

Joint Marginalized Multilevel Model for Study Program Completion and Performance of Students: The Case of Sri Lankan Open and Distance Learners in Management Studies

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When data with correlated responses are available, joint models may provide interesting and improved results than modeling the responses separately. Such models between those responses can be developed and their applicability in various fields is noteworthy. Though joint mixed models and joint population averaged models are popular and common in statistical literature, Joint Marginalized Multilevel Models (JMMM) is still a developing area. Thus, the main objective of the study is to model survival and count data jointly, utilizing MMM and applying it to data related to Distance Education in Sri Lanka. The data obtained for this study represents records of students who have registered for undergraduate study program in Management at a leading higher education institute in Sri Lanka through Open and Distance Learning (ODL), which conducts the program in all the regional/ study centers across the country. As the students are clustered in different regional/ study centers, the clustering effect is also present in the dataset. In this study, completion time of study programs by the students is considered as a survival response and the number of first time passes by students, which represents student performance, is considered as the count variable. The findings suggest that the time to completion of the study program and gender have a significant impact on completion of the study program and student performance in the said context.

Keywords: Joint modeling, Marginalized Multilevel Model, Open and Distance Learning