



**HOUSEHOLD FOOD SECURITY ASSESSMENT  
USING LOGISTIC AND RASCH MODELS:  
A Case Study of Tororo and Busia Districts**

**By**

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## ABSTRACT

Food insecurity is a phenomenon that has plagued most developing countries especially those in Africa. However, assessment of its magnitude and extent has always been a challenge. This study provides an understanding of food insecurity in Uganda using a multi-dimensional approach catering for food harvested, food stored and difficulty accessing food. The analysis is made by food availability, food access, food utilization, coping strategies and gender dynamics within the household. The assessment involved factor analysis using principle component analysis for variable reduction, construction of logit models for different food insecurity proxies and application of the models in classification of households by food security status. Further, assessment of food insecurity was made using Rasch model, a uni-dimensional approach. In the results, varying estimates pertaining to correct classification of households for food security were noted using the logit model. The estimates using food access, food stored and food harvested as proxies were 75.8%, 78.1% and 82.1%, respectively. A higher classification of 89.7% was established using a combination of the three proxies. Following an analysis by district, the classification estimates were significantly higher using the hybrid model (99.2% Busia and 96.2% Tororo). These findings support the application of a hybrid model to the investigation rather than considering the dimensions of food insecurity as separate entities.