Roll No.

MRA 03

Total No. of Printed Pages: 6

Total No. of Questions : 5   MMS-III (Mktg.)   Maximum Marks : 30

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Duration (hrs.) : 2 Hours

Section, if any : NIL Market Research Applications

Note :

Q1 – 10 Marks (Compulsory)

Attempt Any Two from the Remaining Four Questions

Q.1.   Chitragupta Industries Pvt. Ltd. is a toothpaste manufacturing company. They have their own brand named as "Chitrangada" which is launched all across India in 2011. It is now critical for them to understand awareness of their own brand along with key competitors. In order to take business decisions it is of a paramount importance to see where the brand stands where awareness & usage of different brands is concerned. Kindly prepare a market research questionnaire which would answer following questions for Chitragupta Industries Pvt. Ltd.

Awareness & usage details

✓ Awareness of different brands present in the market (both aided & unaided)
✓ Ad awareness of different toothpaste brands
✓ Sources of Ad for all the aware brands
✓ Brands ever used before
✓ Brands used in past 6 months
✓ Brands used in past 3 months
✓ Brands used in past 1 month
✓ Most often used brand (MOUB)
✓ Brands which they will consider purchasing in future.
✓ Brands which they will recommend to others

Q2.   Attempt any two from (a) or (b) or (c) ------------ (5x2) = 10 Marks

Q2(a)   Please explain regression analysis & its implications in market research. Kindly also explain standard regression equation? If number of years of experience, qualification, compensation & number of sub-ordinates reporting are different variables present; please identify dependent & independent variables.

Q2(b)   Please explain the application of correlation analysis in market research. What is its limitation? Do have a look at the following correlation analysis table & state which variables have greatest correlation among themselves?

		Sales	Experience	Advertising expenditure	Sales promotion	PR activities
Pearson Correlation	Sales	1.000	.295	.852	.711	.858
	Experience	.295	1.000	.382	.655	.605
	Advertising expenditure	.852	.382	1.000	.650	.771
	Sales promotion	.711	.655	.650	1.000	.824
	PR activities	.858	.605	.771	.824	1.000

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Q2(c) The backward method of regression analysis has thrown a below table. Please look at the table & explain which model should we consider for regression analysis? and why? If salary is dependent variable then write down regression equation using given variables. Please predict salary if an employee has experience of 5 years, Intelligence Quotient of 96 & having handled 68 projects so far.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta	Lower Bound	Upper Bound
1	(Constant)	456.847	173.949		2.626	.025
	Experience	-93.432	39.717	-.340	-2.352	.040
	Intelligence Quotient	110.270	47.788	.392	2.307	.044
	Emotional Quotient	44.211	55.721	.159	.793	.446
	Projects handled	77.515	28.216	.631	2.747	.021
2	(Constant)	462.792	170.836		2.709	.020
	Experience	-82.081	36.422	-.299	-2.254	.046
	Intelligence Quotient	114.344	46.705	.406	2.448	.032
	Projects handled	89.187	23.669	.726	3.768	.003

a Dependent Variable: Salary

Q3. Attempt any two from (a) or (b) or (c) ----------- (5x2) = 10 Marks

Q3(a) The selection procedure of a candidate for a MMS programme is dependent upon written test score, group discussion score & personal interview score. All the scores will have an impact on deciding whether the selection is successful or unsuccessful. Kindly identify the grouping variable & define range of the same. The discriminant analysis has thrown a below table of Canonical Discriminant Function Coefficients.

Score in Written Test	0.8
Score in Group discussion	-0.18
Score in Interview	0.5
(Constant)	-98.23

Please predict the future of a candidate having a written test score of 120, group discussion score of 9 & personal interview score of 11 with the help of functions at group centroids.

1	1.856
2	-0.698

Q3(b) Kindly explain the implication of conjoint analysis in market research. Apparel manufacturing company makes various types of shirts. They can prepare shirts using cotton, nylon, silk & semi-cotton. Shirts are priced at Rs. 1200, Rs. 1500 & Rs. 2100. The colours in which they prepare shirts are white, blue & cream. Kindly write down the coding scheme to enter the data into SPSS software.

Q3(c) Dhuwa Fireworks Pvt. Ltd. is a popular & innovative cigarette manufacturing company. They have a capacity to produce different flavoured cigarettes such as strawberry, Rose & Kala khatta. The price points per cigarette which a company wants to look at is Rs. 3.5, Rs. 5 & Rs. 6.5. The size of a cigarette also varies from 3 inches, 5 inches & 6.5 inches. All the combinations are shown to a smoker & smoker has asked to give distinct ranks. Please identify how many such combinations are possible? The data is collected from a smoker & has entered into SPSS. The regression analysis has shown a below table -

| | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
	B	Std. Error	Beta	Lower Bound	Upper Bound
(Constant)	13.671	.621		22.008	.000
var1	-6.782	.876	-.711	-7.740	.000
var2	1.035	.886	.109	1.168	.257
var3	4.442	.859	.464	5.172	.000
var4	.911	.835	.096	1.092	.288
var5	2.554	.893	.268	2.860	.010
var6	-.661	.884	-.069	-.748	.463

a Dependent Variable: ranking v7

Kindly identify the best combination? Which variable has a maximum implication where smoker's choice is concerned?

Q4. Attempt any two from (a) or (b) or (c) ----------- (5x2) = 10 Marks

Q4(a) Kindly explain the implication of factor analysis in market research. Which rotation method is usually used in the factor analysis? Following is the rotated component matrix of a 3 factor solution. Kindly identify which variables can be clubbed together? Also identify which variables cannot be clubbed?

| | Component | | |
	1	2	3
I should be seen as a successful person	.959	-.040	.02
Physical health is as important as metal health	.954	-.004	.15
It is very important to mix up with society	.912	.037	-.05
Good quality products are always costly	.578	.149	-.32
Company should spend high on advertising to increase awareness	-.028	.985	-.00
One should live the life to the fullest	-.062	.965	.09
It is important to live in present rather than worrying about future	-.016	.956	.09
The student should seek knowledge rather than being exam oriented	-.184	-.389	-.08
Higher tax rate should be imposed on rich people	.037	.090	.96
Government should decide pricing of necessity goods	-.077	.175	.95

Q4(b) Pompom Motors Pvt. Ltd. wanted to understand the perception of car customers. The company has thus conducted a factor analysis. The analysis has given below rotated

component matrix. Please identify which factor solution is used. Kindly club the different variables. Also state which variables cannot be clubbed.

	Component			
	1	2	3	4
Price	0.969	0.023	0.598	0.365
Mileage	0.938	0.065	0.413	0.456
Easy to maintain	0.658	-0.458	0.745	0.197
Comfortable seating arrangement	0.368	0.975	0.687	-0.978
Higher leg space	0.498	0.239	0.458	0.168
Instant breaks	-0.569	-0.872	-0.985	-0.147
Grip to steering wheel	0.211	-0.479	0.914	0.685
Power Steering	-0.698	0.069	0.947	0.244
Attractive accessories	0.598	0.645	0.214	0.721
Luggage space	0.387	0.961	0.297	-0.381
Availability of different colours	0.085	0.798	0.348	0.997
Availability to choose number plates	-0.659	0.003	0.741	0.935
Promotions & freebees	0.912	-0.097	0.265	-0.317

Q4(c)   Brownie products Pvt. Limited has conducted a factor analysis to understand the consumer psyche of customers of confectioneries. The analysis has come up with the below 5 factor solution. Kindly identify which all variables can be clubbed & which variables cannot be clubbed.

	Component				
	1	2	3	4	5
I don't like watching TV	.726	-.020	-.164	-.062	.324
I feel advt influences buying decisions	.712	.070	.089	.059	-.089
I like trying new things	.603	-.003	.204	.088	-.051
I like watching movies	.426	.405	.369	.069	.300
I prefer buying by credit card than cash	.010	-.768	.073	-.092	.130
I recommend others to buy things	.346	.605	-.016	.104	.219
I prefer buying products than Indian products	.107	-.560	-.011	.200	-.265
I like going for shopping	.348	.527	.432	.203	-.162
I feel sizzling brownie is a luxury	.200	-.457	-.309	.419	.081
I like hanging out with friends	-.017	.119	.644	-.160	.272
I think twice before i buy anything	.165	-.087	.636	-.088	-.303
Quality products are always priced higher	.040	-.030	.611	.243	.122
I don't mind paying high price for quality	-.173	-.108	.218	.770	.173
I love travelling	.476	.105	-.079	.599	.042
I don't like spending money on branded items	.181	.377	-.109	.577	-.284
I don't mind having brownie even if they r full of calories	.159	-.175	.182	.318	.673
I always plan for purchase	-.004	.148	-.010	-.066	.601

Q5.   Attempt any two from (a) or (b) or (c) ----------- (5x2) = 10 Marks

Q5(a)   Kindly explain the implication of cluster analysis in market research. Explain step by step procedure to conduct cluster analysis in SPSS?

Q5(b) The hierarchical cluster analysis method has given a below agglomeration schedule. Kindly identify how many clusters are emerging? Please explain the limitation of the hierarchical method of cluster analysis?

Stage	Cluster Combined		Coefficients
	Cluster 1	Cluster 2	Cluster 1
57	3	28	4.000
58	5	6	4.000
59	13	23	6.000
60	16	20	6.000
61	14	18	8.000
62	10	11	8.000
63	13	15	9.000
64	2	21	10.000
65	3	19	10.000
66	5	8	11.000
67	2	7	11.000
68	13	25	12.000
69	24	26	14.000
70	10	17	15.000
71	13	16	15.000
72	5	24	16.667
73	5	12	17.200
74	4	13	17.333
75	2	10	18.889
76	4	27	20.000
77	3	5	21.000
78	4	9	21.750
79	14	22	28.000
80	3	4	36.765
81	1	14	46.000
82	2	3	71.852
83	1	2	133.813

Q5(c) Thunderbolt refrigerators public Ltd. has undertaken a segmentation exercise of their customers. Thus, a market research was conducted & segmentation was arrived after running a cluster analysis. The data was collected from 100 respondents & they were asked to give their opinion on a 5 point scale where 5 = strongly agree & 1 = strongly disagree. The hierarchical method has given following 4 clusters -

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	Cluster			
	1	2	3	4
Looks & style	3	4	4	5
Sturdiness	5	4	4	4
Brand	5	4	4	3
Durability	5	5	4	4
Storage	3	5	4	4
Technology	3	4	4	4
Price	1	4	4	2
Maintenance Cost	1	4	4	2
Advertising	1	2	1.5	2
Warranty	1	4	4	3
Cost of spares	1	4	3	2
Suggestions from friends & family	4	3	3	1

Please answer which all factors are important for the first segment & why? Which particular factor is not so much important across all the segments & why? Which factors are not much important for the 4th segment & why?