

KADI SARVA VISHWA VIDYALAYA

FACULTY OF COMMERCE

Ph. D. COURSE WORK

RESEARCH METHODOLOGY (STATISTICS)

(5 Credits, 60 hours, 100 Marks= 60 Marks Multiple Choice & 40 Marks Theory)

COMMON FOR ALL AREAS

Objectives:

This paper will help the students to understand the relevance and role of research methodology and the significance of the research tools in all functional areas of commerce. It will also help to distinguish between the different kinds of research available, based on the purpose and nature of problem. The course will emphasize on the types of research, data collection methods, analysis and inferences and conclusions. The course is also intended to provide computer and communication skills for research work.

Unit 1: Introduction to Research:

(07 Hours)

Meaning and types of Research : Basic Research, Pure Research, Applied Research, Modern Scientific approach to Research, Research in Business, Research process, Designing a research study, Criteria of Good Research, Salient features of Research Projects, Scope of a Research Study, Delimitation, Evaluations of Research study, Research Design: Criteria for evaluation of a Research study. factors affecting the selection of problems and problem statements - Review of literature - Elements of scientific methods, objectives, specifications, formulation of hypothesis, Model building and nature and identification of variables, Quantitative, Qualitative, Mixed and Historical research.

Unit 2: Data Collection and Description:

(15 Hours)

Data Vs. Information , Types of Data : Primary Vs. Secondary Data , Time series Vs. Cross sectional Data , Panel Data , Sources of secondary data , Methods of Primary data collection, Developing a Questionnaire, Editing, Coding , Identifying missing observations and outliers , Classification and Tabulation of data , Concepts of a frequency distributions for a discrete and continuous random variable, Data representation : Bar Charts , Pie Charts , Histogram and Ogives, Observation studies , Survey Method, Pilot Survey, Population Vs. Sample Study , Features of a Good sample , Determination of sample size , Sampling and Non-sampling errors, Lipstein's Nine Rules for minimizing non-sampling errors, Validity , Reliability, Precision, Sampling Frame , Sampling Fraction, Probability sampling methods : SRSWR , SRSWOR, Systematic sampling, Proportionate and disproportionate stratified sampling, Cluster sampling, Area Sampling , Two stage sampling , Multistage sampling , PPS Sampling , Sequential Sampling, Non-probability sampling methods: Conveyance Sampling , Purposive sampling , Statistical judgment, Quota Sampling, Snowball sampling (Only description of the methods and their applications to practical situations)

Unit 3: Overview of Univariate and Bivariate Analysis: (15 Hours)

Overview of probability theory, Concept of a Frequency distribution and a probability distribution, Characterizing a frequency distribution and a probability distribution : Concept of Raw and Central Moments, Basic concepts and applications of the measures of Central Tendency, Dispersion, Skewness and Kurtosis, Bivariate correlation analysis, Rank Correlation, Probable Error of Correlation Coefficient, Simple Linear Regression, Nonlinear Regression, Growth Curves, Concept of Coefficient of determination and its interpretation , Measures of Association for Nominal and Ordinal data, Statistics associated with Cross-Tabulations: Chi Square, PHI Coefficient, Contingency, Cramer's V, Lambda Coefficient, , Cross-Tabulation in Practice .

Unit 4: Business Forecasting: (15 Hours)

Need of Forecasting, History of Forecasting, Types of Forecasts, Forecasting Process, Time-Series Forecasting : Components and models of time series, Methods of determination of Long-term trend : Method of Moving Averages, Simple Exponential Smoothing and Linear Least Squares Trend, Holt's and Winter's exponential Smoothing methods, Forecasting with multiple predictor variables : Multiple Regression model, Interpreting Regression Coefficients, Coefficient of Determination and its interpretation, Measuring forecasting error, Choice of an appropriate forecasting technique.

Unit 5: Exposure to different statistical packages and computer skills (08 Hours)

Basics of computing, exposure to different data bases and developing expertise in word processing, electronic spread sheets and data base packages, use of internet and exposure to statistical packages, its utility and interpretation

References for Statistics (Research Methodology):

1. Research Methodology: Concepts and Cases by Dr. Deepak Chawla and DL Neena Sondhi.
2. Kothari C R, Research Methodology (Methods and Techniques) New Age Publications
3. Donald Cooper & Pamela Schindler: "Business Research Methods" Tata McGraw Hill (9th Edition)
4. Sharon Lohr: "Sampling: Design and Analysis" Duxbury Press
5. Cochran W.G.: "Sampling Techniques" Wiley Eastern
6. Pulak Chakravarty: "Quantitative Techniques for Management and Economics" Himalaya Publishing House
7. Levin & Rubin: "Statistics for Management" Pearson Education
8. Hankey, Wichern & Reitsch: "Business Forecasting" Pearson Education