When Sex Matters: A Comparative Generalized Structural Equation Model (GSEM) for the Determinants of Stunting Amongst Under-fives in Uganda

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Abstract : The main aim of this study was to establish the differences in both the determinants of stunting and the causal mechanism through which the identified determinants influence stunting amongst male and female under-fives in Uganda. Literature shows that male children below the age of five years are at a higher risk of being stunted than their female counterparts. Specifically, studies in Uganda indicate that being a male child is positively associated with stunting, while being a female is negatively associated with stunting. Data for 904 males and 829 females under-fives was extracted form UDHS-2016 survey dataset. Key variables for this study were identified and used in generating relevant models and paths. Structural equation modeling techniques were used in their generalized form (GSEM). The generalized nature necessitated specifying both the family and link functions for each response variable in the system of the model. The sex of the child (b4) was used as a grouping factor and the height for age (HAZ) scores were used to construct the status for stunting of under-fives. The estimated models and path clearly indicated that the set of underlying factors that influence male and female under-fives respectively was different and the path through which they influence stunting was different. However, some of the determinants that influenced stunting amongst male under-fives also influenced stunting amongst the female under-fives. To reduce the stunting problem to the desirable state, it is important to consider the multifaceted and complex nature of the risk factors that influence stunting amongst the under-fives but, more importantly, consider the different sex-specific factors and their causal mechanism or paths through which they influence stunting.

Keywords : stunting, underfives, sex of the child, GSEM, causal mechanism
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