SOMAIYA
VIDYAVIHAR UNIVERSITY

	Semester: Jan-Apr 24	
	Examination: End term Examination	
Program code: 17 Program: PGDM EXE	Class: SY	Semester: III (SVU 2022)
Name of the Constituent College: K. J. Somaiya Institute of Management	Name of the department/Section/Center: Business Analytics	
Course Code: 117P17C303	Name of the Course: Business Research Methods	

Maximum Marks: 25   Date: 23-04-24
Duration: 90 minutes

Instructions :-
1. **Make suitable assumptions if required and state them.**
2. **Question 2, 3 and 4 is compulsory**
3. **Attempt any one question in Question 1**
4. **Use of a calculator is permitted.**

Case Study: Decoding Rural India

A large FMCG giant that distributes products all over India has witnessed a plateauing of growth in certain parts of the country. Upon internal consultation among brand and insights team, there is a realization that one of the major reasons for this plateau is lack of growth in the usage of their products in Rural India. The industry research showed that there has been a general increase in FMCG spending in rural parts of the country, but this has not been the case for this giant.

At the same time, it has come to light that the effectiveness of their media spending (measured through brand recall) has started showing a declining trend. This decline is specifically witnessed in the rural markets of the country. Their media agencies and their research partners corroborate this trend.

Generally, the company had always allocated a high proportion of budgets on Television, Print and Outdoor. Recently, given the wave of digital medium – they increased their ad spends on this new medium. While they seem to have a clear understanding of the trends in digital behaviour among their consumers in urban cities, they are unsure whether they have similar level of understanding for their rural consumers.

Recent Changes in Digital Media in Rural India

The Indian media landscape has changed irrevocably in the last few years since the

advent of Jio networks by Reliance Jio Infocomm Limited. The smartphone revolution along with the lowest Internet prices in the world has opened access to consumers deep in <u>rural India</u> in unimaginable ways. The improvements in internet infrastructure and mobile connectivity has led to a host of new online media platforms, social media & streaming services.

The Indian village is brimming with community-based content and local channels which resonate with their unique interests, needs and reflect culture. This also presents a great inclusion and representation opportunity for these communities who use the smartphone as a bridge to ensure that they are not left behind in the digital age. There is also a host of educational and informative content which could link to creating economic opportunities and new possibilities.

Challenge

The company not only needs to understand the tremendous heterogeneity of the country, but they are also now faced with the challenge of understanding the changing media landscape.

Since digital media allows for disseminating advertisements on specific platforms, it is imperative that the company also is aware of platforms/apps that are being used by the consumers in rural India.

Q1	**Attempt any 1** 1. Considering the business problem described above, please list Research Questions and Hypotheses based on which further research steps will be undertaken. What Research Design (Exploratory, Descriptive and Causal Research) would you adopt? 2. What are the different sampling techniques? Indicate specific <u>probability</u> and <u>non-probability</u> sampling techniques that you would adopt for the study. Please also share specific reasons	8
Q2	Draft a set of questions that would help address the questions related to media habits of a person living in a rural village. In designing the questionnaire, include various scales of measurements (Not more than 10-12 questions)	5
Q3	A marketing company is testing the effectiveness of three different advertising strategies (TV commercials, social media ads, and email campaigns) in promoting a new product. They want to determine if there are any significant differences in the average sales(in thousands) generated by each advertising strategy.	6

Refer the Output table and explain

Write the Research Question and the Hypothesis

Is there a significance difference found?

SUMMARY				
Groups	Count	Sum	Average	Variance
TV	78	5494	70.43	98.50
Email	185	14212	76.82	51.10
Social Media	190	17234	90.70	135.26

Source of Variation	SS	df	MS	F Cal	P-value		F crit
Between Groups	25808.6935	2	12904.34675	136.4615548	0.000		3.01
Within Groups	42553.78774	450	94.56397275				
Total	68362.48124	452					

The agency further selects several regions and implement each advertising strategy in one region. After a set period, they measure the sales performance in each region and collect the data. They collected data from North South eastern and western Region. If they wish you find the overall difference in sales across Regions what is the method is suitable.

Q4	A retail company wants to understand the factors influencing customer satisfaction with their online shopping platform. They collected data on recent transactions and record the following variables for each transaction:	6

Time taken for delivery (In mins)

Number of items purchased

Total amount spent (in hundreds)

Customer rating (on a scale from 1 to 10, with 10 being the highest)

The company applied multiple regression analysis to identify which of these factors (if any) significantly affect customer satisfaction

Regression Statistics	
Multiple R	0.58
R Square	0.78
Adjusted R Square	-0.10806526
Standard Error	1.397975279
Observations	14

ANOVA					
	df	SS	MS	F	Significance F
Regression	3	3.38522261	1.128408	0.577387	0.008
Residual	10	19.54334882	1.954335		
Total	13	22.92857143			

	Coefficients	Standard Error	P-value
Intercept	5.754097398	2.926409062	0.077624
Time (Mins)	0.642	0.011320554	0.018
Number	0.09	0.108616676	0.038
amount	0.78	0.000718543	0.086

1. Write the dependent and Independent variables
2. What is the coefficient of determination?
3. Is the Model fit at alpha= 0.05 ?
4. What is the Prediction Equation
5. Are the Predictor variables significant
6. Are the results significant even at alpha 0.01?