

THE INFLUENCE OF SOCIAL MEDIA ON AGRICULTURAL PRACTICES: INSIGHTS FROM ENUGU STATE FARMERS AND STAKEHOLDERS

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ABSTRACT

Social media integration into agriculture has become a game-changing strategy for boosting market access, encouraging cooperation, and improving agricultural practices. The adoption and effects of social media among farmers and stakeholders in Enugu State are examined in this study. The study intends to investigate the ways in which social media platforms are used to connect farmers with markets and policy influencers, promote best practices, and spread agricultural knowledge. A total of 500 farmers, agricultural extension agents, and other stakeholders were surveyed in Udi, Nsukka and Awgu. Results show that social media aided productivity increase, decision-making improvement, and reduction in farming costs. The study recommends that the Federal Ministry of Agriculture should enhance social media literacy and accessibility for farmers by utilizing television commercials and radio jingles. The ministry can also organize workshops or digital literacy programmes at local government level for farmers to help them access online resources and learn how to effectively utilize social media to engage with farming practices.

Keywords: Agriculture, Social Media, Enugu State, Farmers, Facebook, Information.

JEL Codes: D83, Q1, Q13, Q130

1. INTRODUCTION

Agricultural activities are crucial for sustaining the livelihoods of individuals and fostering economic development in emerging nations (Nnadi, Ossai, Akukwe and Chiatula, 2024). The economic advancement of a nation serves as a definitive measure of the enhancement in the quality of life for its citizens (Nyako, 2024). Nigeria's economy has been based primarily on agriculture, which employs more than 70% of the country's workforce and makes a substantial contribution to the nation's gross domestic product (GDP) (National Bureau of Statistics, 2022). Agriculture in Nigeria is divided into four primary sub-sectors: crops, livestock, forestry, and fishing, and among these, the crop sub-sector is the most significant, contributing more than 73% of the overall agricultural output (Yusuf and Tiri, 2024). Notwithstanding its significance, the agricultural industry continues to face obstacles such as low productivity, restricted access to contemporary farming technologies, and weak market connections. According to Inegbedion et al. (2020), Nigeria's agriculture industry has been neglected for so long that it is not very appealing to the country's youth. However, social media's rise has created

new avenues for tackling these issues by revolutionizing the access, sharing, and dissemination of agricultural information.

Social media platforms, initially designed for personal interaction, have evolved into essential instruments for businesses aiming to promote their products and services, engage with customers, and foster relationships with their suppliers (Yusuf and Abel, 2025). Worldwide, social media have transformed numerous industries, agriculture included. According to Banmeke et al. (2012), this has made information not just available but also easily accessible to potential users. These contemporary ICTs have not only transformed the information landscape in the present world but have also influenced the manner in which individuals connect and link with one another. Social media have the potential to serve as powerful tools for agricultural development, particularly in regions with limited access to traditional extension services. Farmers throughout the world are using social media to increase access to agricultural knowledge for better farming practices and increased commercial prospects. In Nigeria, social media's application in agriculture is slowly picking up momentum. Social media serve as a tool to enhance the perception of agriculture among a wide audience, and facilitate the exchange of information and experiences between youth and emerging farmers (Adigun et al. 2017). For instance, the "Farmers' Group Nigeria" on Facebook has turned into a centre for talking about agricultural issues and solutions, with members exchanging experiences and suggesting efficient farming methods. Additionally, agricultural startups like, "FarmCrowdy" and "ThriveAgric" have leveraged social media to link investors with farmers, thus tackling the challenge of restricted access to funding. These platforms have demonstrated that social media can play a pivotal role in enhancing agricultural productivity and profitability in Nigeria. Platforms like Facebook, WhatsApp, and Twitter are now vital tools for communication in agriculture. These platforms enable the sharing of information regarding market trends, agricultural methods, and weather predictions.

Enugu State, similar to numerous areas in Nigeria, depends significantly on agriculture for its economic support. The state's rich soil fosters a range of crops such as cassava, yam, maize, and rice, alongside livestock rearing. Nevertheless, farmers in Enugu State frequently encounter obstacles like climate change and inadequate understanding of enhanced farming methods. According to Oduntan and Obisesan (2022), climate change is anticipated to have a profound impact on agricultural production due to probable long-term alterations in rainfall patterns and the movement of temperature zones. These changes may pose serious threats to the food security and economic development of a region. To close these gaps, effective communication and sharing of information are essential. Social media platforms, due to their extensive reach and engaging features, offer a distinct opportunity to tackle these challenges by linking farmers, agricultural specialists, and policymakers.

Motivated by the urgent need to find out the influence of social media on farming methods and agricultural growth in Enugu State, this study aims to comprehend how social media help farmers in Enugu State, a primarily agrarian State in Southeast Nigeria, adopt more agricultural practices, and seek agricultural information from social media. This study seeks to assess the level of social media usage among farmers and other agricultural stakeholders in Enugu State; identify the types of agricultural information shared on social media platforms, and evaluate the impact of social media on farmers' decision-making and productivity. This research contributes to the growing body of literature on the influence of social media in promoting agriculture, and provides insights into the correlation between technology and agricultural development in Nigeria. This study is structured into five sections. The second section is the literature review which consists of the theoretical and empirical literature. The third section is the methodology which consists of the theoretical frame work, and the research design. The

fourth section consists of the results and discussion of findings. Finally, the fifth section consists of the conclusion and recommendations.

2. LITERATURE REVIEW

2.1 Theoretical Literature

2.1.1 Technological determinism theory

The technological determinism theory was propounded by Thorstein Veblen. The theory states that technology in any society defines its nature as it leads to newer ways of production which influence the cultural, political and economic aspects of the society (Asemah et. al., 2017). Technological determinism shows itself at various levels which starts with the introduction of newer technologies, introduces various changes which could lead to a loss of existing knowledge. This theory states that media technology shapes how individuals in a society think, feel, act, and how the society operates as it moves from one technological age to another.

2.1.2 Uses and Gratifications Theory

Elihu Katz was the pioneer of the uses and gratifications theory, positing that individuals engage with media to their benefits. This perspective emerged in the early 1970s, further developed by Katz alongside his colleagues Jay Blumler and Michael Gurevitch (Asemah et. al., 2017). The uses and gratifications approach conceptualizes the audience as proactive participants, indicating that they deliberately select specific media and content to attain desired outcomes or gratifications that address their personal needs. This theory of mass communication aims to elucidate the reasons behind individuals' active pursuit of specific media forms to satisfy particular needs.

2.2 Empirical Literature

This literature review examines previous studies on social media and technology adoption in agriculture with a focus on its use and advantages among farmers and stakeholders in Nigeria. Hafeez et al. (2023) in their study on drone technology for precision farming found that there was an increase in drone application for precision agriculture after 2017 due to the reduction of weight, cost of UAVs, and increment in payload capability. According to the study, the application of machine learning in drones has made it possible to create a farmer-friendly system. The study also found that there was an increase in the application of multi-copters in pesticide spraying.

Inegbedion et. al. (2020) in their study found that the use of social media (Facebook, WhatsApp and Instagram) in the marketing of agricultural products significantly influenced cost reduction and hence efficiency in marketing as well as enhanced turnover of farmers through increased demand for agricultural products. The study also found that the adoption of social media in the marketing of agricultural products enhanced the efficiency of agricultural marketing and sales turnover of farmers in South-south of Nigeria but only the use of WhatsApp and Instagram predicted efficiency of agricultural marketing and sales turnover of farmers. In another study by Adejo and Opeyemi (2019), it found that majority (70%) of the respondents affirmed that they had heard about social media, while only 30% had not heard about social media. Out of the majority that had heard about social media, only 21.7% agreed that they were using social media to source agricultural information while most (78.3%) of the respondents were not using social media to source agricultural information. This result further showed that majority still were not aware of the use of social media as a good source of agricultural information and hence, did not use it to source

necessary information that will improve farming. The study further found that as the age of the respondents' increases, the probability of having high level of social media usage reduces. Young people are believed to be inquisitive and therefore are willing to acquire more

information. The study found that an increase in household size increased the probability of social media usage. The study also reported that educational level, farming experience and annual farm income were significant variables that influenced the level of usage of social media in the study area.

In a study by Alabi and Nnaji (2021), it was found that respondents who used social media for agricultural practices improved in the areas of new crop varieties ($X = 2.33$), new farm input application methods ($X = 2.11$), new market outlets ($X = 2.05$), loan availability ($X = 2.00$), fertilizer application ($X = 2.09$), and weather condition ($X = 2.13$). This showed that social media brought about the sharing of agricultural related ideas among farmers and proved immensely useful to farmers in communicating agricultural information in the study area. Furthermore, the study revealed that agricultural information mostly found on social media were information on new crop varieties (2.33^*), new breeds of animals (1.94), new farm input application methods (2.11^*), new market outlets (2.05^*), loan availability (2.00^*), new feeding system for animals (1.80), fertilizer application (2.09^*), high roofed greenhouse (1.84), weather condition (2.13^*), and buying location (1.86).

Furthermore, Aliagan et al. (2023) in their study found that the types of agricultural information shared on social media were information on diverse agricultural practices where Facebook and Instagram had 9,000 posts each on the subject; information on awareness and participation in agricultural programmes where Facebook had 10,000 posts and Instagram had 20,000 posts; information on agricultural commodity price where Facebook had 5,000 posts and Instagram had 14,000 posts; information on pest disease and control where Facebook had 3,000 posts and Instagram had 25,000 posts; information on equipment promotion and marketing where Facebook had 300 posts and Instagram had 30,000 posts.

Another study by Banmeke et al. (2012) found that the utilization of social network tools (SNTs) by agriculture researchers in the study area was divided into educational and social utilizations. Findings further indicated that sourcing for educational materials ($\bar{X}=3.55$) and agricultural news ($\bar{X}=3.02$) were the major educational utilization of SNTs by the respondents. Researchers also use SNTs for sourcing for conferences, trainings and short courses ($\bar{X}=2.96$) connecting with other registered researchers ($\bar{X}=2.85$), and engaging in collaborative research with other researchers ($\bar{X}=2.83$). With respect to social utilization of SNTs, results revealed that reading magazines/newspaper for latest events ($\bar{X}=2.80$), and uploading pictures of events such as birthdays ($\bar{X}=2.49$) were the social activities SNTs were often used for by the researchers. Overall, the utilization of social network tools by agriculture researchers had 61.7% of the respondents score below the mean score (70) therefore having a low utilization. This implied that the researchers were not fully utilizing social network tools for either educational or social activities. Alhassan et al. (2023) in their study found that respondents (30.0%) indicated that social media helped to engage young farmers in agriculture through extension services. The study also found that there was a positive relationship between age and the usage of social media where a unit increase in age would lead to about 0.094 probability increase in the usage of social media. This means that the drive for the use of social media tools could be higher with increasing age. This implies that an increase in the age of the youth even when they grow beyond a certain age (35 years) may not reduce their tendency to use social media.

3. METHODOLOGY

3.1 Theoretical Framework

This study is anchored on the technological determinism theory where technology in any society defines its nature as it leads to newer ways of production which influence the cultural, political and economic aspects of the society. When farmers and agricultural stakeholders are exposed to social media, they find out information on newer agricultural methods from a

variety of people both home and abroad as social media serve as the meeting point of everyone on a variety of issues. Furthermore, this theory is supported by Alabi and Nnaji (2021), and Inegbedion et. al. (2020) in their studies which showed that social media brought about the sharing of agricultural related ideas among farmers and proved immensely useful to farmers in communicating agricultural information in the study area. Also, the use of social media (Facebook, WhatsApp and Instagram) in the marketing of agricultural products significantly influenced cost reduction, and hence efficiency in marketing as well as enhanced turnover of farmers through increased demand for agricultural products.

3.2 RESEARCH DESIGN

The study adopted a survey research design to explore the influence of social media on agricultural practices among farmers and stakeholders in Udi, Nsukka and Awgu. This design allows for the collection of primary data using the questionnaire. The population of study comprises all the farmers and stakeholders (agricultural extension officers, marketers, policymakers, and representatives of agricultural cooperatives) in Udi, Nsukka and Awgu. To get the sample size of the farmers and stakeholders, Comrey and Lee (1992) provided the following guidance in determining the adequacy of sample size for an infinite population: 100 = poor, 200 = fair, 300 = good, 500 = very good, 1,000 or more = excellent. Therefore, five (500) was used as the sample size for farmers and stakeholders.

3.3 SAMPLING METHOD

The multistage sampling technique was used where in the first stage, the purposive sampling technique was used to select the three agricultural zones which are Udi, Nsukka and Awgu. In the second stage, the stratified random sampling technique was used to categorize respondents into farmers and stakeholders. In the third stage, the simple random sampling technique was used to select respondents from each stratum, and in the fourth stage, the availability sampling technique was used in sharing copies of the questionnaire.

3.4 DATA COLLECTION AND DATA ANALYSIS

The questionnaire was used to collect data. It was validated by a statistician who ran the analysis. A pilot test was conducted on 90 respondents (30 from each agricultural zone), and necessary adjustments were made to enhance clarity and reliability. Data from the questionnaire was analyzed using descriptive statistics (frequency, percentage, mean). Informed consent was obtained from all the participants. Participants' privacy and confidentiality were ensured.

4. RESULTS AND DISCUSSION OF FINDINGS

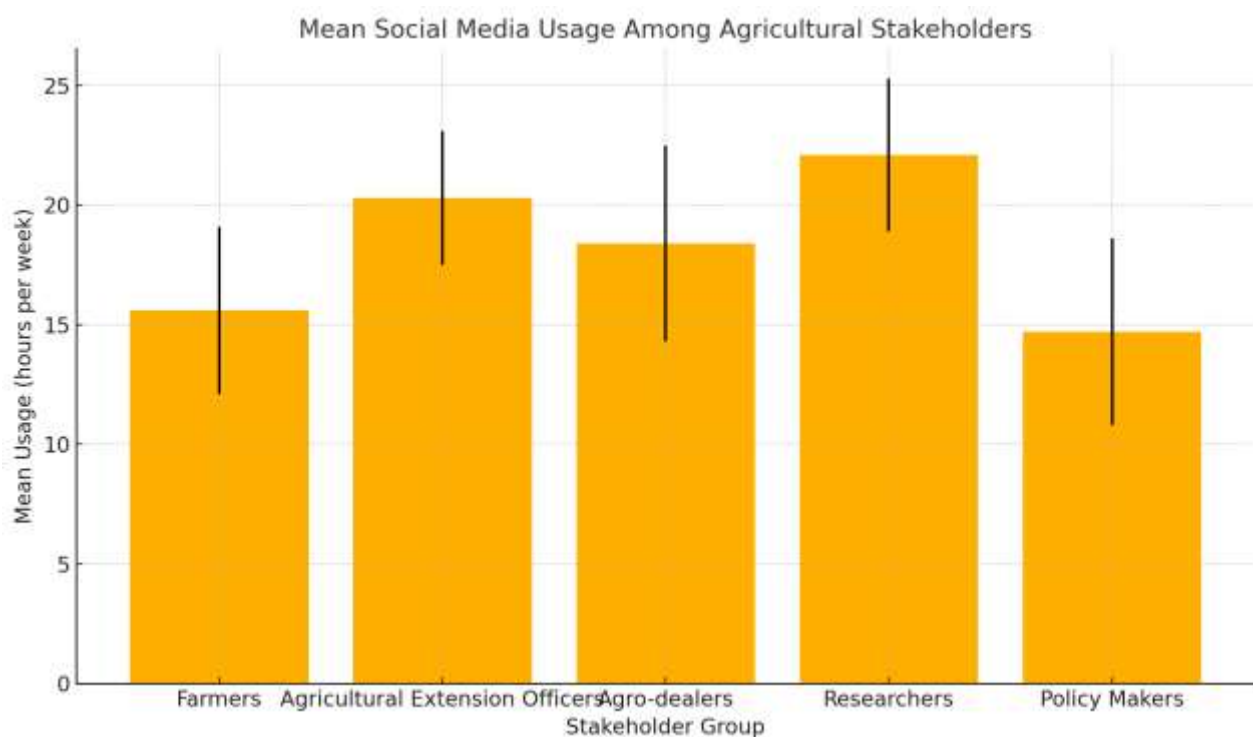
Figure 1: Personal information of farmers and stakeholders.

Response Options	Frequencies	Percentages	Response Options	Frequencies	Percentages
Sex of farmers			Sex of Stakeholders		
Male	277	92%	Male	164	82%
Female	23	8%	Female	36	18%
Total	300	100	Total	200	100
Highest completed education of farmers			Highest completed education of stakeholders		
Primary education	199	66%	Primary education	0	0%
Secondary education	87	29%	Secondary education	107	54%

Tertiary education	14	5%	Tertiary education	93	46%
Total	300	100	Total	200	100
Marital status of farmers			Marital status of stakeholders		
Single	89	30%	Single	11	6%
Married	211	70%	Married	186	93%
Divorced/Separated	0	0%	Divorced/Separated	3	1%
Total	300	100	Total	200	100
Age group of farmers			Age group of stakeholders		
30 years and below	27	9%	30 years and below	47	23%
31 to 40 years	257	86%	31 to 40 years	48	24%
41 to 50 years	9	3%	41 to 50 years	59	30%
Above 50 years	7	2%	Above 50 years	46	23%
Total	300	100	Total	200	100

Source: Field Survey, 2023-2024.

Figure 2: Level of social media usage among agricultural stakeholders



Source: Field Survey, 2023-2024.

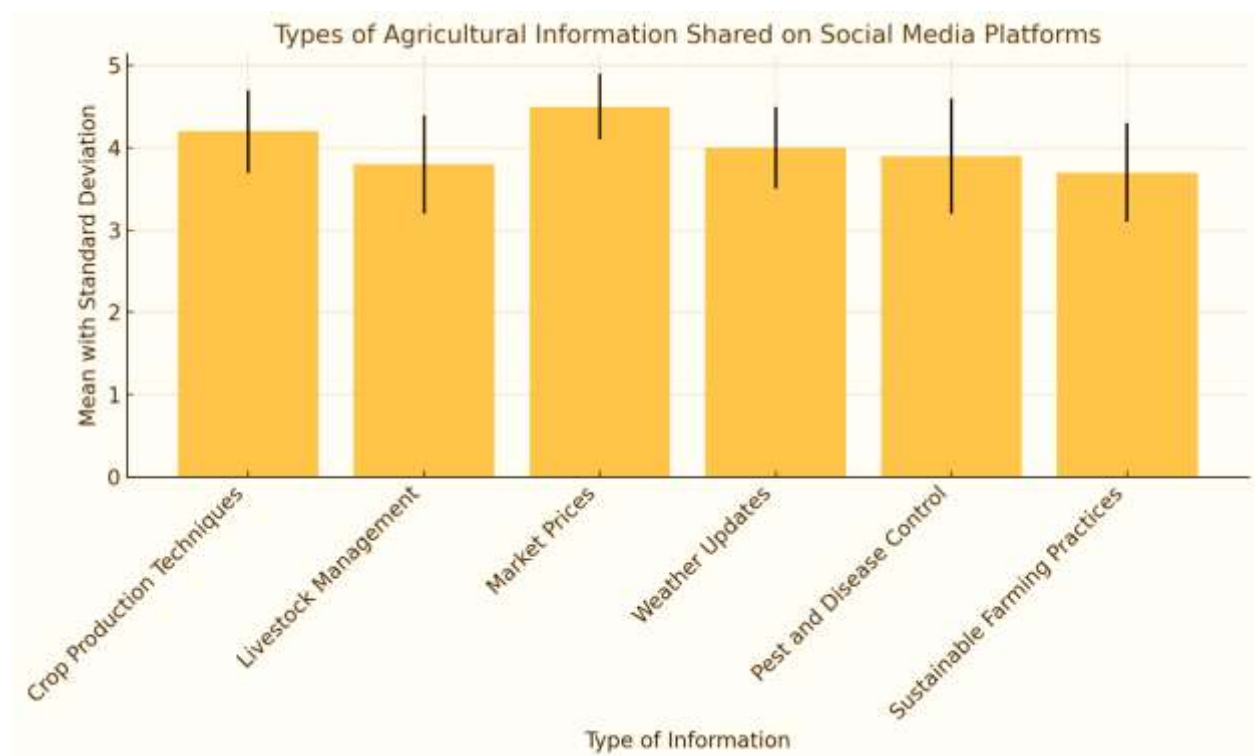
Researchers have the highest average social media usage (22.1 hours per week). This could be attributed to their need for staying updated with research findings, trends, and global agricultural innovations, which are often disseminated through social media platforms. This finding is consistent with that of Banmeke et al. (2012) where it was found that sourcing for educational materials and agricultural news were the major educational utilization of SNTs (Social Network Tools) by the respondents. It was also found in the study that researchers use

SNTs for sourcing for conferences, trainings and short courses, connecting with other registered researchers, and engaging in collaborative research with other researchers.

Agricultural Extension Officers also exhibit high usage (20.3 hours per week), likely due to their role in bridging the gap between farmers and new agricultural technologies or practices. This finding corroborates that of Alhassan et al. (2023) which found that respondents (30.0%) indicated that social media helped to engage young farmers in agriculture through extension services.

Farmers and Policy Makers show relatively lower usage, with farmers averaging 15.6 hours and policy makers 14.7 hours per week. This might reflect limited access or perceived relevance among these groups compared to others. This finding lends credence to that of Adejo and Opeyemi (2019), where it found that only 21.7% agreed that they were using social media to source agricultural information while most (78.3%) of the respondents were not using social media to source agricultural information. This result further showed that majority were not aware of the use of social media as a good source of agricultural information and hence, did not use it to source necessary information that will improve farming. However, the findings are in contrast to that of Hafeez et al. (2023) where they found that farmers embraced technology by making use of drones in precision agriculture, and multi-copters in pesticide spraying.

Figure 3: Types of agricultural information shared on social media.

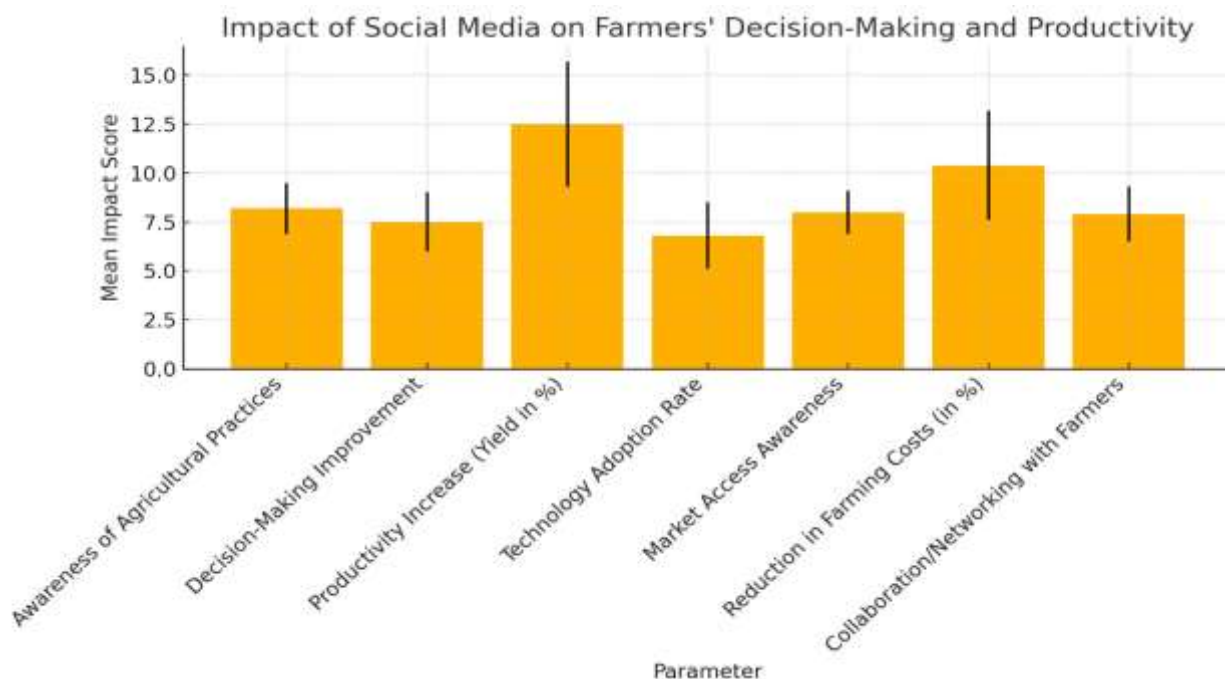


Source: Field Survey, 2023-2024.

Market Prices has the highest mean (4.5), indicating it is the most commonly shared type of agricultural information on social media. This trend likely reflects the importance of timely market price updates for farmers and traders. However, this finding is dissimilar to that of Alabi and Nnaji (2021) where it was found that the most agricultural pieces of information shared on social media were information on new crop varieties. The finding is also in contrast with the finding of Aliagan et al. (2023) where they found that the type of agricultural information mostly shared on social media was information on diverse agricultural practices where Facebook and Instagram had 9,000 posts each on the subject.

Sustainable Farming Practices has the lowest mean (3.7), suggesting that while sustainability is important, it might not be as frequently shared or prioritized compared to other topics. Crop Production Techniques (4.2) and Weather Updates (4.0) are also frequently shared, highlighting their relevance to day-to-day farming activities. This finding is in consonance with that of Alabi and Nnaji (2021) where information on weather condition was mostly found on social media.

Figure 4: Impact of social media on farmers' decision-making and productivity.



Source: Field Survey, 2023-2024.

The highest mean scores are observed for Awareness of Agricultural Practices (8.2) and Market Access Awareness (8.0). Low standard deviation values for these parameters (1.3 and 1.1, respectively) indicate consistent responses among farmers, suggesting that social media are particularly effective in disseminating agricultural knowledge and market-related information. Productivity Increase: Productivity increase due to social media has a mean of 12.5%, the highest improvement observed. This finding also supports the finding of Alabi and Nnaji (2021) where respondents who used social media for agricultural practices improved in the areas of new crop varieties, new farm input application methods, new market outlets, loan availability, fertilizer application, and weather condition.

Reduction in Farming Costs: Mean on cost reduction stands at 10.4%, with a standard deviation of 2.8, indicating significant financial benefits for some farmers. This finding lends credence to that of Inegbedion et. al. (2020) where they found that the use of social media (Facebook, WhatsApp and Instagram) in the marketing of agricultural products significantly influenced cost reduction and hence efficiency in marketing as well as enhanced turnover of farmers through increased demand for agricultural products. The study also found that the adoption of social media in the marketing of agricultural products enhanced the efficiency of agricultural marketing and sales turnover of farmers in South-south of Nigeria.

Technology Adoption and Collaboration: Technology Adoption Rate (6.8) and Collaboration/Networking with Farmers (7.9) are moderate but suggest a growing trend in adopting advanced tools and fostering community through social platforms. This finding supports that of Hafeez et al. (2023) where farmers were influenced by technology through the use of drones and multi-copters in pesticide spraying. This finding also supports the

technological determinism theory where technology in any society defines its nature as it leads to newer ways of production which influence the cultural, political and economic aspects of the society. The growing trend of the adoption of technology by farmers will lead to newer ways of doing things and a loss of existing knowledge as a result of the introduction of new technologies.

5. CONCLUSIONS AND POLICY RECOMMENDATIONS

The existing body of literature highlights the profound influence of social media on the decision-making processes and productivity of farmers. Social media platforms serve a complex function in the distribution of agricultural information, encompassing a variety of topics including market trends, weather predictions, educational resources, and policy developments. Although social media offers essential avenues for information dissemination and market engagement, it is crucial to tackle challenges such as digital literacy, connectivity problems, and the spread of misinformation. Addressing these obstacles can transform social media into a vital resource for promoting sustainable agricultural development. Subsequent researches should investigate methods to bolster the trustworthiness and inclusivity of agricultural communication conducted through social media channels.

As a result of farmers' low usage of social media, the study recommends that the Federal Ministry of Agriculture should enhance social media literacy and accessibility for farmers by utilizing television commercials and radio jingles. The ministry can also organize workshops or digital literacy programmes at local government level for farmers to help them access online resources and learn how to effectively utilize social media to engage with farming practices. Furthermore, the ministry ought to establish social media accounts on platforms such as WhatsApp, Facebook, and Twitter to effectively engage with grassroots farmers. To facilitate access to social media, it is also recommended that smartphones be subsidized for these farmers, enabling them to acquire devices that will assist in their connectivity to social media platforms.

This study further recommends that farmers who are social media savvy should raise awareness and facilitate the dissemination of content related to sustainable farming practices, given the comparatively limited focus on information pertaining to these practices. To achieve this successfully, government or agricultural organizations could create incentives for social media influencers or farmers who share information on sustainable farming practices.

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