

# Assignment

## GLM

25.03.2024

1. Using appropriate notations, explain the multinomial model and show the multinomial model is part of the exponential dispersion family
2. Assuming set of regressors, provide an expression for the probability for the  $i^{th}$  subject in the multinomial model
3. Create a toy example (or a simulation study) of the multinomial regression model, specifying the input parameters and run the multinomial regression model using R. Interpret your outputs. [Hint: You may refer to libraries in R for implementing the multinomial regression model]

[5 + 5 + 15 = 25 marks]

## 1 Instructions

1. Use the Microsoft Word.
2. Clearly indicate the sections and for each section, include a respective appendix for your R codes and outputs
3. Missing any important details may result in loss of marks

4. Present your solutions in a clear manner
5. This is a grouped assignment and the deadline to submit is 25 April 2024. The CR and VCR submit the list of students with IDs in the different groups in excel sheet.