



ON-DEMAND WORKSHOP SERIES

Online Sessions For
Your Convenience

6 Modules – 3 hour sessions

Get a certificate to share with employers!!!



A Student's Guide to Data Analysis

LEARN HOW TO USE THE R SOFTWARE
TO TEST
RESEARCH HYPOTHESES

MENTOR
DR. MEENA RAMBOCAS

☰ THE VALUE OF DATA



Students who can work with data will have an immediate competitive advantage in the workplace.

Why data analysis

In today's world, data is king.

Quantitative data analysis methods will reveal essential facts and improve the validity and reliability of conclusions made from data. It facilitates the generalizability of findings to some larger populations.

In your research, you will be required to describe the characteristics of a specific group of entities like companies, employees, or customers; compare the mean score across groups; predict and explain outcomes or reduce the number of variables in a research model.

Quantitative data analysis, through the application of specific statistical techniques, will help.



Structure of On-Demand Series of Workshops

This workshop series has six modules. Students can choose the most relevant module(s) they would like to enrol in.

Developed for your busy schedule. Enjoy the following:

- **Easy Access** - There are no prerequisites for this workshop.
- **Wide Appeal** - Open to all graduate and postgraduate students and business executives who work with data.
- **Convenient and Flexible** - Each module is 3 hours and will be delivered online via zoom.
- **Access to resources** - Resources are provided to all students, including a handbook, demonstration videos, lecture notes, and class recording.



Module 1 is compulsory and gives the foundation for subsequent modules.

A Student's Guide to Data Analysis

1

Understanding the R interface and creating datasets

2

Inspecting data: Missing data & outliers

3

Visualizing data and developing the sample profile

4

Testing research hypotheses: Are there significant group differences?

5

Testing research hypotheses: Are there significant relationship among variables?

6

Working with multi-item scales: How to reduce and summarize data

Module 1: Understanding the R interface and creating datasets

Students will have easy access to the R software and receive guidance on downloading and installing the program on their personal computers. Students will learn to enter coded data into R save and import files from other programs, including SPSS and Excel.

Key outcomes:

Participants will learn how to transform raw data from their survey instruments into symbols that different statistical programs, including R can handle.

Key Topics:

- Coding: Closed-ended and open ended questions and developing the code book.
- Downloading and Installing R
- Understanding the R interface
- Creating datasets in R
- Saving data and load/importing data into R



Module 2: Inspecting Data: Missing Data & Outliers

Prerequisite: Module 1

Key outcomes:

Participants will be exposed to the steps in identifying missing data and applying remedies. Participants will also be exposed to a simple measure of detecting and handling outliers.

Key topics:

- Understanding the concepts of missing data and outliers .
- The 4-step process in identifying missing data and applying remedies .
- Using R to survey the extent of missing data, and corrective action for missing data .
- Using R to identify outliers .



Module 3: Visualizing Data and developing the sample profile

Prerequisite: Module 1

Key outcomes:

Students will be introduced to the tools and techniques frequently used to describe the data collected. This analysis will be done using the R - statistical package. Students will learn best practices for visualizing data and using data for storytelling.

Key topics:

- Constructing a sample profile
- Data visualization with graphical data analysis tools
- Explore datasets, discover patterns, show relationships



Module 4: Testing research hypotheses: Are there significant group differences?

Prerequisite: Module 1

Key outcomes:

Students will be exposed to appropriate tests to compare group means. Students will understand the results from data collected from experiments from different treatment groups. Students will also be able to use proper statistics to report significant differences among heterogeneous groups.

Key topics:

- Independent sample t-test
- Analysis of Variance
- Non-parametric tests



Module 5: Testing research hypotheses: Are there significant relationships?

Prerequisite: Module 1

Key outcomes:

Students will be able to test and measure the linear relationship among a group of variables and comment on the strength and nature of the connections. Students will also be able to construct prediction models and comment on the relative impact of a series of independent variables on a single dependent variable.

Key topics:

- Bi-variate correlation analysis
- Simple regression analysis
- Multiple regression analysis and model building



Module 6: Working with multi -item scales: How to reduce and summarize data

Prerequisite: Module 1

Key outcomes:

Students will be able to conduct an appropriate analysis that takes a set of variables and reduces them to one or more components that represent the variance of the variables for subsequent hypothesis testing.

Key topics:

- The Bartlett Test of Sphericity and KMO
- Principal Component Scores
- Scree Plots
- Reliability coefficient



Payment: Cost per Module

Current UWI student and staff - TT\$250 /US\$38

Non-UWI student - TT\$300 /US\$48



Earn a certificate of completion

When you finish all six modules, you'll earn a certificate that you can share with prospective employers and your professional network.



welcome

Summer 2023

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NOW!

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E-mail STA-FSS.SummerSchool@sta.uwi.edu

