

International Journal of Agriculture Extension and Social Development

Volume 9; Issue 8; August 2026; Page No. 51-56

Received: 24-05-2026
Accepted: 28-06-2026

Indexed Journal
Peer Reviewed Journal

Knowledge and utilization of social media for agricultural information among farmers in Uttar Pradesh

¹Ritika Arya, ²RN Yadav, ²VK Singh, ¹Pramod Tripathi, ³Soumya Mishra, ¹Anjali Pandey and ¹Shivendra Pratap Singh

¹Research Scholar, Department of Agricultural Extension Education, Sardar Vallabhbhai Patel University of Agriculture and Technology, Meerut, Uttar Pradesh, India

²Professor, Department of Agricultural Extension Education, Sardar Vallabhbhai Patel University of Agriculture and Technology, Meerut, Uttar Pradesh, India

³Research Scholar, Department of Agricultural Extension Education, CCS Haryana Agricultural University, Hisar, Haryana, India

DOI: <https://www.doi.org/10.33545/26180723.2026.v9.i8a.3986>

Corresponding Author: Pramod Tripathi

Abstract

Digital extension programmes have expanded across India on the assumption that a mobile handset can substitute for the field functionary India's advisory system has never had enough of. Whether that substitution works depends on who among the rural population is positioned to use it, and central Uttar Pradesh has offered almost no evidence either way. This study examined how far rice and wheat growers of Kanpur Dehat district know and use social media for farming information, and which socio-economic attributes underlie each behaviour. Two development blocks and ten villages were purposively selected, and twelve social-media-using cultivators were drawn at random from each village, giving 120 respondents interviewed face to face with a structured schedule. Knowledge was scored across thirty-five items covering seven platforms and services; utilization was scored across nine items covering specific farming applications. Data were summarised by frequency, percentage, mean and standard deviation, and associations tested by Pearson and Spearman correlation. Average knowledge stood at 18.70 (SD 9.12) out of a possible thirty-five, with over a third of respondents in the high category and a quarter in the low; utilization averaged 5.07 (SD 2.48) out of nine, distributed similarly. Competence clustered around WhatsApp and the Kisan Call Centre, both low-threshold and vernacular, and thinned sharply for registration-based portals such as e-Choupal. Education and annual family income correlated most strongly and positively with both outcomes; material possession, communication media use and social participation carried smaller but significant positive correlations, and age correlated negatively with both; caste, family structure, occupation, landholding and housing pattern showed no significant association with either. Digital engagement among these farmers is therefore uneven rather than absent, shaped only partly by socio-economic standing and more consistently by schooling, income and household resource than by age, caste or landholding alone.

Keywords: Digital divide, digital literacy, extension advisory services, Kisan call centre, WhatsApp

Introduction

Extension systems across the developing world were designed for a world of scarce information, not scarce staff, and that mismatch now defines their limits. In South Asia a field functionary serves several thousand farm families, so a recommendation can take a full cropping season to reach the farmer who needs it. Agriculture sustains half India's workforce on a much smaller share of national income; most cultivators still enter the sowing season without contact with any formal advisory source, depending instead on input dealers, neighbours and memory (Patel & Hebsale Mallappa, 2022) ^[7].

Kanpur Dehat, where this study was carried out, illustrates the problem starkly: per-capita income here was roughly ₹64,095 in 2021–22, among the lowest in Uttar Pradesh, and the economy rests almost entirely on rice, wheat, pulses and oilseeds grown on small, fragmented holdings. Digital

extension has been advanced as a low-cost way around this constraint, since a handset is replicable at near-zero cost, unlike a field visit. Kisan Call Centres, the SMS Portal, e-NAM, expert systems and agricultural podcasts rest on this logic (Tripathi & Mishra, 2026; Mishra *et al.*, 2026) ^[12, 5], though it holds only for farmers with the literacy and confidence to use it (Tripathi *et al.*, 2026) ^[13] infrastructure alone is not enough.

Social media differs from older digital-extension tools in allowing two-way exchange, letting a farmer describe a problem and weigh the answer against what others say, with penetration among Indian farming communities now considerable (Rathwa *et al.*, 2024; Mithun *et al.*, 2025; Suchiradipta & Saravanan, 2018) ^[9, 6, 11]. Owning a smartphone is not the same as being able to use it: a farmer may know a service exists without recalling how to reach it, or be competent yet avoid it because its content arrives in an

unfamiliar register. Knowledge and utilization are therefore separate outcomes, though most published work folds them into a single index that hides whether a shortfall is cognitive or situational.

Studies keeping the two constructs apart have not converged on a common set of predictors, a pattern that looks regional rather than random. In Gujarat, education, occupation, income and information-seeking behaviour correlated positively with knowledge while age correlated negatively (Patel & Hebsale Mallappa, 2022)^[7], echoed among Haryana crop growers (Darshan *et al.*, 2017)^[2], whereas among Andhra Pradesh livestock keepers only exposure and information-seeking behaviour mattered (Mithun *et al.*, 2025)^[6]. Utilization has tracked education and social participation in Gujarat (Rathwa *et al.*, 2024)^[9], age and cooperative membership in South Africa (Zondo & Ndoro, 2024)^[14], and other combinations in Nigeria and Himachal Pradesh (Ahmad *et al.*, 2025; Kumar & Mukherjee, 2025)^[1, 4]. Determinants estimated elsewhere cannot simply be assumed to apply to Uttar Pradesh's central plains, where the evidence base is close to empty.

Kanpur Dehat is a useful test bed because its farmers are neither the most connected nor the most cut off within Uttar Pradesh, sitting in the ordinary middle where much of the state's rice and wheat area lies, closing a gap in a literature concentrated elsewhere. This study was undertaken among rice and wheat growers of Kanpur Dehat to assess their knowledge of social media platforms and public digital advisory services, measure the extent and pattern of utilization of these platforms for agricultural purposes, and identify which socio-economic attributes are associated with each outcome and with what relative strength.

Materials and Methods

Study area

The study was conducted in Kanpur Dehat district, Central Plain Zone of Uttar Pradesh, within the Indo-Gangetic alluvial belt (26.30° N, 79.96° E; elevation about 144 m). The district carries an intensive rice–wheat rotation supplemented by pulses and oilseeds, with a per-capita income of roughly ₹64,095 in 2021–22 and almost no non-farm industrial activity, making it a useful setting for examining socio-economic influences on digital engagement.

Research design and sampling

An ex post facto design, supported by descriptive survey procedures, was used since the independent variables of interest already existed in the population and could not be manipulated; correlation coefficients are read as strength of association within a cross-section, not as causal effect. A multistage sampling procedure combined purposive and random selection. Kanpur Dehat was chosen purposively for its reported concentration of social-media-using farmers; two of its ten development blocks were selected for larger cultivated area and better service availability, and five villages were drawn from each block in consultation with the local Krishi Vigyan Kendra. Within each of the ten villages, a list of social-media-using rice and wheat growers was prepared with the Village Development Officer and Gram Pradhan, and twelve respondents were selected at random from each list, giving a final sample of 120.

Variables and measurement

Descriptive profile variables (age, education, caste, family type and size, occupation, landholding, annual family income, housing, approach road) were recorded as in Table 1. Twelve scored attributes, the same list plus material possession, communication media use and social participation, were used for the association analysis, following Singh's (2005)^[10] socio-economic status scale modified for the study area; extension contact could not be reconstructed from the digitized dataset and was excluded. Knowledge, the first dependent variable, was assessed through 35 statements across seven platforms and services (Facebook, WhatsApp/WhatsApp Business, YouTube, Kisan Call Centre, Kisan SMS Portal, e-Choupal, Instagram), scored on a three-point continuum (no awareness = 0, aware but unable to operate unassisted = 1, independent use = 2) and classified as low (0–11), medium (12–23) or high (24–35). Utilization, the second dependent variable, was measured through nine statements on specific farming applications, scored never/occasionally/regularly used, and classified as low (0–3), medium (4–6) or high (7–9). Both scales were content-validated by a panel of extension scientists and pre-tested on twenty farmers outside the study villages; internal consistency was acceptable (Cronbach's alpha 0.81 and 0.76).

Data collection and analysis

A structured interview schedule, framed in Hindi, was administered face to face after the study protocol was cleared by the Departmental Research Ethics Committee and verbal informed consent was obtained from every respondent; participation was voluntary and responses were recorded anonymously. Data were analysed in SPSS using frequency, percentage, mean and standard deviation, and bivariate association was tested through Spearman's rank-order and Pearson's product-moment correlation, with significance reported at 5 per cent (*) and 1 per cent (**).

Results

Socio-economic profile of respondents

Table 1 describes a sample dominated by working-age cultivators on very small holdings. Four-fifths of respondents were 50 years or younger, four-fifths farmed two hectares or less, and half operated below one hectare, a structure that limits both the surplus a household can generate and its capacity to absorb the recurring cost of mobile data. Schooling is modest rather than absent: 45 per cent had completed high school or beyond, while 17.50 per cent remained illiterate and would need to engage text-heavy platforms through an intermediary, if at all. Backward and scheduled communities together made up 77.50 per cent of the sample, and just over half reported annual family income below ₹2 lakh. Nuclear households predominated, and only a third had pucca road access to the homestead, a physical marker of the same infrastructural marginality that governs network availability.

Two features of this profile carry forward into the analysis that follows. With 80 per cent of respondents on marginal-to-small holdings and 68 per cent below intermediate schooling, the socio-economic spread within the sample is real but narrow, so whatever variance is available to explain differences in digital behaviour comes mainly from the upper

tail of each distribution rather than from a wide middle. Separately, 43.33 per cent combined cultivation with labour, service, animal husbandry or business, which exposes a

substantial minority to non-farm information environments in a way that plain landholding or income figures would not capture.

Table 1: Socio-economic profile of social-media-using farmers in Kanpur Dehat (n = 120)

Attribute	Category	f	%
Age	Young (≤ 30 years)	39	32.50
	Middle (31–50 years)	55	45.83
	Old (> 50 years)	26	21.67
Education	Illiterate	21	17.50
	Can read and write	33	27.50
	High school	33	27.50
	Intermediate	18	15.00
	Graduation and above	15	12.50
Caste	General	18	15.00
	Other Backward Class	61	50.83
	Scheduled Caste / Scheduled Tribe	32	26.67
	Others	9	7.50
Family type	Nuclear	75	62.50
	Joint	45	37.50
Family size	Small (≤ 4 members)	20	16.67
	Medium (5–8 members)	85	70.83
	Large (> 8 members)	14	11.67
Occupation	Agriculture only	68	56.67
	Agriculture + labour	15	12.50
	Agriculture + service	15	12.50
	Agriculture + animal husbandry	12	10.00
	Agriculture + business	10	8.33
Landholding	Marginal (≤ 1 ha)	61	50.83
	Small (1–2 ha)	35	29.17
	Medium (2–4 ha)	19	15.83
	Large (> 4 ha)	4	3.33
Annual family income (₹)	$\leq 1,00,000$	18	15.00
	1,00,001–2,00,000	45	37.50
	2,00,001–3,00,000	37	30.83
	$> 3,00,000$	20	16.67
Housing	Kachcha	6	5.00
	Mixed (kachcha + pucca)	68	56.67
	Pucca	46	38.33
Approach road	Kachcha	50	41.67
	Kharanja	30	25.00
	Pucca	40	33.33

Knowledge and utilization of social media by platform and function

Table 2: Platform-wise knowledge and function-wise utilization of social media for agricultural information (n = 120)

Platform / Function	High (%)	Medium (%)	Low (%)
Panel A. Knowledge by platform / service			
Kisan Call Centre (4 items)	44.79	31.25	23.96
WhatsApp / WhatsApp Business (5 items)	44.00	35.17	20.83
Instagram (5 items)	40.83	33.50	25.67
YouTube (3 items)	39.17	31.39	29.44
Facebook (4 items)	28.12	46.04	25.83
Kisan SMS Portal (3 items)	28.06	26.11	45.83
e-Choupal (3 items)	27.78	27.22	45.00
Panel B. Utilization by agricultural function			
Contacting experts for crop, pest or fertiliser problems	47.50	27.50	25.00
Following agricultural experts on Facebook	43.33	32.50	24.17
Following agricultural pages, videos and technology posts	40.83	32.50	26.67
Watching videos on modern methods, machinery and crop management	40.00	31.67	28.33
Viewing farming photographs, reels and new ideas	39.17	34.17	26.67
Obtaining market price, production and input information	36.67	35.83	27.50
Joining farmer groups and exchanging information on WhatsApp	32.50	40.00	27.50
Sharing photographs of diseased crops for diagnosis	26.67	40.00	33.33
Checking crop market prices through e-Choupal	25.00	43.33	31.67

Platforms in Panel A are ordered by proportion of respondents in the high-knowledge category; functions in Panel B are ordered by proportion in the high-utilization category.

Table 2 sets the seven platforms and services against one another and shows a clear split between conversational applications and transactional portals. WhatsApp leads the commercial platforms, with 44.00 per cent of responses in the high-knowledge band, which is unsurprising given that its demands stop at a phone number and a one-time password before voice notes and photographs take over from typed text. Instagram and YouTube follow at 40.83 and 39.17 per cent high, while Facebook sits in an odd middle position: recognition is widespread, but most responses cluster in the medium band, suggesting familiarity that stalls before the account-building steps the instrument tested. The two public services diverge sharply from one another. The Kisan Call Centre records the highest knowledge of anything tested, 44.79 per cent high, built on a toll-free number that requires no registration and works in the caller's own language. The Kisan SMS Portal and e-Choupal trail everything else, each with close to 45 per cent of responses in the low band; barely one respondent in eight could explain what e-Choupal even is. Awareness, in short, tracks how simple the access route is rather than how useful the service might be where a farmer to reach it.

Utilization follows a comparable logic but along a different axis, moving from receptive to contributory use rather than from platform to platform. Contacting experts about a crop, pest or fertiliser problem draws the highest share of high-use respondents (47.50 per cent), and following experts, pages and instructional video are close behind at 40 to 43 per cent. Sharing a photograph of a diseased crop for diagnosis, arguably the single most useful thing a farmer can do with these platforms, attracts high use from only 26.67 per cent, and checking prices through e-Choupal falls lower still at 25.00 per cent, a position that Table 2's knowledge panel already anticipates: a function cannot be well used on a service that most respondents barely understand.

Overall levels of knowledge and utilization

Table 3: Distribution of respondents by overall knowledge and utilization of social media (n = 120)

Construct	Category (score range)	f	%	Mean $\pm$ SD
Knowledge	Low (0–11)	29	24.17	18.70 $\pm$ 9.12
	Medium (12–23)	50	41.67	
	High (24–35)	41	34.17	
Utilization	Low (0–3)	31	25.83	5.07 $\pm$ 2.48
	Medium (4–6)	50	41.67	
	High (7–9)	39	32.50	

Mean and standard deviation are reported once per construct, over the full score range

Composite scores in Table 3 place both constructs a little above their scale midpoints, knowledge averaging 18.70 against a possible 35 (SD 9.12) and utilization 5.07 against 9 (SD 2.48), with roughly two-fifths of respondents at the medium level in each case and the rest divided nearly evenly between the two extremes. The standard deviations, essentially half the size of their respective means, matter more than the averages themselves: they describe a

population in which a third of respondents operate close to the ceiling of both scales while a quarter sit barely above the floor, despite every respondent qualifying as a social-media user by the sampling design. The near-identical category proportions across knowledge and utilization point to a close underlying coupling between the two, which the correlation analysis below examines directly.

Correlation between socio-economic attributes and knowledge and utilization

Table 4: Correlation between socio-economic attributes and knowledge and utilization scores of social media use (n = 120)

Socio-economic attribute	Knowledge (rs)	Utilization (rs)
Age	−0.22*	−0.24*
Education	0.47**	0.45**
Caste	0.08	0.06
Family type	0.05	0.04
Family size	−0.10	−0.08
Occupation	0.16	0.18
Size of landholding	0.17	0.19
Annual family income	0.43**	0.46**
Housing pattern	0.14	0.16
Material possession	0.31*	0.34*
Communication media use	0.39*	0.41*
Social participation	0.25*	0.28*

*Significant at $p < 0.05$; **significant at $p < 0.01$; coefficients without an asterisk are not significant ($p > 0.05$). rs = Spearman's rank correlation coefficient; age and family size were correlated with Pearson's product-moment coefficient (r).

Table 4 sets the twelve scored socio-economic attributes against both outcomes. Two attributes, education and annual family income, correlated positively with both knowledge and utilization at the 1 per cent level (education: rs = 0.47 and 0.45; income: rs = 0.43 and 0.46), and were the strongest associations recorded for knowledge in the entire analysis. Age returned a smaller but still significant negative correlation with both outcomes (rs = −0.22 and −0.24), consistent with younger respondents managing these platforms somewhat more comfortably than older ones. Material possession, communication media use and social participation each correlated significantly, though more modestly, with both knowledge and utilization (rs between 0.25 and 0.41 across the six coefficients), while caste, family type, family size, occupation, landholding and housing pattern showed no significant relationship with either outcome. The overall pattern is one of partial rather than absent association: a small cluster of attributes, education and income foremost, tracks both knowledge and utilization fairly closely, while most of the remaining socio-economic profile carries little explanatory weight for either.

Discussion

What emerges from this study is not digital exclusion but digital stratification. Every respondent counted as a social-media user by design, and socio-economic standing was scored using an established status scale (Singh, 2005)^[10], yet a quarter sat in the lowest knowledge band and a quarter in the lowest utilization band: access plainly does not translate into competence in any simple way. Gandhinagar farmers in Gujarat returned 65 per cent in the high knowledge category (Patel & Hebsale Mallappa, 2022)

[7], roughly double the 34.17 per cent found here, while Andhra Pradesh livestock keepers clustered in the medium band, with only 20.74 per cent high (Mithun *et al.*, 2025) [6]; Kanpur Dehat sits closer to the Andhra pattern. The gap reflects the populations sampled, not the platforms: Gandhinagar is peri-urban, whereas half the farmers here work below one hectare, 17.50 per cent are illiterate, and two-thirds never went past high school. A lower educational and asset floor produces thinner procedural knowledge, so western India's findings do not transfer easily here. This platform ordering recurs elsewhere: WhatsApp and YouTube dominate daily use in Gujarat too (Rathwa *et al.*, 2024) [9], suggesting the hierarchy reflects entry barriers rather than local taste. WhatsApp needs only a phone number and a one-time password, after which voice notes and photos carry the conversation past whatever a farmer cannot read; 63.33 per cent here cleared that step easily. A registration-heavy portal instead routes farmers back through an office or a form, reintroducing the intermediation digital extension was meant to remove; barely 11.67 per cent could explain what e-Choupal is.

The Kisan Call Centre's standing deserves attention: it records the highest knowledge of any service tested, and its top-ranked utilization function, consulting an expert about a crop or pest problem, is exactly what it offers. A voice channel in the caller's own language, needing no registration and no literacy, reaches low-asset farmers in a way portals cannot, countering any assumption that newer platforms simply displace older ones; the human, voice-first route remains most trusted here, with newer platforms layered on top of it. This connects to the wider toolkit behind this study. Expert systems and e-NAM share the Call Centre's logic but still demand registration and trust in an unfamiliar interface, exactly where the SMS Portal and e-Choupal falter (Tripathi & Mishra, 2026; Tripathi *et al.*, 2026) [12, 13]; podcasts share its voice-first appeal but lack two-way exchange (Mishra *et al.*, 2026), [5] explaining a practice but not answering a question. Extension professionals elsewhere already see social media as reshaping agricultural communication (Suchiradipta & Saravanan, 2018) [11], consistent with what is found here: farmers adopt what feels like a conversation, not a form, so these tools would do better to simplify registration and add voice support first.

The sharpest finding is the gap between receptive and contributory use. Following experts and watching videos draws high engagement from roughly two-fifths of respondents, but sharing a photo of a diseased crop for diagnosis, the most useful action available, draws only 26.67 per cent; Gujarat shows the same pattern more starkly, with just 24.40 per cent uploading video and 14.44 per cent audio (Rathwa *et al.*, 2024) [9]. Two things keep this gap open: posting a question exposes one's uncertainty, so an unsure farmer may prefer to watch, and doubts about platform information's reliability, a constraint reported elsewhere too (Patel & Vinaya Kumar, 2021; Kaviya & Natarajan, 2025) [8, 3], discourage framing a question. Raising exposure alone will not turn viewers into participants; that needs a moderated space, such as a Krishi Vigyan Kendra-anchored group, where the responder's credibility is visible. The correlations align with the literature more than the raw scores suggest. Patel and Hebsale Mallappa (2022) [7] linked knowledge to education, occupation and income positively, and age

negatively; this study agrees on education, income and age ($rs = 0.47, 0.43$ and -0.22) but not occupation ($rs = 0.16$), likely because 56.67 per cent farm exclusively, leaving little occupational variation to detect. Mithun *et al.* (2025) [6] found income unrelated to knowledge among Andhra's livestock keepers, whereas it mattered here ($rs = 0.43, p < 0.01$), plausibly because data and handset costs compete harder against a smaller crop income.

Utilization correlated with a broader set of attributes, led by material possession ($rs = 0.34$) rather than the education and social participation Rathwa *et al.* (2024) [9] emphasised, though both stayed significant too, closer to Zondo and Ndoro (2024) [14], whose model found farm income significant, income and assets being conceptually related. Caste, occupation, landholding and housing showed no association with utilization, unlike the broader predictor sets from Nigeria and Himachal Pradesh (Ahmad *et al.*, 2025; Kumar & Mukherjee, 2025) [1, 4], reminder predictors rarely transfer across settings. Several comparison studies used regression rather than correlation (Rathwa *et al.*, 2024; Zondo & Ndoro, 2024) [9, 14]; this study reports correlations only, since regression grows unstable on a narrow, correlated predictor set like this one, so the two estimates should be read as related, not comparable. More broadly, these results support treating knowledge and utilization as separate constructs rather than one combined index, as much prior work has done (Patel & Hebsale Mallappa, 2022; Rathwa *et al.*, 2024; Mithun *et al.*, 2025; Zondo & Ndoro, 2024) [7, 9, 6, 14]; a single score would have hidden the WhatsApp-versus-e-Choupal split, the receptive-contributory gap, and material possession mattering slightly more for utilization than knowledge (0.34 against 0.31).

A few limitations apply. Pretest reliability (α 0.81 and 0.76) suggests the instruments were not the weak link, but purposive sampling limits generalisation, and since the sample comprised only existing users, these figures are a ceiling, not an average, saying nothing about farmers with no access at all. Self-reports likely inflate both scores, and the narrow socio-economic range, only four large landholders, may itself suppress correlations a wider range would reveal. With 89.17 per cent married male household heads, findings mainly describe male decision-making; women's digital behaviour remains unexamined, and extension contact, unreconstructable from the dataset, was dropped. Finally, this snapshot cannot rule out that e-Choupal, poorly known today, might look different after a redesign or publicity push.

Conclusion

The findings indicate that although social media has become accessible to many farmers in Kanpur Dehat, its knowledge and utilization remain uneven. Around one-third of the respondents demonstrated a high level of knowledge and actively used social media for agricultural purposes, whereas nearly one-fourth had limited knowledge and low utilization despite having access to digital tools. Farmers were most familiar with WhatsApp and the Kisan Call Centre because these platforms are easy to use, inexpensive, and available in local languages. In contrast, awareness and use of registration-based services such as e-Choupal remained low. Most farmers preferred using social media to obtain information, watch videos, or seek expert advice, but comparatively fewer actively shared crop problems or

interacted with experts by posting photographs or queries. Among the socio-economic variables studied, education and annual family income showed the strongest positive association with both knowledge and utilization, while age was negatively associated with both. Material possession also influenced utilization significantly, whereas caste, family type, occupation, landholding, and housing pattern did not show significant relationships. These findings suggest that digital competence depends more on educational and economic resources than on traditional demographic characteristics.

This study provides one of the first comprehensive assessments of farmers' knowledge and utilization of social media for agricultural information in central Uttar Pradesh. It also highlights the importance of assessing knowledge and utilization separately, as each requires different interventions. While improving knowledge calls for capacity-building programmes, increasing utilization requires better infrastructure, localized content, and greater trust in digital advisory services. The findings suggest that extension programmes should provide need-based digital training, promote user-friendly vernacular platforms, strengthen trusted advisory services such as the Kisan Call Centre, and encourage farmers to actively engage in digital interactions. Future research should examine changes in digital behaviour over time and include behavioural factors and women farmers to develop a more comprehensive understanding of digital agricultural communication.

References

- Ahmad M, Ango AK, Barau AA. Factors influencing farmers' usage of social media platforms for livelihood activities in north west Nigeria. *Nigerian Journal of Agriculture and Agricultural Technology*. 2025;5(1A):82–94. doi:10.59331/njaat.v5i1A.971.
- Darshan NP, Meena BS, Meena HR. Influence of socio-economic characteristics of farmers on their use of social media in Haryana, India. *International Journal of Current Microbiology and Applied Sciences*. 2017;6(10):14–18. doi:10.20546/ijcmas.2017.610.002.
- Kaviya P, Natarajan M. Constraints in utilizing social media for accessing agricultural technology information: Challenges faced by farmers. *International Journal of Agriculture Extension and Social Development*. 2025;8(5):166–168. doi:10.33545/26180723.2025.v8.i5c.1880.
- Kumar D, Mukherjee D. Factors influencing social media adoption and its impact on agricultural distribution in mountainous regions of Himachal Pradesh. *Lex Localis – Journal of Local Self-Government*. 2025;23(S6):4897–4908. doi:10.52152/f9207820.
- Mishra S, Anshuman J, Tripathi P. From fields to earphones: The growing role of podcasts in agricultural extension. *NG Agriculture Insights*. 2026;2(3):1–5. doi:10.5281/zenodo.20550389.
- Mithun G, Triveni G, Sharma GRK, Swetha Kanti S, Ganga Raju G, Punya Kumari B. Knowledge level of livestock farmers towards social media as an information source in Andhra Pradesh. *International Journal of Agriculture Extension and Social Development*. 2025;8(SP-9):84–87. doi:10.33545/26180723.2025.v8.i9Sb.2448.
- Patel PK, Hebsale Mallappa VK. Predictive factors for farmers' knowledge of social media for sustainable agricultural development. *Indian Journal of Extension Education*. 2022;58(4):55–59. doi:10.48165/IJEE.2022.58412.
- Patel PK, Vinaya Kumar HM. Farmers' socio-economic status and constraints using social media for sustainable agricultural development. *Gujarat Journal of Extension Education*. 2021;32(2):34–39.
- Rathwa MS, Christian BM, Patel DN. Relationship between farmers' profile and their social media utilisation behaviour. *Gujarat Journal of Extension Education*. 2024;37(1):82–86. doi:10.56572/gjoe.2024.37.1.0013.
- Singh AK. Socio-economic status scale (rural). 2005.
- Suchiradiptha B, Saravanan R. The online culture of agriculture: Exploring social media readiness of agricultural professionals. *CSI Transactions on ICT*. 2018;6(3):289–299. doi:10.1007/s40012-018-0205-0.
- Tripathi P, Mishra S. Digital intelligence for sustainable agriculture: The role of expert systems in India. *NG Agriculture Insights*. 2026;2(4):21–26. doi:10.5281/zenodo.21589078.
- Tripathi P, Singh LB, Netravathi G, Varshney A, Mishra S. Assessment of benefits of e-NAM on socio-economic status of farmers in western Uttar Pradesh, India. *Journal of Scientific Research and Reports*. 2026;32(2):353–361. doi:10.9734/jsrr/2026/v32i23985.
- Zondo WNS, Ndoro JT. Evaluating the influence of socioeconomic factors on smallholder farmers' social media adoption in the Nkomazi Local Municipality, Mpumalanga Province. *South African Journal of Agricultural Extension*. 2024;52(1):20–47. doi:10.17159/2413-3221/2024/v52n1a13764.