

Customer Retention

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Objective of the study

- The objective of the project is to apply analytical skills to give findings and conclusions in detailed data analysis of E-retail factors for customer activation and retention.

BUSINESS MODEL

- . 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.

DATA SOURCES

The sample data is provided to us from our client database. The dataset has 269 observations and 71 features.

Dataset:

	Gender	Age	City	Pincode	YearsOfOnline Shopping	PurchaseInPast1Year	InternetAccess	DeviceUsed	MobileScreen Size	DeviceOS	...	Log
0	Male	31-40 years	Delhi	110009	Above 4 years	31-40 times	Dial-up	Desktop	Others	Window/windows Mobile	...	Am
1	Female	21-30 years	Delhi	110030	Above 4 years	41 times and above	Wi-Fi	Smartphone	4.7 inches	IOS/Mac	...	Amu Flipk
2	Female	21-30 years	Greater Noida	201308	3-4 years	41 times and above	Mobile Internet	Smartphone	5.5 inches	Android	...	Mynr
3	Male	21-30 years	Karnal	132001	3-4 years	Less than 10 times	Mobile Internet	Smartphone	5.5 inches	IOS/Mac	...	Snapd
4	Female	21-30 years	Bangalore	530068	2-3 years	11-20 times	Wi-Fi	Smartphone	4.7 inches	IOS/Mac	...	Flipkz Pay

5 rows × 71 columns

DATA PREPROCESSING

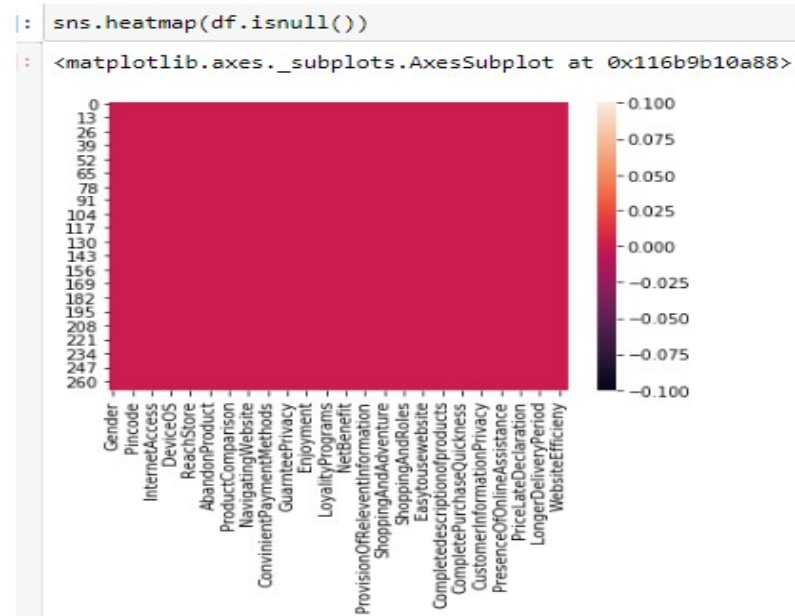
Replacing columns

```
df1.columns
```

```
Index(['Gender', 'Age', 'City', 'Pincode', 'YearsOfOnlineShopping',  
      'PurchaseInPast1Year', 'InternetAccess', 'DeviceUsed',  
      'MobileScreenSize', 'DeviceOS', 'DeviceBrowser', 'Channel',  
      'ReachStore', 'ExploreTime', 'PaymentOption', 'AbandonProduct',  
      'WhyAbandon', 'WebsiteContent', 'ProductComparison', 'PurchaseDecision',  
      'RelevantInfoOnListedProducts', 'NavigatingWebsite', 'Speed',  
      'UserFriendlyInterface', 'ConvinientPaymentMethods', 'Trust', 'Empathy',  
      'GuarnteePrivacy', 'CommunicationChannelsAvailability',  
      'BenifitsAndDiscounts', 'Enjoyment', 'Flexibility',  
      'ReturnAndReplacementPolicy', 'LoyaltyPrograms',  
      'DisplayQualityInformation', 'goodqualitywebsitesatisfaction',  
      'NetBenefit', 'UserSatisfactionAndTrust', 'WideVarietyOfProducts',  
      'ProvisionOfRelevantInformation', 'MonetarySavings',  
      'Convenienceofpatronizingonlineretailer', 'ShoppingAndAdventure',  
      'ShoppingAndSocialStatus', 'ShoppingAndGratification',  
      'ShoppingAndRoles', 'ValueForMoneySpent', 'OnlineRetailersShoppedFrom',  
      'Easytousewebsite', 'Visualappealingwebpagelayout',  
      'Varietyofproductonoffer', 'Completedescriptionofproducts',  
      'FastLoadingWebsiteSpeed', 'WebSiteReliability',  
      'CompletePurchaseQuickness', 'PaymentsOptionsAvailability',  
      'Speedyorderdelivery', 'CustomerInformationPrivacy',  
      'CustomerFinancialInformationSecurity', 'PerceivedTrustworthiness',  
      'PresenceOfOnlineAssistance', 'LogInTime', 'DisplayGraphicsTime',  
      'PriceLateDeclaration', 'PageLoadingTime', 'LimitedModeOfPayment',  
      'LongerDeliveryPeriod', 'WebsiteDesignChange',  
      'FrequentDisruptionInMovingFromPageToPage', 'WebsiteEfficiency',  
      'IndianOnlineRetailerToRecommend'],
```

DATA PREPROCESSING

Dealing with null values



No null values present

DATA PREPROCESSING

Data Info And Description

#	Column	Non-Null Count	Dtype
0	Gender	269 non-null	object
1	Age	269 non-null	object
2	City	269 non-null	object
3	Pincode	269 non-null	int64
4	YearsOfOnlineShopping	269 non-null	object
5	PurchaseInPast1Year	269 non-null	object
6	InternetAccess	269 non-null	object
7	DeviceUsed	269 non-null	object
8	MobileScreenSize	269 non-null	object
9	DeviceOS	269 non-null	object
10	DeviceBrowser	269 non-null	object
11	Channel	269 non-null	object
12	ReachStore	269 non-null	object
13	ExploreTime	269 non-null	object
14	PaymentOption	269 non-null	object
15	AbandonProduct	269 non-null	object
16	WhyAbandon	269 non-null	object
17	WebsiteContent	269 non-null	object
18	ProductComparison	269 non-null	object
19	PurchaseDecision	269 non-null	object
20	RelevantInfoOnListedProducts	269 non-null	object
21	NavigatingWebsite	269 non-null	object
22	Speed	269 non-null	object
23	UserFriendlyInterface	269 non-null	object
24	ConvinientPaymentMethods	269 non-null	object
25	Trust	269 non-null	object
26	Empathy	269 non-null	object
27	GuaranteePrivacy	269 non-null	object
28	CommunicationChannelsAvailability	269 non-null	object
29	BenifitsAndDiscounts	269 non-null	object
30	Enjoyment	269 non-null	object

```
df1.describe()
```

```

Pincode
count    269.000000
mean    220465.747212
std     140524.341051
min      110000.000000
25%     122018.000000
50%     201303.000000
75%     201310.000000
max      560037.000000

```

```
df1.describe(include='object')
```

```

Gender  Age  City  YearsOfOnlineShopping  PurchaseInPast1Year  InternetAccess  DeviceUsed  MobileScreenSize  DeviceOS  DeviceBrowser ...
count    269    269    269                269                269                269                269                269    269 ...
unique     2     5    11                    5                    6                    4                    4                    4     3     4 ...
top  Female  31-  Delhi  Above 4 years  Less than 10 times  Mobile internet  Smartphone  Others  Window/Windows Mobile  Google chrome ...
freq    181    81    58                    98                    114                    142                    141                    134                    122                    216 ...

```

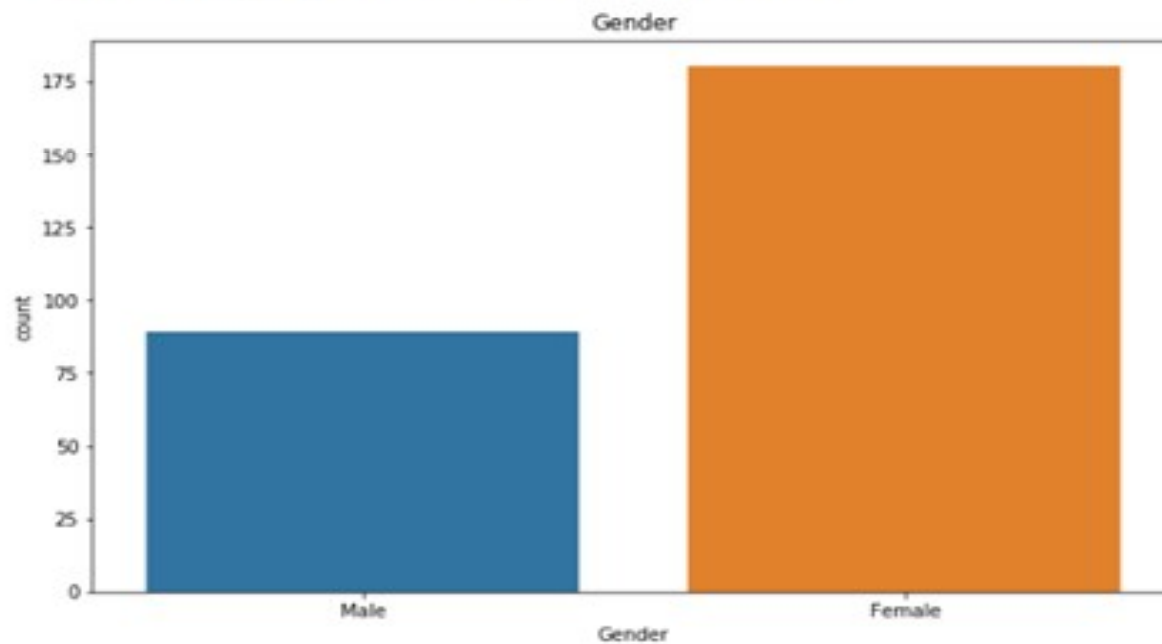
4 rows x 70 columns

4 rows x 70 columns

DATA VISUALIZATION

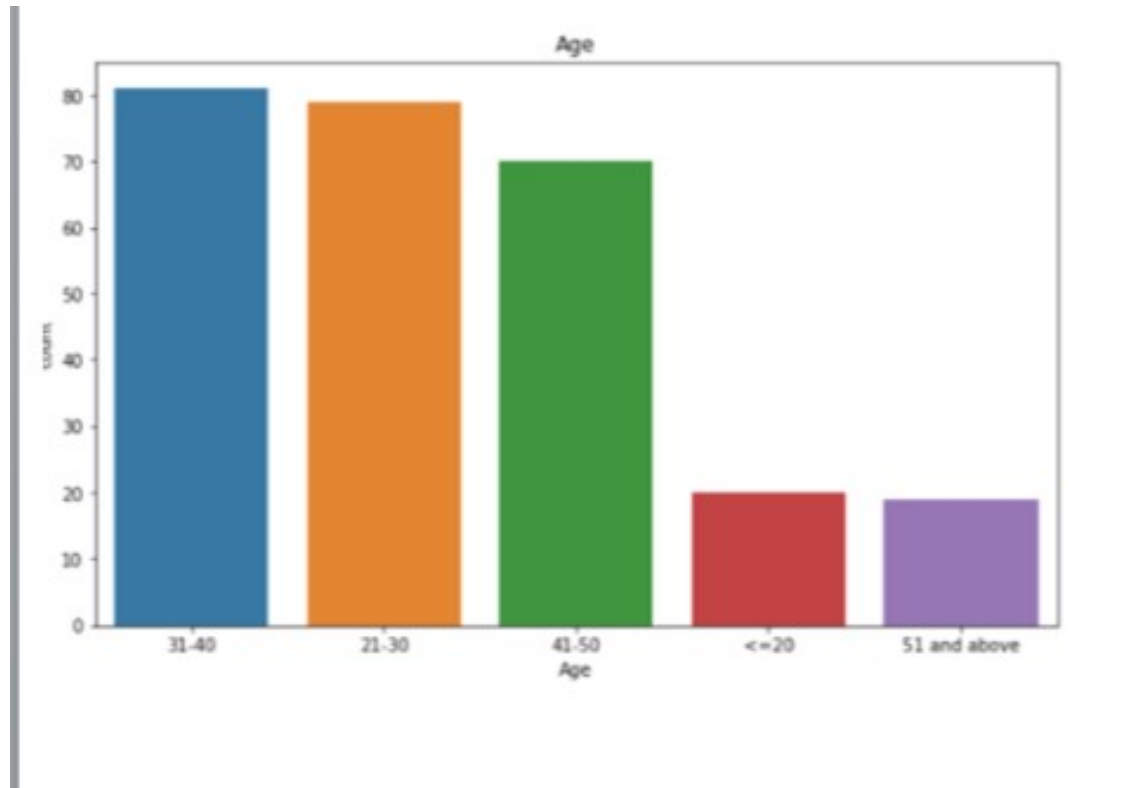
1. CountPlot -Gender

<matplotlib.axes._subplots.AxesSubplot at 0x116ba14cf88>



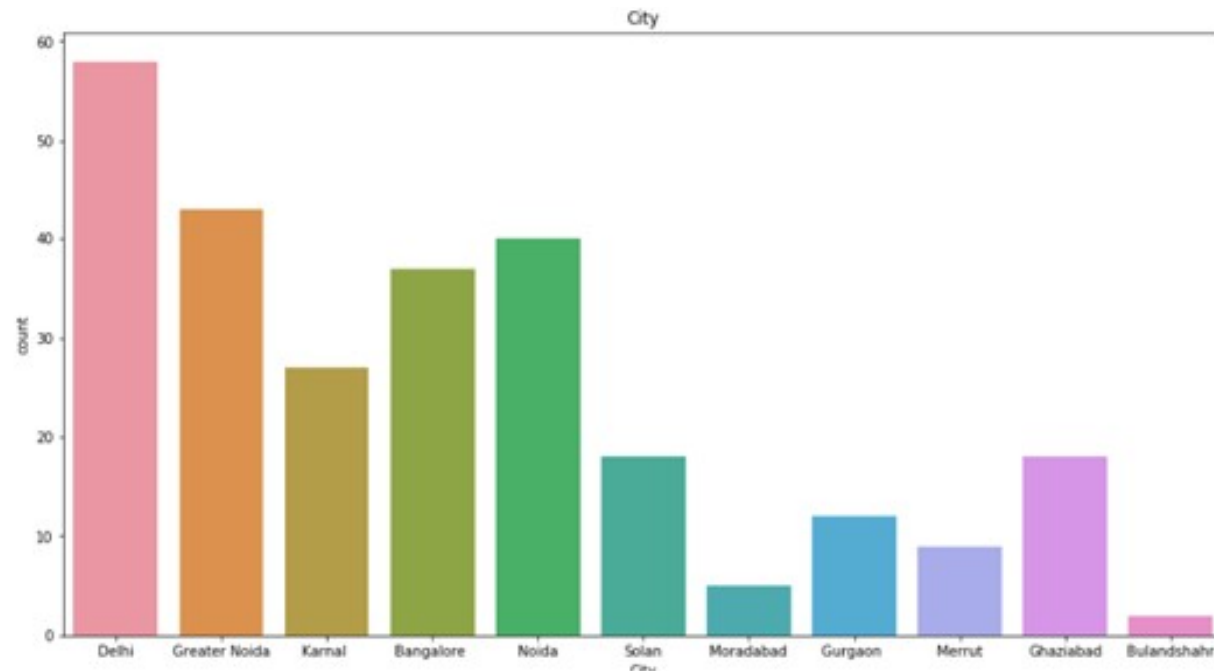
DATA VISUALIZATION

Age



DATA VISUALIZATION

City



DATA VISUALIZATION

For All Variables

```
categorical_feats = df1.dtypes[df1.dtypes == "object"].index
print("Number of Categorical features: ", len(categorical_feats))

Number of Categorical features: 70

li_cat_feats = list(categorical_feats)
nr_rows = 35
nr_cols = 2

fig, axs = plt.subplots(nr_rows, nr_cols, figsize=(nr_cols*8,nr_rows*10))

for r in range(0,nr_rows):
    for c in range(0,nr_cols):
        i = r*nr_cols+c
        if i < len(li_cat_feats):
            ax1=sns.countplot(x=li_cat_feats[i], data=df1, ax = axs[r][c])
            ax1.set_xlabel(li_cat_feats[i], labelpad=10)

sns.despine()
```

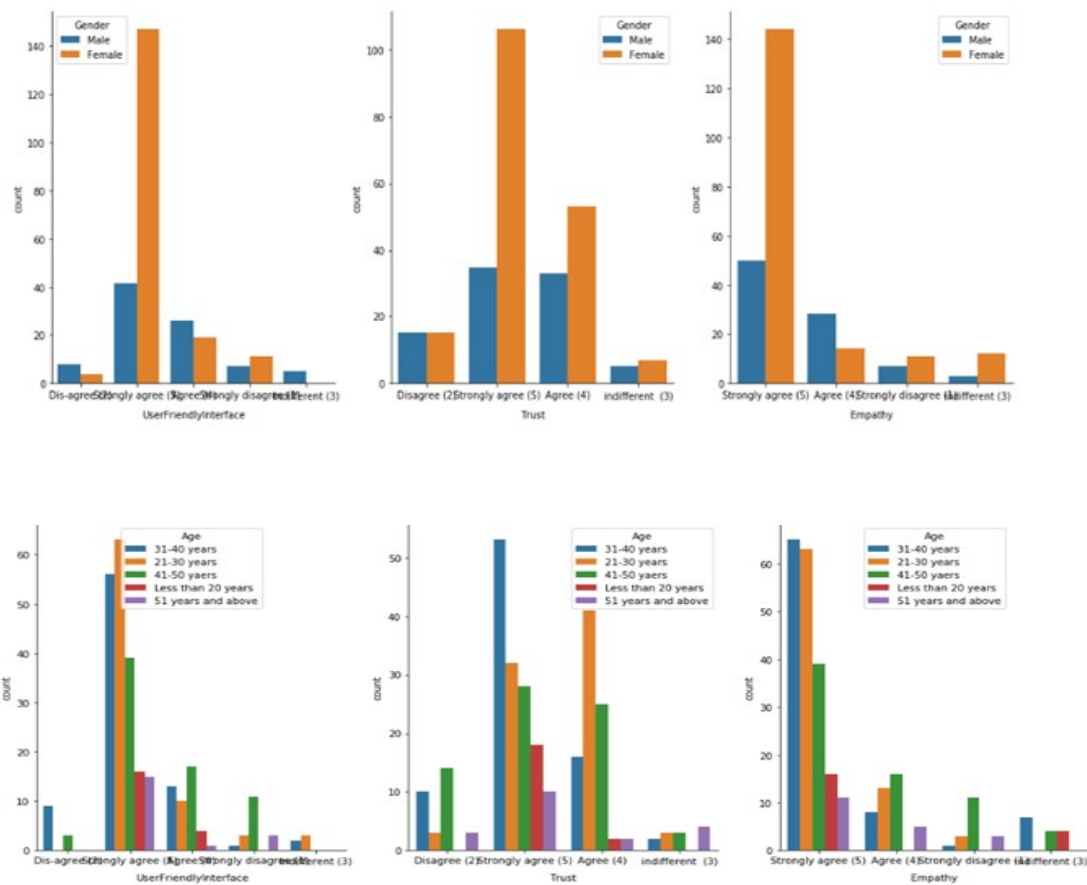
DATA VISUALIZATION

Relationship of Hedonic Values with Gender and Age

Hedonic Values:

- 'UserFriendlyInterface
- 'Trust
- Empathy
- Enjoyment
- LoyaltyPrograms
- 'UserSatisfactionAndTrust
- 'Convenienceofpatronizingonlineretailer
- ShoppingAndAdventure'
- ShoppingAndSocialStatus
- ShoppingAndGratification'
- ShoppingAndRoles
- ValueForMoneySpent
-

DATA VISUALIZATION



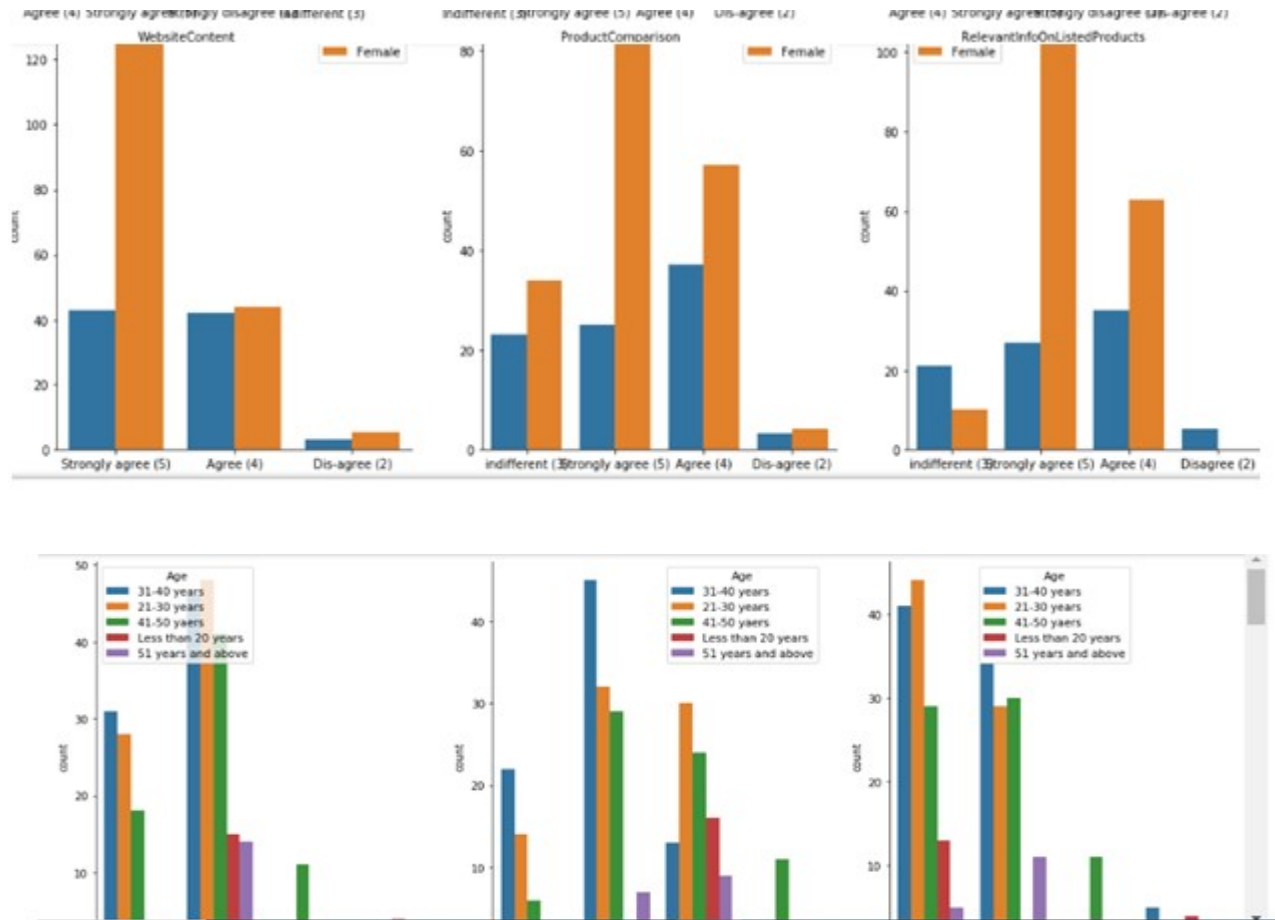
DATA VISUALIZATION

Relationship of Utilitarian Values with Gender and Age

Utilitarian Values:

- WebsiteContent
- ProductComparison
- RelevantInfoOnListedProducts
- NavigatingWebsite
- ConvinientPaymentMethods
- GuarnteePrivacy
- CommunicationChannelsAvailability
- Flexibility
- DisplayQualityInformation
- goodqualitywebsitesatisfaction
- WideVarietyOfProducts
- ProvisionOfRelevantInformation
- MonetarySavings

DATA VISUALIZATION



CONCLUSION

Results of the data analysis performed indicates the e-retail success factors, which are very much critical for customer satisfaction. It is concluded that combination of both utilitarian and hedonistic value are needed to affect the repeat purchase intention positively