

UNIVERSITY OF KARACHI

STATISTICAL INFERENCE

BBA – 1V (Hons.)

Course Title: STATISTICAL INFERENCE

Course Number : BA (H) – 432

Credit Hours : 03

Objective

Advance course of statistics has been designed to estimate parameter (B) through statistics (t), students will know how to draw random samples from finite population. Students will also know how to test the hypothesis regarding population mean, variance and population for large samples based on normal distribution which is the back bone of the whole theory of statistics. The students will also know how to test the above mentioned hypothesis for small samples. Change in the business with time is of supreme importance. Students in this course will also study how to measure the change of the trend in business. They can also eliminate the effect of more than one variable on their business.

Course Contents

1. Continuous Probability Distribution

- 1.1 Normal Distribution
- 1.2 Properties of Normal Distribution
- 1.3 Standard Normal Distribution
- 1.4 Application of normal Distribution in Solving Business Problems

2. Sampling – Its Meaning

- 2.1 Population – Definition and Its Types
- 2.2 Finite and Infinite Population
- 2.3 Homogeneous and Heterogeneous Population
- 2.4 Concept of Sample and Population
- 2.5 Sampling Techniques

- 1. Simple Random Sampling (SRS)

2. Stratified Random Sampling
3. Systematic Sampling

- 2.6 Properties of Estimators
- 2.7 Application of SRS in Business Research

3. Estimation of Parameters

- 3.1 Point Estimation
- 3.2 Interval Estimation of Parameter
- 3.3 Properties of a Good Estimator
- 3.4 Determination of Sample Size

4. Test of Hypothesis – Meaning, Null Hypothesis, Alternative Hypothesis, One Tail and Two Tail Test, Type I and Type II Error. Logic Behind the Procedure of Test of Significance

- 4.1 Test of Hypothesis Concerning A Single Population Mean
- 4.2 Test of Hypothesis Concerning the Difference Between Two Population Means
- 4.3 Paired Comparison
- 4.4 Test of Hypothesis Concerning A Single Population Proportion
- 4.5 Test of Hypothesis Concerning the Difference Between Two Population Proportions
- 4.6 Test of Hypothesis Concerning A Single Population Variance
- 4.7 Test of Hypothesis Concerning the Ratio of Two Population Proportion Variances
- 4.8 Test as Goodness of Fit Test
- 4.9 Test as a Test of Independence Between Two Attributes

5. Correlation and Regression

- 5.1 Concept of Regression and Correlation
- 5.2 Method of Least Square
- 5.3 Multiple Regression and Correlation for Three Variables Only
- 5.4 Application of Multiple Regression Plane in Business Problems

6. Time Series and Its Components

- 6.1 What is Time Series? Components of Times. Method of Studying These Components
- 6.2 Method of Finding Secular Trend by the Principle of Least Square

Recommended Books

1. Freund John E., Mathematical Statistics with Applications, Prentice Hall, (7th Edition), October 2003.
2. Spiegel Murray R., Schaum's Outline of Probability and Statistics, McGraw Hill Publishers, (2nd Edition), March 2000.
3. Weiss Neil A., Introductory Statistics, Addison–Wesley Publishing Co. (7th Edition), June 2004.