

CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY, KANPUR

Research Methodology

Syllabus for Ph.D. Entrance Examination 2023

Research and Types of Research: Meaning and importance of Research, Objectives of Research, Motivation in Research. Research methods Scientific method vs Arbitrary Method, Logical Scientific Methods: Deductive, Inductive, Deductive-Inductive, pattern of Deductive, Inductive logical process, Different types of inductive logical methods, Types of research, Descriptive vs. Analytical, Applied vs. Fundamental, Quantitative vs. Qualitative, Conceptual vs. Empirical. Research Process. Criteria of good Research. Research Formulation, Defining and formulating the research problem - Selecting the problem - Necessity of defining the problem, Importance of literature review in defining a problem, Literature review, Primary and secondary sources, monographs, patents, web as a source, searching the web. Critical literature review, Identifying gap areas from literature review, Hypothesis, Different Types, Significance Level, Development of Working Hypothesis, Null hypothesis, Type I error, Type II error. Validity and Reliability, Design of Experiments. Sources of Data, Primary and Secondary, Categorical (nominal and ordinal), Numerical (discrete, continuous, ratio and interval) Methods of Data Collection: Survey, Interviews (in-depth or Key Informant interviews), Focus Group Discussion (FGD), Observation, Records or Experimental Observations., Mathematical Models for research, Sampling Methods and Sampling Error. Data Analysis with Statistical Packages, Hypothesis-testing, Generalization-and Interpretation.

Analysis of data, Descriptive statistics, Inferential Statistics, Statistical Graphics, Histograms, Frequency Polygon, Ogive, Bar Graphs, Pareto Charts, Pie Charts, Scatterplots, Boxplots Descriptive Analysis, Frequency Distributions, Measures of Central Tendency, Measures of

Variation/Dispersion, Skewness and Kurtosis, Coefficient of variation, Correlation and Regression Analysis, Chi square test, F test, t test, z test, ANOVA one way and two way, normal distribution, non-parametric statistical techniques, binomial test, discriminate analysis , factor analysis, cluster analysis, content analysis.

Writing a survey and identifying the problem. Planning and writing a research proposal: Research projects, Major funding agencies.

Ethical Issues, Ethical Committees, Commercialization, copy right, royalty, Intellectual Property rights and patent law, Track Related aspects of intellectual property Rights, Reproduction of published material, Plagiarism, Citation and Acknowledgement Reproducibility and accountability

Structure and components of Scientific Reports, types of Report, Technical Reports and Thesis Significance, Different steps in the preparation, Layout, structure and Language of typical reports, Bibliography, Referencing and foot notes, Importance of Effective Communication.

Types of publications, Indexing and abstracting services, Online library, Search engines, Citation indexes, Citations analysis, Online searching methods, how to cite and list correctly, Common documentation styles, Citation of sources in the text, Reference management softwares.

Preparation of thesis and research papers: Structure of a thesis/research article/ review article, including title, introduction, literature review, methods and materials, referencing. Editing and proofreading, Use of abbreviations.

CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY, KANPUR
(Research Methodology Syllabus for Hindi, Sanskrit, Urdu and English)

Unit-I Fundamentals of research; Meaning, Objectives, Research process, Methods and Methodology, Criteria of good research

Unit-II Types of Research; Pure research, applied research, Exploratory Research, Descriptive research, Diagnostic research, Quantitative and Qualitative research etc.

Unit-III Research Design, Meaning, Need, Types of research design-Exploratory Research Design, components of research design and features of good research design.

Unit-IV Methods, Collection and Analysis of Data: Types of data, Methods of data collection- Interview Method, Mailing Method, Observation Method, Survey Method etc.; Primary and secondary sources of data, Sampling- meaning and methods, Classification and Tabulation, Graphical presentation.

Unit-V Presentation of Research: Citation Styles- APA, MLA etc., Research ethics and Plagiarism, Report writing steps in report writing, layout of report writing, reference and bibliography.

Reference Books:

- 1) George J. (1964), The Science of Education Research, Eurasia Publishing House, New Delhi
- 2) William Philip at. Al (1973), Evaluation and Assessment of educational Studies: A third level course methods of educational enquiry, The Open University Press, Walton Hall Blethaley Buckinghamshire
- 3) Mariampolski H. (2001) Qualitative Market Research – A Comprehensive Guide Sage Publication, India Ltd, New Delhi
- 4) Black Thomas (2001), Understanding Social Science Research, Sage Publication, India Ltd, New Delhi
- 5) Fern Edward F. (2001) Advanced focus Group Research, Sage Publication, India Ltd, New Delhi
- 6) Michael V.P., 'Research Methodology in Management', Himalaya Publishing House, New Delhi.