

Extension Educators' Use of Social Media for Promoting Extension-related Activities

Enoch Teye Kwao Ametepey
University of Arkansas

Jeff Miller
University of Arkansas

Casandra Cox
University of Arkansas

See next page for additional authors

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Abstract

The insurgence of the internet and digital media usage has changed the landscape for information acquisition across disciplines globally. The integration of social media in Extension education has altered communication strategies among educators, farmers, and various stakeholders. This research investigates the degree to which Extension educators in Arkansas utilize social media for professional purposes, identifies demographic factors influencing usage, and analyzes the challenges related to its adoption. This study, informed by the Uses and Gratifications Theory (UGT), utilized a cross-sectional survey design to gather data from 97 Extension educators in three districts. Findings indicate social media is primarily used for event announcements, program marketing, and educational information dissemination, yet it remains underused for interactive and evaluative functions, including client collaboration and program impact assessment. Furthermore, the results demonstrate notable variations in social media adoption among job roles, with 4-H & Youth Development agents showing the highest levels of usage. Also, female agents engage with social media more often than male educators. Significant challenges encompass restricted time for content development and training, absence of incentives, and complexities in navigating social media platforms. Extension educators acknowledge the potential of social media for outreach and engagement, despite existing barriers. The research suggests implementing targeted training, providing specialized administrative support, and improving policies to enhance the effectiveness of social media in Extension education. Future research should investigate optimum practices and training requirements to improve educators' social media utilization.

Keywords

Social media, extension education, 4-H and Youth Development, family and consumer science, Uses and Gratification, agricultural communications, digital engagement

Authors

Enoch Teye Kwao Ametepey, Jeff Miller, Casandra Cox, and George Wardlow

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Introduction

In recent years, the internet has significantly impacted how information is generated and disseminated between Extension professionals, farmers, consumers, and other stakeholders in the agricultural sector. In the attempt to enhance communication and education among Extension agents in the United States, Extension communication units nationwide have established technical support initiatives to assist agents in the design, development, and distribution of programmatic and educational information via social media and technology platforms (Allen et al., 2014). Extension educators have employed social media platforms to establish client connections and relationships and to disseminate educational programs (Gharis & Hightower, 2017; Mains et al., 2013). Gharis and Hightower (2017) maintained integrating social media into agricultural Extension outreach endeavors has allowed agents to enhance their ability to attain their work objectives more effectively. Social media platforms such as Facebook were found to be an effective communication tool among county 4-H Extension agents in Arkansas (Burden-Padgett, 2023).

Saravanan et al. (2015) highlighted several advantages of social media use in Extension. Social media provides a cost-effective means of communication and enables simultaneous engagement with large, diverse audiences, breaking geographical barriers. It allows for location-specific, client-focused, and problem-oriented interventions, making it a versatile tool for addressing the unique challenges faced by clientele. Social media allows user-generated content sharing and community discussion, which enhances peer-to-peer learning and collaboration among stakeholders in the agriculture value chain (Saravanan et al., 2015). Widespread mobile phone access allows social media to facilitate information and resource accessibility while improving Extension organizations' online visibility and broadening their outreach. Furthermore, it facilitates the accessibility of agricultural information, empowering users across various demographics. Social media facilitates collaboration and integrated problem-solving in the agriculture sector by uniting farmers, researchers, Extension workers, policymakers, and other stakeholders on a single platform (Saravanan et al., 2015).

Incorporating social media platforms can allow Extension agents to deliver accurate, current information to a wider audience (Gharis et al., 2014). Bowen et al. (2013) found most Tennessee 4-H agents (84%) utilized social media to promote their programs or interact with audiences. Extension agents used social media platforms to enhance the visibility of their Extension brands, advertise Extension services, provide information, and spread awareness about new technologies (Lipsman et al., 2012). Additionally, social media offers Extension professionals an affordable, prompt, user-friendly, and accessible means of communication (Lewis, 2014; Mains et al., 2013).

North Carolina Extension agents predominantly used social media to advertise forthcoming events and activities, as well as to promote their Extension initiatives (Wallace, 2023). The findings revealed significant gaps in social media usage, specifically, most agents did not use social media to evaluate the impact of their programs, collaborate with specialists and clients, or deliver Extension programs effectively. These findings represent a missed opportunity to leverage the innovations and advantages of social media.

Challenges with Social Media Use in Extension

Despite the potential of social media in fostering communication, information dissemination, and outreach activities in Extension education, some notable challenges associated with its use in Extension exist. Social media use challenges in Extension in India include the frequency of irrelevant posts by some members, increased internet data requirements, and poor internet connectivity (Thakur & Chander, 2018). Issues such as control, time management, accessibility, and training were barriers to social media use found among Wisconsin and New York Extension educators (Newbury et al., 2014). Social media administration is perceived as laborious, with educators hesitant to embrace techniques that may rapidly become obsolete (Newbury et al., 2014). Restricted access to high-speed, broadband internet, and inadequate office infrastructure impede usage, especially in rural regions (Newbury et al., 2014). Inadequate training renders many Extension educators uncertain about the appropriate use of social media, despite their acknowledgment of its capacity to engage varied audiences (Newbury et al., 2014).

Need for the Study

Over the years, Extension educators in all 75 counties of Arkansas have gradually adopted various technologies to establish communication with clientele. The landscape of communication continues to evolve, compelling Extension agents to augment their traditional face-to-face interactions with internet-based channels (Gharis et al., 2014). Jones-Jang et al. (2020) found social media communication can become more diverse and impactful as it moves from traditional top-down, one-way communication to two-way communication where both creators of knowledge and audiences can interact.

Due to the significant role social media plays in agricultural Extension, studies highlighted the use of social media in agriculture Extension communications (Alotaibi et al., 2018; Elmer et al., 2016; Gharis et al., 2014; Lubell & McRoberts, 2018; Mains et al., 2013; Newbury et al., 2014; Vines et al., 2016). Other researchers have emphasized that the benefits of social media include better organizational efficiency, access to a larger knowledge base, employee-driven innovations, and higher user productivity (Mitchell & Ybarra, 2009; Wilson et al., 2018). Lubell and McRoberts (2018) found social media has become a useful tool for educating people about sustainable agriculture practices and facilitating communication between Extension specialists, farmers, and other stakeholders about the wide range of issues affecting agroecological systems.

Within the study area, the University of Arkansas Division of Agriculture (UADA), in its social media users' policy and procedures, has approved the following platforms for professional Extension activities within the state: *Facebook, Flickr, Instagram, Pinterest, Twitter, and YouTube* (UADA, 2023). Given the significant rise in social media usage, these platforms were formally endorsed for utilization by Extension educators to facilitate the dissemination of Extension activities at the state level. Effective Extension practice necessitates the timely delivery of relevant information to target audiences to support an informed decision-making process (Burden-Padgett, 2023). Though Extension educators now have official access to these platforms as well as limited guidance on how to use them, there has been no assessment or evaluation effort describing how the platforms are being used. Therefore, no baseline data exists to determine future training and professional development needs or to describe and measure improvements in the use of social media by Extension educators.

Theoretical Framework

Uses and Gratification Theory (UGT) is a well-established theoretical framework that explains the motives and reasons for using specific media (Kaur et al., 2020). Developed within mass communication studies, UGT explores how, why, and with what purpose individuals use media in their daily lives (Weiyang, 2015). The theory posits that media users actively select media channels to meet needs rather than consuming content passively (Katz et al., 1974). Historically, UGT has been utilized for mass media audiences, encompassing television, radio, print media, music, and film (Rubin, 2009).

Scholars have progressively expanded the scope of UGT to analyze interactive technologies, especially online and user-generated media, including social media (Kim et al., 2016; White et al., 2014; Shao, 2009). Social media users obtain satisfaction not just from content consumption but also from interaction with others and the creation of their own content for self-expression, identity development, and knowledge dissemination (Shao, 2009). The producer-consumer duality has expanded the scope of UGT, establishing it as an effective framework for analyzing how individuals and organizations utilize media to address changing communication requirements.

Katz et al. (1973, 1974), expanding upon Rosengren's (1974) conceptual framework, identified the fundamental components of UGT by highlighting the influence of individuals' social and psychological requirements on their media expectations. Research utilizing UGT typically examines audience motivations and their media consumption to satisfy requirements for knowledge, entertainment, personal identity, and social connection (McQuail, 1983; Kim et al., 2015). Research indicates that users utilize social media to fulfill communication and relational requirements, such as sustaining social connections, requesting assistance, and establishing new networks (Papacharissi & Rubin, 2000; Lin & Lu, 2011).

In agricultural contexts, UGT has been employed to comprehend the motivations behind the adoption of social media by farmers and agricultural professionals. Daigle and Heiss (2021) discovered that female farmers utilize social media to engage with consumers, obtain agricultural information, and fulfill emotional requirements. Phillips et al. (2018) illustrated that Extension professionals use social media to disseminate information and engage with stakeholders. These applications indicate that motives for media utilization are beyond individual entertainment and sociability, incorporating professional and institutional objectives as well.

This study enhances the applicability of UGT by concentrating on Extension educators, individuals frequently involved in content production. While the UGT often elucidates audience media consumption, we modify the theory to emphasize how educators, as professional social media users, also endeavor to satisfy their needs. In this context, their requirements are frequently organizational, professional, and community-focused: attracting customers, increasing program exposure, involving stakeholders, and achieving the Extension objective. By characterizing Extension educators as institutional users who actively utilize social media to fulfill both personal and organizational needs, UGT offers a framework to examine their motives, actions, and obstacles in integrating social media into Extension activities.

Consequently, UGT elucidates not only the rationale behind Extension educators' adoption of social media but also how their motives might inform training and professional development initiatives. This adaptation enables the theory to enhance communication scholarship by broadening the scope of UGT to encompass professional and institutional media usage, while also enriching Extension education literature by elucidating how educators' social media interactions are influenced by the gratifications they aim to achieve in their roles within 4-H & Youth Development, Family and Consumer Sciences, and Agriculture.

Purpose of the Study

The purpose of this study was to examine how Extension educators in Arkansas integrate social media into their professional practice to support communication, enhance outreach effectiveness, and educational programming. Specifically, the study assessed the ways in which educators adopt and utilize social media to promote Extension activities, the professional and organizational challenges they encounter, and the demographic factors that may influence these practices. Framed by the Uses and Gratifications Theory (Katz & Blumler, 1974), this study provides insight into how Extension educators, as professional communicators, engage with social media platforms to meet organizational, educational, and audience-centered communication goals.

To achieve the study's purpose, the following research objectives were addressed:

1. Assess the extent to which Extension educators utilize social media for professional activities.
2. Describe the demographic and work-related characteristics of Extension educators involved in the study.
3. Examine if selected demographic characteristics of Extension educators affect their social media use.
4. Examine the challenges regarding the use of social media by Extension educators within the context of their professional activities and responsibilities.

Methodology

Research Design

A cross-sectional survey design was used to obtain data from Extension educators in Arkansas to address the research objectives. Surveys allow a researcher to answer questions around three main areas: (1) “descriptive questions”, (2) “questions about relationships between variables”, and (3) “questions about predictive relationships between variables over time” (Creswell & Creswell, 2018, p. 207). The use of a cross-sectional survey enables the researcher to directly witness and examine the phenomenon being studied (Zangirolami-Raimundo et al., 2018). Cross-sectional surveys facilitate the collection of data within a restricted timeframe, resulting in faster outcomes and reduced expenses (Zangirolami-Raimundo et al., 2018).

Instrumentation

Objectives 1-4 were addressed using a survey instrument comprised of closed-ended questions developed to assess Extension educators' current use of social media. Parts of the research instrument were adapted from Wallace's (2023) study, which explored the *perceptions of North Carolina Agriculture Extension agents on social media use in Extension*. Permission to adapt and modify portions of the research instrument was obtained from the original author and his research advisor. The questionnaire used in this study was part of a larger research instrument developed to holistically examine social media use by Extension educators. The section utilized in this research contained 15 statements about how Extension educators use social media in their professional tasks. These items were measured on a 5-point Likert-type scale ranging from 1 (*never*) to 5 (*always*).

Prior to the main data collection, a pilot study was conducted with 14 Extension educators in Oklahoma and Kansas from September 3 to September 20, 2024. Cronbach's alpha was determined for the internal consistency of the research instrument. The results revealed an aggregate alpha value of .815 for the 15 statements that measured the extent of social media use, while a cumulative alpha value of .855 was measured for the 18 challenge-statements associated with social media use. An alpha coefficient of .815 and .855 was deemed acceptable (Kline, 2005); thus, the instrument was judged to be appropriate for data collection.

Content validity of the instrument was ensured by four faculty members from the Agricultural Education, Communications, and Technology Department and one faculty member of the School of Human Development and Family Sciences from the University of Arkansas. Also, a former Extension administrator and other Extension professionals provided feedback on the research instrument's face and content validity, resulting in minor edits to the survey. The survey was administered via Qualtrics®, an online web-based software, and distributed through email, providing participants with a link and a QR code to access the survey. Approval for the study was granted by the University of Arkansas Institutional Review Board (IRB #2406547767).

Subject Selection and Data Collection

The study employed a census approach to study all Extension educators in the three districts spread across all 75 counties in Arkansas. Specifically, Agriculture agents, 4-H & Youth Development agents, and Family and Consumer Science agents were surveyed. A total of 216 agents constituted the population across these three job responsibilities.

To recruit participants, an introductory letter was emailed to the state director, who endorsed and approved the study to be conducted. The state director then added a cover letter with the subject recruitment email and distributed it to all agents in the state. Multiple follow-up attempts were made, where the link and the QR code to the Qualtrics survey were emailed to respondents to improve the response rate. The data collection period spanned one month. Following Dillman et al.'s approach to internet surveys, multiple follow-up emails were sent to the study population to increase the overall response rate. Additionally, individuals were contacted to encourage their colleagues to complete the survey. Despite using these strategies, the usable responses remained 97. Thus, the researcher used these responses in the analysis (Dillman et al., 2014). After four weeks, the survey was closed, and the data collected were retrieved for analysis. Out of the 216 agents, a total of 110 responses were obtained, representing a 51% response rate. Out of the 110 responses, 13 were not usable; as a result, 97 of the usable responses were included in the data analysis.

Data Analysis

The collected data were exported into SPSS® version 28, and the data was analyzed using simple descriptive statistics with data reported as percentages, frequency, means, and standard deviations. A One-Way ANOVA was also conducted to establish any possible association/relationships between selected demographics and their extent of social media use in fostering Extension education. The following is the interpretation of scale mean score: 1.50-1.49 = Never, 1.50-2.49 = Occasionally, 2.50 – 3.49 = Often, and 4.50 – 5.0 = Always.

Findings

The extent to which Extension educators utilize social media

Through research objective one, we sought to describe the extent to which Extension educators used social media for their professional responsibilities. The respondents were asked to indicate their extent of social media use on fifteen separate statements for their professional activities across a five-point Likert-type scale (1= *Never*, 2= *Occasionally*, 3= *Sometimes*, 4= *Often*, 5= *Always*).

The results as presented in Table 1 indicate of the 97 usable responses obtained, 82.5% ($f = 80$) said they either *often* or *always* use social media: “to distribute announcements to clients about upcoming events and programs,” 76.3% ($f = 74$) said they either *often* or *always* use social media: “to market Extension programs to existing and new clients,” 54.7% ($f = 53$) said they either *often* or *always* use social media: “to attract potential users to Extension websites” and 51.% ($f = 50$) indicated they use social media either *often* or *always* to “share Extension-related information with clients.”

Additionally, 82.5% ($f = 80$), said they *never* or *occasionally* “use social media to request information and resources from clients (Ex. Ask for chemical company rep. info),” 79.4% ($f = 77$), said they *never* or *occasionally* “use social media to communicate with Extension advisory groups,” 78.3% ($f = 76$), said they *never* or *occasionally* “use social media to enhance collaboration between specialists and clients,” and 73.2% ($f = 71$) said they *never* or *occasionally* “use social media to deliver Extension programs (e.g., Facebook Live demonstrations).”

Table 1

Statements Describing the Extent to which Extension Educators Use Social Media for Extension Activities (n = 97)

	1	2	3	4	5	M	SD
Statements	%	%	%	%	%		
I use social media to distribute announcements to clients about upcoming events and programs	4.1	2.1	11.3	36.1	46.4	4.19	1.00
I use social media to market Extension programs to existing and new clients	3.1	4.1	16.5	32.0	44.3	4.10	1.03
I use social media to attract potential users to Extension websites	5.2	11.3	28.9	39.2	15.5	3.48	1.05
I use social media to share Extension-related information with clients	13.4	12.4	22.7	34.0	17.5	3.30	1.28
I use social media to share different files such as photos and videos with clients	25.8	17.5	23.7	19.6	13.4	2.77	1.38
I use social media to conduct work-related needs assessments	18.6	26.8	30.9	18.6	5.2	2.65	1.14
I use social media to recruit volunteers	21.6	28.9	29.9	14.4	5.2	2.53	1.14
I use social media to communicate client success stories	26.8	29.9	21.6	13.4	8.2	2.46	1.25

I use social media to have two-way conversations with clients	27.8	33.0	25.8	8.2	5.2	2.30	1.12
I use social media to evaluate the Extension educational program's impact	45.4	26.8	15.5	8.2	4.1	1.99	1.13
I use social media to enhance collaboration between specialists and clients	43.2	35.1	9.3	9.3	3.1	1.94	1.09
I use social media to communicate with Extension advisory groups	53.6	25.8	9.3	8.2	3.1	1.81	1.10
I use social media to collect information about clients	45.4	35.1	13.4	5.2	1.0	1.81	0.93
I use social media to deliver Extension programs (Eg: Facebook Live demonstrations)	58.8	14.4	18.6	8.2	0.0	1.76	1.03
I use social media to request information and resources from clients (Eg: Ask for chemical company rep. info)	62.9	19.6	14.4	2.1	1.0	1.59	0.89

Note. 1 = Never, 2 = Occasionally, 3 = Sometimes, 4 = Often, 5 = Always, n = 75

Selected Demographic Characteristics of Agents

The study sought to describe the demographic and work-related characteristics of Extension educators involved in the study. These findings are presented in Table 2. We found more than half, 54.6% ($f = 53$), were *female*, 39.2% ($f = 38$) were *men*, and 6.2% ($f = 6$) *preferred not to say* their gender. Regarding the distribution of respondents across the three Extension districts in the state, 39.2% ($f = 38$) were from Delta district, 32% ($f = 31$) were from Ozark district, and the rest 27.8% ($f = 27$) were from Ouachita district. The average age of the respondent was 44.88 years ($SD = 13.6$). More than half of the respondents were Agriculture agents (56.7%), 32.0% were 4-H & Youth Development agents, and 11.3% were Family and Consumer Science agents. Regarding education, 67% ($f = 65$) of the 97 respondents had a master's degree qualification. Respondents had an average work experience duration of 11.73 years ($SD = 10.38$), with 52.6% ($n = 51$) working for 10 years or less, and 42.5% ($n = 42$) working for more than 10 years.

Table 2

Selected Demographic Characteristics and Work-related Characteristics of Extension Educators

Item	Description	<i>n</i>	%	<i>M</i>	<i>SD</i>
Gender	Male	38	39.2		
	Female	53	54.6		
	Prefer not to say	6	6.2		
District	Delta	38	39.2		
	Ozark	31	32		
	Ouachita	27	27.8		
	Less than 30 (years)	14	14.4		
Age	31-50	38	39.2	44.88	13.6
	51-70	33	34		

	Above 70	1	1		
	$n = 86, \text{ min} = 23, \text{ max} = 95$				
	Missing/chose not to respond	11	11.3		
Job Assignment	Agriculture Agent	55	56.7		
	4-H and Youth	31	32.0		
	FCS	11	11.3		
Education	Bachelor's degree	30	30.9		
	Master's degree	65	67		
	Doctoral degree	1	1		
	Missing/chose not to respond	1	1		
Years of Experience (years)	Less than 10	51	52.6	11.73	10.38
	10-20	23	23.7		
	21-30	14	14.4		
	31-40	4	4.1		
	Above 40	1	1.0		
	Missing/chose not to respond	4	4.1		
	$n = 93, \text{ min} = 0, \text{ max} = 41$				
Number of years of using social media	Less than 5	35	36.1	7.85	6.0
	5-10	37	38.1		
	11-15	16	16.5		
	16-20	2	2.1		
	Above 20	3	4.1		
	Missing	4	4.1		
	$n = 93, \text{ min} = 0, \text{ max} = 35,$				
Training received on social media use	No training	48	49.5		
	1-2	40	41.2		
	3-4	4	4.1		
	5-6	3	3.1		
	Missing	2	2.1		
	$n = 96, \text{ min} = 0, \text{ max} = 9, M = 1.27, SD = 1.67$				

Additionally, the researchers elicited data on the number of years respondents have been using social media for Extension activities. The results showed 74.2% ($n = 72$) of the respondents had been using social media in Extension work for less than 10 years, with a few 6.2% ($n = 5$) using it for more than 10 years. Also, the study showed 45.3% ($n = 44$) of the respondents had received between one and four training courses on social media use. However, almost half, 49.5% ($n = 48$) of respondents never received any training on social media use.

Extension educators' differences in social media use

Objective three of the study sought to determine if social media use for promoting Extension education activities varies between Agriculture, 4-H & Youth Development, and Family and Consumer Science agents. Descriptive statistics for the extent of social media use in Extension education was conducted. The results showed Agriculture agents ($n = 55$) had a composite mean score of ($M = 2.42$) and standard deviation ($SD = .65$). Family and Consumer Science agents ($n = 31$) achieved a higher mean score of ($M = 2.63$, $SD = .55$), while 4-H & Youth Development agents ($n = 11$) achieved the highest mean score of ($M = 3.24$, $SD = .87$) on a 5-point Likert scale among the three agent groups. The results suggest that Family and Consumer Science agents and 4-H & Youth Development agents sometimes use social media to promote Extension-related activities, compared to agriculture agents, with 4-H & Youth Development agents showing the highest use.

A one-way analysis of variance (ANOVA) was conducted to examine whether Extension educators' use of social media for Extension education differed significantly at $p \leq .05$ across job assignments, which include Agriculture agents, Family and Consumer Science agents, and 4-H & Youth Development agents. The results (Table 3) indicated there was a statistically significant difference in respondents' use of social media for promoting Extension education activities based on their job responsibilities at $F_{(2, 94)} = 7.543$, $p < 0.001$.

Table 3

One-Way ANOVA Results Comparing the Extent of Social Media Use Across Job Assignments of Extension Educators

Source	<i>SS</i>	<i>Df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	η^2
Between	6.264	2	3.132	7.543	<.001	.138
Within	39.028	94	.415			
Total	45.292	96				

A post hoc analysis using Tukey's HSD test was conducted to examine pairwise differences among the three agent groups. Results indicated that 4-H and Youth Development agents reported significantly greater use of social media for promoting Extension educational activities compared to Agriculture agents. No statistically significant difference was observed between 4-H and Youth Development agents and Family and Consumer Science agents. However, Family and Consumer Science agents demonstrated significantly higher social media use than Agriculture agents. Consistent with the mean values presented in Table 4, 4-H and Youth Development agents exhibited the highest overall frequency of social media use in Extension communication activities.

Table 4

Post Hoc Comparison for the Extent of Social Media Use Across Job Assignments of Extension Educators Using Tukey's HSD

Classification	Comparison	Mean Difference (MD)	SE	P	95% CI	
					LB	UB
Agriculture Agent	Fam. & Cons. Sci.	-.214	.145	.305	-.559	.131
Agriculture Agent	4-H & Youth Dev	-.818	.212	<.001	-.133	-.311
Fam. & Cons. Sci.	Agriculture Agents	.214	.145	.305	-.131	.559
Fam. & Cons. Sci.	4-H & Youth Dev	-.604	.226	.024	-1.14	-.066
4-H & Youth Dev	Agriculture Agents	.818	.213	<.001	.311	1.325
4-H & Youth Dev	FCS	.604	.226	.024	.065	1.143

Note. Significance at the * $p < 0.05$ level and ** $p < .001$

Extension educators' gender differences in social media use

We conducted a descriptive statistical analysis at $\alpha = 0.05$ and $n = 97$ to examine the extent of social media use in Extension education based on the respondents' gender. This was to ascertain whether differences exist in how social media is used across genders. The results revealed respondents who *prefer not to say* ($n = 6$) recorded the lowest mean score of $M = 2.13$ ($SD = .08$). Male ($n = 38$) respondents achieved a higher mean score ($M = 2.39$, $SD = .62$), while Female ($n = 53$) achieved the highest mean score of ($M = 2.77$, $SD = .67$).

A one-way analysis of variance (ANOVA) was conducted to examine whether Extension educators who responded to the survey differed significantly with regard to their social media use at $p \leq .05$ across their gender (*Male, Female, & Prefer not to say*). The results (Table 5) indicated a statistically significant difference between two or more means, $F_{(2, 94)} = 5.071$, $p < 0.008$.

Table 5

One-Way ANOVA Results Comparing the Extent of Social Media Use Across Gender Groups of Extension Educators

Source	SS	Df	MS	F	p	η^2
Between	4.411	2	2.205	5.071	.008	.097
Within	40.881	94	.435			
Total	45.292	96				

Note. Significance at $p < 0.05$

A post hoc test using Tukey's HSD was used to determine where the differences occurred within the respondent groups based on gender. The result showed a significant difference between females and males, with no significance in their comparison with *Prefer not to say*. The mean scores in Table 6 demonstrate female Extension educators use social media more frequently for Extension activities than their *male* counterparts and those who responded *Prefer not to say*.

Table 6

Post Hoc Comparison for the Extent of Social Media Use Across Job Assignments of Extension Educators Using Tukey's HSD

Variable	Comparison	Mean Difference (MD)	SE	p	95% CI	
					LB	UB
Male	Female	-.377	.140	.023	-.710	-.043
	Prefer not to say	.256	.289	.652	-.434	.946
		.377	.140	.023	.043	.710
Female	Male	.633	.284	.072	-.044	1.30
	Prefer not to say	-.256	.289	.652	-.946	.434
Prefer not to say	Male	-.633	.284	.072	-1.31	.044
	Female	-.377	.140	.023	-.710	-.043

Note. Significance at $p < 0.05$ level

Challenges associated with social media use by Extension educators

The fourth objective examined the perceived challenges encountered by Extension educators in utilizing social media for professional purposes. Participants evaluated 18 statements derived from Wallace (2023) using a five-point Likert scale (1 = Not a challenge to 5 = A very substantial challenge). Table 7 presents the results from the survey. The predominant challenges deemed “significant” or “very significant” included: insufficient time for content preparation and updates (46.1%), inadequate time for learning new tools (43.3%), difficulties in navigating social media interfaces (29.8%), and a lack of incentives for usage (23.7%). In contrast, the majority of respondents did not regard organizational administrative support (51.5%), organizational technical support (49.5%), insufficient privacy and security measures (41.2%), or limited internet connection (41.2%) as obstacles.

Table 7

Challenges of Social Media Use Among Extension Educators

Challenges associated with social media use	Percentage response per label					M	SD
	1	2	3	4	5		
Lack of time to prepare and update content for social media	15.5	15.5	22.7	25.8	20.3	3.21	1.35
Lack of time to learn about updated tools on social media	15.5	21.6	19.6	26.8	16.5	3.07	1.33
Lack of understanding of how to navigate social media interfaces	26.8	22.7	20.6	21.6	8.2	2.62	1.31
Lack of client's interest in using social media	21.6	23.7	34	15.5	5.2	2.59	1.14
Fear of posting something incorrect or unprofessional	25.8	25.8	26.8	13.4	8.2	2.53	1.24

Lack of incentives for Extension professionals using social media	27.8	23.7	24.7	15.5	8.2	2.53	1.28
Lack of organizational plan to use social media	28.9	24.7	23.7	16.5	6.2	2.46	1.24
Not knowing which social media is preferred by clients	22.7	29.9	34	9.3	4.1	2.42	1.07
Lack of understanding copyright issues	32	20.6	29.9	15.5	2.1	2.35	1.15
Legal and confidentiality risks to the Extension organization	28.9	23.7	30.9	14.4	2.1	2.37	1.11
Lack of knowledge about policies on the appropriate use of social media	30.9	28.9	23.7	13.4	3.1	2.29	1.14
Lack of necessary knowledge and skills for using social media effectively	34	24.7	26.8	10.3	4.1	2.26	1.16
Inadequate training opportunities on social media use	34	23.7	27.8	12.4	2.1	2.25	1.12
Insufficient privacy and security options for social media	41.2	20.6	23.7	11.3	3.1	2.14	1.17
Concerns of potential exposure to computer viruses	35.1	39.2	10.3	12.4	3.1	2.09	1.10
Lack of adequate Internet access in the operational area	41.2	30.9	19.6	4.1	4.1	1.99	1.08
Lack of organizational technical support	49.5	27.8	13.4	8.2	1.0	1.84	1.01
Lack of organizational administrative support	51.5	28.9	9.3	9.3	1	1.79	1.02

Note. Label coded as 1= Not a challenge, 2 = A minimal challenge, 3 = A moderate challenge, 4

= A significant challenge, 5= A very significant challenge

Conclusions and Discussion

Social media provides an opportunity for Extension educators to reach diverse audiences with science-based, unbiased information to make decisions regarding agriculture, food, and natural resources (Barton et al., 2017). Selected social media platforms have been endorsed for use in promoting Extension education within Arkansas. However, no current information exists describing how these social media platforms are used in communicating Extension information. Also, no baseline data exists to guide future training and professional development needs or to describe and measure improvements in the use of social media by Extension educators. This study was guided by the Uses and Gratification Theory as a framework to address this research gap by investigating how surveyed Extension educators use social media to promote Extension education in Arkansas. A descriptive cross-sectional survey was used to gather data across the 75 Arkansas counties. While a census was conducted to obtain data from survey respondents, the usable responses were 97 out of 216 solicited. Therefore, caution should be used in generalizing the findings of this study beyond the respondents. However, it must be noted the findings provide significant insight into the extent of social media utilization among Extension educators in Arkansas as well as the challenges associated with its usage. As a result, the conclusions and

recommendations could provide a better understanding of how the potential of social media could be leveraged to promote Extension education activities within the state.

Objective 1: Extension educators' use of social media for professional activities.

Social media is used in varied ways to promote Extension education (Barton et al., 2017). UGT clarifies how individuals actively interact with media to satisfy their needs, emphasizing the actions of individuals about media rather than the effects of media on individuals (Blumler & Katz, 1974). Specifically, most of the respondents in this study frequently used social media to disseminate announcements to clients about upcoming events and programs, market Extension programs to their new and existing clientele, attract potential users to Extension websites, and share Extension-related information with clients, emphasizing its crucial role in communicating Extension events as well as education and engaging the clients they serve within Arkansas. This conclusion is supported by Wallace (2023), who showed North Carolina State Extension educators utilized social media to promote Extension education programs and to share information related to these programs with their audience. Additionally, the conclusions are confirmed by Alotaibi (2018) on social media use among Extension professionals in Mississippi.

In contrast, findings related to this objective provide insight into how Extension educators are using social media in Arkansas; minimal adoption rates for collaborative functions were recognized. These functions included resource requests (82.5% never or occasionally) and communication with advisory groups (79.4% never or occasionally). These findings indicate unexploited potential for Extension educators to build their capacity to use social media in these identified areas. The findings further demonstrated although Extension educators have adopted social media for certain professional duties, there is potential to improve its comprehensive application in fulfilling organizational objectives. These insights offer a basis for enhancing social media policies and training initiatives within the Extension education systems.

Objective 2: Demographic and work-related characteristics of Extension educators

The demographic and work-related characteristics of Extension educators in the study provide valuable insight into understanding the varied composition of the respondents in this study. A slightly more respondents were female (54.6%), showing a relatively balanced gender representation among the respondents. The proportion of respondents (6.2%) who preferred not to disclose their gender suggests the need for continued efforts to create inclusive research instruments that respect individual identities. The balance in responses based on gender deviates from Wallace (2023), who reported more male (57%) Extension agents than female (38.6%) agents in North Carolina. The geographic distribution of respondents across the three Extension districts was slightly different, with the representation from the Delta (39.2%), Ozark (32.0%), and Ouachita (27.8%) districts. Agriculture agents (56.7%) dominated the survey respondents of this study, followed by *4-H & Youth Development agents* (32.0%) and *Family and Consumer Science agents* (11.3%). This distribution underscores the unique composition of survey respondents based on their professional roles and responsibilities. Again, more than half of the respondents hold a master's degree, highlighting the advanced professional qualifications of respondents. The educational qualifications of the survey respondents aligned with Wallace (2023) and Alotaibi (2018), where 79.1% and 82.3% of their participants hold master's degrees or higher, respectively. These findings suggested that Arkansas Extension educators aligned with other Extension educators for educational qualifications. With an average age of 44.88 years and an average experience of 11.73 years, the Extension educators exhibited a blend of experienced

and mid-career professionals. However, the $SD = 10.38$ years of experience suggests more experienced agents and newer entrants coexist. While most of the survey participants, 74.2%, have been using social media for Extension activities for less than ten years, about half of the respondents, 49.5% never received any training on the effective use of social media for promoting Extension education activities.

Objective 3: Examine if selected demographic characteristics of Extension educators affect their social media use

The findings reveal a significant difference in social media use across the three job responsibilities of Extension educators. 4-H & Youth Development agents demonstrated the highest use of social media for Extension education activities ($M = 3.24$, $SD = .87$), followed by Family and Consumer Science agents ($M = 2.63$, $SD = .55$). Moreover, gender differences were observed, with female agents utilizing social media more frequently to promote Extension activities ($M = 2.77$, $SD = .67$). This finding revealed the need to determine the reasons why some agents, based on responsibilities, engage with social media communications more than others. This will allow leadership to develop tailored social media training programs for Agriculture agents who participated in this survey to boost their use and adoption to promote Extension activities. Additionally, it will be prudent to ascertain why female agents use social media more than their male counterparts. This insight will provide a premise to encourage male survey participants through mentorship to use social media, possibly using success stories that demonstrate the impact of social media.

Objective 4: Challenges associated with social media usage by Extension educators

Concerning challenges associated with social media use in Extension education, the survey respondents were presented with eighteen potential challenges obtained from previous literature. Respondents found the topmost challenges to using social media were a lack of time to prepare and update content, lack of time to learn about updated tools, lack of understanding of how to navigate social media interfaces, and lack of incentives for Extension educators using social media. These conclusions align with the findings of Wallace (2023) and Newbury et al. (2014), who identified time constraints, insufficient training, and limited control as significant challenges to the effective use of social media in Extension services. Similarly, Alotaibi's (2018) study underscored the dual challenges of clients' disinterest and inadequate organizational support, which compounded the difficulties faced by Extension educators in leveraging social media as a tool for outreach and engagement. However, Thakur and Chander (2018) in India found a high frequency of irrelevant posts by some members, increased internet data requirements, and poor internet connectivity as major challenges associated with social media use; their findings deviate from the conclusion of this present study. These findings suggest while social media is promising to enhance Extension education activities, its integration remains contingent upon addressing systemic and individual-level challenges within the Extension framework.

Recommendation for Practice

Based on the study's findings, it was clear most of the extension professionals surveyed were using social media for a list of activities. The findings, however, also suggested they were not using social media for other major Extension activities, as demonstrated in their responses.

As a result, Extension educators in Arkansas should be encouraged to increase their utilization of social media to promote other key Extension activities to their clientele (Wallace, 2023). This could be achieved through tailored training to increase their capacity to use existing and emerging social media platforms to meet the needs of their clients. Also, based on the data obtained from this survey, 4-H & Youth Development agents seem to be using social media more in promoting their educational activities, compared to the other agents in the survey; hence, Arkansas Cooperative Extension needs to encourage the other agents: Family and Consumer Science agents and Agriculture agents to increase their use of social media by leveraging on the motivators of 4-H agents based on the UGT theory. Furthermore, the respondents noted they do not have enough time to prepare and update content and to learn about updated tools on social media to increase their usage to promote Extension activities, despite their assertion social media is beneficial to their professional responsibilities. As a result, Extension educators, especially Family and Consumer Science and Agriculture agents, may require additional time within their daily routine to address social media-related issues. Furthermore, training on effective use of social media in promoting Extension education (Bowen et al., 2013) will allow Extension educators to learn innovative ways to use social media. Additionally, the service should harness its communications team's expertise to support social media usage among agents with clientele who engage in social media for communication. Every district within the state could create a social media coordinator role to provide support to agents who have questions and difficulty in updating their sites and to address any issues related to social media use.

Recommendations for Further Research

This study examined Extension educators' use of social media to support educational activities within the Arkansas Extension framework, guided by the Uses and Gratifications Theory (UGT). Extension educators within the context of this study are both content creators and users of social media to promote institutional needs. In this context, their needs are often organizational, professional, and community-oriented: reaching clientele, enhancing program visibility, engaging stakeholders, and fulfilling the Extension mission. By framing Extension educators as institutional users who engage actively with social media to meet both personal and organizational gratifications, UGT provides a lens to analyze their motivations, behaviors, and challenges in adopting social media for Extension work.

While the findings provide an important snapshot of current practices, they should be interpreted with caution due to limitations such as the inability to gather data from the entire population and reliance on self-reported survey data. Besides the response rate, various other constraints must be recognized. The study's reliance on self-reported survey data may introduce bias, since participants could overestimate or underestimate their actual social media usage. The design also omitted control variables, such as prior training, institutional support, or digital literacy, which could affect social media engagement and hinder the isolation of demographic or job-related factors' impacts. Furthermore, the study only focused on the approved social media platforms by UADA, without considering non-approved ones.

Consequently, the recommendations offered here are intended to inform directions for future inquiry rather than to prescribe immediate changes in practice. First, to more accurately assess the extent and impact of educators' social media use, future studies should employ more targeted measures of social media activity and effectiveness. This could include evaluating training needs and competencies related to social media adoption and promotion (Wallace, 2023) and identifying best practices for professional development across the state (Bowen et al., 2013).

Second, mixed-methods design may yield richer insights into how Extension educators' social media practices evolve and the challenges they encounter. Mixed-methods research could help capture both the breadth of usage patterns and the depth of educators lived experiences in promoting programs through social media.

Finally, future research would benefit both Extension educators and their clientele. Examining perspectives from both groups would offer a more comprehensive understanding of how social media influences program promotion, knowledge dissemination, and engagement within Extension education. Together, these directions can provide a stronger foundation for developing evidence-based strategies that support the effective and sustainable use of social media in Extension programming.

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