

JAIPURIA INSTITUTE OF MANAGEMENT, NOIDA

PGDM / PGDM (SM)

VI TRIMESTER (Batch 2016-18)

END TERM EXAMINATIONS

SET - 1

Course Name	MARKETING ANALYTICS	Course Code	MKT 606
Max. Time	2 HOURS	Max. Marks	40

INSTRUCTIONS:

- **All questions are compulsory**

1. In the customer management lifecycle, customer churn refers to a decision made by the customer about ending the business relationship. It is also referred as loss of clients or customers. Customer loyalty and customer churn always add up to 100%. If a firm has a 60% of loyalty rate, then their loss or churn rate of customers is 40%. As per 80/20 customer profitability rule, 20% of customers are generating 80% of revenue. So, it is very important to predict the users likely to churn from business relationship and the factors affecting the customer decisions

A market manager is interested in how different variables customers' loyalty. The outcome variable, loyal/not loyal is binary.

- a. Which type of regression model is appropriate for this situation. Derive the formula to calculate probability in such types of models.
 - b. The manager finds the maximum likelihood estimates of slope to be (-5.661) & intercept as (0.1281). What is the chance that a 44 yearold will be a loyal customer? ($\exp(-0.0246)=0.9757$) & $\exp(0.0246)=1.0249$ (8 marks)
2. One of the uses of conjoint analysis is being able to understand how customers make their decisions. It allows you to answer questions such as: When a customer is presented with products composed of several features, how do they prioritise? Which features do they see as the 'must haves' and which as the 'nice to haves'? Are there features they are willing to sacrifice? Which feature drives purchase and is linked to the price of the product.

A conjoint study was conducted by a firm to determine the role that five attributes play in influencing a consumer's preference for a vacuum cleaner. The five attributes and their levels are as follows:

Package design (either A, B or C)

- Brand (1,2 or3)
- Price (Rs 300, Rs 400, Rs 500)
- Did “Good Housekeeping” magazine approve product?
- Is product guaranteed?

The best prediction for the product is as follows:

$$\text{Predicted Rank} = 4.833 - 4.5*A + 3.5*B - 1.5*\text{Brand1} - 2*\text{Brand2} + 7.667*(\text{Rs 300 Price}) + 4.83*(\text{Rs 400 Price}) + 1.5*(\text{Approved?}) + 4.5*(\text{Guarantee})$$

What inferences can the firm’s product manager draw from this equation for devising a pro-active marketing strategy? (12 marks)

3. In marketing analytics we often have very large data, which are however similar to each other hence we may want to organize them in a few clusters with similar observations within each cluster. For example, in the case of customer data, even though we may have data from millions of customers, these customers may only belong to a few segments: customers are similar within each segment but different across segments. We may often want to analyze each segment separately, as they may behave differently.

P & G, the famous FMCG company has got the following data after demographic analysis. The company has hired you as a consultant to help them in designing their marketing strategy. Analyse the following data (on this page and next page) to make appropriate recommendations to P&G. (10 marks)

Cluster	z Black	z Hispanic	z Asian	z Age	z Unemp	z income
43	0.51611	0.085488	0.803889	0.061342	0.364346	-0.27542
35	0.62655	-0.70373	-0.4523	0.061342	-0.75146	-0.27542
19	0.12959	-0.82514	-0.4523	0.061342	-0.75146	0.024482
24	0.73698	-0.09664	-0.18312	0.562301	-0.75146	-0.27542

Cluster	City #	City	%age Black	%age Hispanic	%age Asian	Median Age	Unemployment rate	Per capita income(000's)
43	17	Honolulu	1	5	71	37	5	24
43	43	San Francisco	11	14	29	36	6	31
43	45	Seattle	10	4	12	35	5	28
35	2	Atlanta	67	2	1	31	5	22
35	4	Baltimore	59	1	1	33	11	22
35	7	Chicago	39	20	4	31	9	24
35	8	Cincinnati	38	1	1	31	8	21
35	9	Cleveland	47	5	1	32	13	22
35	11	Dallas	30	21	2	30	9	22
35	13	Detroit	76	3	1	31	9	21
35	25	Memphis	55	1	1	32	9	20
35	30	New Orleans	62	4	2	32	7	18
35	31	NY	29	24	7	34	11	27
35	32	Oakland	44	14	15	33	10	24
35	35	Philadelphia	40	6	3	33	9	23
35	37	Pittsburgh	26	1	2	35	7	21
35	40	St. Louis	48	1	1	33	8	23
19	1	Albuquerque	3	35	2	32	5	18
19	3	Austin	12	23	3	29	3	19
19	5	Boston	26	11	5	30	5	24
19	6	Charlotte	32	1	2	32	3	20
19	10	Columbus	23	1	2	29	3	13
19	12	Denver	13	23	2	34	7	23
19	19	Indianapolis	22	1	1	32	5	21
19	20	Jacksonville	25	3	2	32	7	19
19	21	Kansas City	30	4	1	33	6	21
19	22	Las Vegas	11	13	4	33	5	20
19	27	Milwaukee	31	6	2	30	5	22
19	28	Minneapolis	13	2	4	32	5	23
19	29	Nashville	23	1	1	33	3	24
19	33	Oklahoma City	16	5	2	32	6	17
19	34	Omaha	13	3	1	32	5	20
19	36	Phoenix	5	20	2	31	4	19
19	38	Portland	8	3	5	35	7	20
19	39	Sacramento	15	16	15	32	8	20
19	46	Toledo	20	4	1	32	6	19
19	47	Tucson	4	29	2	31	3	19
19	48	Tulsa	14	3	1	33	4	20
19	49	Virginia Beach	14	3	4	29	6	18
24	14	El Paso	3	69	1	29	11	13
24	15	Fort Worth	22	20	2	30	9	20
24	16	Fresno	9	30	13	28	13	16
24	18	Houston	28	28	4	30	7	22
24	23	Long Beach	14	24	14	30	8	21
24	24	Los Angeles	14	40	10	31	11	21
24	26	Miami	27	63	1	36	12	17
24	41	San Antonio	7	56	1	30	5	17
24	42	San Diego	9	21	12	31	8	20
24	44	San Jose	5	27	20	30	8	26

4. Discrete choice models are widely used for the analysis of individual choice behavior and can be applied to choice problems in many fields such as marketing research to guide product positioning, pricing, product concept testing, and many other areas of strategic and tactical interest. Recent applications to predict changes in demand and market share include areas such as choice of travel mode, coffee brand, telephone service, soft drinks and other foods, financial services, internet access, and choice of durables such as smartphones, tablets, automobiles, air conditioners, and houses.

The Indian chocolate market is facing tough times. According to market researcher Nielsen's data, Mars Chocolate had 48 per cent share on an all-India basis in the category in 2016, moving up from 45.4 per cent a year ago. Mars' brands Snickers, Mars, Bounty and Twix have overtaken Mondelez's 5-Star and Cadbury Fuse, which compete in the same filled bars category nationally across modern trade chains.

A local Indian manufacturer has launched chocolates with following attributes:

Dark or Milk

Soft or chewy

Nuts or no nuts

After analyzing data from 100 respondents for their preferences for various attributes the following observations were made:

Dark got weight of 0, Milk 1.38, Soft 2.40, Chewy 4.59, Nuts 5.92 & No nuts 5.07.

As a product manager, what recommendations would you make to this company?

(10 marks)