

The background is a blue-tinted photograph of several people in a meeting. One person in the foreground is holding a smartphone, showing a data visualization. In the background, other people are looking at a large screen displaying various data charts, including bar graphs and pie charts. The overall scene suggests a collaborative data analysis environment.

BURKE INSTITUTE

Tools & Techniques of Data Analysis

Seminar DA02

Tools & Techniques of Data Analysis

SESSION 1: BUILDING THE CASE FOR HOW TO BEST ANALYZE RESEARCH DATA

- Case study examples of improper/deceptive manipulations of data and their consequences
- How to interpret the data from the case studies
- Common errors made in data tabulations, summary measures and other analytical procedures and how to avoid them

SESSION 2: FUNDAMENTAL PRINCIPLES FOR ANALYZING DATA

- Purpose and goal of data analysis
- Data analysis impact on research design
- Characteristics of data and other considerations required for selecting the best analytical procedure for each situation

SESSION 3: STEP-BY-STEP GUIDELINES FOR SELECTING THE BEST ANALYTICAL TOOL

- Integrated flowcharts for choosing the best analytical tool
- Workshop using the flowcharts to apply the tools to a wide variety of situations commonly encountered in marketing research, such as:
 - Summarizing research data and stat testing
 - Deciding when to use t, chi square, f and other tests
 - Choosing correlational procedures and deciding when to use factor, cluster, conjoint, regression, and other multivariate techniques

SESSION 4: UNDERSTANDING CROSSTABS AND DATA WEIGHTING ISSUES

- Using crosstabs to analyze data
- How to avoid common mistakes with tabular data
- Common procedures for weighting data
- Practical guidelines for getting the most out of crosstabs

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SESSION 5: SUMMARY MEASURES FOR RESEARCH DATA

- Use and misuse of various measures of average and dispersion
- Practical guidelines for the proper interpretation of mean, weighted mean, median, standard deviation, variance and other measures
- Confidence interval estimation -- what is it, what does it do and what is it used for?
- Procedures for computing sample size under a variety of conditions encountered in marketing research

SESSION 6: STATISTICAL SIGNIFICANCE TESTING

- The framework for significance testing
- Cautions in interpreting results from tests of significance
- Key decisions in significance testing, one-tailed vs. two-tailed tests, confidence vs. significance level and other considerations
- Description of procedures for analyzing nominal, ordinal and metric data from panels, preference evaluations, purchase likelihood, tracking studies, product testing, advertising awareness and other studies

SESSION 7: ANALYSIS OF ASSOCIATIONS IN RESEARCH DATA

- Bivariate correlation procedures for various types of research data
- When to use and how to interpret each coefficient
- Key terms and definitions for correlation analysis
- Association case studies and computer output examples

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SESSION 8: MULTIVARIATE APPROACHES

- Factor and Cluster Analysis and Multiple Regression
- Illustrative output, terminology, key decisions, and plausible misinterpretations
- Typical marketing research applications
- Conjoint Analysis and Discrete Choice Modeling

SESSION 9: RECENT APPROACHES IN DATA ANALYSIS

- Machine learning/AI techniques
- Overview of text analytics and how it works
- Introduction to non-parametric analytical tools like Bayesian analysis

SESSION 10: GROUP WORKSHOP

- Developing a detailed analysis plan
- Analyzing a real-life marketing research questionnaire to relate the research data to the marketing objectives of the study
- Review all the key analytical procedures used in the case study ranging from Chi-Square to multivariate techniques
- Learn how to transform the data into actionable information for your client
- See firsthand which analytical procedures will answer specific management questions