



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

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Introduction

- Smallholder farming systems in sub-Saharan Africa (SSA) are vulnerable to climate-induced drought and flood risks
- Climate-smart agriculture (CSA) is promoted as a sustainable adaptation strategy, but adoption among smallholder farmers in SSA remains low
- An integrated conceptual framework is proposed to examine how socio-psychological factors influence farmers' intention to adopt CSA practices in south-western Uganda
- The framework integrates constructs from:
 - Knowledge, Attitude and Practice (KAP) model
 - Protection Motivation Theory (PMT)
 - Theory of Planned Behaviour (TPB) (Fig. 1)

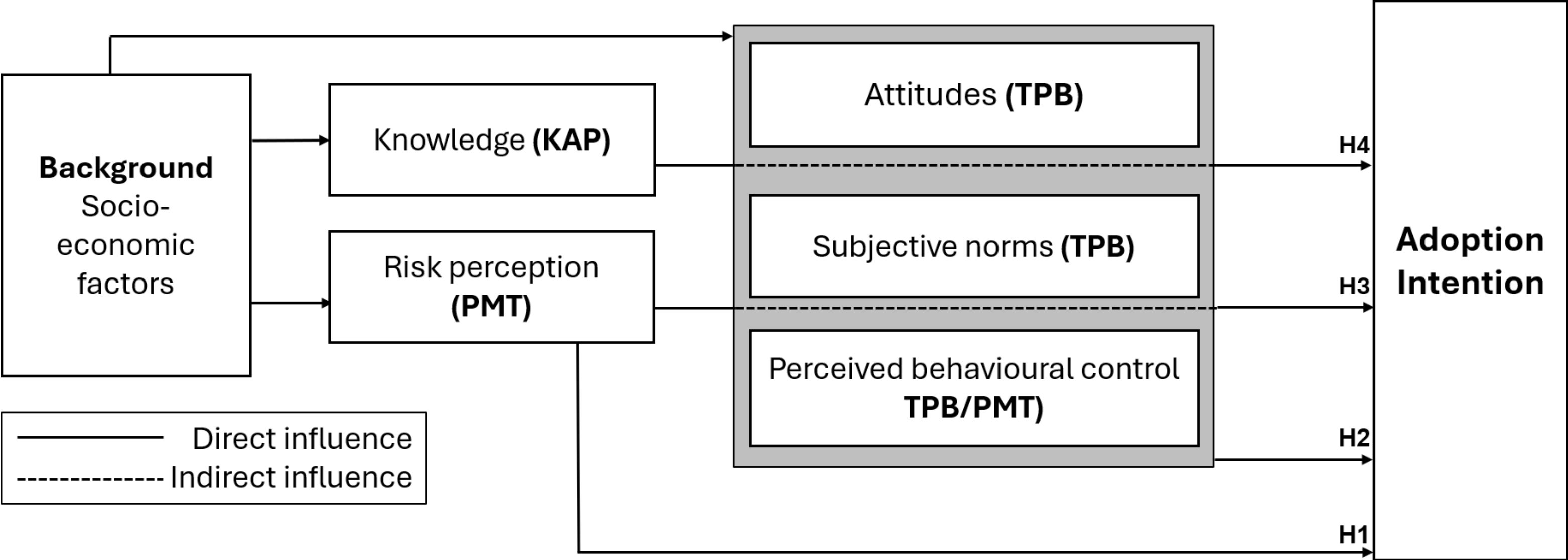


Fig. 1. Conceptual framework integrating PMT, KAP, TPB, and background factors to explain how socio-psychological factors influence farmers' intention to adopt CSA practices

Methodology

- A survey of 583 randomly selected smallholder farming households across three districts in south-western Uganda (Fig. 2)

Key constructs assessed

- Knowledge of drought and flood hazards and CSA practices
- Risk perception:** perceived hazard impact and frequency
- Attitude:** evaluation of adopting CSA practices
- Subjective norms:** perceived social influence on adoption
- Perceived behavioural control:** perceived capacity to adopt CSA practices

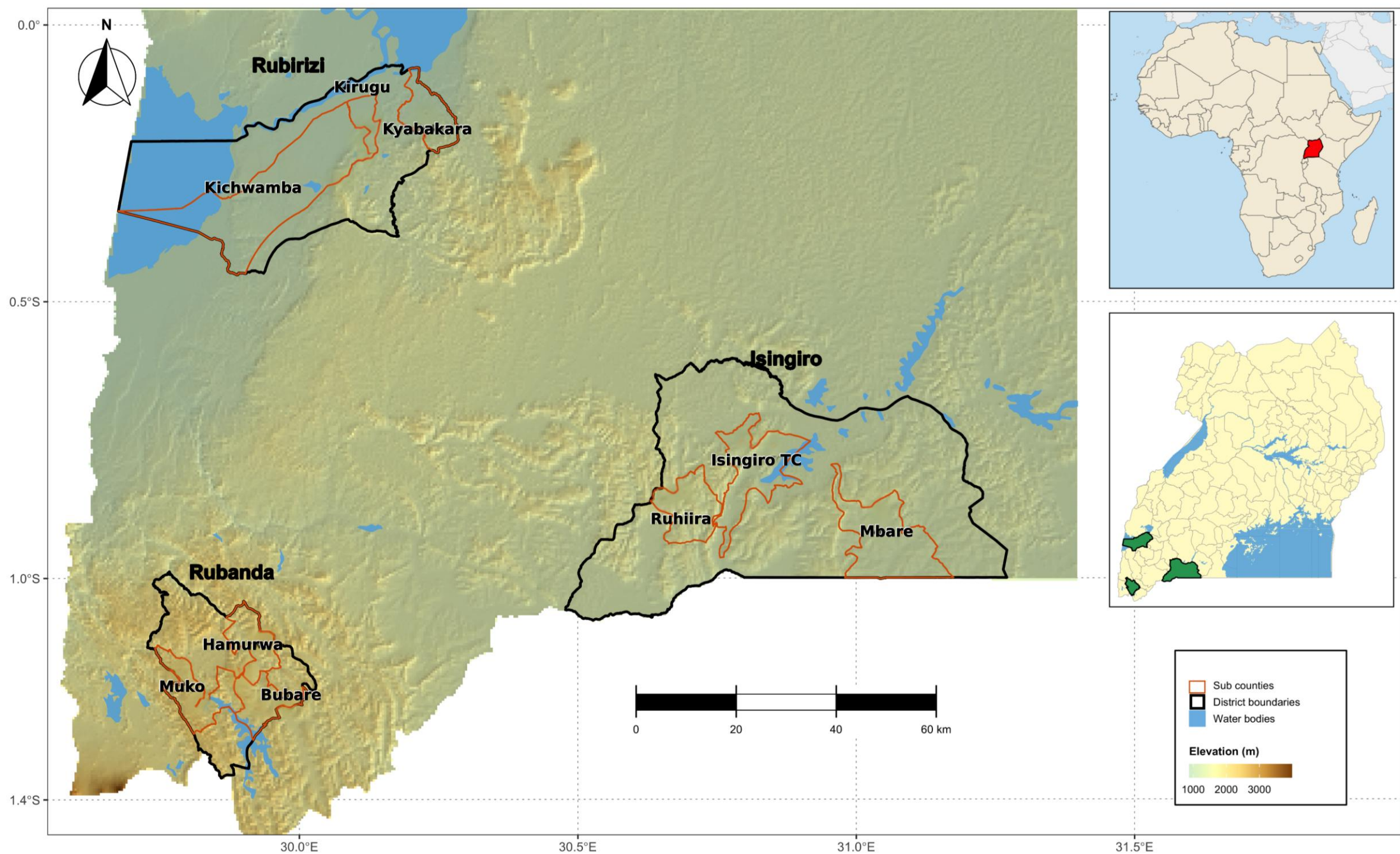


Fig. 2. Map showing the three districts where the study was conducted

Key results

1. Climate-smart agricultural practices adopted

- Farmers adopt several CSA practices spanning four major functional categories
- Crop-based measures: early planting and improved crop varieties are the most highly adopted (Fig. 3)

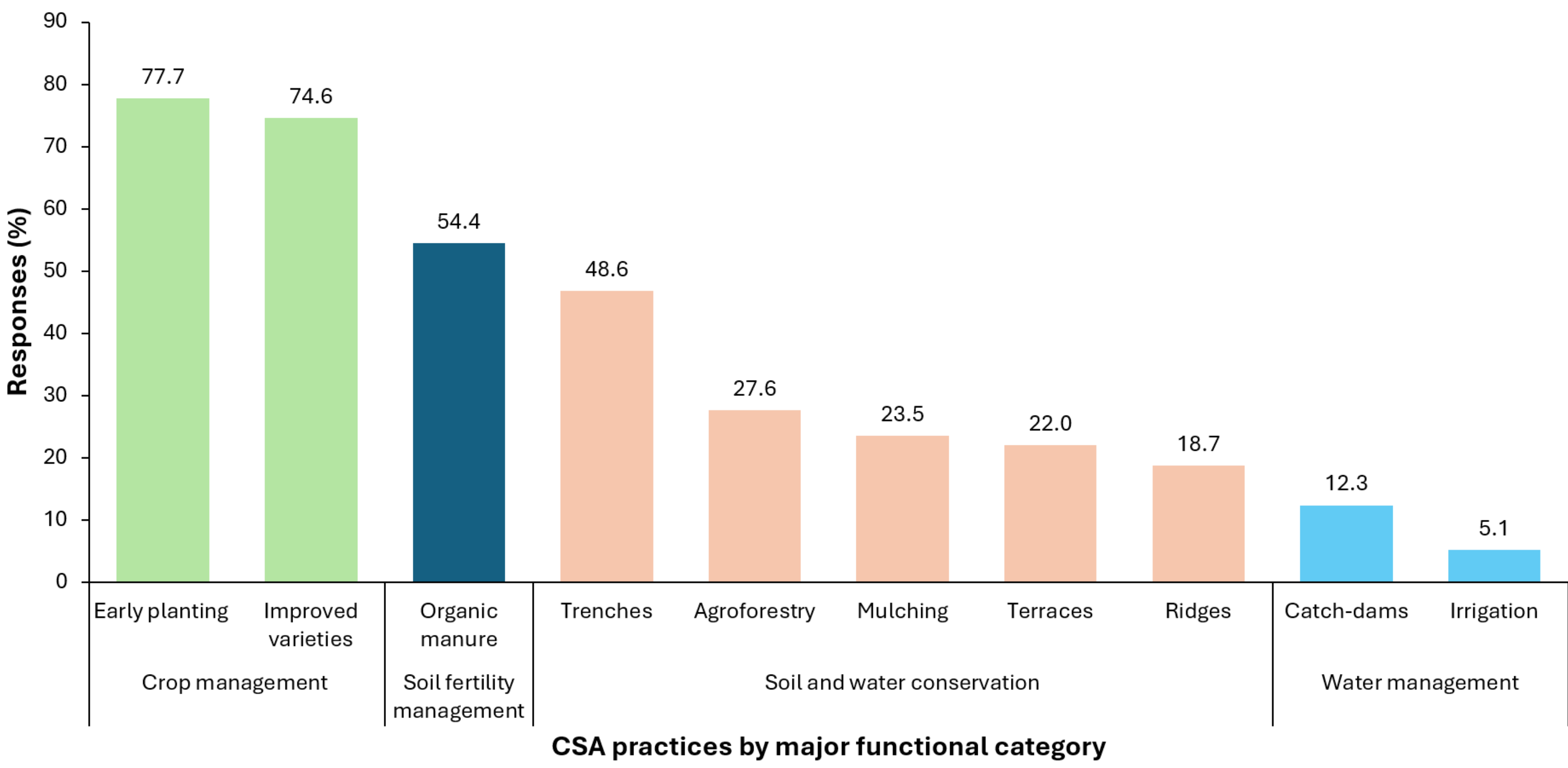


Fig. 3. Percentage of farmers adopting selected climate-smart agricultural practices

3. Indirect effect of socio-psychological factors on adoption intention

- Indirect effects on adoption intention are generally small, except for knowledge of CSA practices
- Knowledge of CSA practices influences smallholder farmers' adoption intention strongly through PBC, followed by SN for both hazards (Fig 5)

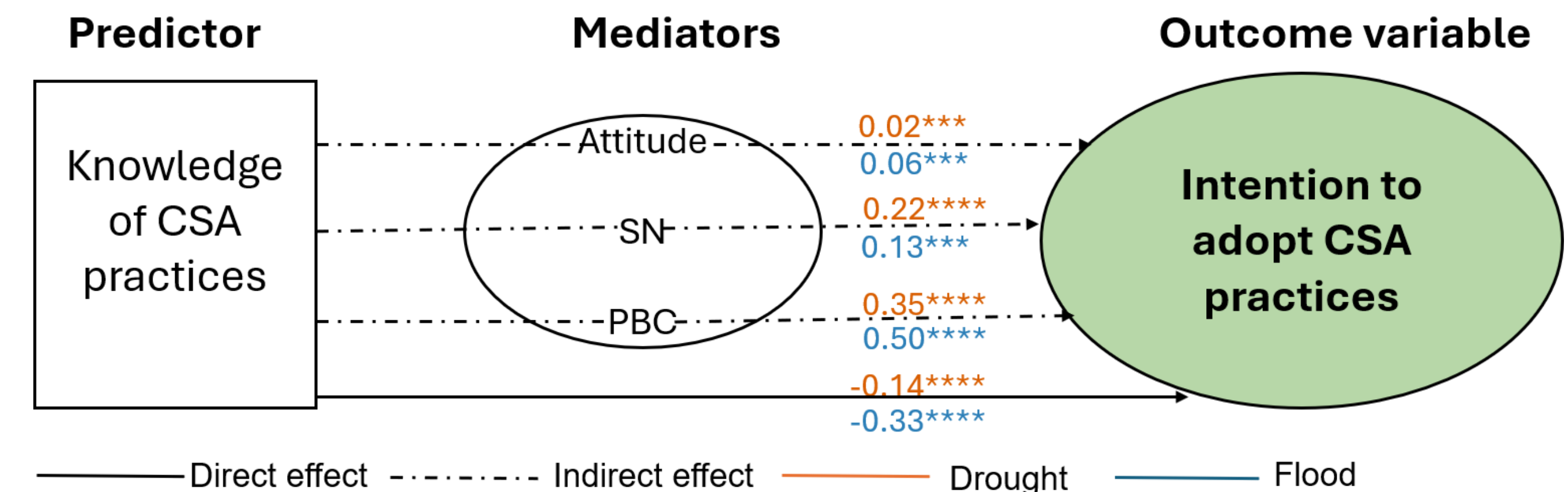


Fig. 5. Standardised coefficients for the indirect pathway linking knowledge of CSA practices to adoption intention. Significance levels: ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$

2. Direct effects of socio-psychological factors on adoption intention

- Perceived behavioural control has the strongest influence on adoption intention for both drought and flood hazards, with a slightly stronger effect for floods
- Subjective norms also positively influence adoption intention, with a stronger effect for drought than flood (Fig. 4)

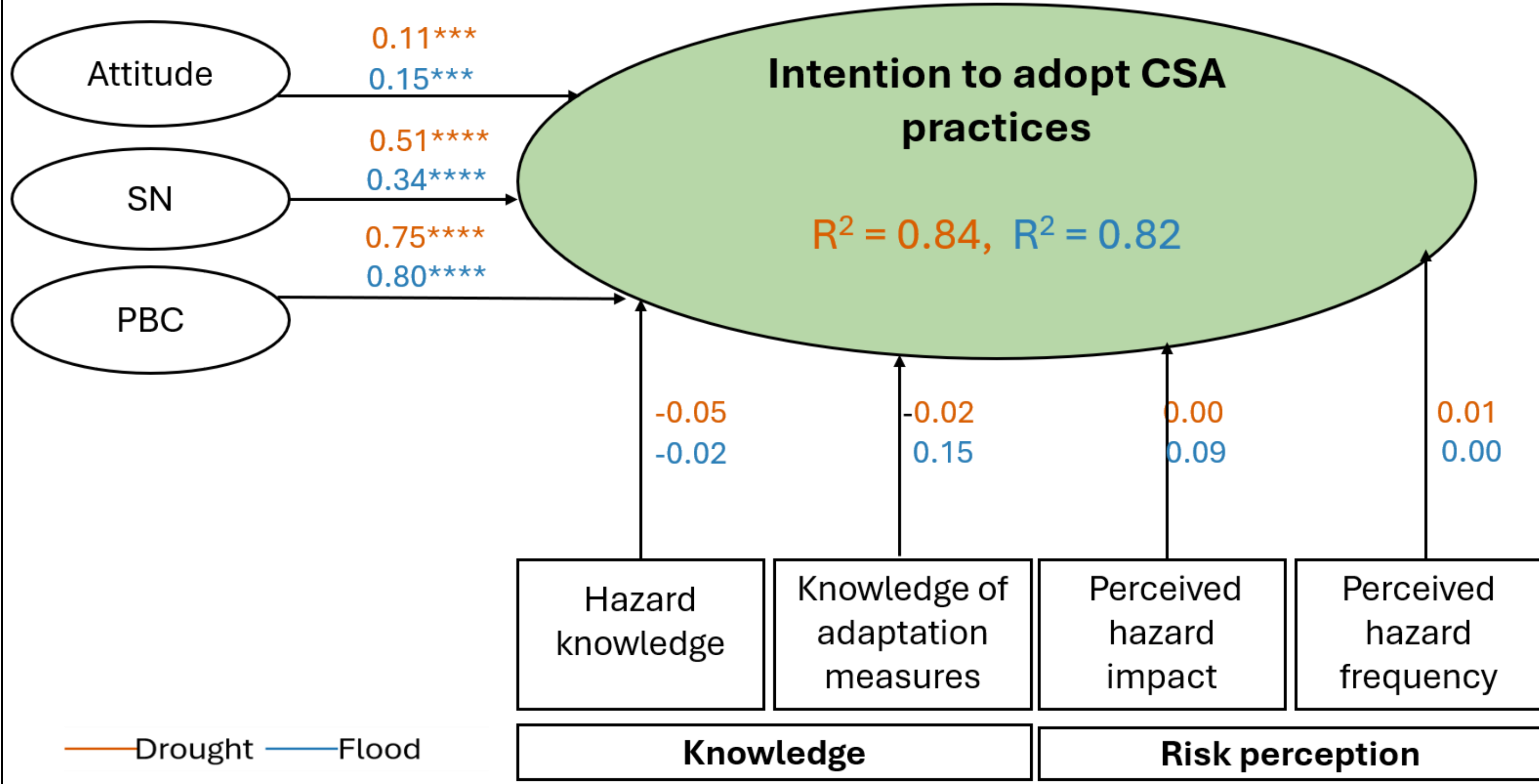


Fig. 4. Standardised coefficients for direct effects of socio-psychological factors on intention to adopt CSA practices. Significance levels: *** $p < 0.01$; **** $p < 0.001$

Conclusion

- Perceived behavioural control and subjective norms are the major direct determinants of smallholder farmers' intention to adopt CSA practices
- Knowledge of CSA practices influences adoption intention indirectly, mainly through perceived behavioural control and subjective norms for both drought and flood hazards
- Strengthening CSA knowledge, alongside farmers' perceived capacity and supportive social norms, can enhance intention to adopt CSA practices