

ABSTRACT

Smart farming is an intelligent method of agriculture that utilizes tools or farmers' knowledge to manage agricultural land efficiently and enhance sustainability in the agricultural sector. However, the use of smart farming remains relatively low, particularly in regions such as Surabaya and Kediri. The adoption rate among conventional farmers is still limited, largely due to low digital literacy and inadequate technological infrastructure. This situation highlights a gap between the potential of technology and the readiness of human resources, which can hinder improvements in agricultural efficiency and productivity. Moreover, land limitations have driven some conventional farmers to shift from traditional methods to adopting smart farming. On the other hand, the low participation of younger generations also indicates weak farmer regeneration, which may threaten the long-term sustainability of the agricultural sector. This study aims to analyze the factors influencing the adoption of smart farming using the extended Unified Theory of Acceptance and Use of Technology (UTAUT) model. The research was conducted quantitatively with 179 respondents, consisting of potential users from conventional farmers, potential users from non-farmers interested in smart farming, and current smart farming practitioners in the Surabaya and Kediri regions. Data were collected through a distributed questionnaire and analyzed using the Structural Equation Modelling (SEM) method. The results show that factors such as effort expectancy, social influence, facilitating conditions, and intention to use significantly affect the intention and decision to adopt smart farming. These findings provide theoretical foundations and recommendations for potential non-farmer users, potential conventional farmer users, and current smart farmers, highlighting the importance of promoting a more inclusive adoption of smart farming.

Keywords: *smart farming, UTAUT, SEM, conventional farming*