

Paper 06: STATISTICAL METHODS IN ECONOMICS - II

Course Description

This is the second course in the two part sequence on statistical methods. It begins with a discussion on sampling techniques used to collect survey data. It introduces the notion of sampling distributions that act as a bridge between probability theory and statistical inference. It then covers topics in inference that include point estimation, statistical intervals and hypothesis testing. It concludes with a discussion of the simple linear regression model.

Course Outline

1. Sampling

Principal steps in a sample survey; methods of sampling; the role of sampling theory; properties of random samples.

2. Point and Interval Estimation

Estimation of population parameters using methods of moments and maximum likelihood procedures; properties of estimators; confidence intervals for population parameters.

3. Hypothesis Testing

Defining statistical hypotheses; distributions of test statistics; testing hypotheses related to population parameters; Type I and Type II errors; power of a test; tests for comparing parameters from two samples.

4. Simple Linear Regression

Estimation of the slope and intercept parameters; inference and prediction.

Readings:

1. Jay L. Devore, *Probability and Statistics for Engineers*, Cengage Learning, 2010.
2. William G. Cochran, *Sampling Techniques*, John Wiley, 2007.
3. Richard J. Larsen and Morris L. Marx, *An Introduction to Mathematical Statistics and its Applications*, Prentice Hall, 2011.

**UNIVERSITY OF DELHI
DELHI SCHOOL OF ECONOMICS
DEPARTMENT OF ECONOMICS**

Minutes of Meeting

Subject : B.A. (Hons) Economics – Second Semester (2012-13)
Course : 05 - Statistical Methods in Economics II
Date of Meeting: 14.12.2012 (Friday), 11:30 am
Venue : Department of Economics, Delhi School of Economics, University of
Delhi
Convenor : Rohini Somanathan
Team Member : Deepti Goel

Attended by :

1. Santosh Aggarwal, Laxmi Bai College
2. Heena Kapoor, S.G.G.S College of Commerce
3. Sumeet Singh Raheja, Shivaji College
4. Charu Grover, Shaheed Bhagat Singh College
5. Padma Suresh, Sri Venkateshwara College
6. Shalini Agarwal, Kalindi College
7. Anita Balani, Hans Raj College
8. Anup Chatterjee, ARSD College
9. Pragya Atri, ARSD College
10. Chandra Goswami, Dyal Singh College
11. Awadhesh Kumar, Deshbandhu College
12. Neetu Chopra, Miranda House
13. Priyanka Bhatia, Shri Ram College of Commerce
14. Prarthna Agarwal Goel, Kalindi College

The following decisions were made at the meeting:

It was decided to continue with the same criteria for **Internal Assessment** as those followed last year. The total of 25 marks for internal assessment would be assigned as follows. There will be two class tests of 10 marks each and 5 marks would be awarded based on attendance of classes and tutorials.

- 1) This is as per University rules. No need to edition.
- 2) It was decided that the question paper would have three sections. The following distribution of topics and marks, and the amount of choice within each topic, was agreed upon:

Section 1:

Topic 1: Sampling (10 marks) No choice to be offered. All question(s) to be attempted. This covers 5.3 till the end of the chapter 5 from Devore's textbook. Also includes Nagar and Das, pages 185-197.

Topic 4: Simple Linear Regression (15 marks). One compulsory question, worth 5 marks. And a choice of attempting one out of two questions, each worth 10 marks.

Section 2:

Topic 2: Point and Interval Estimation(25 marks)

All questions in this section would be compulsory and no choice would be offered.

Section 3:

Topic 3: Hypothesis Testing (25 marks)

One compulsory question, worth 5 marks. And a choice of attempting two out of three questions, each worth 10 marks.

- 3) It was agreed to have a limited number of subparts to a question.
- 4) The following note is to be included in the question paper: All questions within each section are to be answered in a contiguous manner on the answer sheet. Start each question on a new page, and all subparts of a question should follow one after the other.
- 5) The text book to be followed this semester would continue to be the 7th edition of *Probability and Statistics for Engineers* by Jay Devore.
- 6) The second reading in the list of Additional Readings, namely, Schaum's outline series *Probability and Statistics* by M. R. Spiegel, John J. Schiller and R. A. Srinivasan (Tata McGraw-Hill) is to be excluded from the course reading.