

Count Regression Modelling on Number of Migrants in Households

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Abstract : The main objective of this study is to identify the determinants of the number of international migrants in a household and to compare regression models for count response. This study is done by collecting data from total of 2288 household heads of 16 randomly sampled districts in Hadiya and Kembata-Tembaro zones of Southern Ethiopia. The Poisson mixed models, as special cases of the generalized linear mixed model, is explored to determine effects of the predictors: age of household head, farm land size, and household size. Two ethnicities Hadiya and Kembata are included in the final model as dummy variables. Stepwise variable selection has indentified four predictors: age of head, farm land size, family size and dummy variable ethnic2 (0=other, 1=Kembata). These predictors are significant at 5% significance level with count response number of migrant. The Poisson mixed model consisting of the four predictors with random effects districts. Area specific random effects are significant with the variance of about 0.5105 and standard deviation of 0.7145. The results show that the number of migrant increases with heads age, family size, and farm land size. In conclusion, there is a significantly high number of international migration per household in the area. Age of household head, family size, and farm land size are determinants that increase the number of international migrant in households. Community-based intervention is needed so as to monitor and regulate the international migration for the benefits of the society.

Keywords : Poisson regression, GLM, number of migrant, Hadiya and Kembata Tembaro zones

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