



Training-Workshop on Application of Advanced Regression Models in Analysis of Diverse Datasets

456 Hotel

Baguio City, Philippines

Speaker:

Dr. John Vianne B. Murcia

February 26, 2026

Day 1: Fundamentals and Applications of Linear and Logistic Regression Models

8:30 – 9:00 AM

Registration and Preliminaries

Registration, Invocation, and Introduction of Speaker

9:00 – 10:30 AM

Session 1: Foundations of Regression Models

Lecture: Simple and Multiple Linear Regression

Introduction to linear regression: Assumptions, diagnostics, and interpretation.

Applications in predicting continuous outcomes using diverse datasets.

Subtopic: Introduction to Non-Parametric Quantile Regression

When and why to use quantile regression for non-linear relationships.

10:31 – 12:00 PM

Hands-On Session: Implementing Linear and Quantile Regression in Open-Source Software

Dataset import and preparation.

Running regression models and interpreting results.

Diagnosing and visualizing regression outputs.

12:00 – 1:00 PM

Lunch Break

1:00 – 2:30 PM

Session 2: Logistic Regression Models for Categorical Outcomes

Lecture: Binary, Ordinal, and Multinomial Logistic Regression

Understanding logistic regression for binary outcomes.

Extending to ordinal and multinomial logistic regression for multi-class problems.

Applications in diverse datasets, such as healthcare, education, and social sciences.

2:31 – 5:00 PM

Hands-On Session: Implementing Logistic Regression Models in Open-Source Software

Running binary, ordinal, and multinomial logistic regression.

Evaluating model fit (e.g., AIC, confusion matrix) and interpreting coefficients.

Predicting probabilities and visualizing outputs.



February 27, 2026	Day 2: Hierarchical and Count Regression Models
8:45 – 9:00 AM	Registration and Preliminaries
	Recap of Day 1 and setting expectations for Day 2.
9:00 – 10:30 AM	Session 3: Hierarchical Regression Models with Moderating Effects Lecture: Interaction and Moderating Effects in Regression Understanding hierarchical regression and its applications. Incorporating interaction terms and moderating variables in regression analysis. Practical examples in behavioral sciences and policy research.
10:31 – 12:00 PM	Hands-On Session: Implementing Hierarchical Models in Open-Source Software Building hierarchical regression models. Adding interaction effects and visualizing moderation results. Interpreting R-squared changes and the significance of interactions.
12:00 – 1:00 PM	Lunch Break
1:00 – 2:30 PM	Session 4: Count Regression Models for Event Data Lecture: Poisson and Negative Binomial Regression When to use count regression models for event data. Understanding overdispersion and choosing between Poisson and Negative Binomial models. Real-world applications in public health, criminology, and more.
2:31 – 4:30 PM	Hands-On Session: Implementing Count Regression Models in Open-Source Software Running Poisson and Negative Binomial regression. Assessing model fit and interpreting rate ratios. Visualizing count data and creating actionable insights.
4:31 – 5:00 PM	Awarding of Certificate
February 28, 2026	Day 3: Free Day/Departure of Participants