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Social Media Awareness among Farmers in Haryana: An Age-wise Comparative Analysis

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HIGHLIGHTS

- The majority of respondents exhibited a medium level of social media awareness
- Significant age-wise differences were observed in social media awareness among farmers of different age groups
- The socio-personal and communication variables significantly influenced the awareness level of farmers

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Keywords: Age-wise comparison, Awareness, Determinants, Social media.

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ABSTRACT

The study measured farmers' social media awareness and compared the awareness across different age groups in Haryana. A descriptive and analytical research design was employed, and data were collected from 240 farmers, equally divided into three age groups and selected through multi-stage stratified random sampling from eight villages across two districts. Data were gathered using a structured interview schedule, and analysis was conducted using statistical tools including independent sample t-test, Pearson product-moment correlation and multiple linear regression. The results showed that a majority of respondents possessed a medium level of social media awareness. Further, the young farmers exhibited significantly higher awareness compared to other age groups. Also, it was observed that farmers were largely aware of social media for information sharing, communication, and entertainment, but awareness regarding marketing applications remained low. Socio-economic variables such as age, education, extension participation and contact and scientific orientation emerged as the strongest predictors of social media awareness. The study proposes targeted training programmes on digital literacy and institutional linkage to enhance farmers' awareness and professional use of social media platforms.

INTRODUCTION

Social media is an e-communication technology that allows users to exchange knowledge, concepts, private messages, and other types of content by forming an interconnected social relationship called online communities (Merriam-Webster, 2015). These computer-mediated tools are interactive in nature, which makes it easier to create or share content through online communities and networks. They also help people express themselves in various ways. By building online communities, social media enables users to share stuff such as knowledge, concepts, thoughts, and private messages. Additionally, it aids in developing viewpoints, stimulating conversation, and forging connections (Saravanan & Bhattacharjee, 2014). According to Digital 2025, there were 5.66 billion social media users across the world, and an average user spent 2.6 hours each day on various social media platforms. India, home to more than 1.4 billion people, had approximately 950 million internet users, of which about 548 million were in rural areas by the end of 2025. The rapid growth of internet infrastructure, along with the rise of 5G internet connectivity, has expanded the reach of social media

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even in the rural parts of India. As of October 2025, there are over 500 million active users of social media in India, with WhatsApp having the highest number of active users followed by YouTube (500 Million users), Instagram (481 million users), Facebook (403 million users), Snapchat (213 million users), LinkedIn (170 million users), Reddit (30.8 million users) and X (formerly Twitter) with 22.2 million active users (Digital, 2026).

The dissemination of agricultural knowledge and the transfer of technologies both benefit greatly from social media. Farmers can now use social media to enhance their operations and marketing strategies. It gives farmers the chance to collaborate on content creation and encourages farmer-to-farmer learning through creation of groups on Facebook and WhatsApp where they can connect with multiple people simultaneously and share ideas in real time (Singh et al., 2021). Additionally, social media can assist extension specialists in offering expert advice, guidance, and facilitating interactions with progressive farmers and peers. It is a cheap and readily available tool which used to create awareness, mobilise communities, disseminate information, alter farmers' behaviour, obtain feedback, and measure the results of the extension activities (Gharis et al., 2014; Doyle & Briggeman, 2014). By fostering connections between extension experts and the customers who read that material, social media facilitates the delivery of useful, timely, and scientific information to the clients (Jones et al., 2011). Social media platforms offer farmers a comprehensive understanding of local development, going beyond the simple transmission and sharing of agricultural information to become socially, economically, politically, and culturally aware. This improves their decision-making ability and reduces the information gap, leading to their empowerment (Geethalakshmi et al., 2024). Social media can also be used for marketing of agricultural commodities, directly to consumers or grocery stores in cities (Nain et al., 2019; Mishra et al., 2022).

However, despite the increasing penetration of smartphones in rural India, empirical evidence on farmers' awareness regarding the diversified uses of social media, particularly the age-wise differences, remains limited. So keeping these points in view, the research was undertaken to assess the awareness of farmers to different uses of social media, compare social media awareness among farmers of different age groups, and to identify the key determinants of the social media awareness among the farmers.

METHODOLOGY

The study adopted a descriptive and analytical research design to assess the level of social media awareness among farmers and to examine differences in social media awareness across different age groups, in Haryana state. The study chose multistage stratified random sampling technique for selection of the respondents. Two districts i.e., Hisar and Sonipat were randomly selected from the western and eastern zone of Haryana, respectively. From Hisar, Hansi-1 and Hisar-2 blocks, and from Sonipat, Rai and Kharkhoda blocks were selected, randomly. Additionally, two villages were chosen randomly from each of the four blocks. Balsamand and Arya Nagar were chosen from Hisar- 2 block, whereas Umra and Garhi were chosen from Hansi-1 block, respectively. Similarly, Kanwali and Rohat were chosen from the Kharkhoda block, while Manouli and Halalpur were chosen from the Rai block, respectively. After selecting the districts, blocks and villages through random sampling, farmers within each village were stratified into three age categories (young, middle and old). From each age category, ten farmers were selected randomly, resulting in thirty respondents per village and a total sample size of 240 farmers. Equal allocation across strata was adopted to ensure balanced representation and reliable comparison among age groups. A well-structured interview schedule created in consultation with the experts and validated by a panel of discipline specialists, was used to gather the data through the personal interview approach, and MS Excel and IBM-SPSS were used for analysis. Social media awareness was operationalized across five functional domains: general information, agricultural advisory, social networking, marketing and recreational purposes. These domains were derived from Uses and Gratifications framework (Katz et al., 1974) and subsequent ICT and agricultural extension studies, which classify media use according to informational, social, instrumental (economic) and entertainment motivations. Considering the agricultural context of the study, informational use was further differentiated into general information and agricultural advisory functions to capture farm-specific knowledge needs of farmers. Also, a total of five social media platforms i.e. Facebook (profile based), WhatsApp (instant chat), YouTube (video streaming), Instagram (media sharing) and X (micro blogging) were selected for the study as each of them belonged to a different category (type) of social media and were most popular in rural India as per the report of Digital 2026. The awareness was measured using items arranged on a three-point continuum (fully aware, partially aware and not aware). Descriptive statistics such as frequency, percentage, mean and standard deviation were used to describe the awareness levels. The farmers were categorized into three categories i.e., low, medium and high based on their social media awareness using mean and standard deviation. Also, for direct comparison between two independent age-groups at a time and to obtain clearer interpretation of inter-group differences, an independent sample t-test was used. Additionally, Pearson product moment correlation and multiple linear regression was conducted to identify the important socio-economic variables that affect the farmers' social media awareness.

RESULTS

Social media awareness

Respondents were grouped into three categories i.e., high, medium and low based on their degree of awareness to social media. A majority (52.50%) of respondents exhibited a medium level of social media awareness which indicates a moderate familiarity with social media platforms among farmers in Haryana (Figure 1).

Awareness to different uses of Social media

It could be inferred from the findings (Table 1) that farmers were most aware of Facebook's informational use of getting general information and news followed by its social use (networking and interaction with peers and professionals), and recreational use, respectively. In terms of awareness regarding WhatsApp, most farmers were aware of WhatsApp's social use as a medium for networking and recreation, followed by its agricultural use which

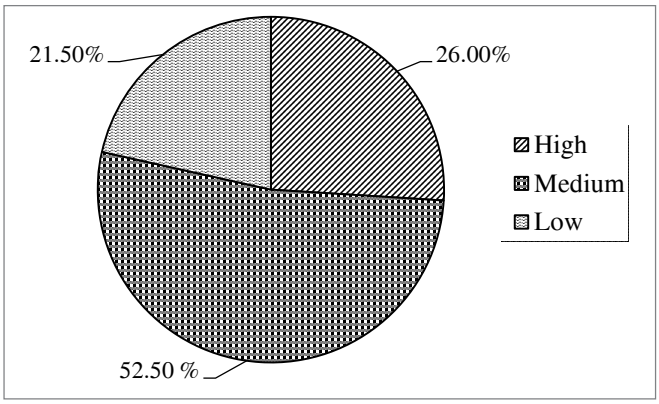

Figure 1. Categorization of farmers on the basis of their social media awareness

includes getting agricultural advisory services. For YouTube, most of the farmers were aware of its recreational use followed by the informational use. Also, for X (Twitter), the awareness was highest for its informational use whereas for Instagram, the awareness was highest for the recreational use. However, in general majority of farmers were unaware of the informational, agricultural, social, economic and recreational use of X and Instagram.

Across the five social media platforms, awareness was highest for recreational and networking functions, whereas it was lowest for economic functions related to marketing and market linkage. This clearly suggests that farmers mainly associate social media with communication and entertainment rather than economic functions. Also, the results (Table 1) indicate that there was a platform specific functional specialization of different social media as recognized by the farmers. YouTube has emerged as a medium for recreation (entertainment) whereas Facebook was recognized as an informational platform. Moreover, WhatsApp emerged as a networking application mainly used for interaction with peers and professionals, whereas the familiarity with X remains low as proved by its lack of awareness among the majority of the farmers. Instagram was also recognized as a recreational medium but its awareness remains mostly restricted to the young farmers.

Comparison of social media awareness across different age groups

The study used independent sample t-test to examine specific pairwise differences in the awareness of different social media between predetermined age categories (young-old, young-middle, and middle-old) of farmers. Since the age groups were conceptually

Table 1. Farmers' awareness regarding functional uses of different social media platforms (n=240)

Functional Domain	Specific Use	Fully Aware	Partially Aware	Not Aware	TWS	WMS	Rank Order
Facebook							
Informational	General Information & News	169(70.41)	58(24.17)	13(05.42)	636	2.65	1
Agricultural	Agricultural Advisory	131(54.58)	87(36.25)	22(09.17)	589	2.45	4
Social	Networking and Interaction	155(64.58)	66(27.50)	19(07.92)	616	2.57	2
Economic	Marketing & Market linkage	65(26.08)	82(34.17)	93(38.75)	452	1.88	5
Recreational	Entertainment	151(62.92)	60(25.00)	29(12.08)	602	2.51	3
WhatsApp							
Informational	General Information & News	104(43.34)	65(27.08)	71(29.58)	513	2.13	3
Agricultural	Agricultural Advisory	124(51.67)	62(25.83)	54(22.50)	550	2.29	2
Social	Networking and Interaction	223(92.91)	11(04.59)	06(02.50)	697	2.90	1
Economic	Marketing & Market linkage	27(11.25)	58(24.17)	155(64.58)	352	1.47	5
Recreational	Entertainment	37(15.42)	84(35.00)	119(49.58)	398	1.66	4
YouTube							
Informational	General Information & News	156(65.00)	73(30.42)	11(04.58)	625	2.60	2
Agricultural	Agricultural Advisory	117(48.75)	89(37.08)	34(14.17)	563	2.34	3
Social	Networking and Interaction	52(21.67)	82(34.16)	106(44.17)	426	1.77	4
Economic	Marketing & Market linkage	46(19.17)	57(23.75)	137(57.08)	389	1.62	5
Recreational	Entertainment	222(92.50)	15(06.25)	03(01.25)	699	2.91	1
X (Twitter)							
Informational	General Information & News	19(07.92)	37(15.42)	184(76.66)	315	1.31	1
Agricultural	Agricultural Advisory	11(04.58)	31(12.92)	198(82.50)	293	1.22	3
Social	Networking and Interaction	14(05.83)	29(12.09)	197(82.08)	297	1.24	2
Economic	Marketing & Market linkage	02(00.83)	07(2.92)	231(96.25)	251	1.04	5
Recreational	Entertainment	06(02.50)	16(06.67)	218(90.83)	268	1.12	4
Instagram							
Informational	General Information & News	63(26.25)	59(24.58)	118(49.17)	425	1.77	2
Agricultural	Agricultural Advisory	29(12.08)	54(22.50)	157(65.42)	352	1.46	4
Social	Networking and Interaction	54(22.50)	53(22.08)	133(55.42)	401	1.67	3
Economic	Marketing & Market linkage	21(08.75)	38(15.83)	181(75.42)	280	1.17	5
Recreational	Entertainment	79(32.92)	53(22.08)	108(45.00)	451	1.88	1

Note: Values in parenthesis denote percentage, TWS= Total Weighted Score, WMS= Weighted Mean Score

distinct categories rather than ordered treatment levels, pairwise comparisons using the independent t-test were considered appropriate for targeted hypothesis testing. Further, five social media, i.e., Facebook, WhatsApp, YouTube, Instagram and X, were used to compare means among the three-age group of farmers.

The findings (Table 2) showed a significant mean difference in the social media awareness between young and old farmers with respect to Facebook, YouTube, Instagram and X (Twitter) with t-values of 3.423, 3.139, 14.702 and 7.425 (significant at 1 per cent probability level, $p<0.01$), respectively. Similarly, the findings revealed a significant difference in the social media awareness among young and middle-aged farmers with respect to YouTube, Instagram and X with t-values of 2.649, 10.257 and 3.697 (significant at 1 per cent probability level, $p<0.01$), respectively. Also, a significant difference in social media awareness was observed for old and middle-aged farmers, with respect to Facebook, Instagram and X with t-values of 2.972, 5.850, and 5.003 (significant at 1% level of significance, $p<0.01$), respectively. There was no significant difference in awareness of WhatsApp and YouTube among the old and middle-aged farmers.

These findings reveal a considerable difference in the awareness level of farmers across the different age groups and social media. The difference was widest for Instagram and X (Twitter), that clearly reflect that familiarity was much higher in young farmers compared to the old farmers. Also, unlike other social media platforms, the awareness regarding WhatsApp did not significantly differ across the young, middle and old age farmers which indicates the universal penetration of WhatsApp as a networking (social) application. Also, old farmers exhibited a comparable awareness level for WhatsApp and YouTube which suggests a high familiarity with these platforms compared to the other social media platforms. Moreover, the awareness of Facebook was comparable among young and middle-aged farmers, suggesting its recognition as an informational and social tool.

Determinants of social media awareness among farmers

The findings in Table 3 inferred that, socio-economic variables such as education, annual income, media exposure, social participation, extension contact and participation, scientific orientation and economic motivation had significant and positive correlation (at 1% probability level) with awareness level, while age showed a negative correlation with awareness.

The multiple linear regression analysis gave R^2 as 0.546 which means, 54.60 per cent variation in farmers' social media awareness can be explained by the selected socio-economic variables. Education, extension contact, extension participation and economic motivation emerged as the strongest predictor of social media awareness, suggesting the importance of social and institutional linkage in promoting digital literacy among the farmers. The relatively high value of coefficient of determination (R^2) suggests that social media awareness among farmers is structurally influenced by educational status, communication and institutional exposures and motivational factors. Also, the diagnosis of multicollinearity (using Variance Inflation Factor and tolerance values) revealed that all predictor variables had VIF values less than 5.00 and tolerance values greater than 0.10, which confirmed the relative stability of the regression estimates.

DISCUSSION

The results on the overall social media awareness of farmers are backed by Mishra et al. (2022) who concluded that most of the farmers fall in the medium category in terms of the overall use of social media. Singh et al. (2020) also observed that in terms of ICT usage most of the respondents were in medium category. Also, it is evident from the results that, while the farmers were aware of the informational, social and recreational functions of the Facebook, WhatsApp and YouTube, their awareness towards agricultural and economic use of social media remains low. The low awareness

Table 2. Age-wise Comparison of social media awareness

Social media platform	Mean (Y)	Mean (O)	Mean difference	t-value	p value
Young (Y) vs Old (O)					
Facebook	2.789	1.998	0.791	4.023**	0.002
WhatsApp	2.799	2.466	0.334	1.553	0.061
YouTube	2.975	2.309	0.666	3.139**	0.005
Instagram	2.159	0.154	2.005	14.702**	0.001
X (Twitter)	1.157	0.119	1.038	7.425**	0.001
Social media platform	Mean (Y)	Mean (M)	Mean difference	t-value	p value
Young (Y) vs Middle (M)					
Facebook	2.789	2.672	0.117	0.596	0.127
WhatsApp	2.779	2.572	0.207	1.107	0.079
YouTube	2.975	2.591	0.384	2.649**	0.006
Instagram	2.159	0.733	1.426	10.257**	0.001
X (Twitter)	1.157	0.633	0.524	3.697**	0.001
Social media platform	Mean (M)	Mean (O)	Mean difference	t-value	p value
Middle (M) vs Old (O)					
Facebook	2.676	1.998	0.678	3.172**	0.003
WhatsApp	2.572	2.466	0.106	0.529	0.134
YouTube	2.591	2.309	0.282	1.572	0.059
Instagram	0.733	0.154	0.579	5.850**	0.001
X (Twitter)	0.633	0.119	0.514	5.003**	0.001

** Significant at 1 per cent level of probability

Table 3. Relationship between socio-economic profile of respondents with their social media awareness

S. No.	Socio-personal variables	Pearson's product moment coefficient ('r' value)	Regression coefficient (B value)
1	Age	-0.317**	-3.927**
2	Education	0.465**	2.342*
3	Annual family income	0.422**	0.783
4	Land Holding	0.171	0.152
5	Cosmopoliteness-Localiteness		
A	Personal Localite	0.367**	0.423
B	Personal Cosmopolite	0.469**	0.347
6	Mass Media Exposure	0.322**	0.569
7	Social Participation	0.412**	1.214*
8	Extension Contact	0.532**	2.791*
9	Extension Participation	0.353**	1.376*
10	Economic Motivation	0.427**	1.967**
11	Scientific Orientation	0.489**	1.568**
	R^2 = 0.546		
	Constant=17.872		

** Significant at 1 per cent level of probability, *Significant at 5 per cent level of probability

towards the economic function of social media (i.e. marketing and market linkages) proves that social media applications are still perceived as tools for accessing information, communication and recreation rather than marketing and transaction by the farmers. This could be credited to the lack of digital marketing skills, low awareness of digital marketing opportunities and lack of exposure to the cases of successful social media marketing. The domination of informational and recreational awareness is also backed by the Gratification theory, which suggests that users of mass media primarily seek recreation and information. Joshi and Dhaliwal (2019), too observed that most farmers consider social media as a source of news, recreation and social interactions and lacks the ability to use it for economic purposes. Additionally, they revealed that while most farmers were aware of different functions of Facebook, WhatsApp and YouTube, their awareness towards X (Twitter) and Instagram were quite low. The results are also supported by Khou and Suresh (2018), who observed that the use of WhatsApp, Facebook and YouTube are the most prevalent amongst the farmers.

The findings on age wise comparison of social media awareness revealed major differences between the farmers of different age groups. The results can also be understood through the lens of digital divide, that refers to the wide disparity in access and familiarity with digital tools including social media between younger and older individuals. Younger farmers are more exposed to smartphones, internet and social media, which increases their awareness of different functions of social media whereas the awareness among older farmers remains low due their limited digital literacy and exposure to social media platforms. The results were supported by Balkrishna and Deshmukh (2017) and Panda et al. (2019), who observed that younger farmers were making greater and more diversified use of social media with respect to older farmers. Jha (2017) also reported that the younger generation in India spends many hours a day browsing YouTube and Facebook. Additionally, the findings revealed that young farmers were much more aware of Instagram and X compared to farmers from middle and older age groups. This pattern again strengthens the argument of digital divide, where old farmers show preference to simpler and easy to use platforms like YouTube and WhatsApp, that satisfy their information and recreational needs whereas younger farmers with higher digital literacy and exposure to new tools tend to experiment with wider range of social media applications like microblogs (X), that requires familiarity with real-time information and digital discourse and short-form media sharing (Instagram), that appeals to younger generation, who prefers image and visual based communication, beyond the more conventional platforms like WhatsApp, YouTube and Facebook.

The results on Pearson product moment correlation revealed that variables such as income, education, mass media exposure, extension contact and participation, social participation, scientific orientation and economic motivation were significantly and positively correlated with social media awareness of farmers, which indicate that the awareness level of farmers towards different functions of social media are affected by socio-personal variables like education, income, communication and social exposure along with their motivations. The findings were backed by Raghuprasad et al. (2012), Kaur (2014) and Mishra et al. (2022) who reported that social media use varied between different income, exposure and motivation levels of farmers. Further, they revealed that farmers from younger and high-income group spend more time on social media with respect to farmers who were older and fall in the low-income group. Also, as social contacts and exposure with different localite and cosmopolite sources, including extension workers, increase, the awareness towards social media and its different functions also increases, as individuals learn and use these emerging tools for building relationships, gain access to information and interaction with colleagues. The negative but significant relationship between age and social media awareness was supported by Joshi and Dhaliwal (2019), who observed that age showed an inverse relationship with social media use. The multiple linear regression analysis also indicates a strong explanatory power of the model where the selected independent variables explain 54.60 per cent variation in the awareness level of farmers. Variables such as education, extension contact and participation, economic motivation and scientific orientation emerged as the most important predictors of social media awareness. This was backed by Satapathy et al. (2024) who observed that educational qualification, social participation and extension exposure are the strongest predictors of ICT use by the farmers. These results highlight the role of strengthening social and institutional (extension) linkages and improving digital literacy of farmers for enhancing their digital awareness and effective use of social media applications. The trainings may be instrumental as the number of training programmes attended, learning motivation, innovativeness, motivation to transfer learning, self-efficacy and achievement motivation significantly affect the training effectiveness (Arunkumar et al., 2021). This will ensure integration of social media into the agro-advisory services, thereby modernizing the conventional extension system and supporting the shift towards the digital agriculture.

CONCLUSION

Farmers were relatively more aware of informational, social and recreational functions of social media that included getting general information and news, connecting with peers and professionals and entertainment; however, awareness of agricultural and economic uses of social media remained low. Among the five platforms selected for the study, Facebook, WhatsApp and YouTube had higher awareness among farmers than Instagram and X. Age-wise comparison of social media awareness revealed that young farmers possessed higher awareness of social media platforms compared to middle-aged and old farmers. Socio-economic variables such as age, education, extension contact and participation, economic motivation and scientific orientation emerged as the strongest predictors of social media awareness among the farmers. The study suggests strengthening digital literacy along with institutional linkages through targeted training programmes to enhance farmers' awareness of different social media functions, particularly the economic and agricultural uses.

DECLARATIONS

Ethical statement: The study was conducted in accordance with ethical research standards. Participation was voluntary, and informed consent was obtained from all respondents. The confidentiality and anonymity of participants were strictly maintained throughout the research process.

Conflict of interest: The authors declare that there are no conflicts of interest regarding the publication of this paper and the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest. The author declares that they have thoroughly reviewed, revised, and edited the content as needed. The authors take full responsibility for the final content of this publication.

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