

Course Description:

ADVANCED STATISTICS FOR GRADUATE STUDY - DBA 8110



No.	Subject	
1	Title	Advanced Statistics for Graduate Study
2	Code	DBA 8110
3	Credit Value	4
4	Prerequisite (if any)	Research Design and Methodology (DBA8109)
5	Learning Outcomes	<p>At the end of this module, students will be able to :</p> <ol style="list-style-type: none"> 1. Illustrate the basic applications of SEM and PLS. 2. Familiar and utilize parametric tests. 3. Utilize Structural Equation Modelling (SEM) and Partial Least Square (PLS) analysis methods. 4. Gain knowledge and skills for evaluating and applying Structural Equation Modelling (SEM) and Partial Least Square Analysis (PLS) in advance research level, with a focus on applications to questions of development and causation across time, or applications taking a transactional or systems perspective. 5. Able to predict suitable number of variable and data for the hypothesized model. 6. Enhancement the quantitative design through Modelling Analysis. 7. Able to do transformation of variable status such as mediating to moderating variable, moderating to independent variable, and etc. 8. Better understand relationship of theory-building and theory testing. 9. Understand when to use various statistical applications that are commonly used in management and in academic papers. 10. Formulate a strategy for analyzing a particular data set. 11. Use the SmartPLS and AMOS software programs to analyze different types of data to answer a broad range of research questions. 12. Apply statistical analysis techniques in course assignments, research and corporate reports. 13. Setup high quality of research design for doctoral level and produce a high quality of academic publications.
6	Synopsis	<p>This course will cover the following :</p> <ol style="list-style-type: none"> 1. Review some intermediate to PLS-SEM and compare PLS-SEMs to multiple regression and factor analysis models. 2. Cover sample size requirements and two important PLS-SEM issues: model identification and model equivalence. 3. Explain why using PLS-SEMs for multicollinearity and measurement reliability provides important advantages. 4. Mediation and moderation test of variable(s) in the structural models. 5. Give two examples using Amos and SmartPLS for structural equation modeling.

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7	Mode of delivery	Lecture, workshop
8	Assessment Methods and Types	<ul style="list-style-type: none"> One Research Assignment (5,000 words) <p>100%</p>
9	<p>Course topics and contact hours</p> <p>1. Advanced Research Methodology (ARM) for Doctoral Research</p> <p>2. SAMPLING METHOD - Introduction to Sampling methods and inferential Statistics. Sample Statistics and Parameters. Statistical Estimation and Sample Size Determination.</p> <p>3. Structural Equation Modelling (SEM) using Partial Least Square (PLS) - Cleaning, labeling, transforming and describing data, crosstabs and hypothesis testing, distributional assumptions and tests of two means, one way and two-way ANOVA, correlation and bivariate regression, multiple regression, hierarchical multiple regression, logistic regression and exploratory factor analysis.</p> <p>4. Model Establishment and Hypothesis Testing using SEM (AMOS) and Partial Least Square (PLS)</p> <p>5. TIME SERIES AND DYNAMIC ECONOMIC MODEL -Stationary, Unit Root and Spurious Regression, Co integration, Error Correction Models and Forecasting with ARIMA and VAR Models.</p> <p>6. LINEAR PROGRAMMING -Linear Programming: Simplex method, sensitivity analysis and Duality, computer solutions.</p> <p>7. DYNAMIC PROGRAMMING -Shortest Route Problem, Job Scheduling, Inventory Control.</p> <p>8. QUADRATIC PROGRAMMING - Applications & risk analysis Transportation, Assignment and Transshipment Problems.</p>	
10	Main Reference(s)	<p>Hair, J.F., Hult, G.T.M., Ringle, C.M., and Sarstedt, M. (2016) A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). 2nd edition. Thousand Oaks, CA: Sage.</p> <p>Levin, Berenson and Stephan (2014) "Statistics for Managers Using Microsoft Excel.", 8th Ed., Pearson.</p> <p>Naresh K.Malhotra (2010), "Marketing Research- An Applied orientation" 6th Edition, Pearson.</p> <p>Gujarati, D.N. (2013), "Basic Econometrics", 5th Edition, McGraw Hill.</p> <p>Bowerman, O'Connell (2013), "Applied Statistics: Improving Business Processes (The Irwin Series in Statistics)." Chicago: Irwin.</p> <p>Andrew F.Siegel, (2013) "Practical Business Statistics" 8th Edition, Irwin McGrawhill.</p>

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