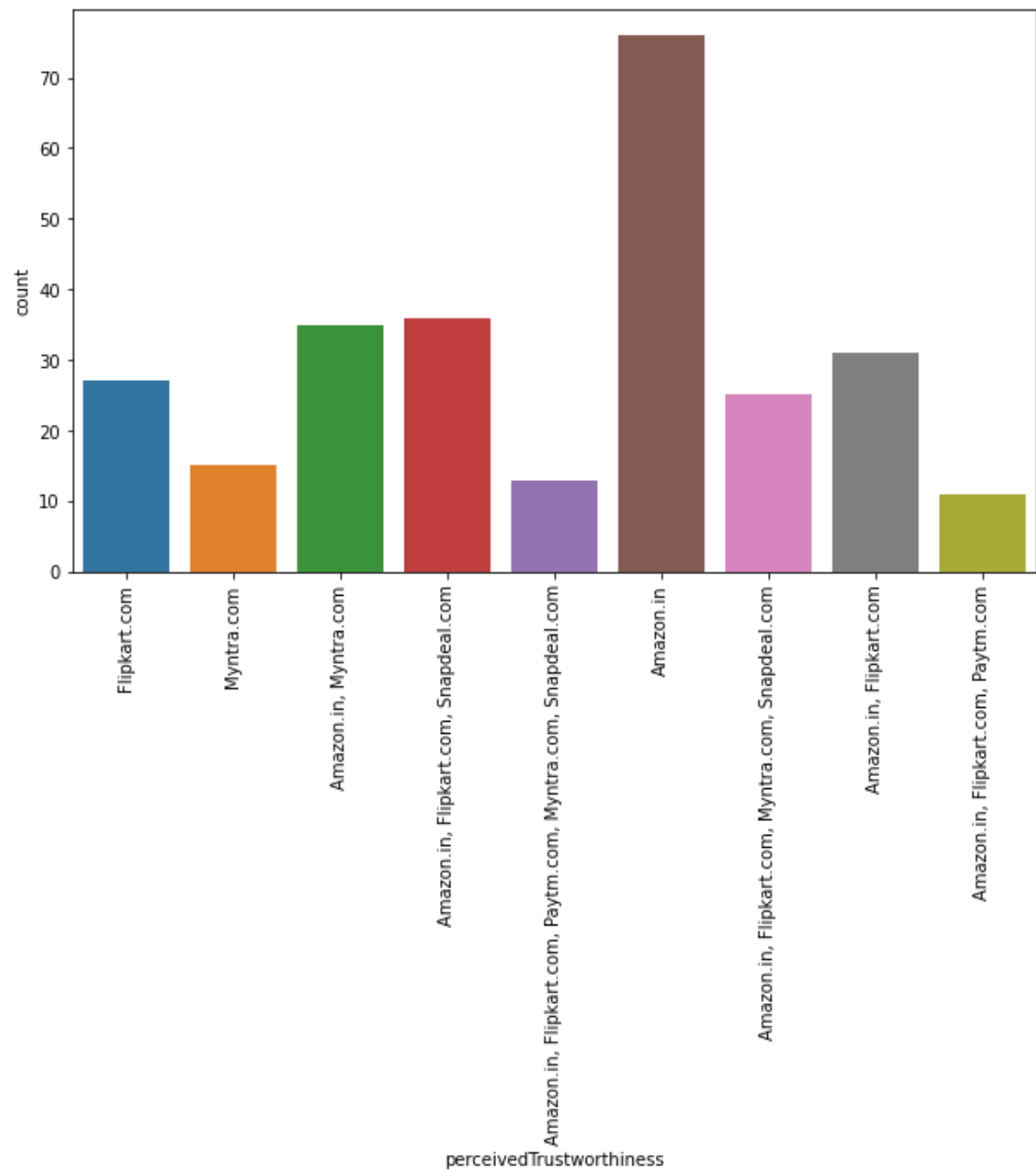


```

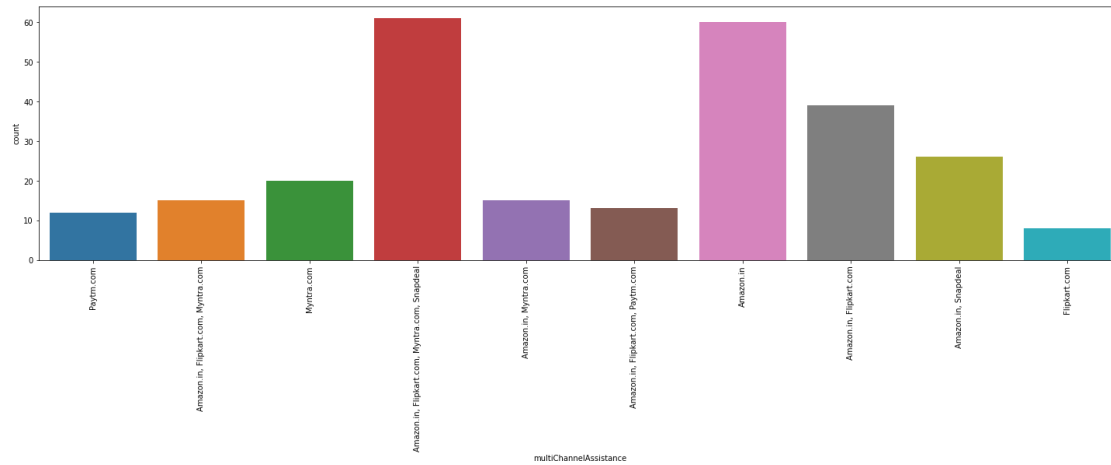
Amazon.in                                     19.0
Amazon.in, Flipkart.com, Paytm.com, Myntra.com, Snapdeal.com 16.0
Flipkart.com                                  12.0
Amazon.in, Flipkart.com, Snapdeal.com         9.0
Amazon.in, Flipkart.com                       9.0
Amazon.in, Paytm.com, Myntra.com              7.0
Amazon.in, Snapdeal.com                      7.0
Myntra.com                                    6.0

```

Paytm.com 6.0
Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com 5.0
Amazon.in, Flipkart.com, Paytm.com 4.0
Name: finInfoSecurity, dtype: float64 2



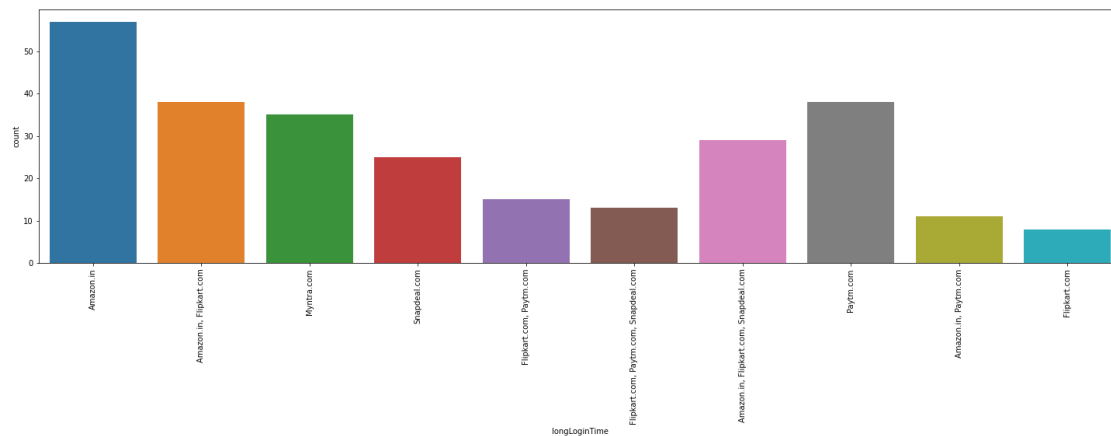
Amazon.in 28.0
Amazon.in, Flipkart.com, Snapdeal.com 13.0
Amazon.in, Myntra.com 13.0
Amazon.in, Flipkart.com 12.0
Flipkart.com 10.0
Amazon.in, Flipkart.com, Myntra.com, Snapdeal.com 9.0
Myntra.com 6.0
Amazon.in, Flipkart.com, Paytm.com, Myntra.com, Snapdeal.com 5.0
Amazon.in, Flipkart.com, Paytm.com 4.0
Name: perceivedTrustworthiness, dtype: float64 2



```

Amazon.in, Flipkart.com, Myntra.com, Snapdeal    23.0
Amazon.in                                         22.0
Amazon.in, Flipkart.com                         14.0
Amazon.in, Snapdeal                             10.0
Myntra.com                                       7.0
Amazon.in, Flipkart.com, Myntra.com              6.0
Amazon.in, Myntra.com                           6.0
Amazon.in, Flipkart.com, Paytm.com              5.0
Paytm.com                                       4.0
Flipkart.com                                    3.0
Name: multiChannelAssistance, dtype: float64 2

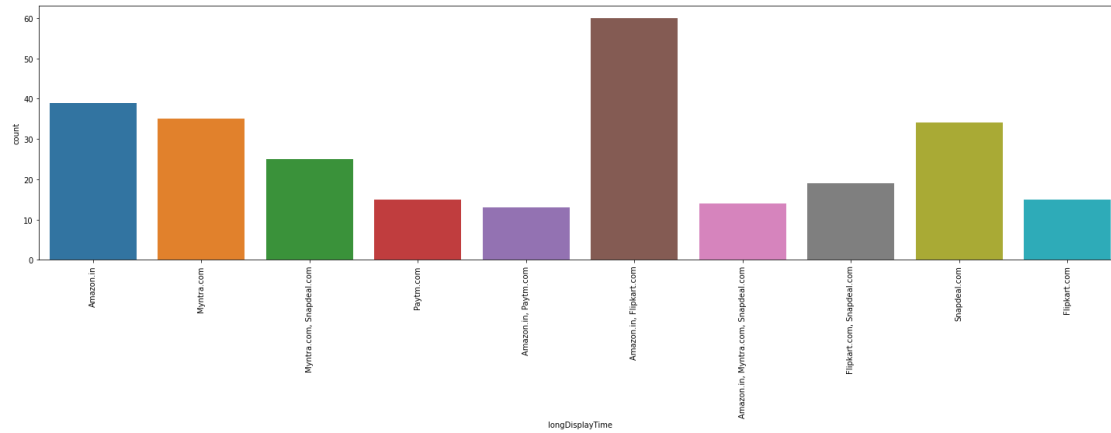
```



```

Amazon.in                                         21.0
Amazon.in, Flipkart.com                         14.0
Paytm.com                                       14.0
Myntra.com                                       13.0
Amazon.in, Flipkart.com, Snapdeal.com           11.0
Snapdeal.com                                   9.0
Flipkart.com, Paytm.com                         6.0
Flipkart.com, Paytm.com, Snapdeal.com           5.0
Amazon.in, Paytm.com                           4.0
Flipkart.com                                    3.0
Name: longLoginTime, dtype: float64 2

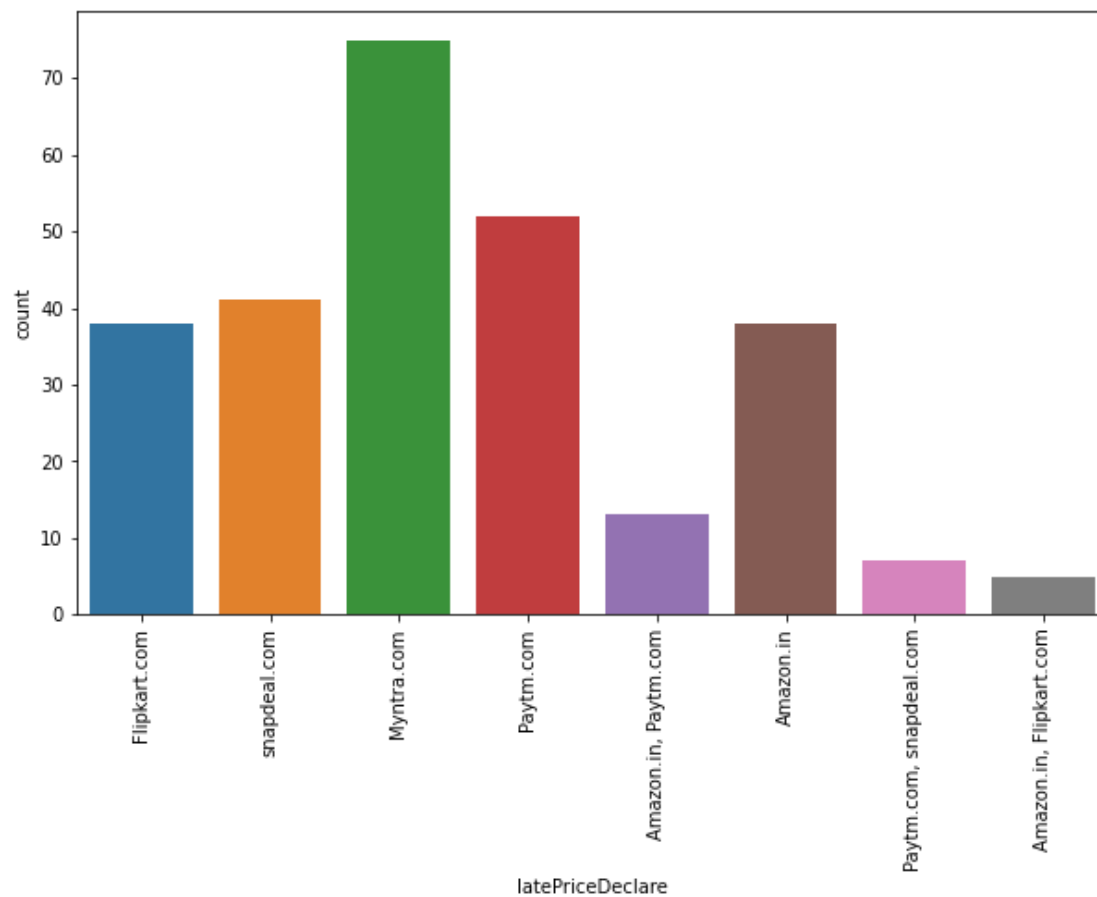
```



```

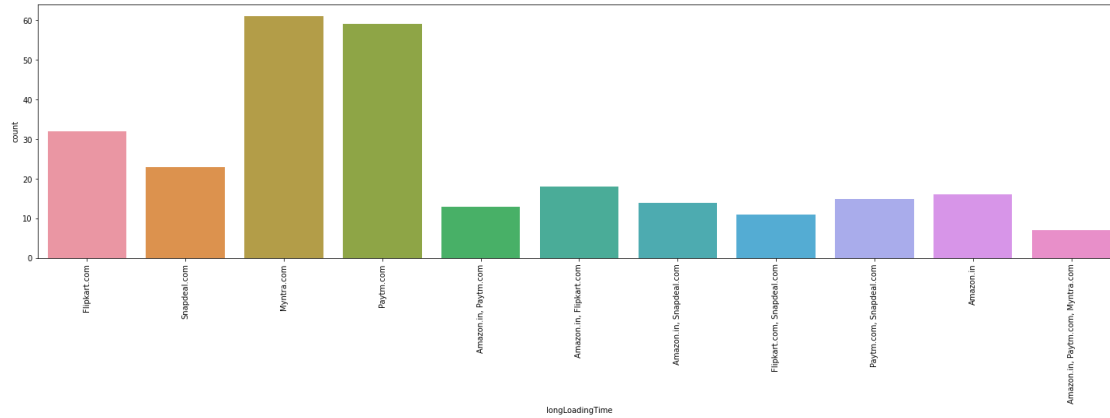
Amazon.in, Flipkart.com      22.0
Amazon.in                   14.0
Myntra.com                   13.0
Snapdeal.com                 13.0
Myntra.com, Snapdeal.com     9.0
Flipkart.com, Snapdeal.com   7.0
Paytm.com                    6.0
Flipkart.com                 6.0
Amazon.in, Myntra.com, Snapdeal.com 5.0
Amazon.in, Paytm.com         5.0
Name: longDisplayTime, dtype: float64 2

```



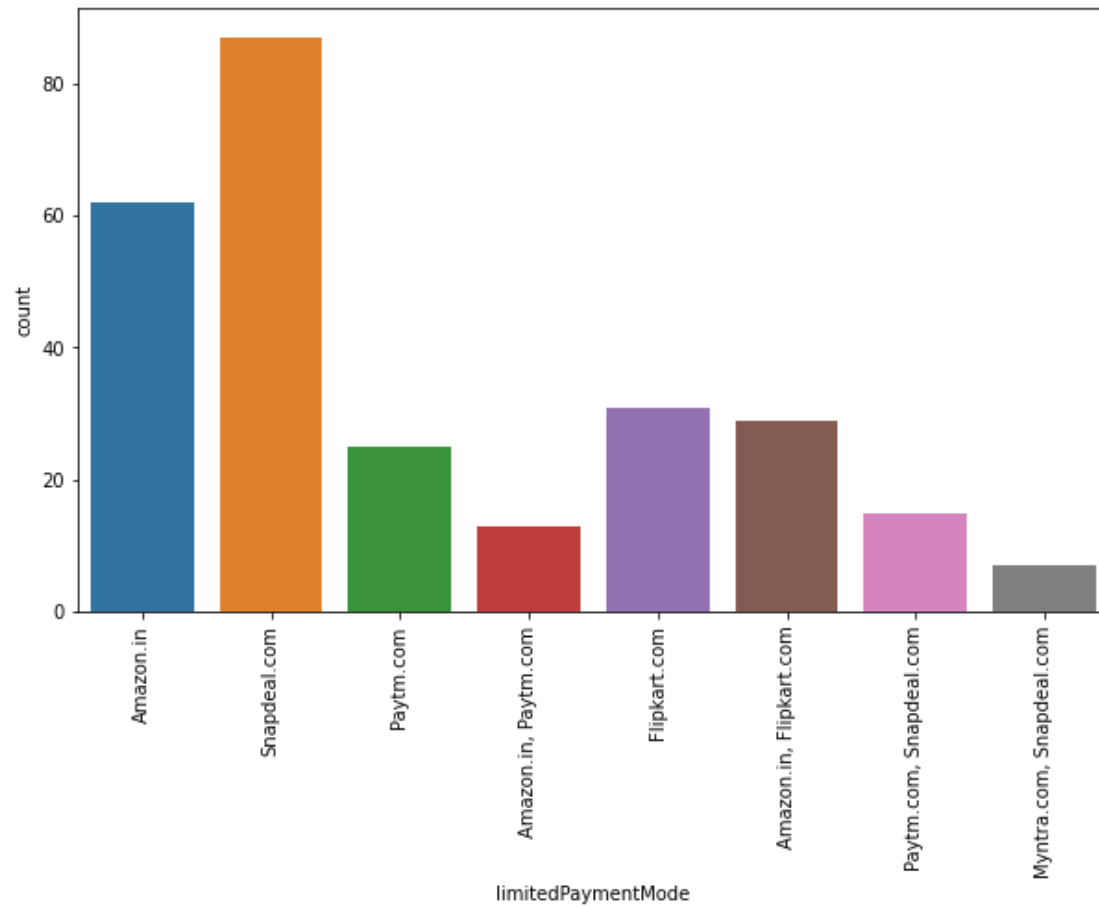
Myntra.com	28.0
Paytm.com	19.0
snapdeal.com	15.0
Flipkart.com	14.0
Amazon.in	14.0
Amazon.in, Paytm.com	5.0
Paytm.com, snapdeal.com	3.0
Amazon.in, Flipkart.com	2.0

Name: latePriceDeclare, dtype: float64 2



Myntra.com	23.0
Paytm.com	22.0
Flipkart.com	12.0
Snapdeal.com	9.0
Amazon.in, Flipkart.com	7.0
Amazon.in	6.0
Paytm.com, Snapdeal.com	6.0
Amazon.in, Snapdeal.com	5.0
Amazon.in, Paytm.com	5.0
Flipkart.com, Snapdeal.com	4.0
Amazon.in, Paytm.com, Myntra.com	3.0

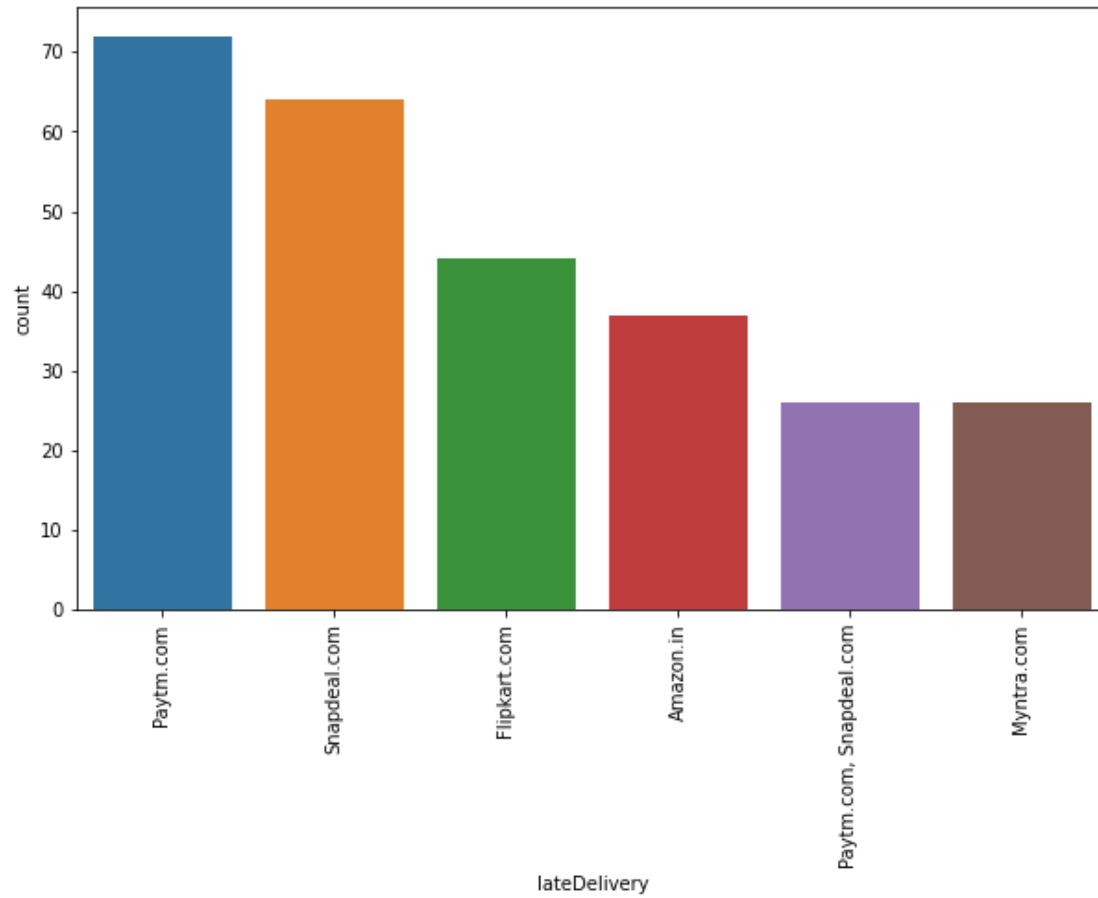
Name: longLoadingTime, dtype: float64 2



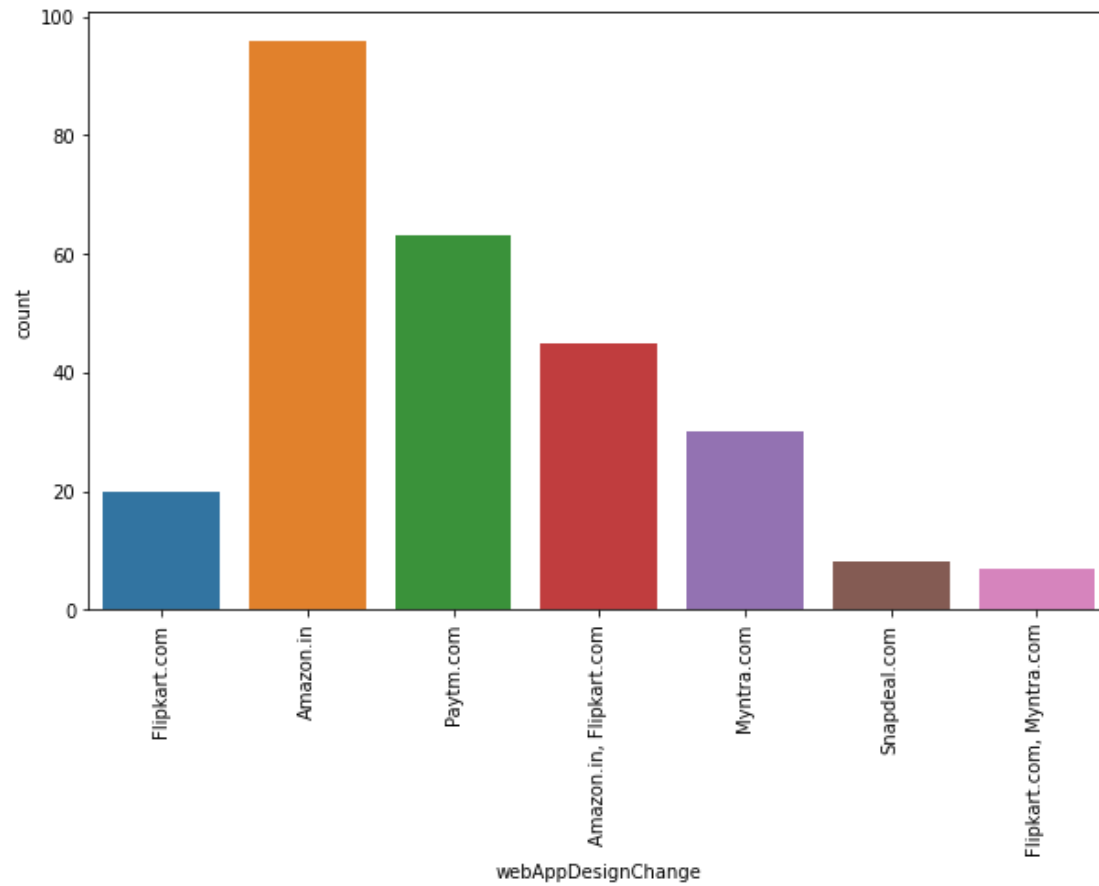
```

Snapdeal.com          32.0
Amazon.in            23.0
Flipkart.com         12.0
Amazon.in, Flipkart.com 11.0
Paytm.com             9.0
Paytm.com, Snapdeal.com 6.0
Amazon.in, Paytm.com  5.0
Myntra.com, Snapdeal.com 3.0
Name: limitedPaymentMode, dtype: float64 2

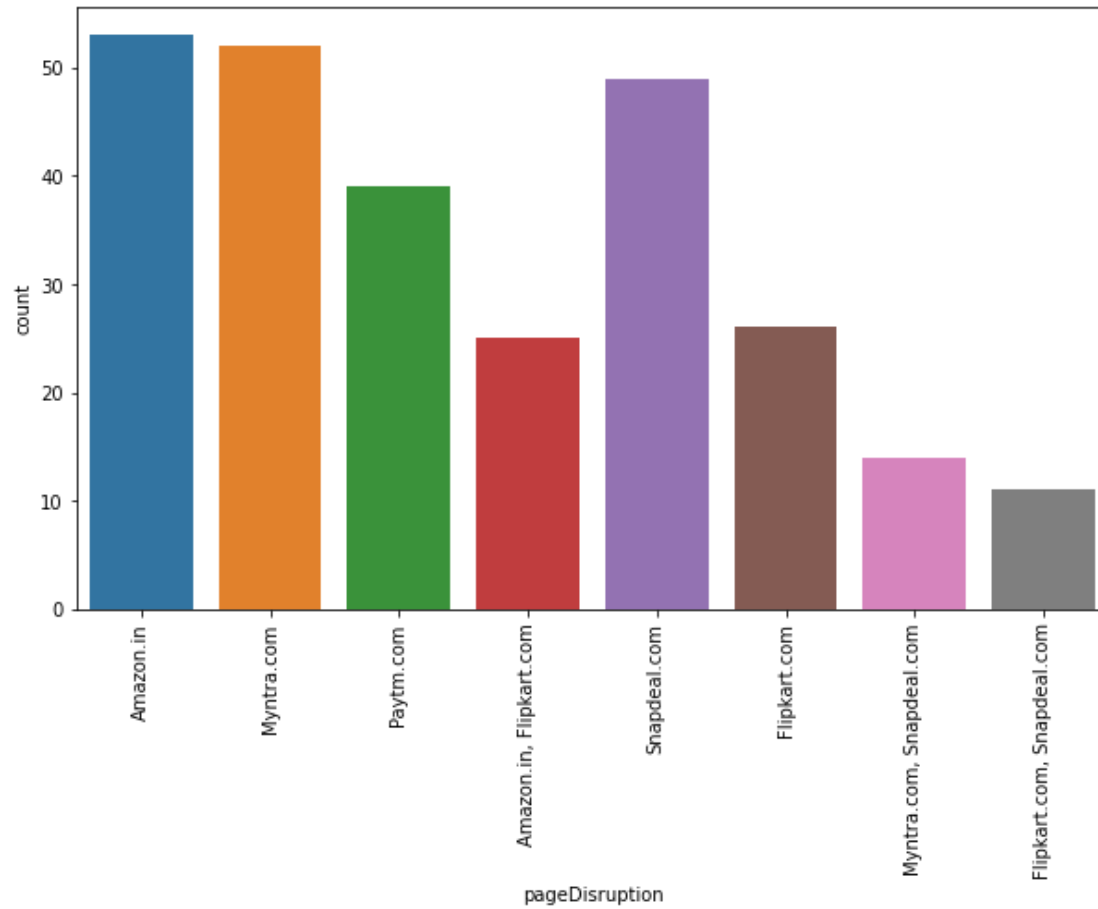
```



```
Paytm.com          27.0
Snapdeal.com       24.0
Flipkart.com       16.0
Amazon.in          14.0
Paytm.com, Snapdeal.com 10.0
Myntra.com         10.0
Name: lateDelivery, dtype: float64 2
```



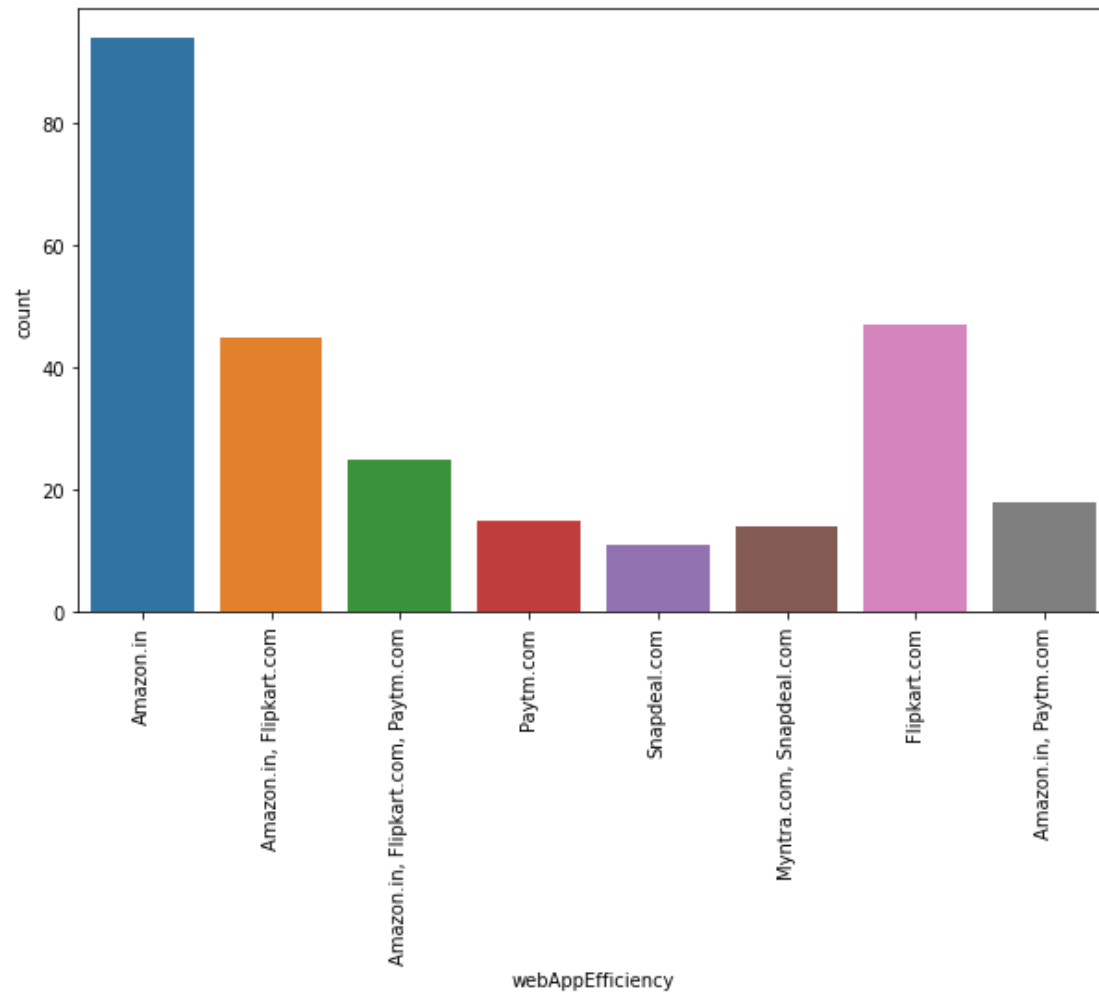
```
Amazon.in          36.0
Paytm.com          23.0
Amazon.in, Flipkart.com  17.0
Myntra.com         11.0
Flipkart.com        7.0
Snapdeal.com        3.0
Flipkart.com, Myntra.com  3.0
Name: webAppDesignChange, dtype: float64 2
```

```

Amazon.in                20.0
Myntra.com               19.0
Snapdeal.com             18.0
Paytm.com                14.0
Flipkart.com             10.0
Amazon.in, Flipkart.com   9.0
Myntra.com, Snapdeal.com  5.0
Flipkart.com, Snapdeal.com 4.0
Name: pageDisruption, dtype: float64 2

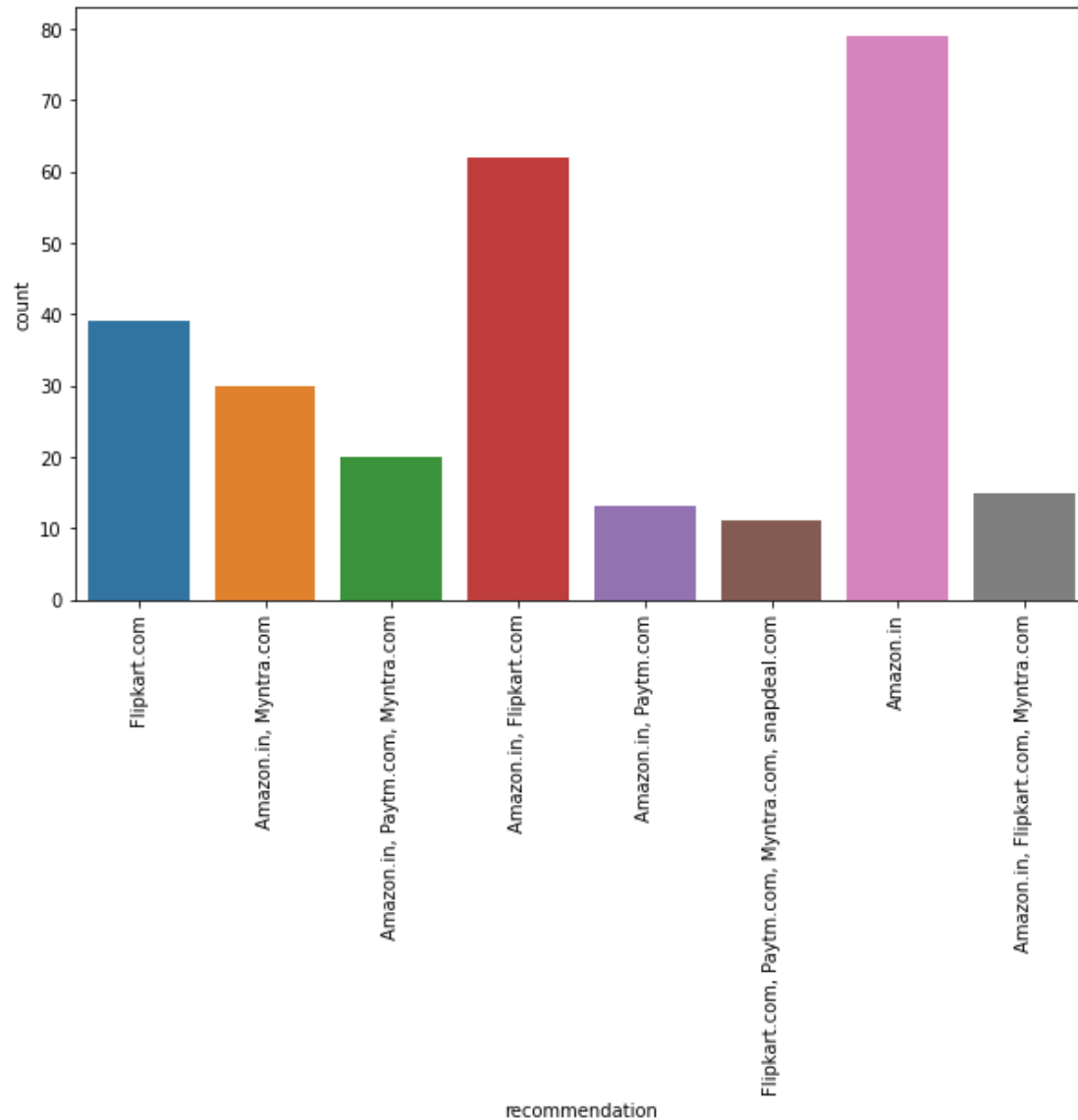
```



```

Amazon.in          35.0
Flipkart.com       17.0
Amazon.in, Flipkart.com  17.0
Amazon.in, Flipkart.com, Paytm.com  9.0
Amazon.in, Paytm.com    7.0
Paytm.com           6.0
Myntra.com, Snapdeal.com  5.0
Snapdeal.com        4.0
Name: webAppEfficiency, dtype: float64 2

```



```

Amazon.in                29.0
Amazon.in, Flipkart.com  23.0
Flipkart.com             14.0
Amazon.in, Myntra.com    11.0
Amazon.in, Paytm.com, Myntra.com  7.0
Amazon.in, Flipkart.com, Myntra.com  6.0
Amazon.in, Paytm.com     5.0
Flipkart.com, Paytm.com, Myntra.com, snapdeal.com  4.0
Name: recommendation, dtype: float64 2

```

- Female customers (67%) are more than male customers
- Customers between 20 to 50 years shopped more from the online store. 75 % of customers are between 20 to 50
- Delhi, Bangalore, Noida are the cities with high number of buyers
- 36% customers were found shopping online for more than 4 years , 24% were shopping for 2-3 years

- IN last one year 42% customers have purchased online less than 10 times,23% customers purchased 31-40 times only 2 percent customers purchased more than 42 times
- 70% customers used mobile internet for online purchase
- 52% customers used Smartphone for online purchase, 32% used laptop least 4% used tablet
- 45% customers use Windows phone
- 80% customers used Google chrome for online purchase
- 86% customers uses Search engine to reach their favorite online store
- After first visit 32 % customers used search engine to reach online store and 32% uses application. We can assume that these customers have been retained by the E commerce website as they have downloaded the application on their phone and have a fair chance of shopping again. Also, there are a few customers who are using Desktop/Laptop, for which, there are no applications for online shopping and you have to stick with the web browser.
- 46% customers take at least 15 minutes before making a purchase, 26% take 6-10 minutes only
- 55% customers prefer Credit/Debit cards to make payments ,28% preferred COD and 17 % preferred Wallets
- 64% customers abandon their shopping cart sometimes, 19% abandon their cart frequently
- 49% customers abandon their bag due to better alternative offer, 20% abandon due to promo code not applicable
- 61% customers have strongly agreed to have easy website content which is easy to understand
- 43% customers agree that Information on similar product to the one highlighted is important for product comparison.
- 70% customers agree that Complete information on listed seller and product being offered is important for purchase decision
- 90% customers agree all relevant information on listed products must be stated clearly.
- 90% customers agreed that the website should be easily navigable
- 85% customers had no issues with the loading and processing speed
- 87% customers agree with user friendly website interface. The online stores should invest heavily in creating user friendly apps and websites, so that the customers do not have to work around much and the overall shopping experience is smooth.
- 59% customers strongly agree with the convenient paying methods. The reluctance to make online payments is gradually reducing. The acceptance has been built by addressing the trust issue over time by giving customers an option to pay online or to pay Cash On Delivery (COD)
- 52% customers trust that online store will fulfill its part of transaction at stipulated time
- 85% customers like the organization's readiness to assist with queries
- Being able to guarantee the privacy of the customer: This also got 69% strongly agree. Costumers are concerned about the unauthorized access to their data. Protecting user privacy will enable stores to drive more revenue and gain more customers
- Responsiveness, availability of several communication channels (email, online rep, twitter, phone etc.): 90% customers agreed to it. In case one channel is not available, customers can reach out to multiple channels which again is an important factor. Being able to communicate easily can make the difference in both their shopping experience as well as fulfill business goals of online store.
- 50% agree that online shopping gives monetary benefit and discounts to the customer: Most online shopping sites offer amazing round-the-year discounts. Banks and Digital Wallets have happily jumped on the online shopping bandwagon by providing Reward Points, and instant Cashback offers in addition to brand discounts, which will help to gain new customers

- 60% customers enjoys online shopping
- 84% customers agree that online shopping is convenient and flexible:
- 90% customers agree that return and replacement policy helps them making purchase decision. It is evident from the fact that people cannot actually try & touch the products, they are purchasing before it reaches home and they would want to return or replace in case of dissatisfaction. Online shopping websites should make strategies around easy return and replacement policy if they want to retain their customers.
- Around 50% customers agree that gaining access to loyalty program is a benefit of shopping online
- Displaying quality Information on the website improves satisfaction of customers: 80% customer agreed to it. It means displaying quality information have a significant association with customer satisfaction, and repurchase intentions
- 95% customers are satisfied while shopping on a good quality website
- Net Benefit derived from shopping online can lead to users satisfaction:90% customers agreed
- User satisfaction cannot exist without trust: 85% customers agree that customer satisfaction cannot be built without trust. Trust is important factor to attract e-commerce buyers. So, it is important for companies to learn how to manage consumers' trust
- Offering a wide variety of listed product in several categories: 75% use agreed.
- 86% customers like to have complete and relevant information
- 80% customers agree to receive monetary savings while shopping online
- 50% agree with the convenience of patronizing the online retailer
- 50% customers agree that online shopping give the sense of adventure
- only 30% customers agree that online shopping enhances their social status
- 45% customers feel gratified while shopping with their favorite retailer
- 45% customers feel that shopping online helps them fulfill certain roles
- 85% customers agree they get value for their money while shopping online

Observations from Multiple Options based Questions i.e. related to company name specific parameters, after 47th rows

- Maximum people have shopped from these 5 companies - Amazon.in, Flipkart.com, Paytm.com, Myntra.com, and Snapdeal.com.
- 48% customers says flipkart, amazon shows wide variety of products
- 37% customers like flipkart and amazon in terms of displaying complete and relevant information of the products
- In terms of speed Amazon.in is liked by 90% customers , 60 % like Flipkart , 27% Myntra
- 78% customers trust Amazon to be reliable , 55% likes flipkart , 25% Myntra
- 80% customers likes Amazon's quickness to complete the purchase , 60% likes Flipart's, 30% likes Myntra's
- 86% likes Amazon's delivery speed , 56% likes Flipkart's , 5% likes Myntra's
- 82% customers trust amazon in terms of keeping the privacy of their data, 56% trust flipkart 20% trust Myntra , 12 % trust Snapdeal
- 70% trust amazon in terms of keeping their financial information secured, 56% Flipakrt, 34% Myntra , 21% Snapdeal , 22@ Paytm
- 84% customers believe Amazon perceived trustworthiness, 43% - Flipkart , 33% - Myntra ,Snapdeal 27% Snapdeal

- 86% customers like Amazon in terms of online assistance through multi-channel , 51% -Flipkart ,42% Myntra
- 50% customers agree that Amazon takes longer time to log them in while in sales period/promotions , 39% goes with flipkart, 13% goes with Myntra , 16% Snapdeal
- 46% customers says that amazon takes longer time in displaying photos in sales/promotion , 35%- flipkart, 21% Snapdeal, 14% Myntra, 11% Paytm
- In terms of late declaration of price in promotion/sales 28% goes with Myntra, 21% amazon , 16% flipkart , 18% Snapdeal, 23% Paytm
- In terms of longer page loading in promotion/sales 26% customer goes with Myntra, 23% flipkart, 23% amazon, 24% Snapdeal
- In terms of limited mode of payment on most products during sales period/promotions 41% goes with Snapdeal, 40% - amazon, 23% flipkart, 20% Paytm and only 3% Myntra. Hence Myntra gives most payment options during sales/promotion.
- In terms of time taken in product delivery Paytm has highest votes of 37%, Snapdeal 24%, flipkart 16%, amazon 14% and Snapdeal and Myntra 10%. Hence Snapdeal and Myntra take minimum time for delivery among all.
- 20% customers dislikes disruptions while moving to another page on amazon, 24% on Myntra, 27% Snapdeal, 14% Paytm, 23% Snapdeal
- 61% customers says that amazon website is as efficient as before, 43% for flipkart, 22% for Paytm, 9% for Snapdeal
- 81% customers would like to recommend amazon to a friend, 43% would like flipkart , 22% would like for Myntra , 9% for Paytm and least 4 % would like to recommend Snapdeal

```
# Let's check the Purchase decisions are based on the following factors :

purchase_factors = data[['contentReadability', 'productInfoClarity', 'relevantProductInfo', 'navigationEase',
                        'loadingProcessingSpeed', 'userFrienlyInterface', 'sellerProductInfo', 'similarProductInfo']]

x_data=[]

label = ['Strongly agree (5)', 'Agree (4)', 'Indifferent (3)', 'Disagree (2)', 'Strongly disagree (1)']
for each in purchase_factors.columns:
    data = pd.DataFrame(purchase_factors[each].value_counts()).reset_index()
    data.columns = ['factor', 'count']
    #data = data.sort_values(by='factor')

    category = [l for l in data['factor']]
    missing_label = list(set(label).difference(category))

    for miss in missing_label:
        i = len(data)+1
        data.loc[i,:] = miss, 0

    data = data.sort_values(by='factor')
    data['percentages'] = round((data['count']/data['count'].sum())*100,2)
    x = [p for p in data['percentages']]
    x_data.append(x)

top_labels = ['Agree<br>(4)', 'Disagree<br>(2)', 'Indifferent<br>(3)', 'Strongly<br>agree<br>(5)', 'Strongly<br>disagree<br>(1)']

y_data = ['Content on the website must be easy to read and understand.',
          'All relevant information on listed<br>products must be stated clearly',
          'Provision of complete<br>and relevant product information',
          'Ease of navigation in website',
          'Loading and processing speed',
          'Complete information on listed seller and<br>product being offered is important',
          'Information on similar product to the<br>one highlighted is important for comparison']

colors = ['#004D40', '#00796B', '#009688', '#4DB6AC', '#B2DFDB']
```

```

fig = go.Figure()

for i in range(0, len(x_data[0])):
    for xd, yd in zip(x_data, y_data):
        fig.add_trace(go.Bar(
            x=[xd[i]], y=[yd],
            orientation='h',
            marker=dict(
                color=colors[i],
                line=dict(color='rgb(248, 248, 249)', width=1)
            )
        ))

fig.update_layout(
    xaxis=dict(
        showgrid=False,
        showline=False,
        showticklabels=False,
        zeroline=False,
        domain=[0.15, 1]
    ),
    yaxis=dict(
        showgrid=False,
        showline=False,
        showticklabels=False,
        zeroline=False,
    ),
    barmode='stack',
    paper_bgcolor='rgb(248, 248, 255)',
    plot_bgcolor='rgb(248, 248, 255)',
    margin=dict(l=150, r=5, t=150, b=80),
    showlegend=False,
    title='Purchase decisions on online Retail Store are based on following factors : '
)

```

```

annotations = []

for yd, xd in zip(y_data, x_data):
    # Labeling the y-axis
    annotations.append(dict(xref='paper', yref='y',
                            x=0.14, y=yd,
                            xanchor='right',
                            text=str(yd),
                            font=dict(family='Arial', size=12,
                                        color='rgb(67, 67, 67)'),
                            showarrow=False, align='right'))
    # Labeling the first percentage of each bar (x-axis)
    annotations.append(dict(xref='x', yref='y',
                            x=xd[0] / 2, y=yd,
                            text=str(xd[0]) + '%',
                            font=dict(family='Arial', size=12,
                                        color='rgb(248, 248, 255)'),
                            showarrow=False))
    # Labeling the first Likert scale (on the top)
    if yd == y_data[-1]:
        annotations.append(dict(xref='x', yref='paper',
                                x=xd[0] / 2, y=1.1,
                                text=top_labels[0],
                                font=dict(family='Arial', size=12,
                                            color='rgb(67, 67, 67)'),
                                showarrow=False))

```

```

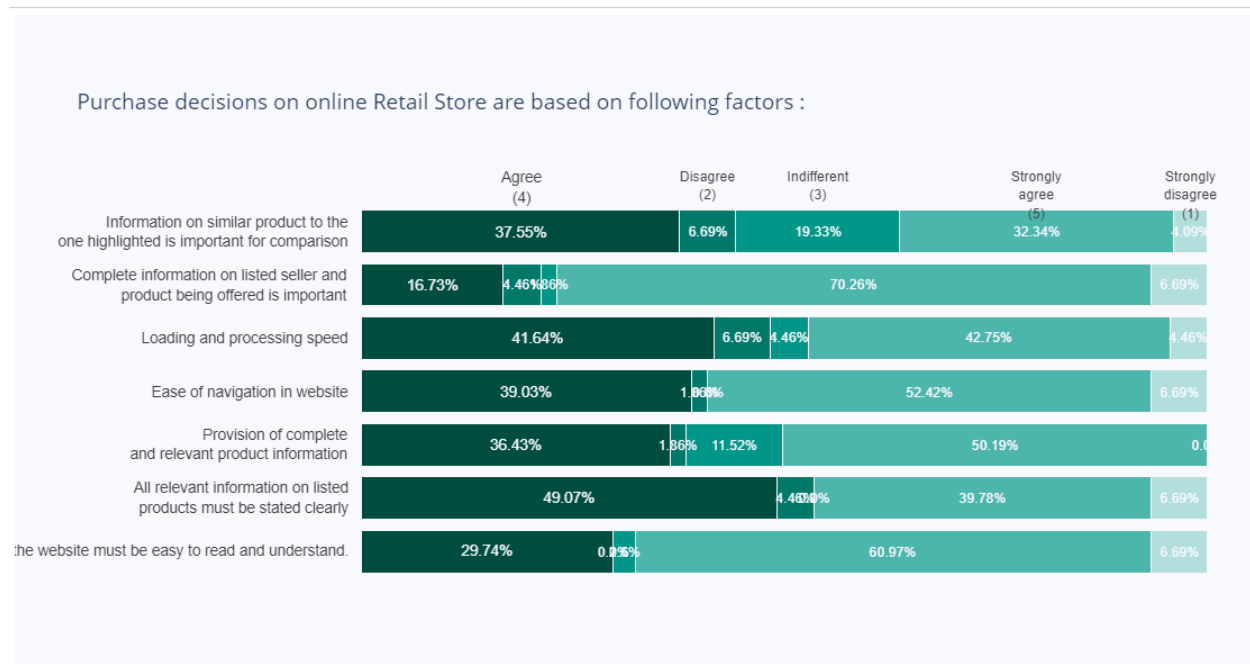
space = xd[0]
for i in range(1, len(xd)):
    # Labeling the rest of percentages for each bar (x_axis)
    annotations.append(dict(xref='x', yref='y',
                            x=space + (xd[i]/2), y=yd,
                            text=str(xd[i]) + '%',
                            font=dict(family='Arial', size=11,
                                        color='rgb(248, 248, 255)'),
                            showarrow=False))
    # Labeling the Likert scale
    if yd == y_data[-1]:
        annotations.append(dict(xref='x', yref='paper',
                                x=space + (xd[i]/2), y=1.1,
                                text=top_labels[i],
                                font=dict(family='Arial', size=11,
                                            color='rgb(67, 67, 67)'),
                                showarrow=False))

    space += xd[i]

fig.update_layout(annotations=annotations)

fig.show()

```

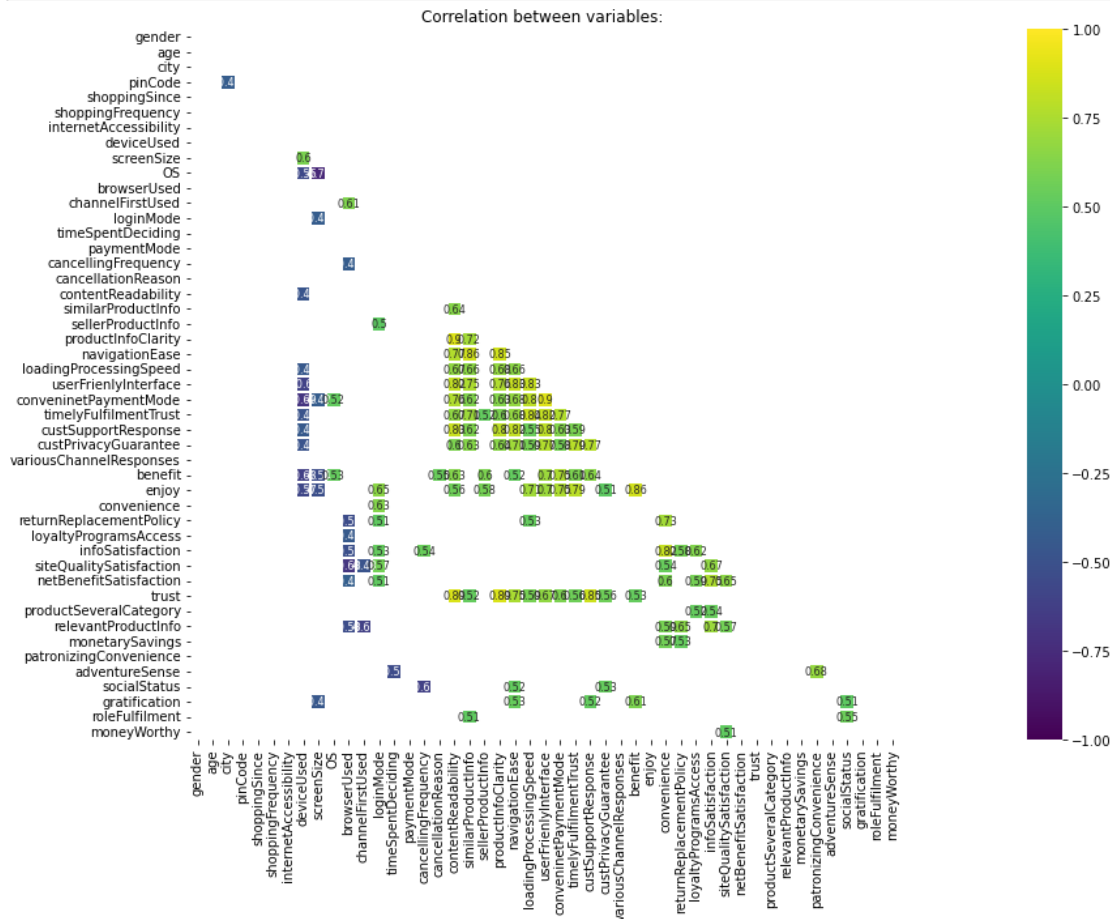


We can observe that, mostly agree with the fact that the product they are purchasing from the app or website, they hope to have complete information regarding the product. Most of them agrees that the functioning of app efficiently is also a major factor which helps in enhance user experience while doing online shopping.


```
# Let's find the columns which has more correlation - for people to purchase online and the app that they use :
```

```
df = encoded_data.iloc[:, :47]
le = LabelEncoder()
df['city'] = le.fit_transform(df['city'])
upper_triangle = np.triu(df.corr())
corr = df.corr()
plt.figure(figsize=(35, 10))

sns.heatmap(corr[(corr >= 0.5) | (corr <= -0.4)],
            cmap='viridis', vmax=1.0, vmin=-1.0, linewidths=0.1,
            annot=True, annot_kws={"size": 8}, square=True, mask=upper_triangle);
plt.title("Correlation between variables: ")
```



From the data we can see that, data related to how the person is accessing the app or website does not matter as it has negative correlation. Customer retention can be done, majorly with customer reviews and by finding out if they are satisfied with the quality of product and experience delivered to them.

Overall Observation

- Most of the customers are females with age from 20-50 and they used mobile internet to access with Windows as operating system.
- And most of the customers used search engines to get into the platform first time and frequently.
- Max customers uses there debit/credit cards for there payment.
- Almost customers agrees to have Content_Readability, Similar_ProductInfo, Seller_ProductInfo, ProductInfo_Clarify, Ease_Navigation, Loading_ProcessingSpeed, UserFriendly_Interface, Conveninet_PaymentMode, TimelyFulfilment_Trust, Customer_Empathy, CustPrivacy_Guarantee, VariousChannel_Responses, Benefit_Discount, Enjoy_OnlineShopping, Convenience_Flexibility, Returns_ReplacementPolicy, Loyalty_ProgramAccess, QualityInfo_Satisfaction, WebsiteQuality_Satisfaction, NetBenefit_Satisfaction, User_Trust, Product_SeveralCategory, Relevant_ProductInfo, Monetary_Savings,

Patronizing_Convenience, Adventure_Sense, Enhances_SocialStatus, Gratification_Shopping, Role_Fulfilment, Money_Worthy.

- Compared to other platforms shopping with Amazon.in and Flipkart.com has maximum benefits rather than drawbacks.

Conclusion:

There is high risk of customer churn with:

- Myntra.com
- Snapdeal.com
- Paytm.com

High customer retention and satisfaction with:

- Amazon.in
- Flipkart.com

When customers are satisfied with a company or service, there is a high possibility that they will share their experience with other people Therefore it is crucial for E-commerce to take into account their customer satisfaction because this will retain customer loyalty as well as attract potential customers.

To conclude, having the right customer retention strategy will keep sellers company growing if they know how to take advantage of it. Then customers will find their way back and continue buying stuff from the best company.