WOMEN AND MEN CHOOSING THEIR PREFERED MAIZE VARIETIES: MODELLING VARIETY RANKS ON CRITERIA RANKINGS

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Participatory variety selection trials may involve men and women farmers making pair-wise rankings of crop varieties as well as identifying and ranking varietal traits (i.e selection criteria) and maize production constraints. It would be useful to model the variety ranks with respect to varietal traits and production constraints as well as characteristics of the individuals doing the ranking. One important question is to find out how the variety rankings relate to the varietal trait ranks and consequently how to integrate into a participatory trial design the different rankings and attributes. Can crop variety ranking be predicted by varietal trait ranking or are there inconsistencies between the two rankings? Participatory plant breeding trials were carried out at four sites in the semi-arid parts of Kenya in preparation for mother-baby maize variety selection trials. The activities included ranking of maize varieties, daily activity calendars, identification and ranking of maize production constraints and maize varietal traits, and pair-wise ranking of varieties by separate groups of men and women. This paper focuses on modeling of the variety rankings with the applications of Bradley-Terry models and extensions in an attempt to resolve the above questions. Based on these models, the criteria ranks and other covariates seem to predict the varietal ranks for different groups of farmers.