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Advanced Analytic Techniques serves as a primer for some of the more advanced statistical methods you may encounter as a researcher, with greater attention to techniques which are frequently used with secondary data. Topics include: conjoint analysis, multiple regression, cluster analysis for segmentation, linear regression, perceptual mapping and factor analysis. You are not expected to memorize complicated formulas; rather, this course teaches the principles behind commonly used advanced statistical methods and when to use them.

Learn which analysis techniques to use with primary and secondary research data

As more and more data primary and secondary research sources emerge in the “age of big data,” selecting appropriate advanced analysis techniques to extract insights is becoming increasingly essential to decision making. The first step is to understand the business question at hand. The second is to assess the data available for you to address the business question.

Certain analysis techniques are only appropriate with primary research data, whereas other analysis techniques are only appropriate with secondary data. Some techniques can be applied to either data source.

This course will introduce you to the most common advanced analytical techniques in use today, with greater attention to techniques which are applied to secondary data. Examples are presented with each technique to demonstrate how insights can be extracted with the technique along with a conversation on what actions might be taken based on such insight. While statistical methods and terminology are discussed, explanations are purposely not detailed in order to help you focus on the overarching applied concepts behind each.

Prerequisite Courses:

There are no prerequisites for enrolling in *Advanced Analytic Techniques*. However, the course assumes some knowledge of basic research design and quantitative research practices.

What Knowledge is assumed by the Course?

You should be familiar with:

1. The differences, strengths and limitations between primary and secondary data sources
2. An elementary understanding and exposure to statistical analysis
3. The ability to detect outlier observations
4. How to frame business problems and suggestions around data which might assist in solving such problems

These topics are covered in details in two separate *Principles Express* courses. A more thorough overview of some of these techniques can be found in *Introduction to Data Analysis* and *Working with Secondary Data: Syndicated and Big Data*. See **Principles Express** courses for more details.

Learning Objectives

After completing this course you should be able to:

1. Describe a common framework that distinguishes between multivariate analytic techniques and helps guide the decision of what technique to use when, based on the following factors—dependence, interdependence, number of dependent variables, type of relationship, item being analyzed, nature of metric, and the nature of the business question being addressed.
2. Compare and contrast the different patterns that express the relationship between two variables (e.g., nonlinear, linear, curvilinear, s-shaped, etc.).
3. Distinguish between interpolation and extrapolation.
4. Describe what Factor Analysis is, what it does, what type of input data is generally acceptable, and common applications in market research.
5. Describe the concept of Segmentation Analysis, what it does, what type of input data is generally acceptable, various techniques on how one may cluster data (e.g., K-Means, RFM, Pareto, etc.) and common segmentation applications in market research.
6. Describe what Perceptual Mapping (including the use of Multidimensional Scaling) is and common applications in market research.
7. Describe the different techniques used to measure association (i.e., Correlation, Simple Regression, and Multiple Regression), what they do, what type of input data is generally acceptable, and common applications in market research.
8. Describe Conjoint Analysis and Choice Modeling, what they do, what type of input data is generally acceptable, and common applications in market research.
9. Describe more advanced measures of association (e.g., Logistical Regression and Structural Equation Modeling), what they do, what type of input data is generally acceptable, and common applications in market research.
10. Describe what Discriminant Analysis is, what it does, what type of input data is generally acceptable, and common applications in market research.
11. Identify the most popular machine learning techniques and describe how researchers can use them to generate insight.
12. Describe what neural network analysis is, what it does, what type of input data is generally acceptable. Describe common applications in market research.
13. Describe the concept of Marketing Mix Modeling, what it does, what type of input data is generally acceptable, techniques that are used (e.g., multiple regression, Bayesian regression, etc.) and common applications in market research.
14. Describe Time Series Analysis, what it does, what type of input data is generally acceptable, what techniques are used, and common applications in market research.
15. Describe the difference between statistical significance and business significance.

Enroll Anytime. Register Now!

For more information about the *Advanced Analytic Techniques*, contact us at questions@georgiacenter.uga.edu or by telephone at +1-706-542-3537.

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