Difference-in-Differences (DiD) Analysis Training Course

Professional Development Training Course Outline

Category	Monitoring and Evaluation	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Difference-in-Differences (DiD) Analysis is a cutting-edge statistical method widely used in program evaluation, policy assessment, and impact studies to measure causal effects over time. Difference-in-Differences (DiD) Analysis Training Course equips participants with advanced analytical skills to identify treatment effects, control for confounding variables, and interpret results with precision. Leveraging real-world datasets and case studies, learners will master DiD applications in health, economics, social programs, and business interventions. The course emphasizes practical implementation using statistical software, ensuring that participants can translate theory into actionable insights.

As organizations increasingly rely on data-driven decision-making, understanding causal inference and treatment effect estimation has never been more critical. This course integrates trending concepts like panel data analysis, synthetic controls, heterogeneity analysis, and robustness checks, providing participants with a comprehensive toolkit for rigorous program evaluation. By the end of the course, learners will confidently apply DiD methodology to assess policy interventions, improve monitoring and evaluation (M&E) systems, and contribute to evidence-based decision-making across multiple sectors.

Programme Curriculum

Difference-in-Differences (DiD) Analysis Training Course

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Course Duration

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Course Objectives

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

1. Understand the theory and assumptions underlying DiD analysis.
2. Apply DiD models to evaluate causal effects in program evaluation.
3. Analyze panel and longitudinal data for treatment effect estimation.
4. Conduct robustness checks and placebo tests in DiD studies.
5. Interpret interaction terms and coefficients in regression models.
6. Address potential biases and confounding variables in DiD analysis.
7. Apply synthetic control methods as an extension of DiD.
8. Use statistical software (R, Stata, Python) to implement DiD models.
9. Examine heterogeneous treatment effects across subgroups.
10. Integrate DiD analysis into Monitoring & Evaluation (M&E) frameworks.
11. Present results effectively for policymakers and stakeholders.
12. Critically evaluate DiD studies in academic and professional research.
13. Design data-driven recommendations for program and policy improvements.

Target Audience

1. M&E professionals and program evaluators
2. Data analysts and statisticians
3. Policy researchers and social scientists
4. Health program managers and epidemiologists
5. Economic researchers and development practitioners
6. Academic researchers and postgraduate students
7. Business analysts and strategy consultants
8. Government and NGO decision-makers

Course Modules

Module 1: Introduction to Difference-in-Differences

- Definition, history, and applications of DiD
- parallel trends and exogeneity
- Understanding treatment and control groups
- Benefits and limitations of DiD analysis

- Case Study: Evaluating a minimum wage policy impact

Module 2: DiD Methodology Fundamentals

- Simple two-period DiD model
- Interpretation of coefficients
- Graphical representation of treatment effects
- Common mistakes to avoid
- Case Study: Health intervention impact on immunization rates

Module 3: Panel and Longitudinal Data Analysis

- Structure of panel datasets
- Fixed effects vs. random effects models
- Handling repeated observations
- Visualizing trends over time
- Case Study: Education program outcomes across schools

Module 4: Regression Techniques in DiD

- Linear regression models for DiD
- Interaction terms in treatment effect estimation
- Robust standard errors
- Model diagnostics
- Case Study: Microfinance program evaluation

Module 5: Addressing Confounding Variables

- Identifying potential confounders
- Including covariates in DiD models
- Balancing treatment and control groups
- Sensitivity analysis
- Case Study: Nutritional intervention for children

Module 6: Placebo Tests and Robustness Checks

- Concept of placebo and falsification tests
- Implementing robustness checks
- Detecting spurious effects
- Interpreting results confidently
- Case Study: Tax policy evaluation

Module 7: Heterogeneous Treatment Effects

- Subgroup analysis
- Interaction with demographic variables
- Visualizing heterogeneous effects
- Implications for program targeting
- Case Study: Job training program by gender

Module 8: Synthetic Control Methods

- Concept and applications of synthetic controls

- Combining DiD with synthetic controls
- Advantages over traditional DiD
- Limitations and assumptions
- Case Study: COVID-19 policy interventions

Module 9: DiD in Health Programs

- Measuring treatment impact in health interventions
- Vaccination campaigns and disease control
- Health policy evaluation
- Interpreting health outcome metrics
- Case Study: Malaria prevention program

Module 10: DiD in Economic and Social Programs

- Evaluating labor market policies
- Poverty reduction and social grants
- Education access programs
- Socioeconomic impact assessment
- Case Study: Conditional cash transfer program

Module 11: Software Implementation – R, Stata, Python

- Data preparation and cleaning
- Running DiD regressions
- Visualizing results
- Reporting outputs effectively
- Case Study: Software-based evaluation of nutrition program

Module 12: Interpreting and Reporting Results

- Translating statistical results into insights
- Visual dashboards for stakeholders
- Policy briefs and presentations
- Ensuring clarity and transparency
- Case Study: Urban transport intervention

Module 13: Integrating DiD into M&E Frameworks

- Designing DiD within program evaluation plans
- Linking with KPIs and indicators
- Reporting standards for M&E
- Continuous monitoring and learning
- Case Study: NGO literacy program evaluation

Module 14: Advanced Topics in DiD

- Multiple treatment periods
- Time-varying treatment effects
- Dynamic DiD models
- Clustered standard errors
- Case Study: National healthcare reform evaluation

Module 15: Capstone Project

- Participants select a dataset for evaluation
- Apply full DiD methodology
- Conduct robustness and heterogeneity checks
- Present findings and recommendations
- Case Study: Comprehensive program evaluation

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

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