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Farmers' Insights into Digital Marketing of Agricultural Commodities: A Study in Haryana

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ABSTRACT

Background: Digital marketing is rapidly growing in India, driven by its large population of mobile users and social media enthusiasts. Indian businesses view digital marketing as an essential technique for their success. However, farmers in Haryana, like many other states across the country, are not fully utilizing its potential to market their products beyond their local regions. This underutilization can be attributed to a lack of knowledge and awareness about digital marketing within the farming community.

Methods: The present study was conducted in four blocks of Kaithal and Kurukshetra districts of Haryana state. A total of eight villages were selected randomly from the four blocks. For respondent selection, 10 progressive farmers and agripreneurs from each village were selected randomly. Thus, in total, 80 farmers were included in the sample of the study. To measure the knowledge level of farmers about digital marketing, the knowledge index was calculated.

Result: The study found that farmers in Haryana have limited knowledge of digital marketing, especially regarding platforms like E-NAM, marketing websites and Facebook. Less than 25 per cent of farmers were awaked of its potential, with an average knowledge score of 25.97 per cent, restricting their ability to utilize digital marketing tools effectively. While they are familiar with social media, its use for agricultural marketing remains minimal. Targeted training on advanced digital marketing concepts including SEO and paid advertising is crucial to enhancing their skills. The Friedman test indicated a statistically significant difference between the knowledge statements, highlighting the need for intervention.

Key words: Agriculture, Commodities, Digital marketing, Farmers, Knowledge.

INTRODUCTION

India has solidified its position as the second-largest country globally in terms of internet users. As of January 2025, there are approximately 806 million internet users in India, accounting for 55.3% of the population (Data Reportal, 2025). Projections suggest this number will surpass 900 million by the end of 2025, driven significantly by rural growth [Internet and Mobile Association of India (IAMAI), 2025].

The number of social media users in India has reached 491 million, representing 33.70 per cent of the total population (Meltwater, 2025). India maintains a substantial mobile connectivity landscape, with 1.12 billion cellular mobile connections, covering 76.6% of the population. Among these, 1.07 billion are active wireless subscribers [Press Information Bureau (PIB), 2025].

India contributes approximately 13.6% to the global internet user base (Data Reportal, 2025). This surge in digital connectivity has led to a significant shift towards online activities, with e-commerce experiencing substantial growth and traditional offline marketing methods witnessing a decline.

The digital marketing industry in India has witnessed remarkable growth. In 2015, its market size was ₹ 152 billion, which increased to ₹ 199 billion by 2020. By the end of the financial year 2024, it reached ₹ 539 billion and projections indicate the industry will grow to ₹ 620 billion by 2025, reflecting a compound annual growth rate (CAGR) of 23.49 per cent (Kraftshala, 2024; Khanna, 2025). This growth is driven by factors such as the proliferation of social media platforms, online portals and rapid digitization.

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In the current era, digital marketing is considered the backbone of businesses in India. It involves applying marketing principles through electronic media, particularly the internet. Digital marketing encompasses mobile phones, display advertising and other digital channels to promote products and services. It leverages various tools, technologies and digital methods to connect businesses with customers efficiently. As one of the most emerging technologies in the Information Technology (IT) and e-commerce sectors, digital marketing is gaining popularity due to its cost-effectiveness and flexibility, making it ideal even for small businesses. Many companies are achieving significant results by adopting digital marketing strategies (Suguna and Selladurai, 2017).

One of the biggest advantages of digital marketing is its ability to reduce marketing and labour costs while offering global reach, direct communication, lower expenses, measurable results and round-the-clock marketing. Even small businesses can achieve global demand, which is difficult to accomplish through traditional marketing techniques. Various digital marketing tools and techniques cater to different consumer segments, including search engine optimization (SEO), pay-per-click (PPC), social media marketing, content marketing, mobile marketing, e-mail marketing, affiliate marketing, marketing analytics and influencer marketing.

The agricultural marketing sector is also benefiting from the digital revolution. Stakeholders involved in the marketing of agricultural commodities are increasingly using online platforms, though adoption is still in its early stages. However, challenges such as poor infrastructure, farmers' reluctance to adopt new technology, illiteracy, lack of internet connectivity and reliance on traditional extension services need to be addressed for successful implementation (Ashok and Naresh, 2020).

One of the major challenges faced by Indian farmers is expanding their market reach beyond local boundaries. Digital marketing has the potential to solve this problem by providing farmers with access to wider markets. Raj and Meena (2022) observed that ICT-enabled strategies significantly improved market access for pulse growers in Rajasthan, suggesting that similar interventions could be beneficial for farmers in Haryana to enhance their digital marketing practices.

In recent years, internet and digital marketing activities have become essential in daily life, playing a crucial role in various economic sectors. However, farmers remain less knowledgeable about digital marketing, despite having a wide range of products to market. This limited awareness has resulted in lower adoption of digital marketing strategies in agriculture compared to other industries (Kumari and Sinha, 2021). The lack of knowledge and awareness among farmers is a significant barrier preventing them from fully utilizing the benefits of digital marketing.

To explore this issue further, the present study was designed with the objective of assessing farmers' knowledge and awareness of digital marketing and understanding its impact on their ability to expand their market reach.

MATERIALS AND METHODS

The entire research was conducted by the authors as part of technical research programme for the year 2022-23 in CCS Haryana Agricultural University, Hisar. The present study was conducted in Kaithal and Kurukshetra districts of Haryana state in India. These districts were selected purposively for the investigation. Dhand and Pundri block of Kaithal district and Thanesar and Pipli block from Kurukshetra district were selected randomly. For selection of villages, two villages were selected randomly from each identified block. Thus, in total eight villages were selected for the study. To select the respondents from selected villages, comprehensive list of progressive farmers and agripreneurs were prepared with the help of village patwari and agriculture inspector of respective villages. From the list so prepared, 10 farmers were selected randomly from each identified village. Thus, in total 80 farmers were included in the sample of study. Thereafter, data were collected from the selected respondents by employing personal interview technique. The interviews were conducted at farmer's homes in the month of December, 2022 to March, 2023. To conduct interview a structured interview schedule was developed and used. Data were collected, analyzed and tabulated to draw the meaningful inferences. To measure the knowledge level of farmers about digital marketing the knowledge index for each respondent was calculated. To determine the extent of knowledge of respondents about each aspect of digital marketing mean per cent score was worked out and ranked accordingly. Statistical measures *i.e.* mean, frequency, per centage and rank orders etc. were used. To find out significant difference between the statements Friedman Test was used.

RESULTS AND DISCUSSION

Data depicted in Table 1 regarding socio-economic profile of the farmers revealed that 52.50 per cent belongs to the middle-age group (36-50 years), followed by 30 per cent in the young age group (25-35 years) and 17.50 per cent in the elderly category. The majority (90%) of respondents were male, while only 10 per cent were female. Educational qualifications indicated that 41.25 per cent had higher secondary education (10+2), 22.50 per cent were graduates and 8.75 per cent had professional education related to Hi-tech agriculture. Meanwhile, 16.25 per cent had middle school education and 11.25 per cent had primary school education, suggesting that most were non-graduates, which may limit their ability to adopt modern agricultural practices. Regarding farming experience, 22.50 per cent of respondents had over 30 years of experience, while 37.50 per cent had 16 to 30 years, 25 per cent had 6 to 15 years and 15 per cent had less than 5 years. Income data show that 72.50 per cent of farmers earned ₹ 1 to 5 lakhs annually, 12.50 per cent earned ₹ 5 to 10 lakhs and 8.75 per cent earned over ₹ 10 lakhs, while 6.25 per cent had income below ₹ 1 lakh, indicating financial instability. Farm size distribution showed 35 per cent were medium farmers, 25 per cent were large farmers and 40 per cent were small or marginal farmers. A critical finding was that 90 per cent of respondents had not received training on digital marketing, while only 10 per cent attended KVK awareness programs, highlighting the urgent need for capacity-building programs to enhance digital marketing knowledge.

The study further assessed farmers' availability and accessibility to smartphones with internet connectivity. Results in Table 2 showed that 90 per cent of respondents

had constant access, while 6.25 per cent could access the internet only at home and 3.75 per cent used smartphones only on the farm. This suggests that smartphones with internet connectivity were widely available among farmers. Farmers were also found to be active social media users, but the study aimed to identify the most frequently used apps. The finding displayed in Table 3 revealed that 97.50 per cent of respondents used WhatsApp, 92.50 per cent used YouTube and 88.75 per cent used Facebook. However, only 20 per cent used Instagram and Twitter (X) was rarely used (10 per cent). During personal interviews, it was reported that farmers primarily used social media for communication, entertainment and non-agricultural purposes.

Given the study's focus on digital marketing, it was essential to analyse farmers' access to marketing platforms. Findings exhibited in Table 4 showed that 91.25 per cent had access to agricultural marketing mobile apps, 82.50 per cent to agricultural marketing websites and 95 per cent to social media marketing platforms. Additionally, 60 per cent of farmers had access to email marketing, 55 per cent to mobile marketing, 45 per cent to video marketing and 60 per cent to content marketing platforms. Although farmers had access to online marketing tools, the extent of their usage for marketing agricultural products remains a critical research question.

To assess farmers' knowledge of digital marketing for agricultural commodities, 42 statements covering various aspects of digital marketing were framed. The mean per cent score (MPS) for each statement was calculated and ranks were assigned accordingly. The results presented in Table 5 provide a comprehensive overview of farmers' awareness of digital marketing tools and techniques.

The findings reveal that the average knowledge level of farmers regarding digital marketing was 25.97 MPS, indicating low awareness and limited understanding of digital tools for agricultural marketing. The analysis further highlights critical knowledge gaps, particularly in search

Table 1: Socio-economic profile of the farmers in the study area. (n=80)

Variable	Respondent category	Frequency	Per cent
Age	Young (25-35 years)	24	30.00
	Middle (36-50 years)	42	52.50
	Old (50 and above)	14	17.50
Gender	Male	72	90.00
	Female	08	10.00
Education	Up to primary	09	11.25
	Middle	13	16.25
	Higher Secondary (10+2)	33	41.25
	Graduates	18	22.50
	Other professional	07	8.75
Farming experience	Less than 5 years	12	15.00
	6 to 15 years	20	25.00
	16 to 30 years	30	37.50
	More than 30 years	18	22.50
Income per year from all farming sources	Up to ₹ 1 Lakh	05	6.25
	₹ 1 to 5 Lakhs	58	72.50
	₹ 5 to 10 Lakhs	10	12.50
	More than ₹ 10 Lakhs	07	8.75
Size of land holding (In Acres) (including leased in and out)	Marginal farmer (≤2.5)	06	7.50
	Small farmer (>2.5 - ≤5)	26	32.5
	Medium (>5 - ≤10)	28	35.00
	Large farmer (>10)	20	25.00
Training received on online marketing/digital marketing	Not received any training	72	90.00
	Received short duration awareness training	08	10.00
	Received long duration skilled training	00	00

Table 2: Availability and accessibility of laptop/smartphone with internet. (n=80)

Variable	Respondent category	Frequency	Per cent
Availability and accessibility Laptop/ Smartphone with internet connectivity	Not available	00	00
	Available in farm only	03	03.75
	Available in home only	05	06.25
	Available all time	72	90.00

engine optimization (SEO), Google Ads and online bidding systems, which ranked at the bottom of the hierarchy. No respondent had awareness about SEO, Google Ads, or bidding systems, which play a vital role in enhancing visibility and market reach. This aligns with (Raghavendra *et al.*, 2023), who found that farmers exhibited low awareness of various e-marketing processes, including digital advertising methods, which are essential for expanding agricultural markets beyond local boundaries.

Above findings indicate a significant gap in farmers' awareness regarding online marketing. Karountzos *et al.* (2024) also reported that farmers' lack of knowledge about essential digital marketing techniques, including SEO and content marketing, limits their ability to effectively market agricultural products online. The study further suggests that low awareness of digital advertising methods hinders the potential for expanding agricultural markets beyond local boundaries.

The study also assessed farmers' familiarity with agricultural e-marketing platforms such as the e-NAM mobile app, which plays a crucial role in digital transactions for agricultural commodities. Findings reveal that knowledge about e-NAM's operation and working process was extremely low, with an MPS of only 1.25 (Rank XXXIX), indicating that farmers lacked awareness about how to use the platform for marketing their produce. This limited awareness hinders farmers' ability to participate in digital markets, making it imperative to introduce training programs to educate them about e-NAM and its potential benefits. This finding is in the line of Raghavendra *et al.* (2023) who reported that awareness about different e-marketing processes among farmers is relatively lower in certain regions, emphasizing the need for capacity-building programs to enhance knowledge about trading processes.

Similarly, knowledge about methods to increase website traffic ranked XXXVIII with an MPS of 2.25, suggesting limited understanding of website promotion strategies. Generating traffic is a key component of digital marketing and without adequate knowledge, farmers may struggle to attract potential buyers to their online platforms. Advertising and marketing agricultural commodities through blogging websites ranked XXXVI with an MPS of 3.55, indicating minimal knowledge about blogging as a marketing tool. Blogging is highly effective in sharing detailed product information, yet the lack of awareness prevents farmers from leveraging its full potential. Similarly, knowledge about sources for creating digital marketing websites ranked XXXV with an MPS of 4.26, suggesting that many farmers were unaware of how to establish an online presence. Addressing this gap could provide farmers with platforms to showcase their products to a larger audience. These findings are consistent with Vasumathi and Arun, (2021) who noted that the agricultural sector has not yet capitalized on marketing technology and that the adoption of digital marketing practices would empower agricultural producers by improving their marketing capabilities.

Findings indicate that knowledge about marketing through Amazon and Flipkart ranked XXXIII with an MPS of 6.60, implying that some farmers have a basic understanding of e-commerce platforms. However, comprehensive training is needed to enable them to utilize these platforms effectively. Similarly, awareness of types of digital marketing content ranked XXXII with an MPS of

Table 3: Status of use of social media apps among the farmers. (n=80)

Social media apps	Frequency		Per cent	
	Regular user	Non-user	Regular user	Non-user
Facebook	71	09	88.75	11.25
You tube	74	06	92.50	07.50
WhatsApp	78	02	97.50	02.50
Instagram	16	64	20.00	80.00
Twitter (X)	08	72	100.00	90.00

Table 4: Accessibility of digital marketing platforms among the farmers. (n=80)

Online marketing platforms	Accessibility	
	Frequency	Per cent
Agricultural marketing mobile apps	73	91.25
Agricultural marketing website/web portals	66	82.5
Social media marketing channels (You tube, WhatsApp, Facebook, Instagram, *etc.*)	76	95.00
Mobile marketing platforms	44	55.00
Paid digital advertisement	00	00
Video marketing	36	45.00
Content marketing platforms	48	60.00
Email marketing	48	60.00

7.96, suggesting limited knowledge about content diversification, which is essential for engaging customers. The study found that farmers' knowledge of digital marketing using content creation ranked XXXI with an MPS of 10.45, reflecting that some farmers possess a reasonable understanding of content-based marketing. However, this remains insufficient, as digital content plays an essential role in branding and customer engagement. Additionally, knowledge about WhatsApp Business for farm commodity marketing ranked XXX with an MPS of 10.75, showing that only a few farmers use WhatsApp for business purposes. Given WhatsApp's widespread usage, increasing awareness of its marketing capabilities is essential. Kulkarni, (2020) also found that while WhatsApp

Table 5: Knowledge of farmers about digital marketing of agricultural commodities. (n=80)

Knowledge statements	Knowledge scores	
	MPS	Rank
Awareness about SEO (search engine optimization) for online marketing	0	XXXXI
Google ads and bidding system for ads space	0	XXXXI
Paid digital advertisements/PPC websites	1.2	XXXX
Ways to increase traffic on your website	2.25	XXXVIII
Bulk messaging for WhatsApp marketing	2.75	XXXVII
Advertising and marketing of agricultural commodities through blogging websites	3.55	XXXVI
Sources of getting made digital marketing websites	4.26	XXXV
e-NAM mobile app operating and working process	1.25	XXXIX
Working process of e-NAM web portal	5.65	XXXIV
Process of marketing through amazon and Flipkart platforms	6.6	XXXIII
Awareness about types of content you can create for digital marketing	7.96	XXXII
Online marketing of agricultural commodities through digital content	10.45	XXXI
Whatsapp business account for marketing of farm commodities	10.75	XXX
Types of Facebook ads	14.44	XXVIII
Four C's of digital marketing	14.66	XXVII
Essential components of good web content	16.8	XXVI
Name of websites which facilitate digital marketing	17.85	XXV
Marketing of agricultural commodities through Facebook page and groups.	12.5	XXIX
Name of mobile apps which provide platform for marketing of agricultural commodities	18.75	XXIV
You tube channel creation and uploading of farm video for advertisement and selling	18.75	XXIII
Name the platforms for digital marketing of agricultural commodities	18.85	XXII
Trading and payment system of e-NAM platform	20.54	XXI
Process of email marketing system	22.75	XX
Process of digital marketing through videos	25	XVIII
Advantages of digital marketing	28.33	XVII
Mobile apps and payment gateways for digital transactions	28.25	XVI
Most effective ways to use social media for marketing	32.95	XV
Most common digital marketing mistakes	24.88	XIX
Process of advertising and marketing through Instagram	33.80	XIV
Factors to measure the social media marketing success	36.70	XIII
Knowledge about mobile marketing procedure/ steps	38.35	XII
Ways to make content go viral on social media	38.66	XI
Advertising and marketing through WhatsApp groups	42.80	X
Awareness about journey of an online shopping customer	46.40	VIII
Process of Facebook marketing	48.90	VII
Utility of YouTube for digital marketing	50.90	VI
Limitations of Online Marketing	55.15	V
Techniques of WhatsApp marketing	44.26	IX
Name of social media channels which facilitate digital marketing	55.65	IV
Skills needed for digital marketing	64.85	III
Sending and receiving online payments for digital marketing	66.86	II
Working process of Meri Fasal Mera Byora (MFMB) Haryana portal	95.00	I
Average MPS	25.97	

Table 6: Shapiro-wilk test for normality distribution of data.

Tests of normality	Kolmogorov-smirnova			Shapiro-wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
MPS	.128	42	.081	.917	42	.005

a. Lilliefors significance correction.

was the most popular social media platform among farmers, there were challenges in adopting social media due to lack of technical knowledge and understanding of its working.

Marketing agricultural commodities through Facebook pages and groups ranked XXIX with an MPS of 12.50, showing that some farmers are familiar with Facebook's potential for digital marketing. However, knowledge about Facebook ad types was low (MPS 14.44, Rank XXVIII), indicating limited understanding of Facebook's advertising features, which could be crucial for reaching targeted customers. The four Cs of digital marketing-consumer, cost, convenience and communication-ranked XXVII with an MPS of 14.66, revealing low awareness of these fundamental marketing principles. Educating farmers about these principles could help them develop more effective marketing strategies. Furthermore, knowledge about essential components of good web content ranked XXVI with an MPS of 16.80, suggesting a basic understanding of content quality, which is crucial for digital marketing success.

Farmers' awareness of platforms that facilitate digital marketing ranked XXV with an MPS of 17.85, showing some familiarity with online marketing websites but a lack of comprehensive knowledge on their utilization. Similarly, knowledge about mobile apps for agricultural marketing ranked XXIV with an MPS of 18.75, reflecting limited familiarity with agricultural e-commerce applications. Encouragingly, awareness about YouTube marketing and farm video advertising ranked XXIII with an MPS of 18.75, suggesting that many farmers recognized YouTube's potential for digital marketing. Given that video content is highly effective in engaging audiences, this moderate level of awareness is promising but requires further improvement. Similarly, Sarje *et al.* (2024) reported that variables such as education, extension contact and possession of ICT tools were positively related to the utility perception of YouTube among farmers.

Farmers also showed moderate awareness of digital marketing platforms (MPS 18.85, Rank XXII) and e-NAM's trading/payment systems (MPS 20.54, Rank XXI). Knowledge of email marketing ranked XX with an MPS of 22.75, while understanding of common digital marketing mistakes ranked XIX with an MPS of 24.88, indicating that many farmers were aware of common pitfalls in digital marketing.

The study further found that knowledge about digital marketing through videos ranked XVIII with an MPS of 25, showing that many farmers recognized the effectiveness of video marketing. Awareness of mobile payment gateways was 28.25 MPS (Rank XVI), while understanding of social media marketing strategies ranked XV with an MPS of 32.95, suggesting growing familiarity with social media as a promotional tool. The top-ranked aspects included WhatsApp marketing (MPS 42.8, Rank X), Facebook marketing (MPS 48.90, Rank VII) and YouTube for digital marketing (MPS 50.90, Rank VI), showing that these platforms were relatively well-known among farmers. However, the highest-ranked statement was awareness about the Meri Fasal Mera Byora (MFMB) Haryana portal, with an MPS of 95 (Rank I), indicating strong familiarity among farmers with this state-run platform.

Overall, the findings suggest that while farmers have some knowledge of digital marketing tools, major gaps remain in advanced concepts like SEO, paid advertisements and content marketing strategies. Addressing these deficiencies through structured training programs can significantly enhance farmers' digital literacy and market reach.

To validate these results, a Shapiro-Wilk test (Table 6) confirmed that the data was not normally distributed ($p = 0.005<0.05$). Consequently, a Friedman test was conducted, revealing a statistically significant difference between statements ($p=0.000<0.05$). These findings emphasize the need for structured training programs to bridge the knowledge gap in digital marketing for farmers.

RECOMMENDATION

It is recommended that targeted training programs should be developed to enhance farmers' understanding of advanced digital marketing tools, particularly in areas such as search engine optimization (SEO) and social media advertising. Workshops should focus on effective content creation for platforms like Facebook and YouTube to engage a broader audience. Additionally, training sessions should cover the utilization of e-commerce platforms such as Amazon and Flipkart, helping farmers maximize their online market reach.

CONCLUSION

The study reveals that while WhatsApp, YouTube and Facebook are widely used by farmers, they are mostly for non-agricultural purposes. Despite significant access to agricultural marketing mobile apps (91.25%), websites (82.50%) and social media marketing channels (95%), farmers utilize these tools minimally for marketing their commodities. The overall knowledge of digital marketing tools was low, with an average MPS of 25.97. Knowledge

gaps are evident in SEO, Google ads, bidding systems and paid digital advertisements, crucial for visibility and market reach. Limited awareness of the e-NAM mobile app, website traffic methods and blogging websites further restricts their adoption.

However, farmers do recognize the benefits of Facebook and WhatsApp for marketing and have a strong understanding of mobile marketing advantages. High knowledge of the Meri Fasal Mera Byora (MFMB) Haryana portal (MPS 95.00) highlights the potential of digital platforms. To bridge knowledge gaps, trainings in advanced digital marketing concepts are essential.

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Disclaimer

The views and conclusions expressed in this article are solely those of the authors and do not necessarily represent the views of the affiliated institution. The author is responsible for the accuracy and completeness of the information provided.

Conflict of interest

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