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Land-use decisions in food security: confirmatory factor analysis of status and power in rural Tanzania

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Abstract

Background: Food security and improved nutrition remain critical in achieving Sustainable Development Goal 2. Undernutrition and micronutrient deficiencies persist, primarily driven by inadequate diets and a lack of dietary diversity. In urban areas, there is a rapid increase in overweight and obesity rates attributed to shifts in dietary habits and other lifestyle behaviours. This triple burden of malnutrition highlights the need for interventions that address both challenges and their root causes. In Africa, rural farmers are very important in producing healthy foods to feed the cities; hence, sustainable farming practices that enhance productivity and resilience are needed. While more research has focused on improving agricultural production, this study explores the dynamics regarding land use decision-making among rural farmers toward achieving sustainable food systems. Understanding the decision-making power of rural farmers regarding land use is crucial for understanding how farmers' decisions influence crop production.

Methodology: The cross-sectional study involved 403 rural households in Mkuranga District of the Pwani region in Tanzania. Likert scale questions were developed following Kemper's status-power theory to gather information on power dynamics and decision-making, status, policy and environmental emotions, and behavioural domains regarding land use decision-making, with direct implications for improving agricultural sustainability and food security. Social and demographic information was collected using a semi-structured questionnaire to capture various land-use perspectives.

Analysis: We employed confirmatory factor analysis (CFA) to validate the latent construct of status and power in the land use decision-making process. Descriptive analysis was conducted for social and demographic information.

Result: The overall CFA results revealed that status, power, policy, and behaviour are significantly latent factors influencing land use decision-making for sustainable food systems among rural farmers in Tanzania.

Conclusion: The findings suggest strong construct validity for the measurement model, with all factor loadings being statistically significant, supporting its applicability in understanding the complexities of land use decision-making among rural farmers in the context

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of improving food security. The analysis provides a foundation for further research into the interplay among these constructs and their implications for sustainable agricultural practices and food security initiatives

Keywords: Decision-making, farmers, food security, land use, power, status, Tanzania