



Adoption Patterns of Digital Agriculture Tools by Male Farmers in Sudanese Wheat Fields: A Case Study from South Africa

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Abstract

Digital agriculture tools have gained traction in South Africa as a means to enhance agricultural productivity and efficiency among farmers. However, their adoption patterns vary significantly across different regions and farming contexts. The research employs a qualitative approach, focusing on semi-structured interviews with 30 purposively selected male farmers from Sudanese wheat fields. Data collection is supplemented by field observations and document reviews. A significant proportion (75%) of the interviewed farmers reported using digital tools for monitoring crop health and soil moisture conditions, while 40% utilised these tools for market price analysis. Farmers attributed their adoption to improved yields and increased income opportunities. The findings suggest that factors such as farmer education levels, access to technology, and perceived benefits significantly influence the adoption of digital agriculture tools in Sudanese wheat fields. Policy makers should invest in targeted training programmes for farmers to improve their understanding and use of digital agriculture tools. Additionally, extension services could be enhanced by providing more practical demonstrations and support materials. digital agriculture, adoption patterns, male farmers, Sudanese wheat fields, South Africa

Keywords: Sudan, Wheat Fields, Digital Agriculture, Technological Adoption, Farmer Behaviour, Innovation Acceptance Theory, Geographic Information Systems

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