Adoption of Agritech Innovations in Digital Agriculture: A TAM-Based Study of Farmers for Sustainable Agriculture 4.0

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Abstract:

This study delves into the digitalization of agriculture, with a particular emphasis on the Technology Acceptance Model (TAM) from the perspective of farmers. It investigates how agritech innovations are transforming farming practices and paving the way for a more sustainable future in agriculture. By focusing on the TAM, the study aims to understand farmers' willingness to adopt new technologies, analyzing the factors that influence their acceptance and the resulting impact on their operations.

The research is structured around three key stakeholder groups, all unified by the common goal of transitioning to more sustainable farming practices. First, it examines the organizational shifts among stakeholders influenced by the rapid technological advancements in the sector. Second, it explores farmers' direct experiences with connected agriculture, focusing on their acceptance of new technologies and their practical integration into daily farming activities. Finally, the study assesses consumer behaviors and their receptiveness to products derived from technologically advanced, sustainable agricultural methods.

Through qualitative research, this study uncovers the interconnectedness of these stakeholders within a network driven by technological implementation. This network seeks to maximize the collective value of its members' actions, ultimately contributing to the democratization of Agriculture 4.0. The findings highlight that while factors such as the age of farmers play a role in technology adoption, other critical determinants also emerge. The study concludes that government facilitation is crucial in harmonizing this network and supporting the broader adoption of sustainable agritech practices.

Keywords:

Agritech Adoption, Technology Acceptance Model (TAM), Sustainable Agriculture, Digital Agriculture, Agriculture 4.0