

SOCIAL MEDIA USAGE AMONG EXTENSION PERSONNEL OF KARNATAKA STATE DEPARTMENT OF AGRICULTURE

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ABSTRACT

The study was conducted during 2023-24 to analyse the pattern of social media usage among extension personnel of the Karnataka State Department of Agriculture. An ex-post facto research design was followed, and a sample of 120 respondents, including Agricultural Officers (AOs) and Assistant Agricultural Officers (AAOs) working at Raitha Samparka Kendras (RSKs) across seven districts of Northern Karnataka under UAS, Dharwad, were selected using simple random sampling. Data were collected through a pre-tested structured questionnaire and analysed using frequency, percentage, mean index, correlation, regression and path analysis. The results showed that all respondents were aware of YouTube and WhatsApp, whereas social media platforms were mainly utilized for information sharing and communication. A majority of respondents perceived YouTube and WhatsApp as highly useful and higher engagement was observed with them. Overall usage ranking placed YouTube first, followed by WhatsApp, and Facebook. Correlation revealed significant positive relationships between variables and overall social media usage. Regression explained 69.00 per cent variation in usage behaviour, while path analysis indicated that extent of usage had the highest direct influence on social media utilization. The study highlights the importance of social media in extension services and the need to strengthen digital competencies for its effective utilization.

Keywords: social media usage, extension personnel, agricultural extension, digital communication, ict tools.

INTRODUCTION

The rapid growth of information and communication technologies (ICTs) has significantly transformed agricultural extension systems by improving the speed, reach, and effectiveness of information dissemination. The integration of ICT tools in extension services has significantly enhanced communication efficiency and accessibility of information among stakeholders (Kamani *et al.*, 2014). According to Wahana *et al.* (2014), the importance of the development of information technology has given birth to social media which is now a medium of public interest in all parts of the world. Social media has emerged as a key tool for facilitating communication between extension personnel and farmers. Social media platforms are increasingly being recognized as effective tools for dissemination of agricultural information and improving farmer outreach (Tadavi *et al.*, 2024; Chauhan *et al.*, 2016). Platforms such as WhatsApp, YouTube, Facebook, and Telegram are increasingly being used to share timely information on crop management, pest and disease control, weather updates, and market intelligence, thereby

strengthening extension service delivery (Aker, 2011; Davis & Sulaiman, 2014; Pratik & Vinaya, 2022).

In India, the widespread adoption of smartphones and expansion of affordable internet services have accelerated the integration of social media into agricultural extension. These platforms support the use of multimedia formats such as videos, images, and voice messages, making information more accessible and understandable to farmers with diverse literacy levels (Mittal & Mehar, 2016; Pratik & Vinaya, 2023). In addition, social media enables interactive and participatory communication, allowing farmers to engage directly with extension personnel, seek clarifications, and share field experiences, thus enhancing knowledge exchange and learning (Meera *et al.*, 2004). Perception of users towards the usefulness of social media plays a crucial role in its adoption for advisory services (Joshi *et al.*, 2017). However, the adoption and effective utilization of social media is often influenced by socio-economic and technical constraints faced by users (Patel & Vinaya Kumar, 2021).

The Karnataka State Department of Agriculture (KSDA) has been actively promoting digital tools to enhance extension outreach and improve the efficiency of advisory services. In this context, social media provides a cost-effective and scalable platform for reaching a large number of farmers across different regions. Extension personnel utilize these platforms to disseminate localized advisories, provide real-time support, and foster collaborative learning networks among farmers (Saravanan, 2010). Recent studies also highlight that social media-based extension approaches can improve farmers' access to timely information and increase adoption of improved agricultural practices.

Despite its potential, the effective use of social media in agricultural extension depends on factors such as digital literacy, accessibility to devices, institutional support, and professional competencies of extension personnel. Challenges such as misinformation, lack of content validation, and digital divide continue to limit its optimal utilization. Furthermore, the varying levels of technological readiness among extension personnel can influence the effectiveness of social media as an extension tool.

In this context, understanding the extent and pattern of social media usage among extension personnel becomes crucial for strengthening digital extension systems. Therefore, the present study focuses on analysing the social media usage among extension personnel of the Karnataka State Department of Agriculture, with the aim of identifying awareness, usage patterns, purposes and usefulness of social media. The findings are expected to contribute to the development of effective strategies for enhancing digital extension services and promoting inclusive agricultural development.

OBJECTIVE

To analyse the social media usage among extension personnel of Karnataka State Department of Agriculture

METHODOLOGY

The study was conducted during 2023-24 across seven districts of Northern Karnataka falling under the jurisdiction of UAS, Dharwad. The population comprised Agricultural Officers (AOs) and Assistant Agricultural Officers (AAOs) working in the State Department of Agriculture at Raitha Samparka Kendras (RSKs). A simple random sampling technique was adopted to select respondents, resulting in a total sample size of 120 extension personnel. The sample included 15 AOs and 5 AAOs from Bagalkot, 8 AOs and 2 AAOs from Belagavi, 15 AOs and 5 AAOs each from Dharwad, Gadag, and Vijayapura, 15 AOs and 5 AAOs from Haveri, and 9 AOs along with 1 AAO from Uttar Kannada.

A structured questionnaire was developed and pre-tested in a non-sample area to ensure its validity and reliability and is used for collecting the information from the respondents. The social media usage was measured by considering five components namely, Awareness about social media, Purpose of using social media, Level of Usefulness, Extent of Usage and Time Spent on social media. Data collection was carried out through personal interviews as well as Google Forms. The collected data were analysed using statistical tools such as frequency, percentage, mean index and advanced statistical tools such as correlation analysis, multiple regression analysis and path analysis were employed to examine the relationship and contribution of selected variables towards overall social media usage among extension personnel.

RESULTS AND DISCUSSION

The results on distribution of extension personnel based on the awareness about social media as shown in Table 1 revealed that all the extension personnel were aware about YouTube and WhatsApp, followed by 62.50 per cent of each had the awareness about Facebook and Instagram, followed by Twitter (56.67%), LinkedIn (52.50%), Telegram (49.17%) and Messenger (21.67%). On the contrary, majority of the extension personnel were not aware about Messenger (78.33%) and Telegram (50.83%).

Table 1: Distribution of extension personnel based on the awareness about social media (n=120)

Sr. No.	Name of social media	Aware		Not aware	
		f	%	f	%
1	Facebook	75	62.50	45	37.50
2	Instagram	75	62.50	45	37.50
3	YouTube	120	100.00	-	-
4	Twitter	68	56.67	52	43.33
5	LinkedIn	63	52.50	57	47.50
6	WhatsApp	120	100.00	-	-
7	Telegram	59	49.17	61	50.83
8	Messenger	26	21.67	94	78.33

The distribution of extension personnel based on their purpose of usage of social media as depicted in Table 2 revealed that 40.00 per cent of the extension personnel were found to used Facebook for social networking, followed by 33.33 per cent were found to use for chatting and 13.33 per cent each were used for reading online news and gaining information. Further, almost half of the extension personnel (49.33%) used Instagram for social networking, followed by 24.00 per cent for gaining information, 20.00 per cent chatting and only 6.67 per cent used it for online news. In utilising YouTube, majority (57.50%) of the extension personnel used it for gaining information, followed by online

news (39.17%) and only 3.33 per cent used it for social networking. Whereas, only 22.06 per cent of the extension personnel used Twitter for chatting purpose and 45.83 per cent of the extension personnel used WhatsApp for chatting

purpose, 32.20 per cent used Telegram for other purposes like shopping, watching online news etc., On the other hand, large majority (76.92%) of extension personnel used Messenger for chatting purpose.

Table 2. Distribution of extension personnel based on the purpose of using social media

(n=120)

Sr. No	Name of social media	No. of users	Purpose of Usage									
			Chatting		Online news		Gaining information		Social networking		Others	
			f	%	f	%	f	%	f	%	f	%
1	Facebook	75	25	33.33	10	13.33	10	13.33	30	40.00	-	-
2	Instagram	75	15	20.00	5	06.67	18	24.00	37	49.33	-	-
3	YouTube	120	-	-	47	39.17	69	57.50	4	3.33	-	-
4	Twitter	68	15	22.06	11	16.18	16	23.52	14	20.59	12	17.65
5	LinkedIn	63	11	17.46	10	15.87	14	22.22	16	25.39	12	19.05
6	WhatsApp	120	55	45.83	11	09.17	12	10.00	42	35.00	-	-
7	Telegram	59	10	16.95	10	16.95	10	16.95	10	16.95	19	32.20
8	Messenger	26	20	76.92	-	-	-	-	6	23.08	-	-

The results in Table 3 showcases the distribution of extension personnel based on their level of usefulness of social media. The data revealed that large majority, (81.67%) of extension personnel felt YouTube as very useful, followed by WhatsApp (75.00%). Whereas, majority (73.33%) of

the extension personnel felt Facebook as somewhat useful, followed by Instagram (66.67%) and LinkedIn (50.79%). On the other hand, 45.59 per cent and 44.07 per cent of the extension personnel felt not useful of Twitter and Telegram respectively.

Table 3. Distribution of extension personnel based on the level of usefulness of social media

(n=120)

Sr. No	Name of social media	No. of users	Level of usefulness					
			Very useful		Somewhat useful		Not useful	
			f	%	f	%	f	%
1	Facebook	75	10	13.33	55	73.33	10	13.33
2	Instagram	75	15	20.00	50	66.67	10	13.33
3	YouTube	120	98	81.67	13	10.83	09	07.50
4	Twitter	68	11	16.18	26	38.23	31	45.59
5	LinkedIn	63	10	15.87	32	50.79	21	33.33
6	WhatsApp	120	90	75.00	25	20.83	05	04.17
7	Telegram	59	08	13.56	25	42.37	26	44.07
8	Messenger	26	09	34.62	13	50.00	04	15.38

The distribution of extension personnel based on their extent of usage of social media as shown in Table 4 point out that large majority (81.67%) of the extension personnel used YouTube and WhatsApp every day. Further, high per cent of usage on alternate day with Twitter was observed

with 20.58 per cent extension personnel only. Whereas in the situation of 'once in a week' usage, a high per cent of extension personnel found to use messenger (38.46%), followed by LinkedIn (34.92%).

Table 4. Distribution of extension personnel based on the extent of usage of social media

(n=120)

Sr. No	Name of social media	No. of users	Frequency of usage							
			Every day		Alternate day		Once in a week		Once in 15 days	
			f	%	f	%	f	%	f	%
1	Facebook	75	10	13.33	10	13.33	25	33.33	30	40.00
2	Instagram	75	5	06.67	15	20.00	18	24.00	37	49.33
3	YouTube	120	98	81.67	10	08.33	12	10.00	-	-
4	Twitter	68	12	17.65	14	20.58	16	23.53	24	35.29
5	LinkedIn	63	10	15.87	10	15.87	22	34.92	21	33.33
6	WhatsApp	120	98	81.67	16	13.33	06	05.00	-	-
7	Telegram	59	10	16.95	10	16.95	15	25.42	24	40.68
8	Messenger	26	03	11.54	06	23.08	10	38.46	07	26.92

The results presented in Table 5 indicates the distribution of extension personnel based on their number of hours spent on social media revealed that large majority of the extension personnel spent 0-1 hour on Facebook (85.33%), Twitter (82.35%). Further, comparatively high per

cent (47.50%) of extension personnel used WhatsApp for 1-2 hours, followed by Instagram (44.00%) and nearly half per cent (49.17%) of the extension personnel spent 2-4 hours on YouTube.

Table 5. Distribution of extension personnel based on the time spent on social media

(n=120)

Sr. No	Name of social media	No. of users	No. of hours used							
			0-1 hour		1-2 hours		2-4 hours		>4 hours	
			f	%	f	%	f	%	f	%
1	Facebook	75	64	85.33	07	09.33	04	05.33	0	0
2	Instagram	75	31	41.33	33	44.00	06	08.00	05	06.67
3	YouTube	120	27	22.50	31	25.83	59	49.17	03	02.50
4	Twitter	68	56	82.35	08	11.76	04	05.89	-	-
5	LinkedIn	63	44	69.84	13	20.63	06	09.52	-	-
6	WhatsApp	120	37	30.83	57	47.50	23	19.17	03	02.50
7	Telegram	59	40	67.79	11	18.64	08	13.57	-	-
8	Messenger	26	16	61.54	06	23.08	04	15.38	-	-

The findings presented in Table 6 on the distribution of extension personnel based on the overall social media usage displays that 'YouTube' ranked first with highest mean index value (63.36), followed by 'WhatsApp' placed in second-highest index value (61.51), 'Facebook' at third rank with index value of 54.07 and 'Instagram' at fourth rank with index value of 53.30. Easy access to wide range of sources for gaining timely and specific information might

be reason for more popularity of social media. The findings of the present study are in agreement with those reported by Tamizhkumaran and Saravanan Raj (2020), who highlighted the significant role of YouTube in extension and advisory services. Their study emphasized that visually rich and informative video content is highly effective in capturing the attention of clients and enhancing knowledge dissemination.

Table 6. Overall social media usage among extension personnel

(n=120)

Sr. No.	Name of social media	Mean Index	Rank
1	YouTube	63.36	I
2	WhatsApp	61.51	II
3	Facebook	54.07	III
4	Instagram	53.30	IV
5	Twitter	53.10	V
6	LinkedIn	52.81	VI
8	Telegram	50.12	VII
10	Messenger	49.29	VIII

The results of past research studies of Iwchukwu *et al.* (2019), James *et al.* (2020); Rathwa *et al.* (2024); Tadavi *et al.* (2024); Tadeipalli *et al.* (2024); Pratik & Vinaya, (2022);

Pratik & Vinaya, (2023); Chauhan *et al.* (2016) and Shanmuka *et al.* (2022) also found to support the present findings.

Table 7 : Correlation analysis between selected variables related to overall social media usage among extension personnel

(n=120)

Sr. No.	Variables	Awareness	Usefulness	Extent of Usage	Time Spent	Overall Usage
X ₁	Awareness	1.000	0.512**	0.468**	0.421**	0.596**
X ₂	Usefulness		1.000	0.648**	0.534**	0.721**
X ₃	Extent of Usage			1.000	0.603**	0.782**
X ₄	Time Spent				1.000	0.654**
X ₅	Overall Usage					1.000

Note: ** Significant at 1 per cent level (p<0.01)

The correlation analysis presented in Table 7 revealed that all the selected variables had a positive and significant relationship with overall social media usage among extension personnel. Extent of usage showed the strongest association with overall usage, followed by usefulness and time spent on social media. This indicates that extension personnel who frequently use social media and perceive it

as useful are more likely to utilize it effectively for extension activities. Awareness also showed a significant positive relationship with overall usage behaviour. The findings are in conformity with the results of Shanmuka *et al.* (2022) and James *et al.* (2020), who reported that perceived usefulness and engagement with digital platforms positively influence social media utilization among extension professionals.

Table 8. Multiple regression analysis of factors influencing overall social media usage among extension personnel

(n=120)

Sr. No.	Independent Variables	Regression Coefficient (b)	Standard Error	t-value
X ₁	Awareness	0.214	0.081	2.64*
X ₂	Usefulness	0.368	0.094	3.91**
X ₃	Extent of Usage	0.441	0.088	5.01**
X ₄	Time Spent	0.287	0.079	3.63**

Model Statistics	Value
R ²	0.69
Adjusted R ²	0.67
F-value	28.54**

Note: * Significant at 5 per cent level ($p < 0.05$), ** Significant at 1 per cent level ($p < 0.01$)

The results in Table 8 on regression analysis indicated that the selected independent variables together explained a substantial variation in overall social media usage among extension personnel ($R^2 = 0.69$). Among the variables, extent of usage emerged as the most influential factor, followed by usefulness and time spent on social media. Awareness also

contributed positively towards overall usage behaviour. The significant F-value indicated that the regression model was statistically significant. The findings suggest that regular engagement and positive perception towards social media enhance its utilization in extension services. These findings are supported by Mittal and Mehar (2016), who observed that perceived utility and digital familiarity significantly influence ICT adoption behaviour.

Table 9. Path analysis showing direct and indirect effects of selected variables on overall social media usage

(n=120)

Sr. No.	Variables	Direct Effect	Indirect Effect	Total Effect
X ₁	Awareness	0.214	0.382	0.596
X ₂	Usefulness	0.368	0.353	0.721
X ₃	Extent of Usage	0.441	0.341	0.782
X ₄	Time Spent	0.287	0.367	0.654
	Residual Effect = 0.31			

The path analysis in Table 9 revealed that extent of usage had the highest direct effect on overall social media usage, followed by usefulness. Time spent and awareness also exerted positive direct and indirect effects on usage behaviour. The results indicate that frequent engagement and positive perception towards social media platforms considerably improve their utilization among extension personnel. The findings are in agreement with Patel and Vinaya Kumar (2021), who reported that behavioural and perception-related factors significantly influence social media usage among agricultural stakeholders.

CONCLUSION

The findings of the study indicate that social media has emerged as a vital communication tool for extension personnel in the Karnataka State Department of Agriculture, playing a significant role in improving the delivery of agricultural information and services. Platforms such as YouTube and WhatsApp were widely recognized and regularly used, owing to their effectiveness in sharing timely, visual, and easily understandable content, as well as facilitating interaction with farmers. Social media was mainly used for accessing information, maintaining professional networks, and communicating with stakeholders, reflecting

its integration into routine extension activities. However, the comparatively lower awareness and use of platforms like Telegram, LinkedIn, and Messenger point to gaps in the adoption of diverse digital tools. These trends suggest that extension personnel tend to rely more on familiar and user-friendly platforms. In light of these findings, it is recommended that focused training initiatives be organized to strengthen the digital capabilities of extension personnel, particularly in exploring and utilizing a wider range of social media applications. Emphasis should also be placed on creating accurate, location-specific, and language-appropriate content to improve communication effectiveness. Additionally, enhancing institutional support, ensuring better internet connectivity, and formally incorporating social media into extension strategies can further improve outreach. Continuous capacity building and support mechanisms will be crucial in maximizing the potential of social media for more responsive and inclusive agricultural extension services.

RECOMMENDATION

- Build the digital capacity of extension personnel by promoting skill development in the effective use of platforms such as YouTube and WhatsApp for delivering timely and practical agricultural information.
- Incorporate social media tools like Facebook, Instagram, and Telegram into structured extension programmes with defined protocols to improve outreach and farmer engagement.

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CONFLICT OF INTEREST

The authors declare no conflict of interest regarding the publication of this paper.

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