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The Business Model for a Digitized Extension Service and Mechanisation Technology in the Rice Sector

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Abstract

Farmers in developing countries often struggle with the adoption of new technologies. This study aims to design an innovative and flexible business model for the sustainable scaling of new technologies. A stakeholder and profit-oriented Canvas business model was used by adding two additional segments (i) profitability and (ii) sensitivity to the original Canvas. The model was designed based on an upstream preliminary analysis of the business environment and its competitiveness. We use a case study based on technologies (Personalized extension application called RiceAdvice, and a threshing machine called ASI thresher from the initial of the partners who contributed: AfricaRice; the Senegal River Valley National Development Agency and the Senegalese Institute of Agricultural Research) developed by AfricaRice. The results show that the designed improved Canvas business model is reliable and profitable when both technologies are used separately. However, higher profitability is observed when both technologies are combined in one business model. In this case, the business has a Net Present Value of about \$17,381.84 and an Internal Rate of Return (IRR) of 33%. The study shows that the business model is very sensitive to the price of the service. Therefore, we recommend an evaluation of the business model to find out the appropriate price and payment method for both the service recipient and the service provider. This study contributes to the business model literature by providing a path for the sustainable adoption of new technologies through a sustainable business model approach.

Practical implication: The outcome of the study is a flexible and operational model for the sustainable adoption of new technologies. The model can be directly used and implemented by actors interested in agribusiness.

Theoretical implication: The theoretical approach of the business model was conceptualised to propose a practical and flexible business model.

Originality: Based on the theoretical approach, the study proposes a practical framework to provide an accurate tool for a sustainable adoption process of new technologies.

Keywords: Adoption, Business model, keywords: Digitized extension service, new technology