12 BRM

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INSTITUTE OF MANAGEMENT TECHNOLOGY – GHAZIABAD

PGDM - 2012-14, IV th TERM END TERMINAL EXAMINATION

BUSINESS RESEARCH METHODS (ALL SECTION)

Time: 120 minutes, Marks – 40

NOTE : Attempt any Four out of the following. All question carry equal marks.

Q1. One of the researchers wants to analyse the dependence of Indian stock market on the US stock market and Japanese stock market. He collects the daily closing values of DJIA and NIKKEI along with NIFTY closing values. Then he applied the regression model assuming NIFTY as a dependent variable and DJIA and NIKKEI as dependent variables. The output is shown below:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
	.908	.825	.825	373.64909	.184

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.357E8	2	2.679E8	1918.627	.000[a]
	Residual	1.135E8	813	139613.640		
	Total	6.492E8	815			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-1959.600	106.505		-18.399	.000		
	DJIA	.840	.014	1.403	59.440	.000	.386	2.589
	NIKKEI	-.265	.007	-.843	-35.732	.000	.386	2.589

(a) Define the terms R, R^2, VIF, F statistic.
(b) Analyse the output and identify the problems in the analysis if any?

@ 85

Q2 A marketing researcher wants to test the hypothesis that, in the population, there is no difference in the importance attached to shopping by consumers living in the northern, southern, eastern and western India. A study is conducted and analysis of variance is used to analyze the data. The results obtained are presented in the following table:

Source	df	Sum of Squares	Mean Squares	F Ratio	F Probability
Between Groups	3	70.212	23.404	1.12	0.3
Within Groups	996	2082.416	20.896		

a. Is there sufficient evidence to reject the null hypothesis?

b. What conclusion can be drawn from the table?

Q3. . In performing a discriminant analysis on "high risk" and "low risk" customer the following data was obtained. The data obtained included 15 with low risk and 15 with high risk.

Raw Discriminant Function:

Variable	Coefficient
Age	-0.24560
Income	-0.00008
Years Married	-0.08465
Constant	72.00335

Group	Group Centroid Mean
low risk	- 1.4560
high risk	+ 1.4560

Wilks' λ 0.68

a) Evaluate the cut-off score that will determine whether a respondent will belong to the 'high risk' or 'low risk' group

b) If a customer walks in who is 40 years of age, with income level of 8,00,000 and married for 10 years, you would classify him in which category.

c) How would you interpret a Wilks' Lambda value of 0. 68

Q4 Under the leadership of Procter & Gamble Chairman A.G. Lafley, Pampers continued to gain market share in 2003 and 2004 by relying on aggressive marketing programs based on extensive consumer research. To remain on the cutting edge of consumer needs, Procter & Gamble needs to continue to seek out and address exactly what consumer are searching for in a diaper before any rival does.Thus, the use of marketing research may be the key to enabling Procter & Gamble to regain leadership in the diaper market.

In this increasingly competitive diaper market, Procter & Gamble's marketing department wanted to formulate new approaches to the construction and marketing of Pampers to position them effectively against Huggies. They surveyed 300 mothers of infants. Each was given a randomly selected brand of diaper (Pampers, Luvs, or Huggies) and asked to rate that diaper on nine attributes and to give her overall preference for the brand. Preferences were obtained on a 7-point Likert-type scale (1= Not at All Preferred; 7= Greatly Preferred). Diaper ratings on nine attributes were also obtained on 7-point Likert-type scale (1= Very Unfavorable; 7= Very Favorable). The goal of the study was to learn whether there are any underlying dimensions inherent in the data. The nine attributes used in the study were:

Variable	Attribute	Marketing Options
X1	Count per box	Desire large counts per box?
X2	Price	Pay a premium price?
X3	Value	Promote high value.
X4	Unisex	Unisex vs. Separate Sex
X5	Style	Prints/colors vs. plain diapers.
X6	Absorbency	Regular vs. super absorbency.
X7	Leakage	Narrow/tapered vs. regular crotch
X8	Comfort/size	Extra padding and form-fitting gathers.
X9	Taping	Reasonable tape vs. regular tape.

The data obtained from the survey has been analyzed, using the software package SPSS and the output is presented in Exhibit-I. Interpret the results of the survey and make appropriate recommendations to the marketing department. The analysis should focus on the underlying perceptual dimensions vis-à-vis attributes of diapers.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.803
Bartlett's Test of Sphericity	Approx. Chi-Square	2404.021
	df	36
	Sig.	.000

Communalities

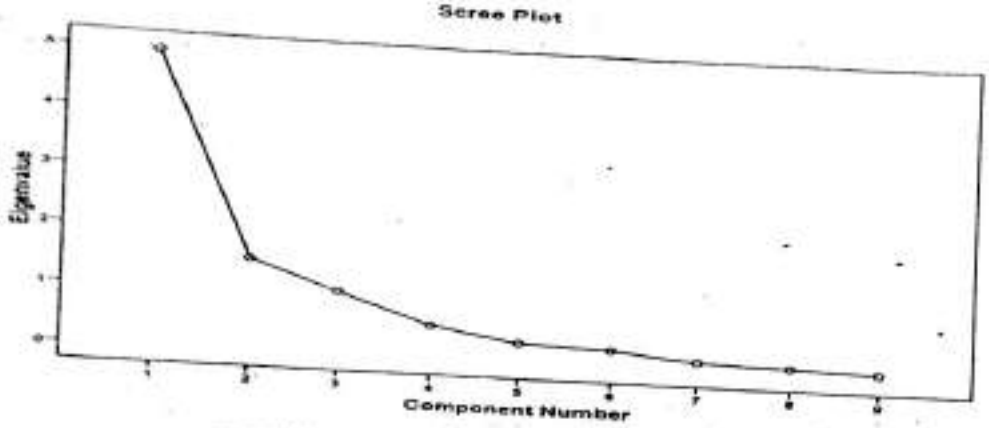
	Initial	Extraction
Count Per Box	1.000	.862
Price Charged	1.000	.890
Value	1.000	.786
Unisex vs. Separate Sex	1.000	.944
Style	1.000	.943
Absorbency	1.000	.842
Leakage	1.000	.871
Comfort	1.000	.801
Taping	1.000	.616

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.973	55.254	55.254	4.973	55.254	55.254	3.066	34.061	34.061
2	1.534	17.043	72.297	1.534	17.043	72.297	2.543	28.260	62.321
3	1.050	11.662	83.959	1.050	11.662	83.959	1.947	21.638	83.959
4	.556	6.180	90.140						
5	.326	3.622	93.762						
6	.272	3.025	96.787						
7	.135	1.503	98.290						
8	.099	1.102	99.392						
9	.055	.608	100.000						

Extraction Method: Principal Component Analysis.



Component Matrix (a)

	Component		
	1	2	3
Count Per Box	.761	.485	.219
Price Charged	.750	.524	.230
Value	.661	.488	.334
Unisex vs. Separate Sex	.744	.162	-.604
Style	.719	.137	-.638
Absorbency	.826	-.393	.082
Leakage	.817	-.447	.067
Comfort	.756	-.456	.147
Taping	.636	-.424	.178

Extraction Method: Principal Component Analysis.

6 a) With fast paced developments in information technology, information is progressively becoming the most powerful of supply chain drivers. Explain the impact of these developments on the changing relative importance of inventory, transport and information as drivers of supply chain. Illustrate your answer with examples. (5)

b) Mary Rhodes, operation manager at Knasas Furniture, has received the following estimates of demand

July	Aug	Sept.	Oct.	Nov.	Dec.
1000	1200	1400	1800	1800	1600

Assume stock out cost for lost sale of $100, inventory carrying cost of $25/unit/month, and zero ending inventory, evaluate these on the basis of the following plans on an incremental cost basis:
Plan A: Produce at a steady rate (equal to minimum requirement) of 1000 units per month and sub contract additional units at $60 per unit.
Plan B: Vary the work force, which performs at a current production level 1300 per month. The cost of hiring additional worker is $3000 per 100 units produced. The cost of layoff is $6000 per 100 units cut back. (5)

OR

What types of industries or situations are best suited to the chase strategy? The level strategy? What are the characteristics of industries that make them good candidates for aggregate planning? (5)

7 a) Effectiveness of Distribution Network Design is measured on the basis of Customer Needs that are met and costs that supply chains incur in meeting those demands. What are the customer service performance measures that are influenced by the structure of the distribution network? Briefly explain each of these performance measures. (6)

b) Given that : (i) 30% of the items produce 75% of the sales.(ii)The first 25% have a 10:1 turnover ratio(A Items),the next 30% have a 5:1 turnover ratio (B Items) and the last 45% have a 2:1 turnover ratio(C Items).(iii)Total annual sales are estimated to be Rs.50,00,000. (4)

What is the total average value of inventory (for A, B and C items taken togather) and the inventory turn.

OR

As businesses mature, they tend to focus more and more on the areas of their core competence. As a corollary, they resort to outsourcing increasing number of their non-core competence functions. What are the main risks associated with outsourcing and how do business counter the same. (4)

8 a) Discuss the flow of logistic planning. Illustrate your answer by taking a suitable example.

b) In present day context what are the key issues in managing a supply chain in India? (5+5)

9 a) What is Bull-Whip effect and how does it relate to lack of co-ordination in a supply chain?

b) What do you understand by Vendor Managed Inventory and Collaborative Logistics in context to Supply Chain Management? (5+5)

10.a) SCOR and Time Cost Mapping are the two methods of measuring the performance of Supply Chains. Describe the approach of each of these performance measures and illustrate the same with example.

b) Describe at least 3 purely supply chain or logistics related strategies that Wal-Mart has adopted to gain competitive advantage in market place. (7+3)

12 BRM

INSTITUTE OF MANAGEMENT TECHNOLOGY – GHAZIABAD

PGDM FT 2012-14, IV th SEMESTER MID TERMINAL EXAMINATION

BUSINESS RESEARCH METHODS

Time: 90 minutes, Marks – 30

Note: Attempt All .

Q1. A three star hotel located in Delhi has been experiencing a decline in its occupancy during the past one year. The management has recently reviewed the problem and is seriously considering to attract business executives as also to provide adequate facilities for holding business conferences, workshops, etc. Since this would involve some renovation of the existing building in addition to new furniture and equipment, the management wants to be cautious in undertaking such an expenditure.

Since its inception several years ago, the hotel has been maintaining a complete record of its guests. When a person visits the hotel for the first time, details such as his name, age, sex, permanent address, purpose of visit and duration of stay along with dates are entered on a card. All subsequent visits along with the duration of stay are dated and recorded on the same card. The guest file has expanded tremendously containing over 8000 cards. The management wants to make use of this readily available information along with any additional information necessary in this regard.

a) If you were to use the above data, for the purpose of sampling, explain how you would go about determining the sampling frame. **(2 mark)**
b) Which of the sampling designs you would like to adopt and give reasons for your choice. **(2.5 marks)**
c) Specify the nature of data you would like to collect from sample respondents. **(2.5 marks)**

Q2. Sony a multinational corporation based in Toyko, Japan, stepped into India in early 1995, in the post liberalization period. Within a couple of months in the same year, it set up its manufacturing unit. The company makes its presence felt in India through Sony Entertainment Television, Sony Music and Sony India. While the first two are comfortably placed in their niche markets, it is the third which is expected to bring in all those exciting Sony digital products. Although the Govt., has cleared its plans to manufacture its various products, it has not been smooth sailing for Sony India.
Sony India is facing some major problems, one of which is the emergence of grey market for its products. While it is targeting sales around Rs. 1050 crores, it has to have a better understanding of India's economic, social and political environment.

Sony India would like to develop itself as its parent company developed its business units in US, Europe and Asia (Singapore). Since it is a multinational manufacturing multi products it has a challenging talk.

i) State what are the problems that the management is concerned with? **(3.5 marks)**

ii) The company wishes you to specify the type of research you would recommend and what will be the main elements in such a research. **(3.5 marks)**

Q3. Madhavi is management trainee with Bharat Telephones. She was looking at the questionnaire she had formulated for the value added services which were to be provided by Bharat Telephones. The questionnaire is as follows:

(i) How many long distance calls do you make per week?
0-3, 3-5, 5-10, more than 10.

(ii) What is your income?
10000-15000, 15000-20000, 20000-30000.

(iii) How much money do you spend on your telephone bill?
Less than 800, 1000-1500,1500-2000, above 2000.

(iv) Have you shopped in a telephone store?
Yes/No

(v) Do you own your telephone?
Yes/No

(vi) Are you aware of special discount rates for long distance calls? Yes/No

(vii) Do they influence when you make long distance call?
Yes/No

(viii) If your telephone rates increased, would you cut back on telephones purchased or usage?
Yes/No

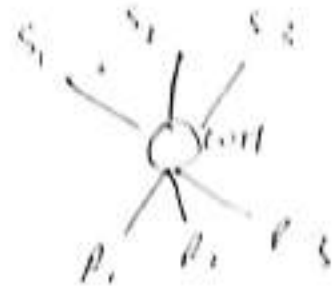
(ix) Do you plan to install more lines in future?
Yes/No

(x) Do you have any sp. phones like car phones, call waiting, phone for deaf, picture phone, wireless phone, push button?

She was wondering how would the respondents react to the mail questionnaire.

Q4) A regional warehouse purchases hand tools from various suppliers and then distributes them on demand to retailers in the region. The warehouse operates 5 days per week and 52 weeks per year.

The following data is estimated for one product, namely 1 inch drill.
Average daily demand = 100 drills
Standard Deviation of daily demand = 30 drills
Supplier lead time = 3 days exactly
Holding Cost = Rs 9.40 per unit per year
Ordering Cost = Rs 35 per order
Service level = 98 percent (Safety factor = 2.05)



Design an inventory system for this product i.e. find:

a) Optimal order quantity
b) Reorder Point
c) Average inventory in units

The finance department has instructed the warehouse to reduce the investment in average inventory of the product by half. What are the major two options available to the manager of the warehouse?

Q5) A company is examining two choices for moving its goods from plant to its depot in Eastern India: truck and rail. The relevant information is as follows:

Transport Mode	Transport Lead Time (in days)	Rate (Rs / Unit)	Shipment Size (Units)
Rail	12	20	5000
Road	4	30	500

cost of product
Number of shipments

The company demand is 20,000 units per year. The cost of product is Rs per unit. Assume inventory carrying cost to be 20%.

a) Which mode of transport should the company choose"
b) Would your answer change if you realize that the time shown above are average times, and that actual time would follow a normal distribution with standard deviation of 4 days for both mode of transport? Which mode is preferred now? $K = 1.5$

Q6) Explain in brief (with suitable examples) various mechanisms with which third parties increase the supply chain surplus?

Q7) Answer in brief any three:
a) Push Pull view of supply chain processes
b) Direct Shipping with milk runs
c) Objective and constraints of typical capacitated plant location model with cost minimization (make suitable assumptions)

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15 BRM

Institute of Management Technology, Ghaziabad
PGDM (F/T), 2015-2017
Term-IV: End-Term Exam, Section : ALL, EXAM DATE: 22/03/16
Business Research Methods

Time: 90 Minutes Maximum Marks: 40

Faculty: Dr. Harvinder Singh, Dr. Rakesh K Singh, Dr. Shraman Banerjee, Dr. Sita Mishra, Dr. B. Rishi

Note:

1. Please write in clear handwriting.
2. This is closed-book, and closed-notes exam.
3. Bullet points with minimal but crisp explanation would be rewarded over general description. Therefore, think *before* you write!
4. Attempt any four out of five questions.

1. You are the administrative assistant for a division chief in a large holding company that owns several hotels and theme parks. You and the division chief have just come from the CEO's office, where you were informed that the guest complaints related to housekeeping and employee attitude are increasing. Your on-site managers have mentioned some tension among workers, but have not considered it unusual. The CEO and your division chief instruct you to investigate. Suggest at least three different types of research that might be appropriate to the situation. (10 Marks)

Q 2 Evaluate the following issues and do as directed. (10 Marks) 2

a) "To what extent do you think management is likely to be vindictive if the union decides to go on strike?" (Identify the type of question/bias, if any)

b) Respondents for the pretest and for the actual survey should not be drawn from the same population. Justify your answer.

c) Questionnaire design process includes specify the type of interviewing method; arrange questions in proper order; develop sampling plan and reproduce the questionnaire. Modify the statement, if required. 3/12

d) The type of method influences questionnaire design. Considering how the questionnaire is administered under each method, which method is most appropriate if lengthy, complex, and varied questions need to be asked? Justify your answer.

e) Deciding if a question is necessary or if several questions are needed rather than one are decisions involved with _____. (choose the correct option: determining the order of scales, choosing question wording, choosing question structure, individual question content)

f) When determining if a question is necessary, in some situations it may be necessary to ask questions that are ***not*** directly related to the information that is needed. Justify your answer.

g) When trying to overcome respondents' unwillingness to answer, the researcher might list the possible responses a respondent might make. Justify your answer.

h) When developing questionnaire questions, if you are considering order position bias and the set of all possible response alternatives, you are developing leading. questions. (Identify type of question).

i) A _____ describes how the analysis will be structured once the data have been collected. (Fill in the blank).

leading

Personal Personal

j) _____ that measure familiarity, product use, and past experience should be asked before questions about the topics themselves. (choose the right option: Branching questions; Filler questions ; Dichotomous questions ; Filter questions)

3. Comment on the following sampling design decisions. Suggest an alternative if the given design is inappropriate.

(a) A department store that wishes to examine the reasons why customers switch to competing department stores draws a sample from its list of credit card holders by selecting every tenth name. (3 Marks)

(b) A fast-food company wishes to check effectiveness of its promotional campaign. It issues a series of print advertisements with a different promotional code for each campaign. A follow up survey in different cities using random sampling asks respondents about the advertisements and promotional codes. (3 Marks)

(c) An administrator of an independent hospital wants to find out if single parents working in the hospital have a higher rate of absenteeism than parents who are not single. Identify the relevant population for the study, and suggest appropriate sampling design to investigate the issue. Identify if there is a sampling frame. Justify your answer.(4 Marks)

4. Analyze the following questions:

A. Educators are always looking for novel ways in which to teach statistics to undergraduates as part of a non-statistics degree course (e.g., psychology). With current technology, it is possible to present how-to guides for statistical programs online instead of in a book. However, different people learn in different ways. An educator would like to know whether gender (male/female) is associated with the preferred type of learning medium (online vs. books). Therefore, we have two nominal variables: Gender (male/female) and Preferred Learning Medium (online/books).

The SPSS output for Crosstab (Gender and Preferred learning Medium) for data collected from 80 respondents is given below:

Gender * Preferred Learning Medium Crosstabulation

			Preferred Learning Medium		
			Books	Online	Total
Gender	Male	Count	16	24	40
		% within Gender	40.0%	60.0%	100.0%
		% within Preferred Learning Medium	55.2%	47.1%	50.0%
		% of Total	20.0%	30.0%	50.0%
	Female	Count	13	27	40
		% within Gender	32.5%	67.5%	100.0%
		% within Preferred Learning Medium	44.8%	52.9%	50.0%
		% of Total	16.3%	33.8%	50.0%
Total		Count	29	51	80
		% within Gender	36.3%	63.8%	100.0%
		% within Preferred Learning Medium	100.0%	100.0%	100.0%
		% of Total	36.3%	63.8%	100.0%

a. Interpret the output in terms of preference for learning medium (Books vs. Online) across two genders. What inferences can be made? (3 Marks)

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.487[a]	1	.485		
Continuity Correction[b]	.216	1	.642		
Likelihood Ratio	.487	1	.485		
Fisher's Exact Test				.642	.321
Linear-by-Linear Association	.481	1	.488		
N of Valid Cases	80				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 14.50.

b. Computed only for a 2x2 table

b. What does the chi-square test suggest? Support your decision with statistical justification. (2 Marks)

B. A researcher is interested in finding out if the education level and gender (Categorical Variables) explains variance in the interest level in politics (Metric Dependent Variable). Using a two by three factorial design, the data collected from 60 respondents is fit into a model. The SPSS output is as given below:

Gender	Edu_Level	Mean	Std. Deviation	N
Male	School	38.2000	4.18463	10
	College	44.1000	4.26745	10
	University	64.1000	3.07137	10
	Total	48.8000	11.87841	30
Female	School	39.6000	3.27278	10
	College	44.6000	3.27278	10
	University	58.0000	6.46357	10
	Total	47.4000	9.05767	30
Total	School	38.9000	3.72615	20
	College	44.3500	3.71023	20
	University	61.0500	5.83524	20
	Total	48.1000	10.49649	60

Tests of Between-Subjects Effects

Dependent Variable:Int_Politics

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	5525.200[a]	5	1105.040	61.190	.000
Intercept	138816.600	1	138816.600	7686.727	.000
Gender	29.400	1	29.400	1.628	.207
Edu_Level	5328.100	2	2664.050	147.517	.000
Gender * Edu_Level	167.700	2	83.850	4.643	.014
Error	975.200	54	18.059		
Total	145317.000	60			
Corrected Total	6500.400	59			

a. R Squared = .850 (Adjusted R Squared = .836)

Question: Based on the output, what inferences can be made? (5 Marks)

5. A manager of a chain of hotels is looking for the ways to target most attractive visitors for their newly launched dedicated services for vacationers, by running an individualized promotion for select visitors to the hotel in last year. As the promotional program is costly, she wants to approach only those potential customers who might spend big money during vacation (especially on their hotel and allied services they provide like cruises, made to order food etc.). She gathered data of last one year and ran a linear regression. Relevant SPSS output is reproduced alongside. The model tries to predict the maximum expenditure traveller would make during his/her stay with hotel while on vacation. It is based on feedback given on 1-10 point scale regarding his/her travel attitude, and importance given to travelling. Other independent variables include house-hold size, and the age of head of household. Based on above details answer the following questions: **(5+5=10 marks)**

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.630[a]	.397	.315	1.163

a. Predictors: (Constant), Travel Attitude, Vacation Importance, HH Size, HH Head Age

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	43.685	12	43.685	32.320	.000[a]
	Residual	324.401	240	1.352		
	Total	368.087	252			

a. Predictors: (Constant), Travel Attitude, Vacation Importance, HH Size, HH Head Age

Coefficients[a]

a) Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	24.392	8.504		2.868	.008
	HH Size	-12.075	6.772	-.784	-7.353	.000
	Vacation Importance	2.302	.734	.136	3.134	.002
	Travel Attitude	11.200	1.523	.857	1.783	.076
	HH Head Age	-2.046	.937	-.213	-2.184	.038

a. Dependent Variable: Max. Expenditure

a) Which independent variable has maximum impact on max. expenditure? Explain on what basis you arrived at the conclusion?

b) Choose any four different statistic encircled in above tables and give their interpretations.