Social Media Usage Trends Among Farmers: A Case Study of Mandi District, Himachal Pradesh

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***Abstract*—This study explores the emerging trends in social media usage among farmers in the Mandi district of Himachal Pradesh, focusing on how digital platforms are reshaping agricultural communication, knowledge dissemination, and market engagement. With increasing smartphone penetration and affordable internet access, social media tools like WhatsApp, YouTube, and Instagram have become integral to farmers' daily lives, enabling access to real-time information on crop management, weather forecasts, pest control, and market prices. Utilizing a descriptive research design and a multistage sampling technique, the study surveyed 130 farmers to analyze their demographic profiles, app usage patterns, agricultural practices, market awareness, and interactions with agricultural support systems. Findings reveal a predominantly young, moderately educated, and technologically engaged farming population, with WhatsApp and YouTube emerging as the most frequently used platforms. While essential agricultural practices such as seed treatment and post-harvest storage are commonly adopted, inconsistencies remain in nutrient management and irrigation. Furthermore, although many farmers regularly access market information and engage with Krishi Vigyan Kendras (KVKs) and other experts, a segment remains underserved. The study recommends leveraging widely used digital platforms for targeted training, enhancing mobile-based expert outreach, and improving access to market information to bridge knowledge gaps and promote sustainable agricultural development.**

***Keywords*—Social Media in Agriculture, Digital Extension Services, Farmer Engagement, Market Information Access, Sustainable Farming Practices.**

I. INTRODUCTION

Social media platforms have emerged as transformative tools in reshaping communication, knowledge dissemination, and community engagement across sectors, including agriculture. Over the past decade, the agricultural landscape has witnessed a paradigm shift, driven by the integration of digital technologies into traditional farming practices. The widespread adoption of smartphones and affordable internet access has accelerated this transition, particularly in rural areas, where access to conventional extension services remains limited (Patel & Vinaya, 2021). Farmers globally are increasingly leveraging platforms like Facebook, WhatsApp, YouTube, and Twitter to access real-time information on weather forecasts, crop management strategies, pest control techniques, market trends, and innovative farming methodologies (Saravanan et al., 2015). This digital revolution holds particular significance in developing regions, where smallholder farmers—often constrained by limited access to formal extension services—rely on these platforms to bridge information gaps, optimize productivity, and enhance resilience against climate and market uncertainties (Bhattacharjee & Raj, 2016). With over 70% of its population engaged in farming, the district produces key horticultural and cereal crops, including apples, maize, and off-season vegetables (Sriboonruang et al., 2020). Existing literature highlights the potential of platforms like WhatsApp for peer-to-peer knowledge sharing, Facebook groups for community discussions, and YouTube for accessing expert advisories in other Indian states (Patel & Vinaya, 2021; Saravanan et al., 2015). Agriculture plays a crucial role in India's economy, employing a significant portion of the workforce and contributing substantially to the country's Gross Value Added (GVA) (Government of India, 2022). Farmers, who traditionally relied on conventional sources of information such as agricultural extension services, television, and radio, are now increasingly turning to social media platforms for real-time updates, expert advice, and market trends (Adhiguru et al., 2009; Thirunavukkarasu & Narmatha, 2016). As public interest in sustainable farming practices, direct farmer-to-consumer interactions, and digital inclusion grows, understanding the role of social media in agricultural development becomes

increasingly relevant (Chowdhury & Hambly Odame, 2013). However, challenges such as limited market access, unpredictable weather conditions, and lack of timely agricultural advisories often hinder productivity and profitability (Murphy, 2024). Additionally, agricultural extension services and non-governmental organizations (NGOs) are increasingly using social media to reach farmers with expert advice, educational videos, and interactive discussions (Lwoga, 2010). Limited digital literacy, unreliable internet connectivity in remote areas, and concerns about misinformation are some of the key barriers that need to be addressed (Rogers, 1995).

II. METHODOLOGY

The present study follows a descriptive research design to explore the patterns of social media usage among farmers in the Mandi district of Himachal Pradesh. This design is appropriate for understanding the extent, nature, and purpose of social media usage in agriculture, as well as examining the relationships between socio-economic characteristics and social media utilization. For the purpose of this study, a multistage sampling technique was employed to ensure fair representation across different regions of the district and various types of farming communities. This approach enabled the researcher to obtain a diverse and representative sample of farmers from the Mandi district of Himachal Pradesh. The study targeted a total sample size of 130 farmers.

The primary data is the information collected directly by a researcher for a specific purpose or project. It is first-hand data that has not been previously recorded or published. Common methods of collecting primary data include surveys, interviews, observations, and experiments. This type of data is highly accurate and specifically tailored to the researcher's needs, making it very useful for original research. The mathematical tool used for data analysis is percentage analysis.

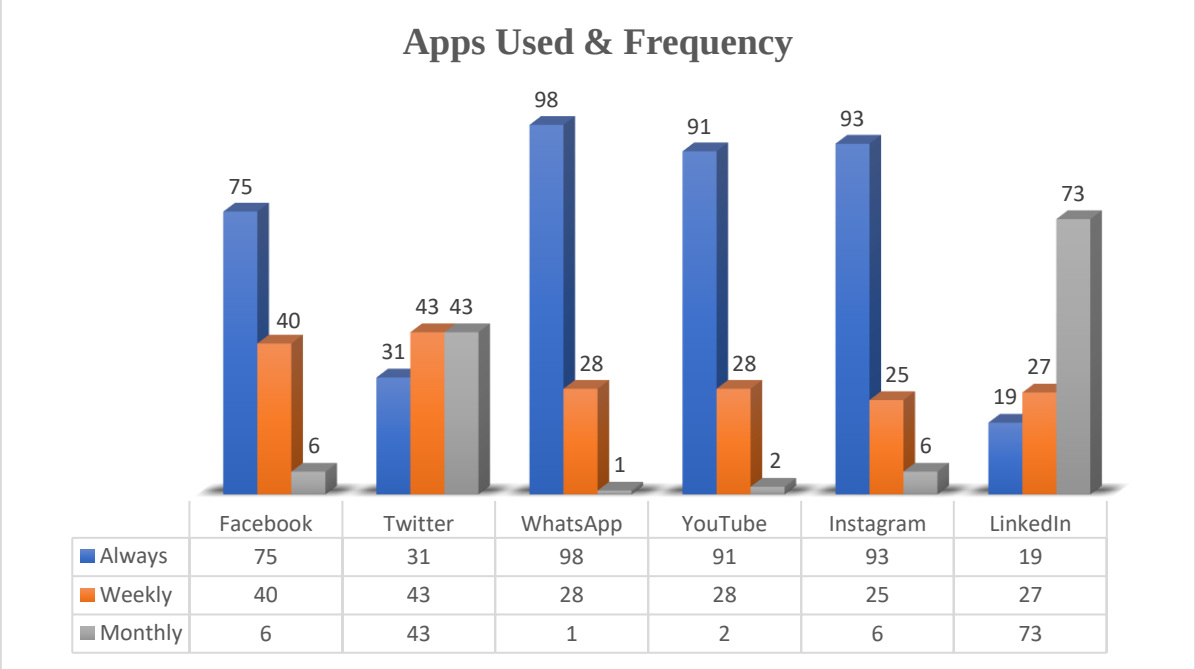
III. RESULT AND DISCUSSION

Table No.1

Demographic Profile	Variable	Count	Percentage (%)
Gender	Male	66	49.2
	Female	64	50.8
Age	20-30 years	44	34
	31-40 years	41	32
	41-50 years	30	23
	50 years above	15	11
Qualification	Graduate	44	33.8
	Higher Secondary	39	30
	Post Graduate	35	26.9
	Matric	12	9.2
Marital status	Married	80	62
	Unmarried	50	38
Family size	Medium	57	44.2
	Small	38	29.5
	Large	34	26.4
Landholding (in bigha):	Small (12.5-25)	46	35.4
	Medium (50-125)	45	34.6
	Marginal (up to 12.5)	27	20.8
	Large (above 125)	12	9.2
Annual Income	Less than Rs. 2,50,000	41	32
	Between Rs. 2,50,000 - Rs. 5,00,000	36	28.1
	Between Rs. 5,00,000 - Rs. 10,00,000	32	25
	More than Rs. 10,00,000	19	14.8
Marital status	Married	80	62
	Unmarried	50	38

Family size	Medium	57	44.2

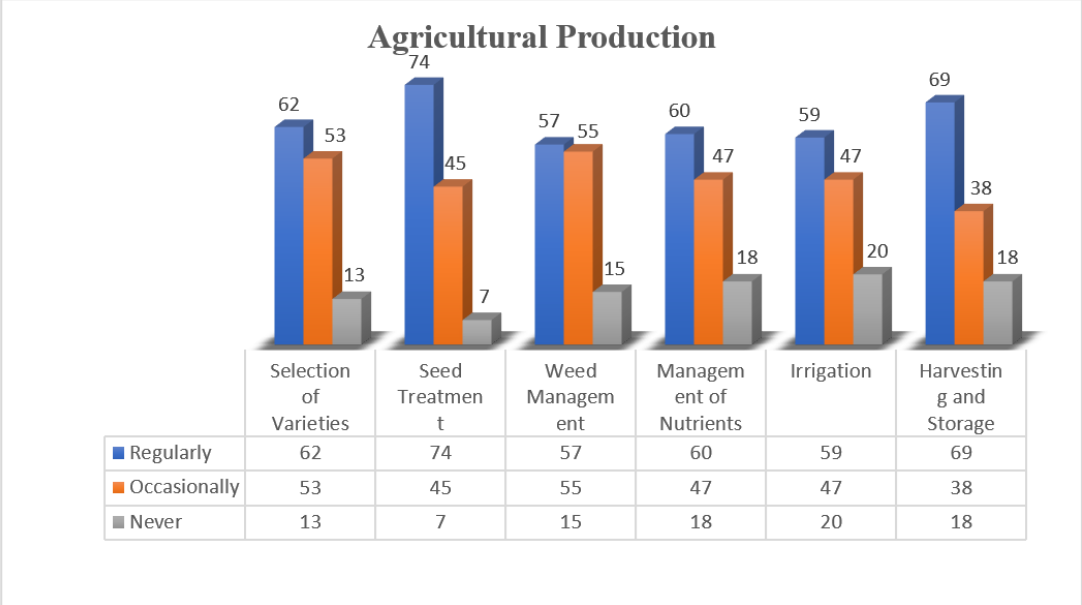
The demographic profile (Table No.1) of the respondents indicates a fairly balanced representation in terms of gender, with females slightly outnumbering males (50.8% female and 49.2% male). The majority of respondents fall within the younger age groups, with 34% aged between 20–30 years and 32% between 31–40 years. This suggests that a significant portion of the population is relatively young. In terms of educational qualifications, most respondents are graduates (33.8%), followed by those with higher secondary education (30%), and postgraduates (26.9%), while a smaller proportion (9.2%) have only completed matriculation. Marital status data shows that a majority of the respondents are married (62%), while 38% are unmarried. Family size varies among the respondents, with medium-sized families (44.2%) being the most common, followed by small (29.5%) and large families (26.4%). Regarding landholding, a considerable number of respondents have small (35.4%) or medium (34.6%) landholdings, while fewer own marginal (20.8%) or large (9.2%) landholdings. When it comes to annual income, 32% earn less than Rs. 2,50,000, while 28.1% fall within the Rs. 2,50,000 to Rs. 5,00,000 range. About 25% of respondents have an income between Rs. 5,00,000 and Rs. 10,00,000, and only 14.8% earn more than Rs. 10,00,000 annually. Overall, the data reflects a diverse demographic with a relatively young, moderately educated, and largely married population with small to medium landholdings and modest income levels.



	Facebook	Twitter	WhatsApp	YouTube	Instagram	LinkedIn
Always	75	31	98	91	93	19
Weekly	40	43	28	28	25	27
Monthly	6	43	1	2	6	73

Figure No.1

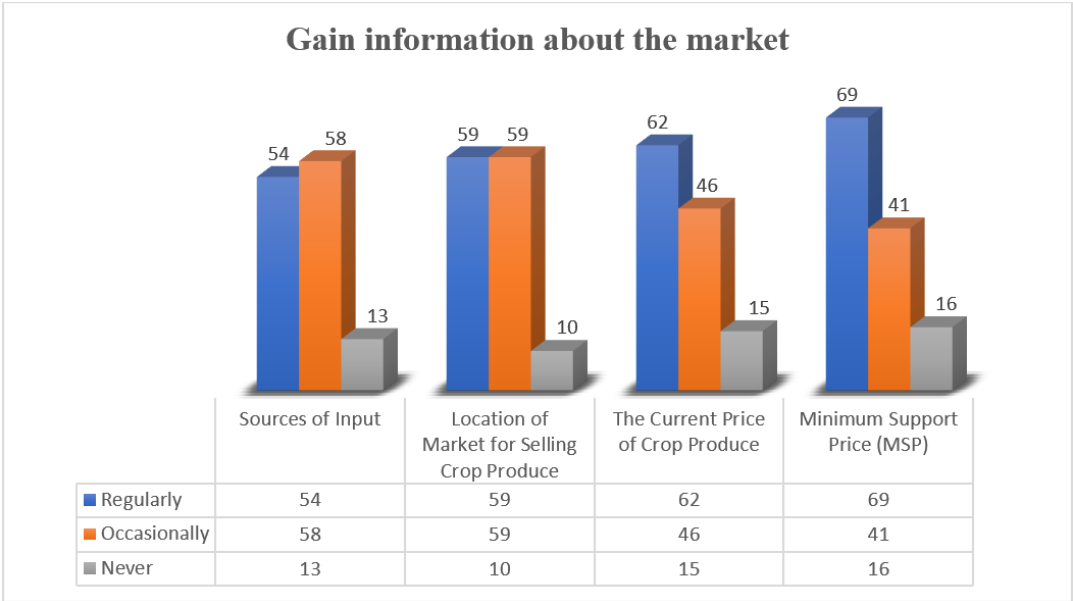
The Figure No.1 app usage and frequency reveals varying levels of engagement with different social media platforms among respondents. WhatsApp emerges as the most consistently used application, with 98 respondents using it always, indicating its integral role in daily communication. YouTube and Instagram also show high daily usage, with 91 and 93 respondents, respectively, reporting they use these apps always. This suggests a strong preference for visual and multimedia content. Facebook remains a widely used platform, with 75 respondents using it always, although a notable portion uses it weekly (40). Twitter shows a more balanced usage pattern, with only 31 using it always, while 43 each use it weekly and monthly, implying a more passive or occasional engagement. LinkedIn, in contrast, is the least frequently used app on a daily basis, with only 19 respondents using it always. A majority (73) use LinkedIn monthly, suggesting it is viewed more as a professional networking tool rather than a daily social media platform. Overall, the data indicates that WhatsApp, Instagram, and YouTube are the most frequently used apps on a daily basis, while Twitter and LinkedIn see more occasional or purpose-specific use.



	Selection of Varieties	Seed Treatment	Weed Management	Management of Nutrients	Irrigation	Harvesting and Storage
Regularly	62	74	57	60	59	69
Occasionally	53	45	55	47	47	38
Never	13	7	15	18	20	18

Figure No.2

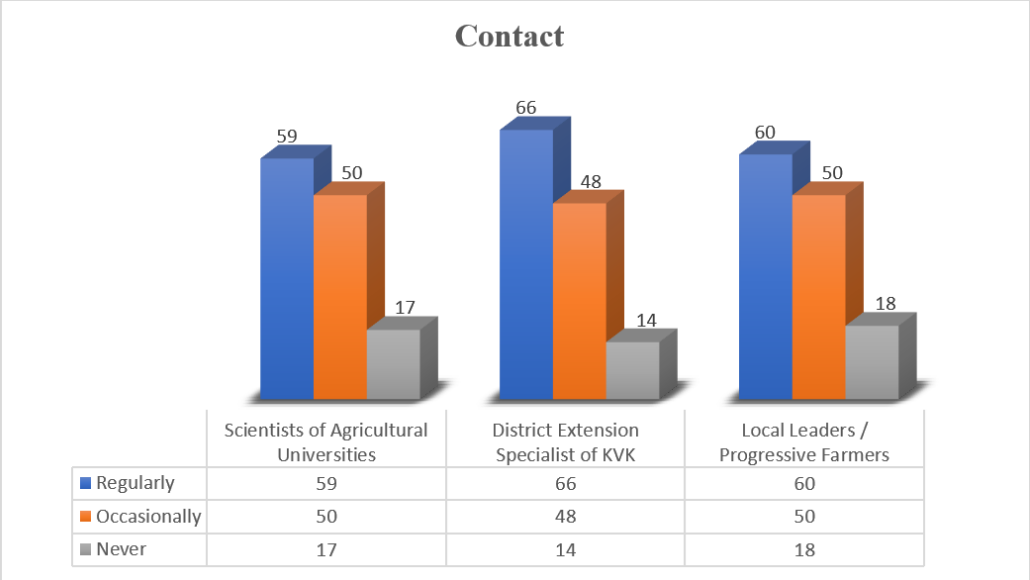
The Figure No. 2 on agricultural production practices reveals that a significant number of respondents are actively engaged in key farming activities, although the level of consistency varies across different practices. The selection of crop varieties is regularly performed by 62 respondents, while 53 do it occasionally, indicating that variety selection is a common but not universally consistent practice. Seed treatment stands out as the most regularly followed practice, with 74 respondents doing it consistently, suggesting high awareness of its importance in crop health and productivity. Weed management and nutrient management show moderate regular participation, with 57 and 60 respondents respectively engaging in these practices regularly. However, a notable number also follow these practices only occasionally (55 for weed management and 47 for nutrient management), which may affect overall crop yields if not done consistently. Irrigation is regularly practiced by 59 respondents, while 47 perform it occasionally, and 20 never do, possibly due to limitations in water resources or infrastructure. Harvesting and storage is another key area with a high level of regular participation (69 respondents), reflecting its critical role in post-harvest handling and reducing losses. Overall, the data indicates that while many farmers are regularly involved in essential agricultural activities, there is room for improvement in the consistency of practices such as irrigation, nutrient management, and weed control to enhance productivity and sustainability in agriculture.



	Sources of Input	Location of Market for Selling Crop Produce	The Current Price of Crop Produce	Minimum Support Price (MSP)
Regularly	54	59	62	69
Occasionally	58	59	46	41
Never	13	10	15	16

Figure No.3

The Figure No. 3 on how farmers gain information about the market shows varying levels of engagement with different aspects of market-related knowledge. A considerable number of respondents regularly seek information about the sources of agricultural inputs, with 54 doing so consistently and 58 occasionally, suggesting a generally proactive approach, though not uniformly across the board. When it comes to knowledge about the location of markets for selling crop produce, 59 respondents each reported doing so regularly and occasionally, indicating that while many farmers are aware of where to sell their produce, there's still a segment that may lack consistent access to this information. In terms of current crop prices, 62 respondents regularly track prices, while 46 do so occasionally, showing that price awareness is relatively strong, which is important for maximizing profit and making informed selling decisions. Notably, information about the Minimum Support Price (MSP) is the most regularly sought, with 69 respondents actively keeping up with it. This reflects the critical role MSP plays in farmers' decision-making and income security. Overall, the data reflects a generally positive trend in market awareness among farmers, with most respondents regularly or occasionally seeking important information. However, a small group still lacks access or initiative in gathering such essential data, pointing to a need for improved outreach and market information dissemination strategies.



	Scientists of Agricultural Universities	District Extension Specialist of KVK	Local Leaders / Progressive Farmers
Regularly	59	66	60
Occasionally	50	48	50
Never	17	14	18

Figure No.4

The Figure No.4 on contact with key agricultural support figures reveals a moderate to high level of engagement among respondents, though there remains a portion that has limited or no contact with these valuable resources. Contact with scientists from agricultural universities is maintained regularly by 59 respondents, while 50 engage occasionally, and 17 never establish contact. This suggests that while a majority benefit from expert guidance, there is still a gap in outreach or accessibility for some farmers. Interaction with the District Extension Specialists of Krishi Vigyan Kendras (KVKs) appears slightly stronger, with 66 respondents contacting them regularly and 48 occasionally, indicating the effectiveness of KVKs in providing on-ground agricultural support. Only 14 respondents reported never contacting them, which is relatively low. Local leaders and progressive farmers also play a significant role in information dissemination and guidance, with 60 respondents regularly seeking their advice and 50 doing so occasionally. However, 18 respondents do not engage with them at all, which may reflect social or geographic barriers. Overall, the data shows that while most farmers maintain regular or occasional contact with agricultural experts and local leaders, efforts to bridge the gap with the minority who remain disconnected could enhance knowledge transfer and adoption of improved farming practices.

IV. FINDINGS

The study reveals a balanced gender representation among respondents, with a predominantly young population, most of whom are graduates. A majority are married and belong to medium-sized families with small to medium landholdings and modest annual incomes. In terms of social media usage, WhatsApp, Instagram, and YouTube are the most

frequently used apps, reflecting a strong reliance on mobile communication and visual content. Agricultural practices show that seed treatment and harvesting/storage are widely adopted, while activities like nutrient management and irrigation are practiced less consistently. Farmers generally exhibit good market awareness, especially regarding Minimum Support Prices (MSP) and crop prices, though some still lack access to vital market information. Contact with agricultural experts such as KVK specialists, scientists, and local leaders is fairly regular, but a small proportion of farmers remain disconnected from these resources.

V. RECOMMENDATIONS

To improve agricultural outcomes, it is recommended to strengthen awareness and training programs focusing on nutrient management, irrigation, and weed control. Digital platforms like WhatsApp and YouTube, already widely used, should be leveraged for disseminating agricultural information and best practices. Additionally, expanding the reach of KVKs and agricultural universities through mobile outreach and local demonstrations could improve access for those who currently lack expert support. Enhancing access to timely market information through mobile alerts or apps could further empower farmers to make better decisions.

VI. CONCLUSION

The data presents a picture of a moderately educated and technologically connected farming community, actively engaged in agriculture but facing challenges in consistency and access to expert support. Strengthening digital engagement, targeted training, and expert outreach can bridge knowledge gaps and promote sustainable agricultural practices. By building on existing communication habits and support systems, these efforts can lead to improved productivity, income security, and rural development.

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