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## Transaction Costs Analysis of Hired Labour Use in Pest Management: The Empirical Study of Fruit Trees Farming in Thailand

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### Abstract

Pest management is one of important activity in fruit trees farming. Having a look at the detail, it shows that pest management activity involves sort of tasks with distinct attributes. Depending on the strategy being employed, a set of tasks may vary from one to the other farms. Calendar based spraying strategy, for instance, may involve simple tasks such as pesticides spraying, while the others, such as IPM strategies, may consist of wide range set of tasks from simple to the more complex ones. This paper reports empirical investigation of the effect of pest management tasks on the likelihood of hired farm labour employment using transaction costs economic framework. It is argued that the hired farm labours are not randomly assigned to perform pest management tasks, but rather to the tasks that are easier to monitor, applied repetitively, and do not require specific skills. Accordingly, the main hypothesis we derived is that pest management tasks labeled as IPM strategy is most likely to be performed under farm labour organisation comprised largely of family labours. The results are summarised as follow: **(1)** The conditional probability of the form of farm labour organisation shows that **(i)** pest monitoring seems likely to be family labour business, **(ii)** pest management tasks labeled as IPM strategy is more likely to be performed under farm labour organisation comprised largely of family labour, and **(iii)** the use of hired labour seems likely to be under supervision of family labour. **(2)** Estimates of probit model of durian farming furthermore confirm that the attributes of pest management task is the most important factor determining the likelihood of employing hired farm labour in pest management. However, the estimate of probit model of tangerine farming cannot provide statistical evidence similar to durian farming model due to the less variation of pest management tasks applied by tangerine farm household.

**Keywords:** Fruit trees farming, hired labour, pest management, transaction cost economics