Tritonna Edu Learning

Website: https://tritonnaedu.com/Courses/

HANDS-ON SEM WITH SMARTPLS

Practical Online Course Brochure

Course Fee: ₹ 8,000
Delivery Mode: Online
Schedule: Flexible Timing
Level: Beginner to Intermediate
Duration: 60 hours

COURSE OVERVIEW

Hands-on SEM with SmartPLS is a practical, beginner-friendly online course designed to help learners understand, apply, and interpret Partial Least Squares Structural Equation Modeling using SmartPLS.

The course focuses on research-oriented application rather than theory alone, with guided demonstrations, practical exercises, model-building activities, and interpretation-based assignments.

Participants will learn how to prepare data, develop conceptual frameworks, create measurement and structural models, import datasets into SmartPLS, assess reliability and validity, evaluate collinearity and model quality, test hypotheses, analyse mediation and moderation, use bootstrapping, conduct predictive assessment, and report SEM findings clearly.

COURSE DETAILS

Course Component	Details
Course Name	Hands-on SEM with SmartPLS
Institution	Tritonna Edu Learning
Website	https://tritonnaedu.com/Courses/
Delivery Mode	Online
Schedule	Flexible Timing
Course Fee	₹ 8,000
Duration	60 hours
Level	Beginner to Intermediate
Learning Approach	Demonstration, guided practice, exercises, model interpretation, and project-based learning
Recommended Software	SmartPLS
Assessment	Practical exercises and final SEM mini-project

WHO SHOULD ENROL?

This course is suitable for:

- Postgraduate students and research scholars
- PhD candidates
- Dissertation and thesis students
- Faculty members and teachers
- Social science, management, psychology, education, business, healthcare, and public health researchers
- Survey researchers and data analysts
- Professionals working with quantitative research
- Learners preparing theses, journal articles, conference papers, or research projects

ENTRY REQUIREMENTS

Learners should ideally have:

• Basic computer skills
• Basic understanding of research methodology and statistics
• Familiarity with survey data and variables
• Basic understanding of correlation and regression

No previous SmartPLS experience is required.

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LEARNING OUTCOMES

By the end of the course, learners will be able to:

1. Understand PLS-SEM and the SmartPLS workflow.
2. Distinguish measurement models and structural models.
3. Develop conceptual frameworks and hypotheses.
4. Prepare, code, and screen data for SmartPLS.
5. Import and manage datasets.
6. Identify constructs, indicators, mediators, moderators, and control variables.
7. Create path models in SmartPLS.
8. Specify reflective and formative measurement models.
9. Assess indicator reliability.
10. Evaluate internal consistency reliability using Cronbach’s alpha and composite reliability.
11. Assess convergent validity using outer loadings and AVE.
12. Assess discriminant validity using HTMT and cross-loadings.
13. Evaluate collinearity using VIF.
14. Assess structural model quality.
15. Interpret path coefficients, t-values, p-values, confidence intervals, and R-square.
16. Assess effect size f-square and predictive relevance Q-square.
17. Use bootstrapping for hypothesis testing and mediation.
18. Analyse direct, indirect, and total effects.
19. Understand moderation and interaction effects.
20. Conduct basic multi-group analysis.
21. Understand PLSpredict and out-of-sample prediction.
22. Use blindfolding or suitable predictive procedures where applicable.

23. Interpret SmartPLS output.
24. Prepare thesis- or journal-style PLS-SEM results.
25. Complete a practical SmartPLS mini-project.

COURSE CURRICULUM

MODULE 1: INTRODUCTION TO PLS-SEM AND SMARTPLS

Duration: 4 hours

Key Topics

• Meaning and purpose of SEM
• Covariance-based SEM and PLS-SEM
• Applications of PLS-SEM
• Advantages and limitations
• SmartPLS workflow
• Constructs, indicators, and paths
• Examples of PLS-SEM in research

Practical Activity

Identify constructs, indicators, and relationships in a sample research model.

MODULE 2: CONCEPTUAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

Duration: 6 hours

Key Topics

• Theoretical framework
• Conceptual model
• Exogenous and endogenous constructs
• Mediators and moderators
• Reflective and formative constructs
• Causal paths
• Research questions

• Hypothesis formulation
• Control variables
• Translating a conceptual model into SmartPLS

Practical Activity

Develop a conceptual framework and write hypotheses for PLS-SEM testing.

MODULE 3: DATA PREPARATION AND IMPORTING INTO SMARTPLS

Duration: 6 hours

Key Topics

• Questionnaire data
• Coding and measurement scales
• Variable naming
• Missing values
• Invalid responses
• Outliers
• Sample size considerations
• Data screening
• Importing Excel and CSV files
• Checking indicators and data types
• Preparing data for analysis

Practical Activity

Prepare, screen, and import a survey dataset into SmartPLS.

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MODULE 4: SMARTPLS INTERFACE AND MODEL BUILDING

Duration: 6 hours

Key Topics

• SmartPLS workspace
• Creating a project
• Importing datasets
• Creating constructs
• Assigning indicators
• Drawing relationships
• Specifying reflective and formative measurement
• Adding mediators, moderators, and controls
• Saving and managing projects

Practical Activity

Create a measurement and structural model in SmartPLS.

MODULE 5: MEASUREMENT MODEL ASSESSMENT

Duration: 8 hours

Key Topics

• Reflective measurement models
• Formative measurement models
• Outer loadings and weights
• Indicator reliability
• Internal consistency reliability
• Cronbach’s alpha
• rho_A
• Composite reliability
• Convergent validity
• AVE
• Discriminant validity
• HTMT
• Cross-loadings
• Indicator deletion decisions
• Model identification considerations

Practical Activity

Assess the measurement model for a multi-construct research model.

MODULE 6: COLLINEARITY, MODEL QUALITY, AND MEASUREMENT MODEL REPORTING

Duration: 8 hours

Key Topics

- Inner and outer VIF
- Collinearity assessment
- Measurement model quality
- Reflective and formative construct evaluation
- Confidence intervals
- Bootstrapping for loadings and weights
- Model evaluation decisions
- Reporting reliability and validity
- Common errors in measurement-model assessment

Practical Activity

Evaluate measurement quality and prepare a reliability and validity report.

MODULE 7: STRUCTURAL MODEL ASSESSMENT AND HYPOTHESIS TESTING

Duration: 7 hours

Key Topics

- Path coefficients
- Bootstrapping
- t-values
- p-values
- Confidence intervals
- R-square
- Effect size f-square

• Predictive relevance Q-square
• Model fit indicators available in SmartPLS
• Direct effects
• Hypothesis decisions
• Total effects
• Reporting structural model findings
• Common interpretation mistakes

Practical Activity

Test hypotheses and prepare a structural-model results table.

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MODULE 8: MEDIATION, MODERATION, AND BOOTSTRAPPING

Duration: 6 hours

Key Topics

• Direct, indirect, and total effects
• Mediation logic
• Parallel and serial mediation overview
• Bootstrapped confidence intervals
• Partial and full mediation
• Interaction terms
• Moderation analysis
• Simple slope interpretation
• Reporting mediation and moderation findings

Practical Activity

Analyse and report a mediation or moderation model.

MODULE 9: MULTI-GROUP ANALYSIS AND PREDICTIVE ASSESSMENT

Duration: 4 hours

Key Topics

• Multi-group analysis
• Comparing path coefficients across groups
• Measurement invariance overview
• MICOM concept
• PLSpredict
• Out-of-sample prediction
• Blindfolding or predictive procedures where applicable
• Practical limitations
• Advanced application choices

Practical Activity

Compare a simple SmartPLS model across two groups and review predictive results.

MODULE 10: REPORTING AND FINAL SMARTPLS MINI-PROJECT

Duration: 5 hours

Key Topics

• Reading SmartPLS reports
• Selecting relevant output
• Presenting measurement-model results
• Presenting structural-model results
• Hypothesis tables
• Mediation and moderation tables
• Path diagrams
• Thesis-style and journal-style reporting
• Common reporting errors
• Practical interpretation
• Presentation of results

Practical Activity

Complete and present a final SmartPLS mini-project with a concise findings report.

TOTAL DURATION

Course Component Hours
Module 1: Introduction to PLS-SEM and SmartPLS 4
Module 2: Conceptual Framework and Hypothesis Development
Module 3: Data Preparation and Importing into SmartPLS
Module 4: SmartPLS Interface and Model Building
Module 5: Measurement Model Assessment
Module 6: Collinearity, Model Quality, and Measurement Model Reporting
Module 7: Structural Model Assessment and Hypothesis Testing
Module 8: Mediation, Moderation, and Bootstrapping
Module 9: Multi-Group Analysis and Predictive Assessment
Module 10: Reporting and Final SmartPLS Mini-Project
Total 60 hours

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FINAL PRACTICAL PROJECT

Each learner will complete a PLS-SEM mini-project involving:

1. Selecting or receiving a practice research dataset.
2. Identifying constructs and indicators.
3. Developing a conceptual framework.
4. Formulating hypotheses.
5. Preparing and screening data.
6. Importing data into SmartPLS.
7. Creating a measurement model.
8. Specifying reflective or formative constructs.
9. Assessing reliability and validity.
10. Checking collinearity.
11. Creating the structural model.
12. Running the PLS algorithm.
13. Bootstrapping.
14. Testing hypotheses.

15. Analysing direct, indirect, and total effects.
16. Conducting mediation or moderation where appropriate.
17. Reviewing predictive assessment.
18. Interpreting SmartPLS output.
19. Preparing a concise PLS-SEM findings report.

SUGGESTED COURSE FORMAT

Flexible Online Learning Model

The course can be delivered through a flexible online learning structure that may include:

• Recorded video lessons
• Downloadable notes
• SmartPLS practice datasets
• Step-by-step demonstrations
• Guided model-building exercises
• Practical assignments
• Interpretation activities
• Online doubt-clearing sessions
• Flexible submission timelines
• Final mini-project guidance

ONLINE COURSE SUMMARY

Online | Flexible Timing | 60 Hours | ₹ 8,000

Recommended Software: SmartPLS

Assessment: Practical exercises and final SmartPLS mini-project

Ideal for students, researchers, faculty members, dissertation scholars, and professionals who want to apply Partial Least Squares Structural Equation Modeling using SmartPLS.