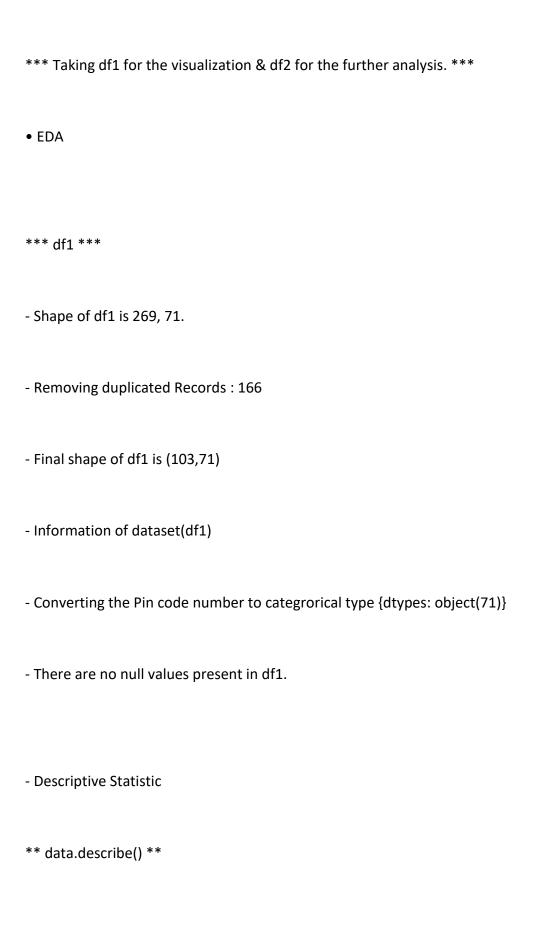# E-retail factors for customer activation and retention: A case study from Indian e-commerce customers

- The dataset is all about the online shopping website's reports and status, given by the customers.

- Our excel file contains 2 excel sheets:

1. Is the detailed excel file.

2. Encoded excel file.

TASK: To apply the data analysis and find the conclusion of data analysis.

- Importing the necessary libraries such as: pandas, NumPy, seaborn, matplotlib.

- Import our dataset.

1. df1 is the detailed sheet.

2. df2 is the encoded sheet.

*** Taking df1 for the visualization & df2 for the further analysis. ***

• EDA

*** df1 ***

- Shape of df1 is 269, 71.

- Removing duplicated Records : 166

- Final shape of df1 is (103,71)

- Information of dataset(df1)

- Converting the Pin code number to categrorical type {dtypes: object(71)}

- There are no null values present in df1.

- Descriptive Statistic

** data.describe() **

1Gender of respondent   2 How old are you?   3 Which city do you shop online from? 4 What is the Pin Code of where you shop online from?   5 Since How Long You are Shopping Online ?   6 How many times you have made an online purchase in the past 1 year?   7 How do you access the internet while shopping on-line? 8 Which device do you use to access the online shopping?   9 What is the screen size of your mobile device?\t\t\t\t\t\t 10 What is the operating system (OS) of your device?\t\t\t\t   11 What browser do you run on your device to access the website?\t\t\t   12 Which channel did you follow to arrive at your favorite online store for the first time?   13 After first visit, how do you reach the online retail store?\t\t\t\t   14 How much time do you explore the e- retail store before making a purchase decision?   15 What is your preferred payment Option?\t\t\t\t\t   16 How frequently do you abandon (selecting an items and leaving without making payment) your shopping cart?\t\t\t\t\t\t\t   17 Why did you abandon the "Bag", "Shopping Cart"?\t\t\t\t\t   18 The content on the website must be easy to read and understand   19 Information on similar product to the one highlighted is important for product comparison   20 Complete information on listed seller and product being offered is important for purchase decision.   21 All relevant information on listed products must be stated clearly   22 Ease of navigation in website   23 Loading and processing speed   24 User friendly Interface of the website   25 Convenient Payment methods   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?

count   103   103   103   103   103   103   103   103   103   103   103   103
         103   103   103   103   103   103   103   103   103   103   103   103
         103   103   103   103   103   103   103   103   103   103   103   103
         103   103   103   103   103   103   103   103   103   103   103   103
         103   103   103   103   103   103   103   103   103   103   103   103
         103   103   103   103   103   103   103   103   103   103   103

unique 2   5   11   39   5   6   4   4   4   3   4   3
       5   5   3   4   5   4   4   5   4   4   5   5
       3   4   4   3   4   5   5   4   3   5   3   3
       4   5   4   4   4   3   5   5   5   5   3   9
       10   10   9   11   10   10   9   11   6   11   11   9
       10   10   10   8   11   8   6   7   8   8   8

top   Female 21-30 years   Delhi   201308   Above 4 years Less than 10 times   Mobile internet   Smartphone   Others Window/windows Mobile   Google chrome   Search Engine Via application   more than 15 mins   Credit/Debit cards   Sometimes   Better alternative offer   Strongly agree (5)   Strongly agree (5)   Agree (4)   Agree (4)
       Strongly agree (5)   Strongly agree (5)   Strongly agree (5)   Strongly agree (5)
       Strongly agree (5)   Strongly agree (5)   Strongly agree (5)   Strongly agree (5)
       Strongly agree (5)   Strongly agree (5)   Strongly agree (5)   Strongly agree (5)
       Strongly agree (5)   Strongly agree (5)   Strongly agree (5)   Strongly agree (5)
       Strongly agree (5)   Strongly agree (5)   Strongly agree (5)   Strongly agree (5)
       Agree (4)   Agree (4)   indifferent (3) indifferent (3) indifferent (3) Agree (4)
       Amazon.in, Flipkart.com, Paytm.com, Myntra.com...   Amazon.in, Flipkart.com, Paytm.com, Myntra.com...   Amazon.in, Flipkart.com   Amazon.in, Flipkart.com
       Amazon.in, Flipkart.com   Amazon.in, Paytm.com   Amazon.in   Amazon.com
       Amazon.in, Flipkart.com   Amazon.in   Amazon.in   Amazon.in   Amazon.in
       Amazon.in, Flipkart.com, Myntra.com, Snapdeal   Amazon.in   Amazon.in,

	Flipkart.com	Myntra.com	Paytm.com		Snapdeal.com	Paytm.com		Amazon.in			
		Myntra.com	Amazon.in		Amazon.in						
freq	66	32	22	13	39	39	70	52	51	46	80	86
	34	48	59	64	49	60	40	38	54	51	45	72
	60	52	75	69	59	41	34	56	76	44	49	66
	61	47	42	48	59	55	42	39	38	35	57	36
	28	33	50	39	19	20	22	25	43	24	16	25
	24	18	25	30	27	33	32	38	21	35	28	

*** df2 ***

- Shape of df2 is 269, 71.

- Drop duplicated records 130

- Drop pin code number

- Shape after removing duplicates : (139,70)

There are no null values present in df2.

• Correlation.

** sns.heatmap(data.corr(), annot = True) **

Plotting the heatmap to see the multicollinearity between the columns.

t's seems there are alot of Mulicollinarity in the data.

Since all the columns are Categorical features therefor no outliers in the data