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Do farmers learn from Facebook group? Evidence from Indonesian aquaculture communities

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Lack of access to climate, technical, and market information caused information asymmetry for smallholder farmers, impending them from well-informed decision making related to farm management. However, with pervasive use of Information and Communication Technologies (ICT), the costs of obtaining important information between farmers and relevant experts can be reduced. Nevertheless, research on ICT and information exchange among smallholders in developing countries is still scarce, resulting in a paucity of data on the programs' impacts. Facebook group could give a forum for agricultural producers in developing countries to exchange knowledge in the most efficient way possible.

Our study investigates why shrimp farmers might join a Facebook community to improve their technical knowledge and farming practices. To serve the purpose, we studied Indonesian shrimp farmers who are members of the *Komunitas Udang Vannamei Indonesia* (KUVI), or Indonesian Vannamei Shrimp Community Facebook group (hereafter, KUVI users), as well as the non-KUVI farmers from traditional communities (hereafter, non-users), in 2021. We exploit a unique dataset of 1657 shrimp farmers, comprising 273 KUVI users and 1384 non-users. The survey solicited socio-economic and farm characteristics, as well as information acquisition behavior data from respondents.

Our descriptive statistics indicate that non-extensive shrimp farmers with stocking densities of 5 to 750 PL employ KUVI more than extensive or traditional farmers, with stocking densities of 1 to 4 PL. They are generally more educated and have higher socioeconomic status. Non-extensive farmer users invest more in input and labor, resulting in much higher sales and output yield. Farmers need a higher degree of technical knowledge to support their decision making and investment in non-extensive shrimp farming, which could explain why they appear to be more involved in information acquisition. Furthermore, the proportion of farmers who are members of ethnic minorities and religious groups who use KUVI is substantially greater than that of non-users.

Despite varying potential information sources, farmers' primary trusted sources are still fellow farmers within the same villages irrespective of KUVI membership, albeit non-KUVI members appear to rely on it more. As the ecological prerequisites for shrimp farming differ by locality and depend on climate, their peers in the same community may be the most reliable source of information. Non-extensive farmers, on the other hand, volunteered more information in KUVI, but they also testified that the information in KUVI was erroneous.

As information disseminated in KUVI by the members is mostly fragmented, farmers are barred from obtaining the accurate information that aids their farming practices.

Our descriptive results show that while Facebook group utilization might help to compensate information asymmetry due to limited extension services, the support of specialists such as extension workers is still required as the aquaculture becomes high-density. Moreover, Facebook groups may function as inclusive information sharing providers for minority groups, who are frequently marginalized in traditional extension system.

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