

Subject Code	MM604
Subject Title	Statistical Analysis for Management Research
Credit Value	3
Level	6
Normal Duration	1-semester
Pre-requisite/ Co-requisite/ Exclusion	None
Objectives	<p>This subject contributes to the achievement of the DBA/DMgt outcome by sharpening students' ability to conduct original applied research and ethical awareness in business administration (Outcome 3).</p> <p>This course is designed for DBA/DMgt participants who want to learn or to refresh their understanding of basic to more advanced statistical applications that are commonly used in management research (both academic and industrial). This course will be much more practical and "hands on" than theoretical. In that sense, it is much more about data analysis than statistics, per se. Emphasis will be on such matters as inputting data, transforming and manipulating data, formulating strategies for data analysis, strategies for analyzing a database, performing statistical techniques using common software packages, interpreting results and formulating the next steps.</p> <p>The techniques covered will range from the relatively simple methods of descriptive statistics using SPSS to more advanced techniques like Factor Analysis, and Structural Equation Modeling. This subject will be especially useful for those who plan to conduct research that involves quantitative analysis in their dissertation as well as for those who wish to analyze data and apply data-driven insights to business and industry using data science.</p>
Intended Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> understand when to use various statistical applications that are commonly used in management and in academic papers; formulate a strategy for analyzing a particular data set; use the SPSS and AMOS software programs to analyze different types of data to answer a broad range of research questions; use data science to extract meaning from your data; better understand relationship of theory-building and theory testing; read journal articles and understand the statistical methods used; apply domain expertise to solve real-world problems using data science.
Subject Synopsis/ Indicative Syllabus	<ul style="list-style-type: none"> • Review of the basic statistical concepts • Cleaning, labeling, transforming and describing data • Crosstabs & 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 • Exploratory factor analysis • Structural equation modeling using AMOS

Teaching/Learning Methodology	<p>The class is run as a combined lecture and lab. A "typical" class will be comprised of a powerpoint-structured lecture/discussion with participants applying the concepts using either SPSS or AMOS on actual data sets. Topics and issues related to research design are folded into the lectures and assignments. Participants will have to complete a number of assignments relating to data organization, analysis and interpretation. Individual reflection is designed to assess students' understanding about how data science can be used to extract meaning from your data.</p>																																																																					
Assessment Methods in Alignment with Intended Learning Outcomes	<table border="1" data-bbox="424 387 1479 981"> <thead> <tr> <th data-bbox="424 387 815 544" rowspan="2">Specific assessment methods/tasks</th> <th data-bbox="823 387 983 544" rowspan="2">% weighting</th> <th colspan="7" data-bbox="991 387 1479 477">Intended subject learning outcomes to be assessed (Please tick as appropriate)</th> </tr> <tr> <th data-bbox="991 488 1054 544">a.</th> <th data-bbox="1062 488 1126 544">b.</th> <th data-bbox="1134 488 1198 544">c.</th> <th data-bbox="1206 488 1270 544">d.</th> <th data-bbox="1278 488 1342 544">e.</th> <th data-bbox="1350 488 1414 544">f.</th> <th data-bbox="1422 488 1479 544">g.</th> </tr> </thead> <tbody> <tr> <td data-bbox="424 555 815 611">Continuous Assessment*</td> <td data-bbox="823 555 983 611">100%</td> <td data-bbox="991 555 1054 611"></td> <td data-bbox="1062 555 1126 611"></td> <td data-bbox="1134 555 1198 611"></td> <td data-bbox="1206 555 1270 611"></td> <td data-bbox="1278 555 1342 611"></td> <td data-bbox="1350 555 1414 611"></td> <td data-bbox="1422 555 1479 611"></td> </tr> <tr> <td data-bbox="424 622 815 779">1. Assignment 1 (individual reflection on method application in Data Science)</td> <td data-bbox="823 622 983 779">30%</td> <td data-bbox="991 622 1054 779">✓</td> <td data-bbox="1062 622 1126 779">✓</td> <td data-bbox="1134 622 1198 779">✓</td> <td data-bbox="1206 622 1270 779">✓</td> <td data-bbox="1278 622 1342 779">✓</td> <td data-bbox="1350 622 1414 779"></td> <td data-bbox="1422 622 1479 779">✓</td> </tr> <tr> <td data-bbox="424 790 815 846">2. Assignment 2</td> <td data-bbox="823 790 983 846">30%</td> <td data-bbox="991 790 1054 846"></td> <td data-bbox="1062 790 1126 846"></td> <td data-bbox="1134 790 1198 846"></td> <td data-bbox="1206 790 1270 846">✓</td> <td data-bbox="1278 790 1342 846"></td> <td data-bbox="1350 790 1414 846">✓</td> <td data-bbox="1422 790 1479 846">✓</td> </tr> <tr> <td data-bbox="424 857 815 913">Take-home Quiz</td> <td data-bbox="823 857 983 913">40%</td> <td data-bbox="991 857 1054 913">✓</td> <td data-bbox="1062 857 1126 913">✓</td> <td data-bbox="1134 857 1198 913">✓</td> <td data-bbox="1206 857 1270 913">✓</td> <td data-bbox="1278 857 1342 913">✓</td> <td data-bbox="1350 857 1414 913"></td> <td data-bbox="1422 857 1479 913">✓</td> </tr> <tr> <td data-bbox="424 925 815 981">Total</td> <td data-bbox="823 925 983 981">100 %</td> <td data-bbox="991 925 1054 981"></td> <td data-bbox="1062 925 1126 981"></td> <td data-bbox="1134 925 1198 981"></td> <td data-bbox="1206 925 1270 981"></td> <td data-bbox="1278 925 1342 981"></td> <td data-bbox="1350 925 1414 981"></td> <td data-bbox="1422 925 1479 981"></td> </tr> </tbody> </table> <p data-bbox="424 1003 1479 1059">*Weighting of assessment methods/tasks in continuous assessment may be different, subject to each subject lecturer.</p> <p data-bbox="424 1093 1479 1149">To pass this subject, students are required to obtain Grade D or above in the overall subject grade.</p> <p data-bbox="424 1193 1479 1294">Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes: the various methods are designed to ensure that all students taking this subject –</p> <ul data-bbox="456 1328 1441 1507" style="list-style-type: none"> • Discuss the issues brought up in the lectures/seminars; • Appreciate the different approaches that may be used to formulate a strategy for analyzing a particular data set; • Participate in discussing and analyzing data by applying various statistical applications. 									Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)							a.	b.	c.	d.	e.	f.	g.	Continuous Assessment*	100%								1. Assignment 1 (individual reflection on method application in Data Science)	30%	✓	✓	✓	✓	✓		✓	2. Assignment 2	30%				✓		✓	✓	Take-home Quiz	40%	✓	✓	✓	✓	✓		✓	Total	100 %							
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Reading List and References	<p data-bbox="424 1977 544 2011"><u>Textbooks</u></p> <p data-bbox="424 2011 1479 2040">Hair, J. F. Anderson, R. E. Tatham, R.L. and Black, W. C, <i>Multivariate Data Analysis</i>,</p>																																																																					

	<p>Prentice-Hall International, Inc. (Latest Edition)</p> <p>Norusis, M. J. <i>SPSS Guide to Data Analysis</i>. Upper Saddle River, N.J.: Prentice-Hall (Latest Edition).</p> <p><u>References</u></p> <p>Byrne, B.M., <i>Structural Equation Modeling in AMOS</i>, latest edition.</p> <p>Field, A., <i>Discovering statistics using SPSS</i>, Sage Publications, latest edition.</p> <p>Levin and Rubin, D. S. <i>Statistical for Management</i>, Prentice Hall, latest edition.</p>
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June 2024