



DEPARTMENT OF BUSINESS MANAGEMENT

PREFACE

Course : MBA I Year I SEM
Academic Year : 2015-16
Name of the Subject : RESEARCH METHODOLOGY AND STATISTICAL ANALYSIS
Prescribed Textbook : S.P GUPTA, STATISTICAL METHODS
Nature of the Subject : Common Paper

Course Aim: To understand the research methodology and basic statistical tools for analysis and interpretation of quantitative and qualitative data.

Learning Outcome: Students will be able to apply the principles of research methodology for the research design for the various mini and major projects of the MBA programme. They will be able to analyse the data statistically.

Unit-I

Research Methodology: Introduction-Topic-Review of Literature-Research Gaps-Research Questions-Objectives-Hypotheses-Scope of the study-Period of the study-Sampling Techniques-Data Collection-Primary data –Questionnaire design-Secondary data-Data Analysis-Limitations of the study-Appendix-References

Objective: Understand the concepts of Research and its steps involved in research process and Methods of collecting data.

Outcome: Students will be able to apply these principles of research to analysis the data Statistically.

Overview:

- Research in common parlance refers to a search for knowledge. One can also define research as a scientific and systematic search for pertinent information on a specific topic. In fact, research is an art of scientific investigation.
- The purpose of research is to discover answers to questions through the application of scientific procedures. The main aim of research is to find out the truth which is hidden and which has not been discovered as yet.
- Defining the research problem clearly and how to solve the problems by using research.
- Getting the data by using Primary and secondary sources.
- Construction of questionnaire design.
- Application area (general).

Unit-II

Tabulation, Graphical Presentation of Data: Histogram, Diagrammatic representation of data: Bar diagram, Multiple Bar diagram, Sub-divided Bar Diagram, Pie Diagram, Measures of Central Tendency: Mean, Median and Mode. Measures of Dispersion: Range, Standard deviation and Variance, Coefficient of variation, Measure of Skewness.

Objective: To facilitate the students to get an idea of different types of diagrams and graphs. to Know about averages.

Outcome: Students will familiar with how to use these Averages in real life situations.

Overview:

- Tabulation may be defined as the systematic presentation of numerical data in rows or/and columns according to certain characteristics. It expresses the data in concise and attractive form which can be easily understood and used to compare numerical figures.
- The advantages of a tabular presentation over the textual presentation are: (i) it is concise; (ii) there is no repetition of explanatory matter; (iii) comparisons can be made easily; (iv) the important features can be highlighted; and (v) errors in the data can be detected.
- The Graphical representation of data through visual methods like graphs, diagrams, maps and charts is called representation of data.
- A measure of central tendency is a single value that describes the way in which a group of data clusters around a central value. To put in other words, it is a way to describe the center of a data set. There are three measures of central tendency: the mean, the median, and the mode.
- To describe data, one needs to know the extent of variability. This is given by the measures of dispersion. Range, interquartile range, and standard deviation are the three commonly used measures of dispersion.
- Skewness is a measure of the asymmetry of the probability distribution of a real-valued variable about its mean. The skewness value can be positive or negative, or even undefined.
- Application area (general).

Unit-III

Linear Correlation and Regression Analysis: Covariance, Pearson's Correlation Coefficient, Scatter plot, Spearman's rank Correlation Coefficient, Regression lines.

Objective: To understand the concept of correlation and its types and methods of finding Correlation coefficient.

Outcome: Students will identify the situations in which Correlation and Regression techniques Applied.

Overview:

- Correlation analysis, which is used to quantify the association between two continuous variables (e.g., between an independent and a dependent variable or between two independent variables).
- Regression analysis is a related technique to assess the relationship between an outcome variable and one or more risk factors or confounding variables.

Application of correlation:

- U.S. Atomic Energy Commission
- Institute of Horticulture
- Department of Botany, Warsaw University of Life Sciences

Application of Regression:

- Microfinance Institutions in Asia
- All India institute of Medical Sciences, New Delhi.
- WHO South-East Asia Journal of Public Health.

Unit-IV

Parametric and Non- Parametric Hypothesis Testing: Procedure for Testing of Hypothesis, One Sample t-test for the Population Mean, Two Sample t-test for independent Samples, Paired Sample t-test. F-test for two population Variances (Variance ratio test), ANOVA One Way Classification, ANOVA two way Classification, Chi Square test of association, Chi Square test of independence.

Objective: To understand the concept of Hypothesis and procedure for testing Hypothesis and Different kinds of tests

Outcome: Students must understand the parametric and non-parametric tests and make use of these Tests under different environments.

Overview:

- Hypothesis testing begins with an assumption, called Hypothesis. That we make about population as parameter.
- The tests (t, F, z etc...) were based on the assumption that the samples were drawn from normally distributed populations or more accurately that the sample means were normally distributed.
- Application area (general).

Unit-V

Time Series and Data Analysis: Fitting a trend line to a time series, Method of least Squares and Method of Moving Averages, Measure of Seasonal Variation.

Objective: To understand the concept of Fitting a trend to a time series and least squares and Moving averages.

Outcome: This study helps students to get an idea about this data analysis and how to apply these Techniques in practical business problems.

Overview:

- Time series is a set of data of statistical observations arranged in chronological order.
- Time series helps in
 - I. In understanding past behaviour.
 - II. in planning future operations
 - III. In evaluating current accomplishments.
 - IV. It facilitates comparison.
- Application area (general).

Section-A
(Mr. G. Naveen Kumar)

Section-B
(Mr. G. Naveen Kumar)

Section-C
(Mr. K. Sudheer)

HOD
(Mr. G. Naveen Kumar)

PRINCIPAL
(Dr. V. S. K. Reddy)