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Socio-psychological determinants of smallholder farmers' intention to adopt climate-smart agriculture in south-western Uganda

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Abstract

Increasing climate variability and associated hazards continue to undermine global progress towards the Sustainable Development Goals, particularly poverty reduction and zero hunger. With a large fraction of the population being smallholder farmers dependent on rain-fed agriculture, Sub-Saharan Africa's food production is highly sensitive to climate variability. Although climate-smart agriculture (CSA) has been widely promoted as a sustainable adaptation strategy, its adoption remains low. Several studies have documented the socio-economic determinants of adoption of CSA practices, but the influence of socio-psychological factors that shape farmers' adaptation decisions is less investigated. This study applies an integrated behavioural framework combining the Knowledge–Attitude–Practice model, the Protection Motivation Theory, and the Theory of Planned Behaviour to examine farmers' intentions to adopt CSA practices, in response to drought and flood hazards. Data were collected through a household survey of 583 smallholder farmers across three agro-ecological zones in south-western Uganda. Statistical analysis of the survey dataset shows that perceived behavioural control (PBC) and subjective norms (SN) are the strongest direct predictors of adoption intention for both drought and flood hazards. Knowledge of CSA practices has a significant indirect effect on adoption intention by strengthening farmers' perceived capacity (PBC) and, to a moderate extent, perceived social expectations (SN) to implement CSA practices. The direct influence of SN and PBC and their mediating role on adoption intention differs significantly across AEZs. Overall, the findings demonstrate that socio-psychological factors mainly PBC, SN and knowledge of CSA practices, play a critical role in shaping smallholder farmers' intentions to adopt adaptive strategies. Research interventions should therefore prioritise strengthening farmers' knowledge of CSA by demonstrating the effectiveness of the different practices in relation to hazard impact reduction. Policy interventions should widen opportunities for knowledge sharing about CSA practices, enhance farmers' capacity to implement CSA practices, and leverage social influence mechanisms to promote the adoption of climate-resilient agricultural practices.

Keywords: smallholder farmers, agro-ecological zones, drought, floods, knowledge-attitude-practice, theory of Planned behaviour

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