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Determinants of women’s willingness to pay for beekeeping kits in rural Kalimantan

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Abstract

Oil palm expansion has fundamentally reshaped rural livelihoods across Indonesia. As oil palm replaced more diversified farming systems, women lost agricultural roles they previously held and were pushed into unpaid domestic work or low-paid informal activities. Targeted interventions can help address this through productive assets that enable women to generate independent income, yet little is known about what drives women’s demand for such assets.

Beekeeping is one promising option. Indonesia hosts more than 40 native stingless bee species well suited to oil palm landscapes, and the activity fits naturally into women’s daily lives without requiring additional land or competing with other livelihood activities. It also supports pollination services and creates incentives to protect remaining forest areas. Despite this potential, beekeeping remains a minor livelihood activity in Indonesia and a formal market for beekeeping kits has yet to develop. Understanding how much women are willing to pay (WTP), which factors shape this willingness, and whether stated willingness reflects actual payment behaviour are therefore essential for effective intervention design.

This study examines the determinants of women’s WTP for beekeeping starter kits among 300 women in Kapuas Hulu, West Kalimantan, an oil palm dominated district with strong traditions of wild honey harvesting. In 2024, a double-bounded dichotomous choice experiment with randomised real and hypothetical payment conditions was used to elicit women’s WTP. A machine learning and interval regression framework then identifies the factors most strongly shaping WTP under both conditions.

Women’s WTP is primarily associated with the number of income-generating household members, perceived forest productivity on oil palm land, and substantial household income from off-farm activities. Women in the real payment condition reported WTP approximately 64 percent lower than in the hypothetical condition, revealing substantial hypothetical bias.

These findings are directly relevant for designing gender responsive livelihood programmes in oil palm landscapes. Targeting should account for household income diversification and forest resource perceptions. The gap between stated and actual WTP suggests that hypothetical demand estimates may overstate uptake of productive asset interventions, a concern relevant to agricultural development across the Global South.

Keywords: Beekeeping, dichotomous choice experiment, gender inequality, hypothetical bias, Indonesia, livelihood diversification, machine learning, oil palm, productive assets, rural livelihoods, willingness to pay, women's economic empowerment