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From intentions to action: Explaining sustainable practice adoption among smallholder oil palm farmers in Indonesia

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Abstract

The expansion of small-scale oil-palm plantations has been one of the most significant drivers of deforestation in Indonesia over the last decades. About 40 % of oil-palm plantations in Indonesia are managed by smallholder farmers, making them key players in the transition to sustainable oil palm. Understanding the behavioural mechanisms behind smallholder farmers' adoption of sustainable practices is therefore critical for policy effectiveness.

Building on a framework that combines the Theory of Planned Behaviour with the Technology Acceptance Model, this study investigates which behavioural mechanisms predict stated intention to adopt sustainable practices and the actual adoption of organic fertilisation, native tree planting and intercropping in oil palm cultivation. The analysis is based on survey data from 1,600 smallholder farmers across the four Indonesian regencies in Jambi with the largest concentration of smallholder oil palm plantations. Using structural equation modelling, I estimate how attitudes, social norms, perceived behavioural control and technology perceptions shape both adoption intentions and behaviour.

Preliminary results show that attitudes are primarily shaped by perceived usefulness of sustainable practices rather than environmental awareness. Similarly, behavioural control is positively associated with the perceived ease of use of sustainable practices. In addition, external pressures (e.g., buyers and government), rather than internal pressures (e.g., family and peers), dominate perceived environmental norms. Finally, while attitudes are a consistent and relevant driver across all outcomes, behavioural control strongly influences organic adoption and social norms are particularly relevant for tree planting.

These findings highlight the value of integrating behavioural and technology adoption theories to better understand decision-making in agricultural contexts and to inform more effective policies promoting sustainable oil palm management.

Keywords: Adoption behaviour, oil palm, sustainable agriculture

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