

# ECONOMICS

## Paper I –Research Methodology and Data Analysis

### Module 1: Research Methodology

Concept of Scientific Research-Characteristics of Social Science Research-Types of research: Pure and Applied Research, Descriptive research, Diagnostic Research, Explorative research, and Action research. Formulation of research problem-Reviewing the literature-Identification of Research problems- Setting of Research question, objectives, Methodology, and Data Source. The setting of hypotheses. Conceptualization in research: Working definitions, Defining concepts, Indicators, and Variables. Concept of Falsification. Research report writing and presentations. References - Bibliography: MLA and APA formats. Status of Social Science Research in India. Plagiarism and it's testing software: Viper and Turnitin.

### Module II: Types of Data and Sampling Methods

Data Measurements: Nominal, Ordinal, Interval, and Ratio scales. Types of Data: Qualitative versus quantitative data. Time series, Cross-section, and Panel data. Primary and Secondary data. Data Sources. Different types of samples: random sample, stratified sample, multistage sample, cluster sample, systematic sample, and snowball sample. Methods of choosing optimum sample size.

### Module III: Basic Tools for Data Analysis

Review of basic statistical measures; Central tendency Dispersion and Skewness. Bivariate data analysis: Correlation, Regression, Multiple Correlation, and Partial Correlation. Random variables and Probability distributions: Discrete and continuous - Normal Distribution-Sampling Distributions, Standard Error- Chi-square, students t and F distributions. Theory of estimation –Point estimation: Desirable properties of estimators, methods of estimation, Interval estimation: Confidence interval and for mean and proportion of success of the population.

### Module IV: Testing of Hypothesis

Various definitions, Parametric tests: Tests concerning Means, Proportion and variance and ANOVA. Nonparametric tests:  $\chi^2$  tests - Sign test, Run test Mann-Whitney U test, Kruskal Wallis Test.

## References

1. Ackroyd, Stephen, and John Hughes, 1992, Data Collection in Context, New York, Longman
2. Babbie, Earl, 1989, The Practice of Social Research, Belmont, California, Wadsworth Publishing Company.
3. Bailey Kenneth D, 1978, Methods of Social Research, New York, The Free Press.
4. Black, James A, and Dean J Champion, 1976, Methods and Issues in Social Research, New York, John Wiley, and Sons.
5. Kothari C R, Research Methodology Methods and Techniques, Wiley Eastern Ltd.
6. Likert R, A Technique for the Measurement of Attitudes.
7. Robert K Yin 2010, Qualitative Research from start to finish, Guilford pub.
8. Siegel, Sidney, 1956, Non-Parametric Statistics for the Behavioral Sciences, Sydney McGraw Hill Book Company.
9. Yates, Frank, sampling Methods of censuses and surveys, New York Hafner.
10. Cochran and William G, Sampling Techniques, New York, John Wiley, and Sons.
11. SP Gupta, Statistical Methods S. Chand & Co., New Delhi.
12. Deepak Chawla and Neena Sondhi, 'Research Methodology: Concepts and

Case' Vikas Publishing House, New Delhi (2011).

13. MLA Handbook for Writers of Research Papers. 7th Edition, East-west Press, New Delhi (2009).

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15. R A Cooper and A.J. Weekes: Data, Models and Statistical Analysis, Heritage

MODEL QUESTION PAPER Ph.D. Pre-Qualifying Examination (ECONOMICS)

PAPER I: RESEARCH METHODOLOGY

Time: 3 hrs

Max Marks: 70

**PART A Very Short Answer Questions** (Answer all Questions. Each Question carries 2 marks)

1. Differentiate between qualitative and quantitative research approach.
2. Explain linear regression analysis.
3. What is economic forecasting?
4. Define sampling distribution and standard error.
5. What is non-random sampling?
6. What is falsification?
7. Explain the sampling and the non-sampling error with suitable examples.
8. What is the purpose of sampling in research?
9. What are the merits of questionnaire?
10. Discuss random sampling.

(10 × 2 = 20)

**PART B Short Essay Questions** (Answer any 4 questions. Each Question carries 5 marks)

11. Discuss problems encountered by researchers in India.
12. Differentiate between bivariate analysis and multivariate analysis.
13. Discuss characteristics of a good research report.
14. Explain the significance of primary data. What are the limitations of primary data?
15. What is questionnaire? Explain about the qualities of good questionnaire.
16. What is the difference between scientific and social science research. Explain the status of social science research in India.

(4 × 5 = 20)

**PART C Long Essay Questions** (Answer any two questions. Each question carries 15 marks)

17. What do you mean by research? Classify different types of research with the help of suitable examples.
18. What is review of literature? Explain in what way review of literature helps in conducting a research study.
19. What role sample size plays in getting desired level of precision in random sampling? Suggest measures for determining such a sample size.
20. What is auto-correlation? How is it detected? What are remedial measures to handle auto-correlation?

(15 × 2 = 30)

**MODEL QUESTION PAPER I Ph.D. Pre-Qualifying Examination (ECONOMICS)**

**PAPER I: RESEARCH METHODOLOGY**

**Time: 3 hrs**

**Max Marks: 70**

**PART A Very Short Answer Questions** (Answer all Questions. Each Question carries 2 marks)

1. Explain the term "Research".
2. What do you mean by sampling error?
3. What are the objectives of social science research?
4. What is hypothesis? Explain the types of hypotheses.
5. Explain the term 'plagiarism'.
6. What is convenient sampling?
7. Explain the concepts of population and sampling.
8. Explain the meaning of analytical research.
9. What do you mean by partial correlation?
10. What are the differences between time series and cross section data.

(10 × 2 = 20)

**PART B Short Essay Questions** (Answer any 4 questions. Each Question carries 5 marks)

11. Describe the different steps involved in a research process.
12. Explain the different methods of random sampling.
13. What are the characteristics of a good research? Explain how quantitative research differ from qualitative research.
14. Describe the precautions that the researcher should take while interpreting the findings.
15. Distinguish between quota sampling and snowball sampling.
16. What are the advantages and disadvantages of interview method?

(4 × 5 = 20)

**PART C Long Essay Questions** (Answer any two questions. Each question carries 15 marks)

17. Elaborate mechanics of writing a research report. Discuss preparation of final bibliography and explain writing mechanism of bibliography.
18. Discuss the different type of research reports. Elaborate layout of the research report.
19. What is Chi-Square Test? Examine the uses of Chi-Square Test in economics research. Describe the steps involved in applying the Chi-Square Test as a non-parametric test of significance.
20. Discuss different methods of collecting data with the help of suitable examples. Differentiate between observation and interview.

(2 × 15 = 30)

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