

BBA 201-18 Business Statistics

Course Objective: Course Objective: The objective of the course on Business Statistics is to familiarize students with the basic statistical tools used to summarize and analyze quantitative information for decision making. Analysis of numbers is required for taking decisions related to every aspect of business.

Course Outcomes (COs): After completion of the course, the students shall be able to:

CO1: To learn the basic concepts like statistics and calculation of arithmetic mean, median and mode and partition values.

CO2: To understand the calculation of moments, skewness and kurtosis and determining whether the given distribution is normal or not.

CO3: To be acquainted with prerequisite knowledge required to understand the Probability and applications of probability theory.

CO4: To understand the concept of correlation regression analysis and their applications.

CO5: To apply the learnt techniques in statistical testing and their applications.

Unit I

Introduction to Statistics: Meaning, Definitions, Features of statistics, Importance, Functions, Scope and Limitations of Statistics.

Data Collection: Sources of Primary and Secondary data. Presentation of Data. Frequency distribution.

Sampling Concepts: Meaning of Population and Sample, Parameters and Statistics, Descriptive and Inferential Statistics, Probability and Non Probability Sampling Methods including Simple Random Sample, Stratified Sampling, Systemetic Sampling, Judgement Sampling and Convenience Sampling.

Unit II

Measures of Central Tendency: Mathematical averages including arithmetic mean, geometric mean and harmonic mean, properties and applications. Positional Averages: Mode and median (and other partition values including quartiles, deciles and percentile. Graphic presentation of measures of central tendency.

Measures of Variation: Absolute and relative measures. Range, quartile deviation, mean deviation, standard deviation and their coefficients. Properties of Standard Deviation and Variance.

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Sampling Distribution: Concept of Sampling Distribution, Formulation of Sampling Distribution of Mean and Sampling distribution of standard deviation/Variance.

Unit III

Simple Correlation Analysis: Meaning of Correlation, Simple, multiple and partial, linear and non linear correlation, correlation and causation, scatter diagram, Pearson's correlation coefficient and Rank Correlation.

Simple Regression Analysis: Meaning of Regression, Principle of least square and regression analysis, Calculation of regression coefficient, properties of regression coefficient, Relationship between correlation and regression coefficient.

Unit IV

Theory of Probability: Meaning of Probability, Approaches to the calculation of probability, calculation of event probabilities, Addition and Multiplication, Laws of Probability (Proof not required), Conditional Probability and Bayes' Theorem (Proof not required).

Probability Distribution: Binomial Distribution: Probability Distribution function, Constants, Shape, Fitting of Binomial Distribution, Poisson Distribution: Probability Function (including Poisson approximation to binomial distribution) Constants, Fitting of Poisson Distribution, Normal Distribution: Probability Distribution Function, Properties of Normal Curve, Calculation of Probabilities.

Suggested Readings:

1. Levin, Richard and David S. Rubin. "*Statistics for Management*". Prentice Hall of India, New Delhi.
2. Chandan, J.S., "*Statistics for Business and Economics*", Vikas Publishing House Pvt. Ltd.
3. Render, B. and Stair, R. M. Jr., "*Quantitative Analysis for Management*", Prentice-Hall of India, New Delhi.
4. Gupta C B, Gupta V, "*An Introduction to Statistical Methods*", Vikas Publications.
5. Siegel, Andrew F, *Practical Business Statistics*. International Edition, McGraw Hill
6. Berenson, L.M., Krehbiel, T.C., Vishwanathan, P.K. and Levine, D.M., *Business Statistics: A First Course*, Pearson Education.