

Impact of Modern Beehive on Income of Rural Households: Evidence from Bugina District of Northern Ethiopia

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Abstract : The enhanced utilization of modern beehives holds significant potential to enhance the livelihoods of smallholder farmers who heavily rely on mixed crop-livestock farming for their income. Recognizing this, the distribution of improved beehives has been implemented across various regions in Ethiopia, including the Bugina district. However, the precise impact of these improved beehives on farmers' income has received limited attention. To address this gap, this study aims to assess the influence of adopting upgraded beehives on rural households' income and asset accumulation. To conduct this research, survey data was gathered from a sample of 350 households selected through random sampling. The collected data was then analyzed using an econometric stochastic frontier model (ESRM) approach. The findings reveal that the adoption of improved beehives has resulted in higher annual income and asset growth for beekeepers. On average, those who adopted the improved beehives earned approximately 6,077 Ethiopian Birr (ETB) more than their counterparts who did not adopt these beehives. However, it is worth noting that the impact of adoption would have been even greater for non-adopters, as evidenced by the negative transitional heterogeneity effect of 1792 ETB. Furthermore, the analysis indicates that the decision to adopt or not adopt improved beehives was driven by individual self-selection. The adoption of improved beehives also led to an increase in fixed assets for households, establishing it as a viable strategy for poverty reduction. Overall, this study underscores the positive effect of adopting improved beehives on rural households' income and asset holdings, showcasing its potential to uplift smallholder farmers and serve as an alternative mechanism for reducing poverty.

Keywords : impact, adoption, endogenous switching regression, income, improved beehives

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