CATEGORICAL DATA ANALYSIS

Objectives

- To enable the students familiar with categorical data and various probability models associated with it.

UNIT I

Data types, Categorical or nominal data, ordinal, interval scale, Ratio scale, Basic test for categorical data, Continues data, interaction in statistical analysis.

(15 hours)

UNIT II

Introduction to generalized linear model, Logistic Regression Analysis, Predictions, Interpreting parameters in logistic Regression. Inference for logistic Regression, Multiple logistic regression.

(15 hours)

Reference Books

1. Agresti, A. (1990) Categorical Data Analysis. New York: John Wiley.
2. Carlin, B.P. and Louis, T.A. (2000) Bayes and Emperical Bayes Methods for Data Analysis, Second Edition46
3. Congdon P. (2006) Bayesian Statistical Modelling, Second Edition, John Wiley & Sons,Ltd. ISBN: 0-470-01875-5
4. Ntzoufras I. (2009) Bayesian Modeling using WinBUGS John Wiley & Sons Inc.
5. Powers D.A. (1999) Statistical methods for Categorical data analysis. Academic pressInc.
6. Shewhart,W.A. and Wilks, S.S. (2013) Case Studies in Bayesian Statistical Modelling and Analysis. Wiely.

Course Outcomes

CO NO.	Upon completion of this course, the students will be able to:	Knowledge level	PSO No.
1	Dramatize categorical data, compute measures of association and structural models for discrete data.	K3,K4	4, 5

2	Fit logistic models and Poisson models to data set.	K5	5, 6
3	Check model assumptions and analyze residuals and goodness-of-fit, Conduct Inference for model parameters.	K4	3
4	Understand path and structural equation modeling.	K2	1, 2
Knowledge Levels: K1-Remembering;K2-Understanding; K3-Applying; K4-Analyzing; K5-Evaluating; K6-creating.			