

**CONSTRAINTS TO THE USE OF SOCIAL MEDIA TOOLS FOR
AGRICULTURAL INFORMATION DISSEMINATION AND TRAINING
EXPOSURE AMONG EXTENSION WORKERS IN EKITI STATE, NIGERIA**

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Agricultural extension services increasingly use digital communication tools to disseminate agricultural information and interact with farmers. However, financial, infrastructural, technical and digital-skill constraints may affect the effectiveness of these tools. This study examined constraints to using social media tools for agricultural information dissemination and extension workers' exposure to training in Ekiti State, Nigeria. A multistage sampling procedure was used to select extension workers from Ikere, Ekiti West and Oye Local Government Areas and their corresponding agricultural development areas. A total of 151 extension workers provided the data used in the analysis. Data were collected using a structured interview schedule and analysed using frequencies, percentages, means and standard deviations. Constraints were measured on a three-point scale, with higher mean values indicating greater severity. High cost recorded the highest mean score (2.52), followed by electricity/power failure (2.28), poor internet coverage (2.19), hacking of accounts (2.18), special device requirements (2.16), limited knowledge and skills (2.13), delayed message delivery (2.13) and technical barriers (2.11). Training exposure was highest for global positioning system (GPS) (62.9%), Zoom (60.9%) and video calls (60.3%), while exposure was comparatively lower for podcasts (25.8%), Soundation (26.5%), blogs and Skype (29.1%). The findings indicate that financial, infrastructural, technical and digital-security constraints remain important considerations in extension workers' use of digital communication tools. The study recommends affordable connectivity, improved power supply, appropriate digital devices and regular practical training based on identified areas of limited exposure.

Keywords: Agricultural extension, Social media, Agricultural information dissemination, Extension workers, Digital tools, Training exposure.

INTRODUCTION

Agricultural extension services play an important role in providing farmers with information and advisory support needed to improve agricultural production, productivity and livelihoods. Conventional extension approaches include farm visits, demonstrations, group meetings, radio, television and printed materials.

The expansion of digital technologies has provided additional channels for extension personnel to communicate with farmers, exchange information and provide advisory support. Digital agricultural extension and advisory services can improve the accessibility and delivery of information, although their benefits may be limited by inadequate infrastructure, unequal digital access and limited digital skills (Food and Agriculture Organization [FAO], 2023).

In this study, social media tools refer specifically to internet-based platforms that support communication, information sharing and interaction among users, including WhatsApp, Facebook, YouTube, Instagram, Twitter and similar platforms. Other digital communication and collaboration tools such as email, Zoom, GPS, Dropbox and video-calling applications are treated separately as digital tools because they do not all constitute social media platforms in the strict sense. This distinction is important because the range of technologies reported by extension workers extends beyond social networking platforms.

The use of digital tools by agricultural extension personnel has increased in Nigeria. Fadipe et al. (2025), for example, reported that WhatsApp was the major social-media platform used for agricultural extension service delivery among extension agents in Ogun State, with 91.3% indicating its use. The study also identified high data charges and unstable electricity supply among the major challenges affecting social-media utilisation.

Evidence from other parts of Nigeria also indicates that access and infrastructural conditions influence the use of ICT in extension. Yekinni et al. (2023), in a study involving extension practitioners in Southwestern Nigeria, reported substantial constraints to ICT access and use and identified the need for more frequent training within extension organisations. Similarly, Udoeye and Okoro (2024) found extensive use of WhatsApp and Facebook among extension personnel in Southeast Nigeria, demonstrating the increasing relevance of social media in extension service delivery.

Digital extension requires more than access to communication platforms. Extension workers need the ability to operate relevant applications, create and share information, communicate with target audiences and manage digital interactions. Iwuchukwu et al. (2023), for example, examined social-media integration among extension workers in Enugu State and identified specific areas of training needs, including YouTube advertising, Instagram image transformation, Twitter functions and WhatsApp application management. Their study illustrates the importance of assessing the specific competencies and training requirements of extension personnel rather than assuming that access to a digital platform automatically implies competence in its use.

Although studies have examined ICT constraints and social-media utilisation among extension personnel in other parts of Nigeria, evidence specific to extension workers in Ekiti State remains limited. Yekinni et al. (2023) examined ICT constraints among practitioners across Southwestern Nigeria, while Fadipe et al. (2025) focused on social-media utilisation among extension agents in Ogun State. The present study contributes state-level evidence from Ekiti State by examining the constraints extension workers encounter and documenting their exposure to selected social-media and digital communication tools.

The study therefore aimed to:

1. identify the constraints facing extension workers in the use of social media tools for agricultural information dissemination in Ekiti State; and
2. determine the level of training exposure of extension workers to selected social-media and digital communication tools.

2. METHODOLOGY

2.1 Study area

The study was conducted in Ekiti State, Nigeria. Ekiti is an agrarian state with a land area of about 5,307 square kilometres, of which over 90% is available for farming and agricultural-related enterprises. The state is also endowed with favourable agro-climatic conditions suitable for producing tree crops such as oil palm, citrus, mango, kola nut and guava, as well as arable crops such as maize, rice, plantain, tomato, okro, melon and watermelon. Ekiti State has about 70% of its population engaged in farming (NAERLS and NPAFS 2010). The state is bounded in the North by Kwara and Kogi States, and in the West by Osun State. It is bounded in the East and South by Ondo State. The state was selected because it has agricultural extension personnel who provide agricultural information and advisory services to farmers. The study covered selected Local Government Areas and agricultural development areas within the state.

2.2 Sampling procedure and sample size

The study used a multistage sampling procedure to select respondents. At the first stage, three Local Government Areas, namely Ikere, Ekiti West and Oye, were selected from Ekiti State. At the second stage, the agricultural development areas associated with the selected locations, namely Ikere, Aramoko and Isan Ekiti, were identified. At the third stage, extension workers within the selected locations constituted the sampling frame.

The study population comprised 245 extension workers. A proportionate sampling procedure was used to select respondents based on the number of extension workers in the selected locations. A total of 151 extension workers constituted the respondents, with the exact numbers selected being Ikere (50), Aramoko (50), and Isan Ekiti (51) from each Local Government Area/zone, whose data were used for the analysis.

2.3 Data collection

Data were collected using a structured interview schedule. The instrument contained questions relating to respondents' background characteristics, use of digital communication tools, constraints affecting the use of social-media tools and previous training exposure to selected digital tools.

The constraint items were measured using a three-point rating scale. by using very severe=3, severe=2 and not severe=1 was the scale actually used.

2.4 Data analysis

Data were analysed using descriptive statistics, including frequencies, percentages, means and standard deviations. Frequencies and percentages summarised categorical responses, while means and standard deviations described constraints to the use of social-media tools.

The analysis of constraints followed the actual three-point rating scale used in the questionnaire. Rather than describing all items above 2.00 as "severe", the results are interpreted according to their relative mean values because a mean slightly above the midpoint does not, by itself, establish that a constraint is severe.

Training exposure was measured as the percentage of respondents who indicated previous training on each listed tool. Therefore, the results represent training exposure, rather than training need.

3. RESULTS AND DISCUSSION

3.1 Constraints to the use of social-media tools

Table 1 presents the constraints extension workers encountered when using social-media tools. High cost had the highest mean score (2.52), followed by electricity/power failure (2.28) and poor internet coverage (2.19). Other relatively prominent constraints included hacking of accounts (2.18), the requirement for special devices (2.16), limited knowledge and skills (2.13), delayed message delivery (2.13) and technical barriers (2.11).

The pattern indicates that financial and infrastructural constraints were particularly prominent among the issues examined. The high mean recorded for cost suggests that the financial requirements associated with internet connectivity and digital communication may restrict regular use. Electricity/power failure and poor internet coverage further point to infrastructural conditions that can interrupt online communication.

This aligns with findings from Ogun State, where Fadipe et al. (2025) identified high data charges and unstable electricity supply as major challenges limiting social-media utilisation for agricultural extension. This also corresponds with Yekinni et al. (2023), who reported considerable constraints to ICT access and use among extension practitioners in Southwestern Nigeria. FAO has similarly identified inadequate infrastructure, poor reception coverage and the cost of digital devices and ICT facilities as barriers to inclusive digital agricultural extension.

Limited knowledge and skills also recorded a relatively high mean score (2.13). This finding indicates that technical capacity remains an issue for some respondents. However, the result should be interpreted together with the training-exposure findings rather than treated as evidence that all respondents require the same training. Similarly, the relatively high scores for account hacking and virus attacks indicate the importance of digital-security awareness among extension personnel.

The lower mean scores for reduced family physical contact (1.72), the need for special training to use web tools (1.97), and complexity of use (1.99) indicate that these issues were less prominent than cost and infrastructural constraints among the items examined.

Table 1. Constraints to the use of social-media tools among extension workers (n = 151)

Constraints	Mean	SD	Rank
High cost	2.52	0.62	1
Electricity/power failure	2.28	0.82	2
Poor internet coverage	2.19	0.72	3
Hacking of accounts	2.18	0.73	4
Requirement for special types of devices	2.16	0.76	5
Limited knowledge and skills in digital tools	2.13	0.75	6
Delayed message delivery	2.13	0.72	6
Technical barriers/malfunctioning of devices	2.11	0.74	8
Lack of awareness of available information sources/untimely information	2.09	0.93	9
Language barriers	2.04	0.94	10
Availability of irrelevant/undesirable content	2.03	0.77	11
Virus attacks on files	2.03	0.76	11
Complexity of use	1.99	0.82	13
Need for special training to use digital tools	1.97	0.75	14
Reduction in family physical contact and relationships	1.72	0.74	15

Source: Field Survey, 2026.

3.2 Training exposure to social-media and digital communication tools

Table 2 shows respondents' previous training exposure to selected social-media and digital communication tools. Among the tools reported, GPS recorded the highest training exposure (62.9%), followed by Zoom (60.9%), video calls (60.3%), Twitter (58.3%), Facebook (55.0%), email (54.3%) and WhatsApp (52.3%). Training exposure was comparatively lower for podcasts (25.8%), Soundation (26.5%), blogs (29.1%), Skype (29.1%) and LinkedIn (31.8%).

The results demonstrate variation in exposure to digital tools. However, the findings should not be interpreted as direct evidence of training need. For example, a low percentage of respondents trained on podcasts indicates limited training exposure but does not establish that podcast training is required. Training need would require an additional measure of perceived importance, competence or skill gap.

The relatively high exposure to Facebook and WhatsApp is relevant to agricultural extension because both platforms are commonly used for communication and information exchange. Fadipe et al. (2025) reported WhatsApp as the major social-media platform used for agricultural extension service delivery among extension agents in Ogun State. (Udoeye and Okoro (2024) similarly reported high use of WhatsApp and Facebook among extension personnel in Southeast Nigeria.

The lower training exposure reported for podcasts, blogs, Skype and LinkedIn may indicate areas where extension institutions could assess whether additional training is appropriate. Such training decisions should, however, consider the relevance of each tool to the actual duties of extension personnel and the needs of their target audiences. The findings also demonstrate why social-media tools and other digital tools should not be presented as a single category. GPS, email, Zoom and Dropbox perform functions that differ from those of social networking platforms. Consequently, the revised presentation distinguishes social-media platforms from broader digital communication and collaboration technologies.

Table 2. Previous training exposure to selected social-media and digital communication tools among extension workers (n = 151)

Tool	Frequency	Percentage (%)
Global Positioning System (GPS)	95	62.9
Zoom	92	60.9
Video calls	91	60.3
Twitter	88	58.3
Facebook	83	55.0
Email	82	54.3
WhatsApp	79	52.3
Instagram	70	46.4
YouTube	68	45.0
Telegram	67	44.4
Dropbox	62	41.1
Wiki	57	37.7
Google doc	53	35.1
LinkedIn	48	31.8
Blog	44	29.1
Skype	44	29.1
Soundation	40	26.5
Podcast	39	25.8

Source: Field Survey, 2026.

4. CONCLUSION AND RECOMMENDATIONS

The study examined constraints affecting the use of social-media tools for agricultural information dissemination and extension workers' training exposure in selected areas of Ekiti State, Nigeria. Financial and infrastructural issues were among the most prominent constraints, with high-cost recording the highest mean score, followed by electricity/power failure and poor internet coverage. Digital-security concerns, device requirements, limited knowledge and skills, delayed message delivery and technical barriers were also reported as important constraints.

Training exposure varied across the digital tools examined. Exposure was relatively high for GPS, Zoom, video calls, Twitter, Facebook, email and WhatsApp, while comparatively lower exposure was recorded for podcasts, Soundation, blogs, Skype and LinkedIn. However, the training results represent previous exposure and should not be interpreted as direct measures of training needs.

The findings are limited to the selected extension workers in Ekiti State and are based on self-reported cross-sectional data. The study did not collect information from farmers and therefore does not establish the effects of social-media use on farmers' access to information, adoption behaviour or agricultural outcomes. The findings should consequently be interpreted within the context of the study population and variables measured.

Based on the findings, the following recommendations are made:

1. Extension organisations should address the financial constraints associated with digital communication. Affordable internet/data arrangements should be explored because high cost recorded the highest mean score (2.52) among the constraints.
2. Extension agencies should improve access to reliable electricity and alternative power sources. Electricity/power failure recorded a mean of 2.28 and may interrupt the use of internet-enabled devices and online communication.
3. Internet connectivity should be improved for extension personnel. Poor internet coverage had a mean score of 2.19, highlighting the need for dependable network access to disseminate digital information.
4. Extension organisations should strengthen digital-security awareness. Training and institutional guidance on account protection, password management, safe file handling and protection against cyber threats are appropriate responses to the reported concerns about account hacking and virus attacks.
5. Practical digital-skills training should be based on demonstrated needs and competency gaps. The present study identified limited knowledge and skills as a relatively important constraint (mean = 2.13), while training exposure varied considerably across platforms. Future assessments should therefore measure both competence and training needs before specific training programmes are designed.
6. Extension institutions should periodically assess the relevance of different digital platforms to extension activities. Low previous training exposure to podcasts, Soundation, blogs, Skype and LinkedIn should be examined alongside actual use and perceived relevance before additional training is introduced.
7. Digital information should be presented in accessible language. The language-related constraint (mean = 2.04) suggests that extension organisations should encourage simple, clear and, where appropriate, locally understandable agricultural information.

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