

Semester V

Paper No- 11: STATISTICAL METHODS IN GEOGRAPHY

Course Objectives

The aim of this course is to introduce students about the significance of statistical methods in geography. Students learn different techniques of descriptive statistics, theoretical distribution, correlations and regression. This will develop the techniques of data analysis, understanding and utilisation of the information more rationally that will help them in higher study and research.

1. Use of Data in Geography

1.1 Significance of Statistical Methods in Geography and Data Source

1.2 Scales of Measurement: Nominal, Ordinal, Interval, and Ratio

1.3 Sampling: Random, Systematic and Stratified

- Montello, D.R. and Sutton, P.C., (2006) An Introduction to Scientific Research Methods In Geography, Sage Publication Inc, California, Chapter 1, 2, and 3.
- Miller, D.C. and Salkind, N.J. (2002) Handbook of Research Design and Social Measurement, Sage Publications, London. Chapter 6
- Pal, S. K. (1998) Statistics for Geoscientists, Tata McGraw Hill, New Delhi, Chapter 9

2 Descriptive Statistics

2.1 Frequency Tables and Central Tendencies (Mean, Median and Mode)

2.2 Centographic Techniques

2.3 Dispersion: Standard Deviation, Variance and Coefficient of Variation.

- Burt, J.E., Barber, G.M., and Rigby, D.L. (2009): Elementary Statistics for Geographers, Guilford Press, New York, Chapter 3.
- Pal, S. K. (1998) Statistics for Geoscientists, Tata McGraw Hill, New Delhi, Chapter 8

3. Theoretical Distributions

3.1 Concept of Probability

3.2 Concept of Normal Curve

3.3 Fitting Normal Curve to Data

- Rogerson, P.A. (2010): Statistical Methods for Geography- A Student's Guide, Sage Publications, New Delhi, Chapter-3.
- Pal S. K., (1982): Statistical Techniques - A Basic Approach to Geography, Tata McGraw Hill, New Delhi, Chapter 5.
- Gupta, S. P. (2006) Statistical Methods, Sultan Chand and Sons, Delhi. Chapter 16

4. Correlations and Regression

4.1 Rank Correlation

4.2 Product Moment Correlation

4.3 Simple Regression

- Sancheti, D.C. and Kapoor, V.K. (2000) Statistics: Theory, Methods and Application, Sultan Chand and Sons, Delhi, Chapter 8
- Chapman, J. M. and Monroe, C.B. (2009) An Introduction to Statistical Problem Solving in Geography, Waveland Press, Long Grove, USA. Chapter 14.

Further Readings

- Gupta, S.P. (2012) Statistical Methods, Sultan Chand & Sons, New Delhi.
- Hammond, P. and McCullagh, P. S. (1978) Quantitative Techniques in Geography, Oxford University Press.
- King, L.S. (1969) Statistical analysis in Geographical studies, Prentice Hall.
- Rogerson, P.A. (2010) Statistical Methods for Geography: A Student's Guide, Sage Publications, New Delhi.
- Walford, N. (2011) Practical Statistics for Geographers of Earth Scientists, Wiley-Blackwell, Oxford.
- Yeates, M. (1974) An Introduction to Quantitative Analysis in Human Geography, Mc Graw Hill, New York.