



Research article

Fostering the future: Agripreneurship intentions among Indian agricultural students

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ABSTRACT

India is an agrarian country, but the contribution of agriculture to GDP was reduced gradually. It was due to the decline of land resources, climate change, and low profitability. To overcome these problems, agripreneurship can offer a viable solution and foster innovation and economic viability which is easily adopted by the younger generation. So, this study focuses on the agri-cultural college students who have more scope to start an agribusiness. It explores attitudes, subjective norms, perceived behavioural control, agripreneurship education, personality traits, and their relationship with agripreneurship intention among 210 agriculture students in India, the study employed a descriptive research design, with data collected through an online survey. Purposive and snowball sampling techniques were utilized to reach the target population. Data analysis was conducted using SPSS, employing *t*-test, ANOVA, correlation, and multiple linear regression to examine the relationships and differences among variables. and the theory of planned behaviour was used to explain the complex relationship between the variables. The results showed that attitudes, subjective norms, perceived behavioural control, and personality traits substantially predict agripreneurship intention, and formal agripreneurship education appears to have minimal influence on outcomes. Gender, landholding, major family occupation, nativity, course of study, and family background do not substantially impact agribusiness plans. The study offers insights for educational institutions, governments, and other stakeholders interested in promoting agripreneurship and driving innovation in agriculture in India. These findings emphasise the need for a comprehensive strategy to foster agribusiness goals that cross traditional boundaries and contexts.

1. Introduction

Agriculture has traditionally been recognised as the backbone of India's economy, employing about half of the country's workers and contributing significantly to GDP [1]. Despite its critical role, the agricultural industry faces various challenges, including declining land resources, the effects of climate change, and low profitability, all of which endanger the livelihoods of millions of farmers [2]. Agripreneurship has emerged as a promising approach that combines entrepreneurship and agriculture, presenting a path for value addition, technology adoption, and market integration, thereby increasing the resilience and competitiveness of the agricultural value chain [3,4]. Recent research has revealed the significance of agripreneurship in India's agricultural revolution. For example, a report by the National Institution for Transforming India (NITI Aayog) emphasized the need to encourage agripreneurship

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to increase agricultural incomes, provide job opportunities, and promote inclusive growth [5]. Furthermore, studies undertaken by the Indian Council of Agricultural Research (ICAR) emphasized the need to include entrepreneurial education and skill development efforts within agricultural colleges to foster a culture of innovation and enterprise among students [6]. Numerous scientific studies have explored the factors that influence students' inclinations to pursue entrepreneurship across various types of disciplines, emphasizing the significance of personal characteristics, social and cultural factors, opportunities for learning, and support from institutions [7,8]. Prioritizing agripreneurship is imperative in the contemporary context, as agriculture confronts critical challenges, including increasing food demand, climate change, and an ageing farming population [9,10]. Agripreneurs drive innovation by implementing climate-resilient practices, utilizing technologies such as precision farming, and developing sustainable, high-yield methodologies that address food security requirements [11], rural areas experience youth migration, agripreneurship attracts younger generations by offering modern, economically viable, and diverse career opportunities [12]. Agripreneurs also enhance market access through digital platforms, enabling farmers to directly reach consumers, obtain fair prices, and reduce dependence on intermediaries [13]. This fosters economic development, mitigates rural poverty, and empowers communities [14]. Furthermore, agripreneurship meets the growing consumer demand for sustainable, high-quality products and promotes environmentally sound practices. By transforming agriculture into a resilient, innovative industry, agripreneurship supports food security, sustainable development, and economic stability—rendering it a high-priority strategy for addressing the sector's current and future challenges [15].

India's population projected to reach 1.5 billion by 2030, the need for sustainable food production is critical. Agripreneurship can meet this demand through innovative approaches that enhance productivity [16]. Moreover, Indian agriculture's heavy reliance on monsoon rains—affecting 52 % of farmland—renders it highly vulnerable to climate change. Climate-resilient agripreneurial solutions, such as drought-resistant crops and precision farming, are essential for securing livelihoods [5]. An additional pressing issue is the aging farming demographic, with over 60 % of farmers above the age of 50 while younger generations migrate to urban areas. By introducing modern technology and profitable agribusiness models, agripreneurship could attract youth back to farming (Census of India, 2011). Economically, agribusinesses are also crucial to India's development. Micro, small, and medium enterprises (MSMEs) contribute approximately 29 % of the GDP and employ over 110 million people, particularly in rural areas (Ministry of MSME, 2020). Additionally, digital platforms such as the Electronic National Agriculture Market (eNAM) have connected over 16 million farmers to wider markets, enabling them to bypass intermediaries and increase their income [1]. These statistics underscore agripreneurship's capacity to address India's agricultural challenges while promoting food security, rural employment, and resilience against climate impacts.

In this regard, it is essential to encourage youth, especially those studying agriculture, to embrace innovation and entrepreneurship in the agricultural sector [17]. Future agripreneurs are nurtured in agricultural universities and colleges, providing students with the knowledge, abilities, and perspective needed to effectively face contemporary agriculture's challenges [18]. About 11.4 million students in India studied agricultural courses and related higher education programmes [19]. Despite this high enrolment, little research has looked explicitly into agricultural students' intention to participate in agripreneurship within the Indian context. Considering India's unique economic status, cultural complexities, and institutional structures, it is crucial to assess agripreneurial intention among agriculture students in particular because they possess fundamental knowledge and abilities that are directly relevant to the agricultural industry, placing them in a unique position to tackle issues like rural development, sustainable farming, and food security. In contrast to other young people, agricultural students frequently have a combination of scientific and technical knowledge of agriculture along with a hands-on experience of farming and rural environments [20]. They have a better understanding of the prospects and demands of the industry as a result of their exposure to agricultural techniques and agribusiness education. Researchers and policymakers can find customized interventions that foster entrepreneurial mindsets in line with agricultural innovation by concentrating on agriculture students. This will help to raise a generation that can actively support rural economies, food system resilience, and agricultural sustainability [21].

In addition, this study plans to apply the Theory of Planned Behavior (TPB), which has been widely applied to predict entrepreneurial intentions and behaviour. Previous studies have shown that TPB significantly explains variance in students' entrepreneurial intentions, with attitude, perceived behavioral control, and subjective norms as key predictors [22,23]. So, we concentrated on investigating how the attitude toward agribusiness, perceived behavioral control, agribusiness education, subjective norms, and personality factors influence the agripreneurial intention among agricultural students in India. Also, we attempt to find the difference in agripreneurial intention across various socio-demographic indicators, which helps to know the influence of social factors on agricultural intention. Previous studies have shown mixed results in socio-demographic influence on agripreneurial intention [24–26]. A better understanding of the characteristics impacting agricultural students' ambition to become entrepreneurs will make it easier to evaluate and establish targeted interventions and policies to assist entrepreneurial aspirations in the agriculture sector.

2. Methodology

Agripreneurship intentions were examined based on the attitudes of the agricultural students. To achieve this goal, a cross-sectional survey was conducted among agricultural students. Researchers were able to gain a better understanding of participants' characteristics and experiences through this cross-sectional study. A survey questionnaire was developed to assess agricultural students' intentions regarding agripreneurship. Data were obtained from 227 agricultural students from various parts of India. The survey was administered using the Kobo Toolbox, an online data collection and management platform. Students from several educational institutions across India participated in this study. Participants were chosen using convenience sampling. The survey link was circulated among agricultural student groups, forums, and blogs through social networks. Students who wished to participate voluntarily were

given the survey link and completed the questionnaire. The researchers ensured the survey could be distributed to students all over India. Of the 227 responses received, 210 were deemed legitimate and included in the final analysis.

2.1. Scale measurement

The survey items were indeed selected based on established, validated measures from previous studies on entrepreneurial intentions [27–30]. Each item was evaluated for its alignment with the study's objectives and relevance to the specific context of agripreneurship. For instance, items related to perceived behavioural control, subjective norms, and attitude toward entrepreneurship were adapted to reflect agricultural-specific scenarios, thereby enhancing their applicability to the agripreneurial context. Furthermore, consultation with experts was conducted; their insights were instrumental in tailoring the questionnaire to reflect specific aspects of agripreneurship relevant to Indian agricultural students. Based on their feedback, minor modifications were implemented to enhance clarity and relevance. Agripreneurship intention has the highest Cronbach's alpha value (0.901), followed by perceived behavioural control (0.828), personality traits (0.775), attitude towards agripreneurship (0.780), agripreneurial education (0.781) and subjective norms (0.751). Since their values are more significant than 0.7, all variables have strong internal consistency dependability.

2.2. Data analysis

The data was statistically analysed using IBM SPSS 19. The study data were statistically analysed using IBM SPSS version 20. To run the inferential statistics, the tests for assumptions were conducted after the descriptive statistics of the research variables had been reviewed. Together with the histogram representation, skewness and kurtosis values were examined, revealing an approximate normal distribution of the data. The homogeneity of variances in the data evaluated using Levene's tests satisfied the assumption, and the test for outliers, which was conducted using box plots, showed no notable outliers. For each of the aforementioned tests, the threshold for statistical significance was set at 5 % ($p < 0.05$). After fulfilling the assumption criteria's One-way ANOVA and independent t tests were used to ascertain the relationship between agripreneurial intention and other socio demographic details. The Pearson correlation test was performed to determine the associations between the scale variables. Concurrently, independent t-tests and ANOVA were utilized to look into any possible relationships between study variables and socio-demographic variables. Finally, multiple linear regression was performed to determine whether the independent variables, which included agripreneurship attitude, subjective norms, perceived behavioural control, agripreneurship education, and personality traits, were significant and predictive of the dependent variable. This analysis can also be used to determine if each independent variable influences the outcome of the dependent variable.

3. Results

Table 1 depicts the demographic characteristics of the study's respondents. The respondents of the study are represented equally by male (50.5 %) and female (49.5 %) students. The majority of the respondents (60 %) are aged between 21 and 25 years, 32.4 per cent of the respondents fall in the category of aged 18–20 years, and 7.6 per cent of the respondents belong between 26 and 30 years. Nearly

Table 1
Demographic characteristics of the Respondents.

Category		Frequency (N = 210)	%
Gender	Male	106	50.5
	Female	104	49.5
Age	Up to 20	68	32.4
	21 to 25	126	60.0
	26 to 30	16	7.6
Locality	Rural	104	49.5
	Urban	56	26.7
	Semi-Urban	50	23.8
Present educational status	Under Graduate	147	70.0
	Post Graduate	39	18.6
	M.Phil.	24	11.4
First graduate student	Yes	106	50.5
	No	104	49.5
Family background	Farming	70	33.3
	Business	24	11.4
	Farming & Business	19	9.0
	Salaried Job	76	36.2
	Others	21	10
Family having agricultural land	Yes	144	68.6
	No	66	31.4
Major Family occupation	Agriculture & Allied	94	44.8
	Non-Agriculture	116	55.2
Aware of agripreneurship schemes and subsidies	Yes	115	54.8
	No	95	45.2

half of the respondents (49.5 %) were from rural areas, 26.7 per cent from urban areas and 23.8 per cent from semi-urban areas. The majority of the respondents (70 %) were undergraduates, 18.6 per cent were postgraduates and 11.4 were M.Phil. degrees.

One-third of respondents (33.3 %) had a farming family background, 11.4 % had a business family background, 9 % had a farming and business family background, 36.2 % had a salaried job, and 10 % had other family backgrounds. The majority of respondents (68.6 %) have agricultural land, whereas 31.4 % of respondents do not have agricultural land. Non-agricultural occupations accounted for 55.2 per cent of respondents' major family occupations, while agriculture and allied occupations accounted for 44.8 per cent. 54.8 per cent of respondents were aware of agripreneurship schemes and subsidies, while 45.2 per cent were not.

The results presented in Table 2 indicate that there is a significant correlation between attitude towards agripreneurship and subjective norms ($r = 0.289$; $p = 0.000$), attitude towards agripreneurship and perceived behavioural control ($r = 0.611$; $p = 0.000$), attitude towards agripreneurship and agripreneurial education ($r = 0.327$; $p = 0.000$), attitude towards agripreneurship and personality traits ($r = 0.540$; $p = 0.000$), attitude towards agripreneurship and agripreneurship intention ($r = 0.726$; $p = 0.000$), subjective norms and perceived behavioural control ($r = 0.482$; $p = 0.000$), subjective norms and agripreneurial education ($r = 0.277$; $p = 0.000$), subjective norms and personality traits ($r = 0.253$; $p = 0.000$), subjective norms and agripreneurship intention ($r = 0.400$; $p = 0.000$), perceived behavioural control and agripreneurial education ($r = 0.317$; $p = 0.000$), perceived behavioural control and personality traits ($r = 0.526$; $p = 0.000$), perceived behavioural control and agripreneurship intention ($r = 0.676$; $p = 0.000$), agripreneurial education and personality traits ($r = 0.339$; $p = 0.000$), agripreneurial education and agripreneurship intention ($r = 0.334$; $p = 0.000$), personality traits and agripreneurship intention ($r = 0.635$; $p = 0.000$).

Table 3 shows that there is no significant difference in the mean score of agripreneurship intention with respect to gender ($p = 0.974$), land holding ($p = 0.819$) and major occupation ($p = 0.073$).

Table 4 shows that an analysis of variance (ANOVA) was performed to examine the differences across nativity, course of study, and family background in the intention to engage in agripreneurship. Table 4 indicates no significant differences across nativity ($p = 0.150$), course of study ($p = 0.764$) and family background ($p = 0.565$) in the agripreneurship intention.

Table 5 results show that agripreneurship Attitude, Subjective Norms, Perceived Behavioural Control, and Personality Traits are significant predictors of agripreneurship Intention because all these predictors were significant at 0.05 level. Agripreneurship Education did not predict the agripreneurship Intention. The independent variables played a significant role in enhancing the participants' agripreneurship Intention. Moreover, the $R^2 = 0.666$ showed that the predictor variables explained 66.6 % of the variance in the agripreneurship Intention.

4. Discussion

In the present study, data were collected using an online survey form. we evaluated socio demographic profile of the respondents then we analysed the difference in agripreneurial intention based on various socio-demographic variables such as age, gender, land holdings, nativity, etc. Later, we examined the relationship between attitude towards agripreneurship, social norms, perceived behaviour control, agripreneurial education, Personality traits, and agripreneurial intention.

As an outcome, the gender of the respondents was equally distributed, and the majority of the respondents were undergraduates aged 21 to 25. Meanwhile, most respondents came from families engaged in agriculture; there was also a significant representation of non-agricultural occupations, indicating a potential shift away from traditional agrarian livelihoods. Approximately half of the respondents were aware of agripreneurship schemes and subsidies, highlighting the importance of understanding awareness levels among the target population.

Previous studies revealed a complex relationship between gender and entrepreneurial intentions. Because, some studies find that women generally have lower entrepreneurial intentions than men [25,26], others suggest that the formation of these intentions is similar across genders [26], which coincides with our finding that both men and women have similar agripreneurial intention. This finding implies that, in the context of the agricultural student population investigated in this study, gender had no significant impact on their tendency to engage in agripreneurship. suggesting that agripreneurship education may provide an inclusive environment that equally promotes both men and women [31]. Furthermore, Due to changing social norms, equal chances, and the increasing

Table 2
Correlation analysis.^a

	ATA	SN	PBC	AE	PT	AI
ATA	1	.289 ^a .000	.611 ^a .000	.327 ^a .000	.540 ^a .000	.726 ^a .000
SN		1	.482 ^a .000	.277 ^a .000	.253 ^a .000	.400 ^a .000
PBC			1	.317 ^a .000	.526 ^a .000	.676 ^a .000
AE				1	.339 ^a .000	.334 ^a .000
PT					1	.635 ^a .000
AI						1

^a Correlation is significant at the 0.01 level (2-tailed).

Table 3Independent Sample *t*-test for gender, land holding, and major occupation difference in agripreneurship intention.

Variable	Categories	N	M	SD	<i>t</i> (df = 208)	<i>p</i>
Gender	Male	106	19.21	3.66	1.481	.974
	Female	104	18.36	3.72		
Land holding	Yes	144	19.31	3.51	3.085	.819
	No	66	17.65	3.90		
Major Occupation	Agriculture and allied	94	18.91	3.36	.420	.073
	Non- Agriculture	116	18.69	3.98		

Table 4

ANOVA test for nativity, course of study and family background differences in agripreneurship intention.

Variable	Categories	N	M	SD	<i>F</i>	<i>p</i>
Nativity	Rural	104	19.28	3.42	1.912	.150
	Urban	56	18.17	3.92		
	Semi Urban	50	18.46	3.95		
Course of Study	UG	147	18.98	3.42	.269	.764
	PG	39	18.48	4.00		
	M.Phil.	24	18.54	4.88		
Family background	Farming	70	18.90	3.62	.740	.565
	Business	24	19.37	3.35		
	Farming and business	19	19.47	3.35		
	Solarised job	76	18.26	4.08		
	Others	21	19.09	3.26		

Table 5

Multiple linear regression Model summary.

	Std. Error	Beta	<i>t</i>	Sig.
Constant	1.450		−3.029	.003
Agripreneurship Attitude	.067	.408	7.496	.000
Subjective Norms	.048	.098	2.106	.036
Perceived Behavioural Control	.052	.240	4.129	.000
Agripreneurship Education	.063	.009	.193	.847
Personality Traits	.064	.261	5.116	.000

R-Square = 0.666 Adjusted R-Square = 0.658.

availability of resources for both men and women, gender may not have a substantial impact on agripreneurial intention. In addition, several nations have regulations that explicitly encourage women in agriculture, which helps to rectify historical inequalities [32]. However, these findings may be influenced by specific educational or cultural contexts, as gender disparities in entrepreneurial propensities may persist in different settings. Future research could examine how contextual factors such as resources, mentorship, and cultural norms influence gender-related intentions.

Our findings show that the agripreneurial intention is not affected by the land ownership in their family. It contradicts with the previous study, which shows that land ownership significantly predicts agripreneurial intentions among agriculture students [33]. Access to land, along with perceived social norms, psychological capital, gender, education level, and location, plays a crucial role in shaping youth agripreneurial intentions [29].

Modern agripreneurs tend to value innovation, resourcefulness, and market prospects over mere land area. Today's agripreneurs can use technology, such as precision agriculture, to increase output on smaller plots. This availability to technological solutions enables even people with limited land to experiment with profitable and effective agriculture practices [34]. Furthermore, different agribusiness alternatives such as organic farming, agritourism, and value-added products can demand more innovation and market knowledge than big tracts of land. Governments and commercial organizations also offer financing and training to small-scale farmers, lowering financial risk and boosting entrepreneurial efforts [35].

Family occupational background significantly impacts entrepreneurial orientation, with business family students showing stronger preferences for autonomy and risk-taking than those from agricultural backgrounds. However [36], found that family background did not significantly affect agripreneurial intentions among agricultural students, which coincides with our finding that family background did not affect agripreneurship intention. Considering the significant difference in the nativity, our findings revealed no difference in agripreneurial intention of students based on their nativity. Both rural and urban students have the same level of intention.

Nowadays, many young people prioritise their interests and talents over traditional family occupations, which reduces the influence of family background on career decisions. A changing perception of agriculture promotes its image as a potential commercial enterprise rather than a low-status, labor-intensive industry. Furthermore, access to education and professional development has opened up chances for agripreneurship [37]. Meanwhile, government and institutional support for agripreneurs, such as grants,

training, and incentives, encourages people of all backgrounds to pursue careers in agriculture [38]. Thus, while a family's agricultural experience may provide some early exposure, factors such as education, economic potential, and support systems are now more significant in fostering agripreneurial intentions, making family background less influential in this career path.

Meanwhile, our findings revealed that the course of study (Undergraduate, postgraduate, M.Phil) did not affect the intention to pursue agripreneurship. This contradicts the previous study, which indicates that most undergraduate agriculture students have moderate to low entrepreneurial intention levels [24]. Institutional factors, particularly the structure of agricultural studies programs, play a crucial role in shaping agripreneurial intentions [39]. To foster agripreneurship, it is recommended that agricultural colleges integrate entrepreneurship education into their curricula and introduce entrepreneurial ideas to motivate students [40]. These findings highlight the importance of educational institutions in cultivating entrepreneurial mindsets among agricultural students and supporting their transition from "job seekers" to "job givers" in the agricultural sector.

Attitude towards agripreneurship has a significant impact on the extent of an effect they have on agripreneurship (Miriti, 2020). Students' intention to engage in entrepreneurship is more likely when they have a positive mindset (Ambad & Damit, 2016). Studies have frequently discovered a positive correlation between attitudes towards agripreneurship and intention to pursue agricultural entrepreneurial activities (Al-Jubari, Mosbah, Talib, & Azman, 2019; Tun Hamiruzzaman, Ahmad, & Ayob, 2020). Which coincides with our result that the attitude toward agripreneurship has a positive effect on the intention toward agripreneurship. Accordingly, cultivating positive attitudes through instruction, training, or exposure to successful role models can boost resilience, encourage creativity, and boost self-confidence, all of which increase the likelihood of starting a business [41].

The manner in which proactivity, risk-taking, and self-confidence influence entrepreneurial behaviour elucidates the positive correlation between personality traits and agripreneurial intention [42,43]. Which coincides with our finding that personality traits significantly influence entrepreneurial intention. For instance, an individual exhibiting proactive tendencies is more inclined to identify opportunities and initiate the establishment of an agribusiness venture. In agricultural enterprises, risk-taking fosters a willingness to embrace uncertainty, while self-confidence enhances one's capacity to maintain a positive outlook in the face of adversity. Collectively, these attributes augment agribusiness intention by motivating individuals to actualise their concepts.

Students' likelihood of becoming agripreneurs is determined by their perception of the simplicity and feasibility of entrepreneurship and the support they receive from various sources, such as parents, relatives, and friends [44]. An optimistic attitude toward the availability of necessary resources encourages students to engage in agripreneurship [45]. This coincides with our finding that perceived behavioural control positively affects the intention toward agripreneurship. The people's judgements of the ease or difficulty of doing a specific behaviour, which are frequently influenced by their previous experiences overcoming hurdles [46]. A strong PBC encourages individuals to take the initiative in solving challenges such as market volatility or financial access. This insight emphasises the importance of cures that increase perceived control, such training, mentorship, and resource access, in order to boost entrepreneurial desires [47].

In addition, our study shows that agripreneurship education positively affects the intention toward agripreneurship. It is similar to the finding that the agribusiness programme positively affected students' attitudes and intentions [48]. Previous studies have also highlighted the role of institutional factors in shaping these intentions, such as the design of agricultural studies programs further emphasized the importance of early exposure to agri-food education and agripreneurship in cultivating interest and entrepreneurial spirit in agriculture [39,49]. Studies also indicate that exposure to entrepreneurship courses and having self-employed parents positively influence students' entrepreneurial intentions [40]. Through agripreneurial education, students acquire practical knowledge of agricultural opportunities, business management, and innovation, thereby increasing their confidence and preparedness to pursue agripreneurship. This educational approach fosters favourable perceptions of agribusiness and encourages individuals to act upon their entrepreneurial aspirations [18,50].

This study reveals that subjective norms positively affect the intention toward agripreneurship. Similar to this previous study, The motivation to pursue agribusiness is influenced by social variables such as family, peers, and the community, as evidenced by the positive correlation between subjective norms and agricultural intention [29]. Social pressure has an essential effect on individuals' behaviour, with students indicating higher confidence in pursuing entrepreneurship when strongly supported by family and relatives and also it helps to mitigate perceived risk and validates agricultural aspirations [51]. As a result, students frequently seek assistance and support from their peers, and the viewpoints of those around them may impact their decision to pursue entrepreneurial ventures [52–54]. Furthermore, peer networks provide social support structures that enable individuals to share experiences, collaborate in learning processes, and reinforce positive subjective norms—all of which are crucial factors in enhancing entrepreneurial intention.

The previous studies have explored agripreneurial intentions among students using the Theory of Planned Behavior. Attitudes towards agripreneurship, subjective norms, and perceived behavioural control significantly influenced agripreneurial intentions [28, 55,56]. Our findings showed similar results that the agripreneurial intention had been positively influenced by the attitude towards agripreneurship, social norms, perceived behaviour control, and personality traits. Formal agripreneurship education appears to have minimal influence on outcomes. A curriculum that focuses primarily on theory rather than practical skills may fail to engage students, while traditional lecture-based teaching methods may not foster entrepreneurial mindsets [57]. Additionally, if the curriculum does not reflect current market trends, technological advancements, and the evolving agricultural sector, students may not view agripreneurship as a viable option. Finally, insufficient institutional support, such as mentorship and funding, could discourage students from pursuing agripreneurship [58]. These findings highlight the importance of tailoring agripreneurial education to enhance students' attitudes, perceived behavioural control, and acceptance of agribusiness [28].

4.1. Limitations

This study's self-reported data came from a convenience sample of agricultural students and may only partially reflect the total population. Future research could consider employing a more diverse sampling method, such as stratified or random sampling across various regions and institutions, to improve representativeness and reduce selection bias. In addition, the cross-sectional design makes it impossible to determine causality, and the survey's dispersion across regions may fail to account for regional variation. Although there was good internal consistency among the variables, the study needed to examine the long-term impact of agribusiness education. Future studies should include longitudinal methodologies and diverse samples to improve generalisability. Initiatives promoting agri-entrepreneurship can be strengthened by understanding specific regional challenges and institutional support, enabling them to be more precisely tuned to meet the entrepreneurial desires of agricultural students under various circumstances.

4.2. Implications

These findings emphasise the importance of a comprehensive strategy to promote entrepreneurship among Indian agricultural students. Educational institutions should prioritise improving students' attitudes towards agribusiness, subjective norms, perceived behavioural control, and personality traits, as they all strongly predict entrepreneurial inclinations. Policies should prioritise the integration of complete agripreneurship education that emphasises practical experience and mentorship, despite its limited direct influence on intents. Furthermore, government activities should focus on developing supportive environments, providing resources, and cultivating community support to boost student confidence in studying agriculture. These findings underscore the importance of integrating entrepreneurship education into agricultural curricula and developing multidisciplinary, quality agripreneurship programs that go beyond theory-based learning to enhance student's knowledge, technical skills, and attributes necessary for successful agribusiness careers and implementing targeted programs to encourage youth participation in agriculture, addressing issues such as food security, youth unemployment, and the ageing farmer population [36,40] Universities and policymakers can use these insights to promote agripreneurship among students and contribute to economic development [55].

5. Conclusion

The study explored the factors affecting the intention of agriculture college students in India to become agripreneurs. It analysed various variables such as attitudes, social norms, perceived control, education, and personality traits. Demographic analysis showed diverse backgrounds among participants, but certain factors like gender and family background didn't significantly influence agripreneurship intention. Instead, attitudes, social norms, perceived control, and personality traits emerged as significant predictors. Positive attitudes, supportive social networks, and confidence were crucial for fostering entrepreneurial intentions. Surprisingly, formal agripreneurship education had limited impact, suggesting the need for further exploration into educational effectiveness. Overall, the study provides insights for policymakers and educators to promote entrepreneurship in agriculture, emphasizing the importance of addressing complex dynamics to unlock its full potential for economic growth and sustainable development.

CRediT authorship contribution statement

Amaran K: Investigation, Conceptualization. **Anbu Krishnamoorthy:** Supervision, Methodology. **Palanisamy Shobana:** Writing – review & editing, Software, Data curation.

Data and code availability statement

Data will be made available on request. For requesting data, please write to the corresponding author.

Ethics statement

We affirm our commitment to ethical research practices throughout the entire process of this study. This includes ensuring voluntary participation, maintaining confidentiality of participants' information, obtaining informed consent, and conducting the research with integrity and respect for the dignity of all involved. Furthermore, we recognize the importance of transparency and accuracy in reporting our findings, adhering to ethical guidelines set forth by institutional review boards and professional associations. Our aim is to contribute meaningful insights to the field of agripreneurship while upholding the highest standards of ethical conduct.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.heliyon.2025.e42163>.

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