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Inclination of postgraduate students towards initiations of startups pertaining to agriculture and allied sectors

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Abstract

The introduction of digital technologies has transformed higher education and agriculture to a great extent, with enormous opportunities for learning, research, and entrepreneurial innovation. The present study examines the trends of adoption and use among postgraduate students at Mahatma Phule Krishi Vidyapeeth (MPKV), Rahuri, one of the leading agricultural universities in India. In the context of India's agriculture-based economy, which is grappling with serious issues of climate change, market volatility, and food security, digital technologies such as AI-based analytics, social media platforms, and Agri-Tech applications have the potential to revolutionize conventional agricultural practices and research approaches. Nonetheless, even with their increasing spread, there is still a significant knowledge gap on how agricultural students interact with these technologies, the conditions influencing their adoption, and the system constraints curtailing their full potential. This study evaluated the inclination of postgraduate students at MPKV Rahuri towards initiating startups in agriculture and allied sectors. The findings reveal a generally positive mindset, with a majority of students (68.26%) categorized as "Inclined" and an additional 18.64% as "Highly Inclined" towards agri-startups.

Despite this inclination, the results show that students exhibit high digital dependence alongside critical readiness gaps in agricultural entrepreneurship. While students are comfortable with digital platforms with 74.48% rating them as important for time-saving market access and 62.17% using social media to learn about government schemes their application of advanced tools is limited. For example, only 35.24% use AI for subsidy inquiries, and very low usage of professional networks like LinkedIn (39.34%) was reported, indicating a preference for more casual platforms.

The discussion highlights a significant gap: high digital adoption has not yet fully equated with startup confidence. This is underscored by the predominant need for AI/ML training, as expressed by 80.74% of respondents. The study concludes that focused AI training and mentorship programs are necessary to close the gap between the students' theoretical knowledge and the practical skills required for hands-on agripreneurship.

By overcoming such challenges, respondents have the potential to unlock the transformative power of digital technologies to enable students to innovate at the nexus of agriculture and technology. This study not only bridges an essential gap in literature on digital adoption in developing economies but also offers a framework for scalable interventions to improve agricultural education, entrepreneurship, and sustainable rural development.

Keywords: Inclination of postgraduate students, Agripreneurship, Agri-tech, startup, Digital Extension

Introduction

The digital age has really shaped higher education and agriculture around the world. Social media and AI technologies have become essential tools for learning and innovation. At Mahatma Phule Krishi Vidyapeeth (MPKV) in Rahuri, postgraduate students are tapping into platforms like YouTube, WhatsApp, and Agri Tech apps to boost their academic success and explore opportunities in Agri-startups. Nonetheless, there's still a gap in understanding how these students use these technologies, the socioeconomic factors that affect their usage, and the challenges they encounter. This study is important because it supports India's strategic emphasis on digital agriculture through programs like the National Agriculture Market (eNAM) and Agri Stack. Its goal is to provide practical suggestions to organizations such as MPKV to improve their curricula by incorporating AI training and promoting an entrepreneurial mindset in agriculture.

By identifying obstacles and enablers to adopting digital tools, the research aims to assist policymakers and educators in developing inclusive solutions for agricultural students. The study specifically examines the current level of digital integration in MPKV's curricula and highlights areas needing enhancement, such as formal AI education, better infrastructure, and stronger entrepreneurial support. Targeting postgraduate students, the research seeks to prepare future leaders in India's agricultural sector. It evaluates how these students engage with social media and AI, along with the effects on their academic development and entrepreneurial activities. Although recognizing the potential advantages, students primarily use WhatsApp for communication and YouTube for learning, but they do not fully utilize advanced AI tools for research or business planning.

Objectives

To study inclination of postgraduate students towards initiation of startups pertaining to agriculture and allied sectors.

Methodology

The study is conducted at the main campus of Mahatma Phule Krishi Vidyapeeth (MPKV), Rahuri, located in Ahilyanagar district, Maharashtra. MPKV Rahuri is one of India's premier agricultural universities, known for its contributions to agricultural research, education, and extension activities. The university offers diverse postgraduate programs in agriculture, making it an ideal location for exploring the utilization patterns of social media and AI platforms by students.

The present study employs an ex-post facto research design, which is most appropriate for understanding the utilization patterns of social media and AI platforms among postgraduate students in agriculture at MPKV, Rahuri. This design involves the analysis of variables and their relationships without direct manipulation, as the researcher cannot control or alter the independent variables such as students' usage patterns, motivational factors, or engagement levels.

Table 1: Distribution of respondents according to their inclination of postgraduate students towards initiations of startups pertaining to agriculture and allied sectors

Sr. No.	Items	SA	A	D	SD
1.	Social media (e.g., YouTube, WhatsApp groups) exposes me to Agri-startup opportunities.	38 (26.26)	54 (37.24)	42 (29.06)	11 (07.62)
2.	AI platforms (e.g., ChatGPT) help me generate innovative agri-business ideas.	29 (20.00)	49 (33.84)	52 (35.890)	15 (10.31)
3.	I follow agricultural influencers/experts on social media for startup guidance.	22 (15.17)	63 (43.43)	47 (32.42)	13 (09.06)
4.	Online courses (e.g., Coursera, Udemy) have equipped me with agripreneurship skills.	18 (12.41)	57 (39.36)	55 (37.93)	15 (10.31)
5.	AI-powered market analysis platforms (e.g., CropIn, AgriVision) improve my business planning.	25 (17.26)	53 (36.62)	51 (35.24)	16 (11.03)
6.	Social media helps me learn about government schemes for Agri-startups.	31 (21.47)	59 (40.72)	42 (29.06)	13 (09.06)
7.	I use LinkedIn/Facebook to connect with potential Agri-startup partners.	14 (10.34)	42 (29.06)	68 (46.83)	21 (14.56)
8.	AI chatbots assist me in resolving queries about agricultural subsidies/loans.	12 (08.34)	39 (26.93)	68 (46.94)	26 (17.91)
9.	Online forums (e.g., Kisan Sabha groups) motivate me to start my venture.	19 (13.14)	47 (32.41)	62 (42.84)	17 (11.73)
10.	Social media reduces my dependency on traditional Agri-extension services.	27 (18.66)	61 (42.14)	45 (31.03)	12 (08.34)
11.	AI platforms minimize risks in my Agri-startup decision-making.	21	50	58	16

Inclination of postgraduate students towards initiations of startups pertaining to agriculture and allied sectors

This variable measures the interest and proactive engagement of postgraduate agriculture students in leveraging social media and AI platforms to initiate or support agricultural startups and allied sector ventures. It captures entrepreneurial intent, digital innovation adoption, and perceived opportunities at the intersection of agri-tech and digital platforms.

Results and Discussion

Inclination of postgraduate students towards initiations of startups pertaining to agriculture and allied sectors

In the table 3.1 the questionnaire shows that postgraduate students at MPKV Rahuri exhibit high digital dependence but critical readiness gaps in agricultural entrepreneurship. Whereas 74.48 per cent rate digital platforms as important for time-saving market access (Q12) corroborating World Bank's (2022) findings regarding ICT in agriculture - a mere 35.24 per cent use AI for subsidy inquiries (Q8), in line with Kamilaris *et al.* (2017) ^[8] observed constraints of AI in bureaucratic applications. The predominant need for AI/ML training (80.74 per cent, Q13) underlines Van den Berg *et al.* (2021) ^[14] focus on building skills, interestingly 62.17 per cent use social media for schemes by the government (Q6), confirming FAO's (2021) digital extension models, but very low usage on LinkedIn (39.34 per cent, Q7) refutes Ellison *et al.* (2015) theories of professional networks, indicating the students prefer more casual platforms. The findings show that while students are comfortable with digital platforms, they face challenges due to limited institutional support and technical issues with specific platforms, where high digital adoption (Q1-Q6) has not yet fully equated with startup confidence a gap where focused AI training and mentorship programs must be used to close the gap between theoretical knowledge and hands-on agripreneurship. These findings are in partially similar to the findings reported by kamilaries *et al.* (2017), world bank (2022), van den Berg *et al.* (2021), FAO (2021) and Salami *et al.* (2020).

		(14.54)	(34.54)	(40.06)	(11.07)
12.	Digital platforms save time in accessing Agri-market information.	45	63	29	8
		(31.06)	(43.47)	(20.00)	(05.54)
13.	I wish AI/ML training was included in our Agri-entrepreneurship curriculum.	52	65	21	7
		(35.94)	(44.87)	(14.52)	(04.82)

SA- Strongly Agree A- Agree D- Disagree SD- Strongly Disagree

Here in table 3.2 the scores are inflicted of the respondents who chosen scoring value respectively. A majority of 68.26 per cent of students come under the "Inclined" category (scores 34-41), which reflects a relatively positive mindset towards agri-startups. At the same time, 18.64 per cent of the respondents are "Highly Inclined" (scores 42 above), which reflects intense entrepreneurial inclination, whereas a lower per cent of 13.11 per cent reflect low inclination (scores up to 34).

Table 2: Distribution of scores of the postgraduate students according to their initiations of startups pertaining to agriculture and allied sectors

Sr. No	Scores	Respondents (n=145)	
		Frequency	Percentage
1.	Up to 34 (Lowly Inclined)	19	13.11
2.	34 to 41 (Inclined)	99	68.26
3.	42 and above (Highly Inclined)	27	18.64
Total		145	100
Mean = 37.67		S. D = 3.33	

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