

MFC 1.4 Statistical Analysis

Objective

The Objective of this course is to make the students learn the application of statistical tools and techniques for decision making.

Course Inputs

1. **Univariate Analysis:** An overview of central tendency, dispersion and skewness.
2. **Probability Theory:** Probability - classical, relative and subjective probability; Addition and multiplication probability models; Con
3. **Probability Distributions:** Binomial, Poisson and Normal distributions - their characteristics and application.
4. **Statistical Decision Theory:** Decision environment; Expected profit under uncertainty and assigning probabilities; Utility theory
5. **Sampling and Data Collection:** Sampling and sampling (probability and non-probability) methods; Sampling and non-sampling errors; law of large Number and Central Limit Theorem; Sampling distributions and their characteristics.
6. **Data sources - primary and secondary:** Primary data collection techniques -schedule, questionnaire and interview.
7. **Statistical Estimation and Testing:** Point and interval estimation of population mean, proportion and variance; Statistical testing - hypotheses and errors; Sample size; Large and small sampling test - Z test, T test and F test.
8. **Non Parametric Tests:** Chi-square tests; Sign tests; Wilcoxon Signed - Rank tests; Wald - Wolfowitz test; Kruskal - Wallis test.
9. **Correlation and Regression Analysis:** Two variables case.
10. **Index Numbers:** Meaning and type; Weighted aggregative indices - Laspeyre's a Paasche's indices compared; ofIndices(price-quantity) relatives;ofweight Tests of adequacy; Special problems - shifting the base; splicing; overlapping index series; Uses and problems.

Suggested Readings

- Hooda, R.P.: Statistics for Business and Economics, Macmillan, New Delhi.
- Heinz, Kohler: Statistics to Business & Economics, Harper Collins, New York.
- Hien, L.W.: Quantitative Approach to Managerial Decisions, Prentice Hall, New Jersey.
- Lawrence B. Morse: Statistics for Business & Economics, Harper Collins, New York.
- Levin, Richard I., David S Rubin: Statistics for Management, Prentice Hall, Delhi.
- Watsnam Terry J. and Keith Parramor: Quantitative Methods in Finance, International Thompson Business Press. London.

