P-ISSN: 2618-0723
E-ISSN: 2618-0731

NAAS Rating (2025): 5.04
www.extensionjournal.com

International Journal of Agriculture Extension and Social Development

Volume 8; Issue 9; September 2025; Page No. 601-605

Received: 27-06-2025
Accepted: 29-07-2025

Indexed Journal
Peer Reviewed Journal

Use of social media and AI platforms by postgraduate students in MPKV, Rahuri

P Pratihari[1], BA Deshmukh[2], SS Sadaphal[3], PB Kharde[4], SD Shinde[5] and SP Maloth[1]

[1] MSc. Scholar, Department of Agricultural Extension Education, PGI, MPKV, Rahuri, Maharashtra, India
[2] Assistant Professor, Directorate of Extension Education, MPKV, Rahuri, Maharashtra, India
[3] Assistant Professor, Department of Agricultural Extension Education, PGI, MPKV, Rahuri, Maharashtra, India
[4] Associate Professor, Department of Agricultural Extension Education, PGI, MPKV, Rahuri, Maharashtra, India
[5] Assistant Professor, Department of Statistics, PGI, MPKV, Rahuri, Maharashtra, India

DOI: https://www.doi.org/10.33545/26180723.2025.v8.i9i.2468

Corresponding Author: P Pratihari

Abstract

The advent of digital technologies has revolutionized higher education and agricultural practices, offering unprecedented opportunities for learning, research, and entrepreneurial innovation. This study investigates the adoption and utilization patterns among postgraduate students at Mahatma Phule Krishi Vidyapeeth (MPKV), Rahuri a premier agricultural university in India. Against the backdrop of India's agrarian economy, which faces pressing challenges such as climate change, market instability, and food security, digital tools like AI-driven analytics, social media platforms, and Agri-Tech applications hold immense potential to transform traditional farming practices and academic methodologies. However, despite their growing prevalence, there remains a critical knowledge gap regarding how agricultural students engage with these technologies, the factors shaping their adoption, and the systemic barriers limiting their full potential.

This research is structured around five primary objectives (1) mapping their utilization patterns of social media (e.g., WhatsApp, YouTube, LinkedIn) and AI platforms (e.g., ChatGPT, Agri-Bots) for academic, professional, and entrepreneurial purposes; (2) formulating actionable recommendations for students, educators, policymakers, and technology developers to enhance digital integration in agricultural education and entrepreneurship.

Employing a mixed-methods approach, the study collected data from 145 postgraduate students across 16 disciplines including Agronomy, Agricultural Engineering, and Agri-Business Management using stratified random sampling. Quantitative data were gathered through structured questionnaires, while qualitative insights were derived from focus group discussions and interviews. Statistical tools such as frequency distribution, percentages, mean, and standard deviation were used to analyse the data, complemented by thematic analysis for qualitative responses.

The study concludes with targeted recommendations to bridge these gaps and operational suggestions: (1) integrating AI and digital literacy modules into agricultural curricula; (2) developing low-cost, vernacular AI tools to cater to rural students; (3) establishing institutional partnerships with Agri-Tech firms for hands-on training; (4) creating "Digital Agri-Clinics" to provide real-time troubleshooting and mentorship; and (5) advocating for policy reforms under India's National Education Policy (NEP) 2020 to prioritize digital infrastructure in agricultural universities.

By addressing these challenges, respondents can unlock the transformative potential of digital technologies, empowering students to innovate at the intersection of agriculture and technology. This research not only fills a critical gap in literature on digital adoption in developing economies but also provides a framework for scalable interventions to enhance agricultural education, foster entrepreneurship, and drive sustainable rural development.

Keywords: Purpose of use, engagement level, accessibility and usability, type of content, operational suggestions

1. Introduction

The digital era has significantly influenced higher education and agriculture globally, with social media and AI technologies becoming vital for education and innovation. Postgraduate students at Mahatma Phule Krishi Vidyapeeth (MPKV), Rahuri, are utilizing platforms like YouTube, WhatsApp, and Agri Tech apps to enhance academic performance and explore Agri-startup opportunities. However, there is a knowledge gap regarding how these students employ these technologies, the socioeconomic factors influencing their use, and the challenges they face.

The study is significant as it aligns with India's strategic focus on digital agriculture through initiatives like the National Agriculture Market (eNAM) and Agri Stack. It aims to offer practical recommendations to institutions like MPKV to enhance curricula with AI training and foster an Agri-entrepreneurial culture. By identifying barriers and facilitators to digital tool adoption, this research will help guide policymakers and educators in creating inclusive solutions for agriculture students.

The study specifically evaluates the current state of digital integration within the curricula at MPKV and identifies areas that need improvement, including the need for formal AI training, enhanced infrastructure, and increased entrepreneurial support. Focusing on postgraduate students, the research aims to prepare future leaders in India's agricultural sector. It assesses how these students use social media and AI, as well as the implications for their academic

growth and entrepreneurship. Despite acknowledging the potential benefits, students mainly use WhatsApp for communication and YouTube for tutorials, but are not fully utilising advanced AI tools for research or business planning.

1.1. Objectives

1. To study the utilization patterns of social media and AI platforms amongst postgraduate students.
2. To obtain operational suggestions for effective use of social media and AI platforms by students and other stakeholders.

2. Methodology

To assess the use of social media and AI platforms among postgraduate students, five indicators were utilised: Purpose of use, Level of engagement, Accessibility and usability, Type of content, and Impact on academic and professional outcomes.

2.1. Purpose of use

This part deals with questions related to the Purpose of use. This dependent variable identifies how students strategically select digital tools to fulfil specific needs, aligning with Uses and Gratifications Theory (Katz *et al.*, 1973) [7], which posits that users actively choose media to satisfy defined goals.

Sr. No	Category	Interpretation
1	Improve Academic grades	Using platforms to enhance grades
2	Skill development	Learning non-curricular skills
3	Job hunting	Career-related activities
4	Peer collaboration	Group study/ sharing resources
5	Stress relief	Non-academic use

2.2. Engagement Level

Engagement Level measures both the quantitative frequency and qualitative depth of postgraduate agriculture students' interactions with social media and AI platforms. This dependent variable evaluates how actively and meaningfully respondents participate in digital environments, distinguishing between passive consumption and constructive contributions. The respondents are asked to give information about how much engaged they are in social media and ai platforms.

Sr. No	Category	Interpretation
1	Passive	Only views content
2	Light	Like/save content
3	Moderate	Occasionally posts
4	High	Regularly posts
5	Very high	Creates original content

2.3. Accessibility and Usability

Accessibility and Usability represent critical dimensions in evaluating how effectively postgraduate agriculture students can interact with social media and AI platforms for their academic and professional needs. These constructs originate from the Technology Acceptance Model (TAM) (Davis, 1989), which identifies perceived ease of use and usefulness as key determinants of technology adoption. In this study, they are operationalised to assess both the logistical ease of reaching platforms and the user experience of navigating them.

Sr. No	Category	Interpretation
1.	Easy login/setup	No technical barrier to access
2.	Intuitive interface	Can navigate without instructions
3.	Mobile compatibility	Regular use via smartphone
4.	Fast loading speed	No delays in content retrieval
5.	Multilingual support	Uses the platform in the preferred language
6.	Offline functionality	Can access some features offline

2.4. Type of Content

Type of content examines the nature of material that postgraduate agriculture students consume or create on social media and AI platforms, reflecting their academic priorities and digital engagement patterns. The categorisation reveals whether students prioritise rigorous academic resources, practical skill-building materials, collaborative knowledge-sharing, or leisure-oriented content, offering insights into how digital platforms supplement formal education.

Sr. No	Category	Interpretation
1	Academic articles	Journal experts
2	Video lectures	Recorded classes, tutorials
3	Infographic notes	Visual summaries, study notes
4	Industry news	Carrier trends/sector updates
5	Decision forums	Peer question and answers
6	Entertainment	Memes and non-academic videos

2.5. Impact on Academic and Professional Outcomes

Impact on academic/professional outcomes assesses the tangible and intangible effects of social media and AI platform usage on postgraduate agriculture students' educational performance and career progression. This dependent variable employs a mixed-methods approach to capture both quantitative achievements and qualitative experiences, providing a comprehensive evaluation of digital tools' efficacy.

Sr. No	Category	Interpretation
1	Skill Acquisition	Learn new technical/professional skills
2	Research efficiency	Faster thesis and data collection
3	Confidence boost	Increased presentation and writing skills
4	Time savings	Reduced study and research time
5	Publication success	Published paper using platform source data

2.6. To obtain operational suggestions for effective use of social media and AI platforms by students and other stakeholders

This variable systematically identifies, categorizes, and evaluates actionable recommendations to optimize postgraduate agriculture students' utilization of social media and AI platforms for academic and professional development. It transforms research findings about current usage patterns, challenges, and best practices into concrete, implementable strategies for various stakeholders.

3. Results and Discussion

3.1 Utilization pattern of social media and AI platforms

To measure the pattern of utilization of the social media and AI platforms by postgraduate students a total of 5 indicators were used, *viz*. 1) Purpose of use; 2) Engagement Level; 3) Accessibility and usability; 4) Type of content; 5) Impact of academic and professional outcomes; The results are presented hereafter.

3.1.1. Purpose of use

The data indicates that postgraduate students at MPKV, Rahuri, predominantly utilize social media platforms for stress relief and entertainment, with 96.55 percent engaging for these purposes. Additionally, 93.79 percent of the students actively share information through various platforms. This trend suggests that a significant majority of students rely on applications such as WhatsApp, YouTube, and Instagram for leisure activities and instant access to educational resources. Furthermore, 77.24 percent of students leverage social media for skill development, including activities such as viewing tutorial videos or enrolling in online courses. Approximately two-thirds, or 67.58 percent, engage in scholarly collaboration through social media, facilitating group discussions and project work. Conversely, a smaller percentage, 44.82 percent, actively follow industry updates, which indicates a greater emphasis on academic pursuits over career-oriented trends.

As indicated in Table 1, a substantial majority of students, 95.17 percent, utilize artificial intelligence (AI) platforms for research assistance, including sourcing academic papers or summarizing relevant materials. Furthermore, 84.13 percent employ AI for data analysis, which proves advantageous for their study projects. Around 70.34 percent make use of AI for automated learning, for instance, through chatbots or linguistic tools, while 60.68 percent incorporate AI for career preparation, including resume building and interview training. A smaller subset, 37.93 percent, engages with AI for content creation, revealing a preference among students for consuming information rather than producing written content. These findings align, in part, with the research conducted by Venkatesh *et al.* (2016) [15] and Junco *et al.* (2015) [6].

Table 1: Distribution of respondents according to their Purpose of use in social media

Sr. No	Purpose of Use (Social media)	Respondents (n=145)	
		Frequency	Percentage
1.	Academic Collaboration	98	67.58
2.	Skill development	112	77.24
3.	Information sharing	136	93.79
4.	Industry trends and news	65	44.82
5.	Stress relief/ Entertainment	140	96.55

Table 2: Distribution of respondents according to their Purpose of use in AI platforms

Sr. No	Purpose of Use	Respondents (n=145)	
		Frequency	Percentage
1.	Research Assistance	138	95.17
2.	Data analysis	122	84.13
3.	Carrier preparation	88	60.68
4.	Automated learning	102	70.34
5.	Content Generation	55	37.93

3.1.2. Engagement Level

Table 3 reveals a clear hierarchy in postgraduate students' engagement with social media and AI platforms. A significant 97.24% exhibit passive engagement, primarily consuming content without interaction, while 83.44% engage lightly by liking or saving posts. Moderate participation occurs in 58.62%, with 22.06% posting regularly, and just 12.41% creating original content. This reflects a participation gap, highlighting that most students are passive consumers rather than active producers, consistent with the "1 rule" of online communities. The low creator percentage signifies missed opportunities for peer learning, suggesting a need for further research into engagement obstacles. These findings align with Nielsen *et al.* (2006) [9] and Junco *et al.* (2014) [5].

Table 3: Distribution of respondents according to their Engagement Level

Sr. No	Engagement Level	Respondents (n=145)	
		Frequency	Percentage
1.	Passive (only views content)	141	97.24
2.	Light (like/save content)	121	83.44
3.	Moderate (occasionally posts)	85	58.62
4.	High (Regularly posts)	32	22.06
5.	Very high (Creates original content)	18	12.41

3.1.3. Accessibility and Usability

Table 4 provides an analysis indicating that mobile compatibility (91.03 percent) and streamlined login processes (81.37 percent) are the most critical accessibility features for postgraduate students, which aligns with global trends favoring mobile-first digital learning (Pew Research Centre, 2023) [10]. Conversely, the reported satisfaction with loading speed (57.93 percent) and multilingual support (28.96 percent) highlights significant barriers, pointing to potential deficiencies in infrastructure and localization. The low prioritization of offline functionality (19.31 percent) contrasts with findings from studies focusing on rural education contexts (Selwyn, 2012) [12], suggesting a disconnect between platform design and the needs of students lacking reliable internet access. Usability is closely tied to intuitive interfaces (66.89 percent), reinforcing the premise of Davis's (1989) Technology Acceptance Model, which posits ease of use as a critical factor for adoption. These findings are partially consistent with the research conducted by Selwyn *et al.* (2020) [13] and the Pew Research Centre (2023) [10].

Table 4: Distribution of respondents according to their Accessibility and usability

Sr. No	Accessibility and Usability	Respondents (n=145)	
		Frequency	Percentage
1.	Easy login/setup	118	81.37
2.	Intuitive interface	97	66.89
3.	Mobile compatibility	132	91.03
4.	Fast loading speed	84	57.93
5.	Multilingual support	42	28.96
6.	Offline functionality	28	19.31

3.1.4. Type of content

The content preference analysis among postgraduate agriculture students reveals clear trends in their engagement with social media and AI platforms. Regarding social media, a striking 96.55 percent of students favour

Entertainment content, highlighting its predominant role as a source of enjoyment and leisure. Additionally, video lectures are highly utilized by 84.82 percent of students, showcasing platforms like YouTube as vital tools for visual learning that complement traditional classroom instruction. While News (44.82 percent) and Discussion forums (46.89 percent) do see some usage, reliance on more formal academic resources, such as Academic articles (35.17 percent) and Notes (24.82 percent), is notably lower. This trend suggests that, despite some academic benefits, social media primarily serves as a recreational outlet for these students while supporting traditional study methods.

In contrast, AI platforms are predominantly used for academic and research-focused materials. An impressive 90.34 percent of students turn to these platforms for Academic articles, emphasizing their crucial role in facilitating research and literature reviews. Additionally, 70.34 percent of students prefer using AI for Notes, indicating its utility in note-taking, summarizing, or crafting study materials. While Video lectures (55.17 percent) and News (50.34 percent) also attract a significant user base, their popularity pales in comparison to academic articles and notes, further underscoring the research-oriented application of AI tools. Furthermore, 37.93 percent of students engage with discussion forums, reflecting a degree of collaborative interaction. Most notably, Entertainment content is rarely sought after on AI platforms, with only 10.34 percent of participants using them for this purpose.

These findings align partially with research conducted by Borrego *et al.* (2020) [2] and Kahu and Nelson *et al.* (2018) [8].

Table 5: Distribution of respondents according to their Type of content in social media

Sr. No	Type of Content	Respondents (n=145)	
		Frequency	Percentage
1.	Entertainment	140	96.55
2.	Video lectures	123	84.82
3.	Academic articles	51	35.17
4.	Notes	36	24.82
5.	News	65	44.82
6.	Discussion forums	68	46.89

Table 6: Distribution of respondents according to their Type of content in AI platforms

Sr. No	Type of Content	Respondents (n=145)	
		Frequency	Percentage
1.	Entertainment	15	10.34
2.	Video lectures	80	55.17
3.	Academic articles	131	90.34
4.	Notes	102	70.34
5.	News	73	50.34
6.	Discussion forums	55	37.93

3.1.5. Impact of Academic and Professional outcomes

The platform usage effects analysis identifies a number of important trends among postgraduate students. First, skill Acquisition was the most common outcome 87.58 per cent, as predicted by van Laar *et al.* (2020) [14] digital competence model, with students using these platforms actively for upskilling. Almost 79.31 per cent respondents cited improved research effectiveness respectively, as noted by Bond *et al.* (2020) [1] evidence of AI-supported scholarly work. Notably, although 70.34 per cent reported a boost in confidence in academic skills - in line with Bandura (1997) self-efficacy theory, 51.74 per cent comes under enhanced information access. The considerable time savings of 55.17 per cent of users supports Clark (1994) [3] media efficiency theory, although this does not necessarily equate to improved-quality outputs.

These findings imply an impact hierarchy, this trend points towards the necessity for specific training in assisting students in translating usage of the platform into concrete scholarly outputs. The findings are in line with van Laar *et al.* (2020) [14] and Bond *et al.* (2020) [1].

Table 7: Distribution of respondents according to their Impact of Academic and Professional outcomes

Sr. No	Category	Respondents (n=145)	
		Frequency	Percentage
1.	Skill Acquisition	127	87.58
2.	Research efficiency	115	79.31
3.	Confidence boost	102	70.34
4.	Time savings	80	55.17
5.	Enhanced Information access	75	51.74

3.2. Operational suggestions for effective use of social media and AI platforms by students and other stakeholders

The study provides an in-depth analysis of strategies to enhance the integration of social media and artificial intelligence (AI) among postgraduate students at Mahatma Phule Krishi Vidyapeeth (MPKV) in Rahuri. A significant 80.77 percent of respondents advocate for the inclusion of AI and machine learning (ML) training within the academic curriculum. This insight reveals a pressing gap in the current educational offerings, suggesting that the curriculum falls short of equipping students with essential skills that align with global trends emphasizing digital agriculture competencies.

Additionally, there is a notable demand for the establishment of verified information hubs, with 70.34 percent of students expressing concern regarding the reliability of information sources. This highlights a critical need for institutional initiatives that can effectively filter and curate high-quality content, ensuring that students have access to accurate and trustworthy information.

The study also reveals a strong preference for implementing AI platforms in regional languages, as indicated by 60.74 percent of participants. This points to an important linguistic barrier that hinders technology adoption, particularly for the rural student demographic in Maharashtra, who may find it challenging to engage with content presented exclusively in English.

Moreover, students exhibit a keen interest in privacy-protected networking platforms (58.62 percent) and Digital Agri-Clinics (52.48 percent). These preferences underscore a growing desire for secure, application-based digital environments that can effectively bridge the gap between academic theories and practical agricultural challenges faced in the field.

Infrastructure remains a vital concern, with 46.94 percent of respondents emphasizing the necessity for improved internet connectivity as a foundational requirement for the

successful implementation of other digital initiatives. This suggests that without addressing the basic infrastructure challenges, the efficacy of more advanced digital solutions could be severely compromised.

Furthermore, while support for subsidizing access to high-cost platforms received a lower approval rate of 40.72 percent, it still indicates that financial barriers are a secondary yet significant concern. Similarly, the interest in organizing monthly workshops, noted by 32.46 percent of students, suggests that there is a demand for continued education and hands-on experience, albeit ranked lower in priority compared to more foundational issues.

The research findings reveal a strategic prioritization among students, who seem to favor foundational changes—such as curriculum integration and the establishment of reliable information systems—over subsequent infrastructure improvements and cost solutions. This data underscores the necessity for a phased implementation strategy. It is crucial that efforts begin with redesigning curricula and validating content before advancing to linguistic adaptations and infrastructure enhancements.

Importantly, the implications of these findings stress the pivotal role that MPKV must play in institutionalizing digital competencies. This proactive approach is essential in order to move beyond piecemeal solutions, specifically in the context of meeting NAAC accreditation criteria related to digital pedagogy. Ultimately, the focus on enhancing graduate employability within the Agri-tech sectors is critical, as the study highlights the multifaceted needs of students and the educational institution's responsibility in addressing these challenges effectively.

These findings are in partially similar to the findings reported by Van den Berg *et al.* (2021) [14], Salami *et al.* (2020) [11] and FAO (2021) [4].

Table 8: Operational suggestions for effective use of social media and AI platforms

Sr. No	Suggestions	Respondents (n=145)		
		Frequency	Percentage	Rank
1	Integrate AI/ML training in curriculum	117	80.77	I
2	Create verified information hubs	102	70.34	II
3	Develop regional-language AI platforms	88	60.74	III
4	Create privacy-protected student networking platforms	85	58.62	IV
5	Digital Agri-Clinics	76	52.48	V
6	Improve campus internet infrastructure	68	46.89	VI
7	Subsidize High-Cost Platforms	59	40.72	VII
8	Host monthly AI tool demo workshops	47	32.46	VIII

References

1. Bond M, Buntins K, Bedenlier S, Zawacki-Richter O, Kerres M. Mapping research in student engagement and educational technology in higher education: A systematic evidence map. Int J Educ Technol High Educ. 2020;17(1):2.
2. Borrego M, Foster MJ, Froyd JE. What is the state of the art of systematic review in engineering education? J Eng Educ. 2020;104(4):393-413.
3. Clark RE. Media will never influence learning. Educ Technol Res Dev. 1994;42(2):21-9.
4. Food and Agriculture Organization of the United Nations. Digital agriculture report: Rural e-commerce development experience from China. Rome: FAO; 2021.
5. Junco R. Engaging students through social media: Evidence-based practices for use in student affairs. J Coll Stud Dev. 2014;55(5):509-12.
6. Junco R, Heiberger G, Loken E. The effect of Twitter on college student engagement and grades. J Comput Assist Learn. 2015;27(2):119-32.
7. Katz E, Blumler JG, Gurevitch M. Uses and gratifications research. Public Opin Q. 1973;37(4):509-23.
8. Kahu ER, Nelson K, Picton C. Student interest as a key driver of engagement for first year students. Stud Success. 2018;8(2):55-66.
9. Nielsen J, Loranger H. Prioritizing web usability. Berkeley: New Riders Press; 2006.
10. Pew Research Center. Social media fact sheet. Washington, DC: Pew Research Center; 2023 Apr 24. https://www.pewresearch.org/internet/fact-sheet/social-media/
11. Salami CK, Kamara JS, Bangura MJ. The impact of social media on agricultural entrepreneurship among youth in Sierra Leone. J Agric Ext. 2020;24(3):112-25.
12. Selwyn N. Making sense of young people, education and digital technology: The role of sociological theory. Oxf Rev Educ. 2012;38(1):81-96.
13. Selwyn N. Education and technology: Key issues and debates. 2nd ed. London: Bloomsbury Academic; 2016.
14. van Laar E, van Deursen AJAM, van Dijk JAGM, de Haan J. Determinants of 21st-century skills and 21st-century digital skills for workers: A systematic literature review. SAGE Open. 2020;10(1):1-14.
15. Venkatesh V, Thong JYL, Xu X. Unified theory of acceptance and use of technology: A synthesis and the road ahead. J Assoc Inf Syst. 2016;17(5):328-76.