

PRACTICAL ECONOMETRICS FOR MANAGERIAL DECISION MAKING



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TRAINING CENTER



Introduction

Managers face decisions every week that depend on relationships between variables: price and demand, training and productivity, marketing spend and revenue. The Practical Econometrics for Managerial Decision Making Course teaches how to measure those relationships with evidence rather than intuition. Participants learn how to build regression models, test their reliability, and interpret results in language that non-specialists understand. Furthermore, the course covers forecasting, panel data, and causal inference techniques used in business analysis. In addition, it addresses data quality and the ethical use of statistical findings. As a result, delegates leave able to support commercial decisions with defensible quantitative evidence.

Practical Econometrics for Managerial Decision Making Course Objectives

- Apply the ordinary least squares (OLS) regression method to business data sets.
- Build multiple regression models with appropriate variable selection.
- Test statistical significance using t-tests, F-tests, and p-values.
- Diagnose and correct heteroscedasticity, multicollinearity, and autocorrelation.
- Interpret coefficients, elasticities, and marginal effects for managerial use.
- Apply time series models including ARIMA and exponential smoothing for forecasting.
- Use panel data techniques such as fixed effects and random effects models.
- Apply instrumental variables and difference-in-differences for causal inference.
- Evaluate model performance using R-squared, adjusted R-squared, and RMSE.
- Present econometric findings clearly to non-technical decision makers.

Course Methodology

- Interactive workshops led by applied econometrics practitioners.

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- Hands-on modelling exercises using spreadsheet and statistical software tools.
- Case studies on pricing, demand forecasting, and workforce productivity.
- Group work on data preparation and variable construction.
- Interpretation workshops translating coefficients into business meaning.
- Structured critique of model output and reliability checks.
- Capstone project: presenting an econometric analysis for a business decision.

Who Should Take This Course

- Business analysts and data analysts.
- Economists and research specialists.
- Finance and planning managers.
- Marketing and pricing analysts.
- Risk and forecasting professionals.
- Consultants supporting evidence-based decisions.

Practical Econometrics for Managerial Decision Making Course Outlines

Day 1: Foundations of Econometrics for Business

- What econometrics adds to managerial decision making.
- Types of data: cross-sectional, time series, and panel.
- Correlation, causation, and common misinterpretations.
- Simple linear regression and the ordinary least squares method.
- Interpreting intercept, slope, and error terms.
- Data preparation, cleaning, and outlier handling.





- Exercise: running a simple regression on business data.

Day 2: Multiple Regression and Model Diagnostics

- Building multiple regression models.
- Selecting and transforming variables.
- Testing significance with t-tests and F-tests.
- Diagnosing multicollinearity and variance inflation factors (VIF).
- Detecting and correcting heteroscedasticity.
- Testing for autocorrelation with the Durbin-Watson statistic.
- Workshop: diagnosing and repairing a regression model.

Day 3: Forecasting with Time Series Models

- Time series components: trend, seasonality, and cycles.
- Moving averages and exponential smoothing methods.
- ARIMA model structure and selection criteria.
- Measuring forecast accuracy with MAPE and RMSE.
- Handling structural breaks and shocks.
- Building and validating a demand forecast.
- Exercise: forecasting a business metric.

Day 4: Panel Data and Causal Inference

- Panel data structure and advantages.
- Fixed effects and random effects models.
- Choosing between model specifications.
- Instrumental variables for endogeneity problems.



- Difference-in-differences for policy and intervention evaluation.
- Propensity score matching basics.
- Case exercise: evaluating an intervention's effect.

Day 5: Interpretation, Communication, and Decision Use

- Turning coefficients into business insight.
- Elasticities and marginal effects in pricing decisions.
- Communicating uncertainty and confidence intervals.
- Avoiding overclaiming and spurious findings.
- Ethical use of data and statistical evidence.
- Building decision memos from econometric output.
- Capstone project: presenting an econometric analysis.

Conclusion

By successfully completing Practical Econometrics for Managerial Decision Making, participants will have acquired practical knowledge of regression modelling, model diagnostics, forecasting, panel data, and causal inference. They will understand how to test whether a relationship is real and how to translate coefficients into managerial meaning. In addition, they will gain confidence in presenting quantitative evidence to decision makers. Gentex Training Center builds this programme around applied analysis, so delegates return ready to replace assumption with evidence.

FAQs



Q1 What is the "Practical Econometrics for Managerial Decision Making" course about?

It teaches how to measure business relationships with statistical evidence. Participants learn regression modelling, model diagnostics, forecasting, panel data methods, and causal inference. The course focuses on interpreting results for real managerial decisions rather than pure theory.

Q2 What are the key benefits of the "Practical Econometrics for Managerial Decision Making" course?

It replaces intuition-based decisions with evidence-based analysis, improving pricing, forecasting, and resource allocation. Participants gain practical modelling skills, sharper interpretation ability, and confidence in presenting findings. Organisations benefit from better forecasts and more defensible strategic choices.

Q3 What skills will I gain from the "Practical Econometrics for Managerial Decision Making" course?

Participants gain regression modelling and diagnosis, time series forecasting, panel data and causal inference, and econometric interpretation and communication.



Q4 What tools, methods, or standards are covered in the "Practical Econometrics for Managerial Decision Making" course?

The course covers ordinary least squares (OLS) regression, multiple regression, t-tests, F-tests, and p-values, variance inflation factors (VIF), heteroscedasticity and autocorrelation tests including the Durbin-Watson statistic, ARIMA and exponential smoothing, panel data fixed and random effects models, instrumental variables, difference-in-differences, R-squared, adjusted R-squared, RMSE, and MAPE.

Q5 How is the "Practical Econometrics for Managerial Decision Making" course applied in real-world practice?

Participants apply it by modelling demand and pricing relationships, testing whether interventions worked, and building validated forecasts. They then translate coefficients into elasticities and marginal effects and prepare decision memos that present evidence and uncertainty honestly to management.