Socio-Cultural Factors Influencing Women Participation in Agricultural Digitization in Zangon Kataf Local Government Area of Kaduna State, Nigeria

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ABSTRACT

Agriculture, a fundamental sector globally, is undergoing a digital transformation, yet the participation of women in this transition remains variable due to socio-cultural dynamics. The research delved into how societal norms, cultural perceptions, access to resources, educational opportunities, and gender roles impact women's engagement in adopting digital tools and technologies within the agricultural sphere. This study analyzed between socio-cultural factors and women's involvement in agricultural digitization initiatives. Employing qualitative and quantitative methodologies, this research aimed to uncover the multifaceted barriers and facilitators influencing women's participation in agricultural digitization. The study drew upon interviews, surveys, and case studies to comprehend the nuances of socio-cultural factors that shape women's decision-making, access to information, and technology adoption in agricultural practices. Factors found to influence rural women farmers' decision on adopting agricultural digitalization were gender roles and expectations (0.000), access to land (0.098), networks and support systems (0.036), decision-making power (0.000), access to education (0.082), age of farmers (0.093), social stigma and discrimination (0.00) and Technological Literacy (0.044). Addressing socio-cultural barriers was crucial in ensuring equitable access to technological advancements, fostering economic empowerment, and sustainable development within the agricultural sector. Findings of this research would contribute significant insights into designing gender-inclusive policies, tailored interventions, and empowerment strategies aimed at enhancing women's agency and involvement in agricultural digitization.

INTRODUCTION

In Eastern Asia and Sub-Saharan Africa, women make up about 50% of the agricultural work force, whereas in Latin America, they make up 20% (Haile 2016); Planning, policies, and programs must incorporate them as a result for sustainable and successful development (Asamu *et al.,* 2019). In all emerging nations, women play a critical role in the agricultural and rural economies. Their responsibilities are evolving quickly in many parts of the world where social and economic factors are reshaping the agricultural sector, and they differ significantly between and within regions (Maksim *et al*., 2022). The promotion of digital agricultural services for women in agriculture is growing (FAO, 2023). Women are using digitalization services to help solve the issues preventing them from realizing their full productivity and economic potential. Tsan *et al.* (2017) opined that the promise of revolutionary digitization has been extolled in the literature; realizing these objectives

depends in part on the recipients' capacity to utilize newly developed digital services. However, there is still a dearth of information in African digitalization literature regarding the variables that could affect rural farmers' acceptance and usage of digital services compared to their male counterparts (FAO, 2019). Problems with societal institutions (including families, friendship networks, and social standing) and cultural norms (like gender roles, values, and attitudes) that hinder the growth of women in agriculture are referred to in this context as socio-cultural hurdles. Success in society is impeded for women in male-dominated nations because of profoundly embedded, discriminatory cultural norms, attitudes, behaviors, and traditions (Kapinga and Montero, 2017). There are a number of root causes of the digital gender divide, including hurdles to access, affordability, education (or lack thereof) and lack of technological literacy, as well as inherent biases and socio-cultural norms that lead to gender-based digital exclusion. The study will fill a gap in the literature by providing a comprehensive analysis of socio-cultural factors specifically influencing women's participation in agricultural digitization within the context of Zangon Kataf Local Government Area of Kaduna State, Nigeria. It will offer insights into the unique socio-cultural dynamics that shape women's engagement with digital agricultural technologies in this specific geographic region, contributing to a deeper understanding of how to promote gender-inclusive approaches to agricultural digitization in rural Nigerian communities.

RESEARCH METHODOLOGY

The study was conducted in Zangon Kataf Local Government Area (LGA) of Kaduna State, Nigeria. Zangon Kataf LGA was purposively selected because, there were problems related to women participation and pilot study was conducted in the study area to check the existence of rural women's participation towards agricultural digitalization. Multistage sampling had been used for this study. In this study, two sets of data were employed for the empirical analyses, primary and secondary data. The primary data were collected through field questionnaire administration and interview of 100 women farmers. Multiple Logistic regression model was used to assess the factors influencing rural women farmers' participation in agricultural digitalization.

RESULTS AND DISCUSSION

Factors influencing women's participation in Agricultural Digitalization

Multiple regression analysis of the data indicated in the Table show that eight (8) variables were significantly related to level of participation of women farmers in Agricultural digitization. The variables were gender roles and expectation, access to land, networks and support systems, decision-making power, access to education, age of farmers, social stigma and discrimination, and technological literacy.

Coefficient of gender roles and expectations was found to be positively related (0.231) to women participation in agricultural digitalization and significant at 1%. This means that female gender roles might limit women's access to education and technology, as they are often expected to fulfill domestic duties rather than engage in technology-related activities. This result agrees with the findings of Asamu *et al.* (2020) who found that women participation in agricultural production to be positively influenced by gender in Warri South Local government of Delta State Nigeria.

Coefficient of access to land was also found to be positively related (0.075) to women participation in agricultural digitalization and significant at 10%. This implies that the more women get access to land, the more they participate in agricultural digitalization.

Coefficient of networks and support systems was found to be positively related (0.052) to women participation in agricultural digitalization and significant at 5%. Limited access to supportive networks or mentorship opportunities for women in agriculture may hinder their ability to access information and resources related to digitization.

Coefficient of decision-making power was found to be positively related (0.031) to women participation in agricultural digitalization and significant at 1%. In some societies, women have limited decision-making power within households or communities and hence impede their ability to adopt or invest in agricultural digitization.

Coefficient of access to education was also found to be positively related (0.054) to women participation in agricultural digitalization and significant at 10%. Limited access to quality education, particularly in rural areas, can hinder women from acquiring the necessary skills to engage with digital tools in agriculture. This

agrees with Kapinga and Montero (2017) who suggested access to education to one of the most needed factors in adopting technology in agriculture.

Coefficient of age of farmers was also found to be positively related (0.022) to women participation in agricultural digitalization and significant at 10%. Younger are more active in adopting agricultural digitalization compared to the older women.

Coefficient of social stigma and discrimination was also found to be positively related (0.007) to women participation in agricultural digitalization and significant at 1%. Societal prejudices and stigmas against women's involvement in certain sectors or roles might discourage their active participation in agricultural digitization initiatives.

Coefficient of Technological Literacy was also found to be positively related (0.482) to women participation in agricultural digitalization and significant at 5%. Socio-cultural norms might discourage women from learning about or using digital tools and technologies, leading to a lack of familiarity and comfort with agricultural digitization. This agrees with Maksim *et al*. (2022) who in their study found technology influencing knowledge-based innovation and digital economy.

Table 1. Regression Analysis Result of the Factors influencing women's participation in Agricultural Digitalization

Variables	Estimated Coefficients	Odds ratio	Wald statistics	Significance level
Gender roles and expectation	0.231***	3.516	0.459	0.000
Work-Life Balance	0.301	2.113	0.553	0.612
Access to land	0.075*	0.681	0.219	0.098
Networks and Support Systems	0.052**	1.924	0.807	0.036
Household size	0.008	0.295	3.217	0.513
Marital status	0.443	0.200	0.717	0.183
Decision-Making Power	0.031***	2.675	0.114	0.000
Farming experience	0.023	0.648	0.119	0.435
Farm sizes	0.282	2.773	0.306	0.428
Cultural Norms and Beliefs	-0.776	1.928	0.554	0.577
Extension contact	0.102	1.611	3.080	0.664
Access to Education	0.054*	6.546	5.703	0.082
Age of farmers	0.022*	2.844	2.906	0.093
Access to Resources	0.099	3.523	3.826	0.790
Social Stigma and Discrimination	0.007***	3.112	2.254	0.000
Access to credit	0.223	0.779	0..371	0.543
Technological Literacy	0.482**	1.026	0.019	0.044
Language and Cultural Barriers	0.465	1.478	2.902	0.801
* = significant at 10%		R^2= 0.782		
** = significant at 5%		Adjusted R^2 =0.657		
*** = significant at 1%		F-ratio = 12.77		
NS=not significant				

Source: Computed from Survey Data (2023).

CONCLUSION

This study was carried out in order to determine the influence of socio-cultural factors on adoption of digitalization in agricultural production among women farmers, and it was found thatgender roles and expectations (0.000), access to land (0.098), networks and support systems (0.036), decision-making power (0.000), access to education (0.082), age of farmers (0.093), social stigma and discrimination (0.00) and Technological Literacy (0.044) positively influenced.

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