

€ TRAINING

Principles of Econometric and Its
Applications Using Statistical Analysis SPSS





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Introduction:

This training program provides an in-depth understanding of econometric principles and their applications, focusing on the use of SPSS for statistical analysis. It empowers participants to apply econometric techniques to real-world data, perform robust statistical analyses, and derive actionable insights.

Program Objectives:

By the end of this program, participants will be able to:

- Understand the fundamental principles of econometrics.
- Use SPSS for data management and statistical analysis.
- Apply econometric models to analyze economic data.
- Interpret econometric results for decision-making.
- Perform diagnostic tests and ensure model validity.

Target Audience:

- Economists.
- Data analysts.
- Researchers.
- Statisticians.
- Professionals using statistical tools for economic data analysis.

Program Outline:

Unit 1:

Introduction to Econometrics:

- Overview of econometrics and its importance.
- Types of econometric models.
- Basic concepts: dependent and independent variables.

- Understanding the assumptions of econometric models.
- Introduction to SPSS for econometric analysis.

Unit 2:

Data Management in SPSS:

- Importing and managing datasets in SPSS.
- Data cleaning and preparation for analysis.
- Handling missing data and outliers.
- Creating and transforming variables in SPSS.
- Data visualization techniques in SPSS.

Unit 3:

Simple and Multiple Regression Analysis:

- Basics of simple linear regression.
- Extending to multiple regression analysis.
- Estimating and interpreting regression coefficients.
- Hypothesis testing and significance levels.
- Using SPSS for regression analysis.

Unit 4:

Econometric Applications in Time Series Analysis:

- Understanding time series data and its characteristics.
- Autocorrelation and stationarity in time series.
- ARIMA models for time series forecasting.
- Model selection and diagnostics for time series.
- Applying time series analysis in SPSS.

Unit 5:

Panel Data Econometrics:

- Introduction to panel data and its advantages.
- Fixed effects vs. random effects models.
- Estimating panel data models using SPSS.
- Diagnostic testing for panel data models.
- Applications of panel data in economic research.

Unit 6:

Econometric Models for Categorical Data:

- Introduction to logistic regression and probit models.
- Estimating binary outcome models in SPSS.
- Interpreting results from categorical data models.
- Diagnostic tests for categorical models.
- Applications of categorical econometric models.

Unit 7:

Simultaneous Equation Models:

- Understanding systems of simultaneous equations.
- Identification problems in simultaneous equations.
- Estimating simultaneous equations with SPSS.
- Structural vs. reduced-form models.
- Real-world applications of simultaneous equations.

Unit 8:

Diagnostic Testing in Econometrics:

- Testing for multicollinearity, heteroskedasticity, and autocorrelation.
- Performing model diagnostic tests in SPSS.
- Ensuring the validity and reliability of econometric models.

- Remedies for common econometric problems.
- Practical examples of diagnostic testing.

Unit 9:

Forecasting with Econometric Models:

- Introduction to forecasting techniques in econometrics.
- Building forecasting models in SPSS.
- Evaluating the accuracy of forecasts.
- Application of econometric forecasting to economic data.
- Best practices for developing reliable forecasts.

Unit 10:

Advanced Econometric Techniques:

- Introduction to advanced topics: GMM, VAR, and VEC models.
- Handling endogeneity in econometric models.
- Structural equation modeling SEM in SPSS.
- Practical applications of advanced econometric techniques.
- Integrating advanced techniques into economic research.