

**DEPARTMENT OF MANAGEMENT**  
**SCHOOL OF MANAGEMENT & BUSINESS STUDIES**  
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Ph.D. Course Work Examination 2023  
**Research Methodology**  
**DRM-101**

MM: 60

Time: 03Hours

Note: Answer any *five Questions*, each carry equal marks.

Q1. "A research scholar has to work as a judge and derive the truth and not as a pleader who is only eager to prove his case in favour of his plaintiff." Discuss the statement pointing out the objectives of the research.

Q. 2 Rainbow Seven is a regional brand of water whose market share has remained relatively stable for the past few years. The management wants to increase the brand's market share by using more effective advertising themes. For the last two years, Rainbow's advertising has featured a well-known Bollywood actress who presents a 'safe and secure, always' message in all the commercials. The company knows that it needs to make the brand more progressive and reposition it. It wishes to gauge the perception of consumers about Rainbow as compared to other brands to reposition it better. They are unsure whether a structured or unstructured approach would be better. You are required to:

- a) State the research objectives
- b) Design a formalised and unconcealed questionnaire (use different scales).

Q3. Write short notes on any **three**

- a) Nominal vs. ordinal scaling
- b) Salami Slicing
- c) H-index and I-10 Index
- d) Exploratory research design

Q4. Explain the meaning of the following in context of Research design.

- a) Extraneous variables;
- b) Research hypothesis;
- c) Experimental and Control groups;

Q5. The literature review helps map scientific productivity, research patterns and future agenda. Express your view on this statement. How do we identify the research gap from the literature?

Q6. (a) "A sample may be large yet worthless because it is not random, or it may be random but unreliable because it is small". Comment upon the above statement and state the complexity and relevance of choosing the right sampling technique.

(b) Choose a particular research problem/situation and suggest how you will go ahead with Quota and Cluster sampling for the same.

Q7. Attempt **BOTH** the parts of the question

(a). The table given below shows the data obtained from SMEs regarding access to credit and having quality certification

| Quality Certification | Access to Credit | No Access to Credit | Total |
|-----------------------|------------------|---------------------|-------|
| Yes                   | 469              | 31                  | 500   |
| No                    | 1315             | 185                 | 1500  |
| Total                 | 1784             | 216                 | 2000  |

Test the effectiveness of quality certification on access to credit. Test your results with the help of  $\chi^2$  at 5 per cent significance level. The table value of  $\chi^2$  for 1 degree of freedom at 5% significance level is 3.841. (9)

(b) Explain the condition to apply parametric tests used in testing hypotheses with examples. (3)

Q8. Parameter estimates in terms of regression coefficient, Wald statistics, p-value, Exp ( $\beta$ ) are given in the below table for examine the determinants of COVID-19 Preventive Measure. Where 1 denote the aware of at least one way to prevent the spread of COVID-19 while 0 indicates unawareness of at least one way to prevent. Explanatory variables and description is given in first and second column respectively.

(a) Which regression model is suitable to explore the determinants COVID-19 Preventive Measure Justifies your answer. (3)

(b) Interpret the table with probable cause. (9)

| Explanatory Variables      | Description of Variables                                          | Model 2:<br>Aware of at least one way to prevent the spread of COVID-19 |       |              |                |
|----------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------------|-------|--------------|----------------|
|                            |                                                                   | $\beta$                                                                 | Wald  | Sig.         | Exp( $\beta$ ) |
| Age                        | In Year                                                           | -0.023**                                                                | 4.361 | <b>0.037</b> | 0.978          |
| Gender                     | Male =1, Female=0                                                 | 0.018                                                                   | 0.003 | 0.957        | 1.018          |
| Family Size                | In Number                                                         | 0.059                                                                   | 1.391 | 0.238        | 1.061          |
| Social Category            | SC/ST=1, Otherwise=0                                              | -0.347                                                                  | 1.573 | 0.210        | 0.707          |
| Education                  | Schooling =1, No Schooling =0                                     | 0.887***                                                                | 8.678 | <b>0.003</b> | 2.427          |
| Occupation                 | Cultivation=1, Otherwise=0                                        | 0.223                                                                   | 0.375 | 0.54         | 1.25           |
| Income                     | 1 to 4                                                            | 0.31**                                                                  | 6.422 | <b>0.011</b> | 1.363          |
| Poverty Status             | APL=1, Otherwise=0                                                | -0.733*                                                                 | 3.716 | <b>0.054</b> | 0.48           |
| SHG Membership             | Yes=1, Otherwise=0                                                | 0.187                                                                   | 0.469 | 0.494        | 1.205          |
| Mobile Holding             | Ownership of mobile Yes =1, No= 0                                 | -1.105                                                                  | 1.094 | 0.295        | 0.331          |
| Access to information      | Yes =1, No= 0                                                     | 0.229                                                                   | 0.222 | 0.637        | 1.257          |
| Asset holding              | Ownership of Scotty/Car/Jeep/Tractor/bicycle (Yes=1, Otherwise=0) | 0.279                                                                   | 0.802 | 0.370        | 1.321          |
| Cash relief                | Cash relief during COVID                                          | 0.715***                                                                | 6.985 | <b>0.008</b> | 2.045          |
| Access to Medical Services | Accessed in last three month (Yes =1, No= 0)                      | 0.015                                                                   | 0.003 | 0.956        | 1.015          |
| Type of Health Facility    | Private health facilities =1, Otherwise                           | 0.558**                                                                 | 4.08  | <b>0.043</b> | 1.746          |
| Constant                   |                                                                   | 1.685                                                                   | 1.453 | 0.228        | 5.391          |
| Correct prediction (%)     |                                                                   | 90.6                                                                    |       |              |                |
| Chi-square (15)            |                                                                   | 43.54***                                                                |       |              |                |
| -2 Log likelihood          |                                                                   | 400.83                                                                  |       |              |                |
| Cox & Snell R Square       |                                                                   | 0.059                                                                   |       |              |                |
| Nagelkerke R Square        |                                                                   | 0.128                                                                   |       |              |                |