ISSN | JSAFS

Journal of Sustainable Agriculture and Food Systems
Vol. 1, No. 1, 2026, pp. 21–31

DETERMINANTS OF YOUTH INTENTION TO ENTER FARMING: THE ROLES OF DIGITAL AGRICULTURAL LITERACY, PERCEIVED ECONOMIC ATTRACTIVENESS, AND INSTITUTIONAL SUPPORT IN SRAGEN REGENCY, CENTRAL JAVA

[1]Farida Arinie Soelistianto, [2]Eddy Silamat
[1]Politeknik Negeri Malang, [2]Universitas Pat Petulai

ARTICLE INFO

Article history

Received: [October, 2026]
Revised: [October, 2026]
Accepted: [October, 2026]
Available Online: [31 October, 2026]

Keywords

Agricultural Career Intentions; Digital Agricultural Literacy; Perceived Economic Attractiveness; Institutional Support; Agricultural Workforce Regeneration

DOI

***Corresponding* Author:**

Name: Farida Arinie Soelistianto
Institution Address: Politeknik Negeri Malang
e-mail: farida.arinie@polinema.ac.id

ABSTRACT

Agricultural workforce regeneration remains a significant challenge in Indonesia as younger generations increasingly pursue employment opportunities outside the agricultural sector. This study aims to examine the relationships between digital agricultural literacy, perceived economic attractiveness, institutional support, and young people's intentions to pursue agriculture in Sragen Regency, Central Java. A quantitative approach with an explanatory research design was employed, involving 85 respondents selected from young people residing in Sragen Regency. Primary data were collected through structured questionnaires using a five-point Likert scale and analyzed using multiple linear regression with IBM SPSS Statistics version 25. The findings reveal that digital agricultural literacy, perceived economic attractiveness, and institutional support have positive and statistically significant relationships with agricultural career intentions. Perceived economic attractiveness emerged as the strongest predictor, indicating the importance of financial prospects in shaping young people's agricultural career preferences. The regression model was statistically significant ($F = 23.140$, $p < 0.001$), explaining 46.1% of the variation in agricultural career intentions ($R^2 = 0.461$). These findings highlight the importance of integrating digital competency development, economically attractive agricultural opportunities, and accessible institutional assistance to encourage youth engagement in agriculture. The study contributes empirical evidence to understanding agricultural workforce regeneration and provides practical insights for developing targeted agricultural policies and youth entrepreneurship programs.

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A. INTRODUCTION

Agriculture plays a vital role in food security, rural employment, and sustainable economic development. However, agricultural workforce regeneration remains a challenge as younger generations increasingly pursue careers outside the sector. The Food and Agriculture Organization (FAO, 2022) highlights that youth participation in agriculture is constrained by limited access to productive resources, financing, and institutional support. In Indonesia, the 2023 Agricultural Census recorded approximately 6.18 million farmers aged 19–39 years, accounting for only 21.93% of the country's farmers (BPS, 2023). This situation is particularly relevant in Sragen Regency, Central Java,

where agriculture remains economically significant despite increasing competition from manufacturing and trade. In 2025, agriculture, forestry, and fisheries contributed 11.47% of Sragen's gross regional domestic product, compared with 36.66% from manufacturing and 20.01% from trade, while paddy production reached approximately 690,388 tons (BPS, 2026). These conditions underscore the importance of understanding the factors influencing young people's intentions to pursue agricultural careers.

Digital agricultural literacy represents a potential determinant of youth participation in agriculture. The integration of digital technologies into agricultural production, marketing, and information management has created opportunities for more innovative and entrepreneurial farming practices. Klerkx et al., (2019) emphasize that agricultural digitalization requires technological competencies, effective knowledge systems, and supportive institutional arrangements. Young people with stronger digital agricultural literacy may perceive agriculture as a modern and viable career, particularly through access to market information, digital platforms, and technology-based business opportunities. Nevertheless, familiarity with digital technologies does not necessarily translate into practical agricultural competencies, making it important to examine their relationship with agricultural career intentions.

Perceived economic attractiveness and institutional support are equally important considerations in agricultural career decisions. Young people tend to evaluate agricultural employment based on expected income, profitability, financial stability, and entrepreneurial opportunities. Uncertainty surrounding commodity prices, production costs, and market accessibility may reduce agriculture's perceived economic appeal. FAO (2022) emphasizes that decent employment opportunities and access to productive resources are essential for encouraging youth participation. Meanwhile, institutional support through agricultural training, technical assistance, financing, and entrepreneurship programs can reduce barriers to entering the sector. However, the effectiveness of such support depends on its accessibility and relevance to younger generations. Therefore, both economic perceptions and institutional conditions may influence young people's willingness to pursue agricultural careers.

The relationships among digital agricultural literacy, perceived economic attractiveness, institutional support, and agricultural career intentions can be explained through the Theory of Planned Behavior (TPB) developed by Ajzen (1991). According to this theory, behavioral intentions are shaped by attitudes, subjective norms, and perceived behavioral control. Perceived economic attractiveness may contribute to favorable attitudes toward agricultural careers, while digital agricultural literacy and institutional support may strengthen perceived behavioral control. Although previous studies have examined agricultural digitalization and technological competencies (Klerkx et al., 2019) emphasized economic opportunities and institutional assistance in youth agricultural participation (FAO, 2022), empirical evidence integrating these three determinants within a single analytical framework remains limited, particularly in Sragen Regency. This research gap highlights the need to investigate how technological, economic, and institutional factors jointly relate to agricultural career intentions.

Accordingly, this study aims to examine the individual and simultaneous relationships of digital agricultural literacy, perceived economic attractiveness, and institutional support with young people's intentions to pursue agriculture in Sragen Regency, Central Java. By integrating technological, economic, and institutional perspectives within the TPB framework, the study seeks to provide empirical evidence on the factors associated with agricultural career choices among younger generations. The findings are expected to contribute to the literature on agricultural workforce regeneration and provide practical insights for local governments, educational institutions, and agricultural development stakeholders in designing strategies to strengthen youth engagement and support sustainable agricultural development.

B. LITERATURE REVIEW

1. Theoretical Foundation: Theory of Planned Behavior

The Theory of Planned Behavior (TPB), developed by Ajzen (1991), explains behavioral intentions through three key components: attitudes, subjective norms, and perceived behavioral control. In agricultural career decisions, perceived economic attractiveness shapes young people's attitudes toward farming, while digital agricultural literacy

strengthens their technological competencies and perceived ability to engage in agricultural activities. Institutional support further enhances perceived behavioral control by facilitating access to training, financing, and productive resources (Amalia et al., 2020; Rizkiatami et al., 2022). However, technological capabilities alone may not encourage agricultural participation when economic prospects are unfavorable or institutional assistance is limited. Accordingly, this study applies TPB as a theoretical foundation for examining how digital agricultural literacy, perceived economic attractiveness, and institutional support contribute to young people's intentions to pursue agricultural careers.

2. Young People's Intentions to Pursue Agriculture

Agricultural career intention refers to young people's willingness, motivation, and commitment to pursue agriculture as a future occupation or entrepreneurial activity. According to Ajzen (1991), behavioral intention reflects an individual's readiness to engage in a particular activity before actual participation. Agricultural career intentions are shaped by personal aspirations, economic opportunities, and structural conditions. Sumberg et al. (2012) emphasize the influence of rural economic transformations and changing employment opportunities, while Bezu and Holden (2014) identify limited access to agricultural land as a significant barrier to youth participation. Similarly, HLPE (2021) highlights the importance of employment prospects, access to knowledge, and productive resources in encouraging youth engagement in agriculture. In this study, agricultural career intention serves as the dependent variable, measured through interest in agricultural careers, willingness to participate in farming activities, intention to establish agribusiness enterprises, and commitment to future agricultural employment.

3. Digital Agricultural Literacy

Digital agricultural literacy refers to individuals' ability to access, evaluate, and utilize digital technologies and information to support agricultural production, marketing, and business decisions. Klerkx et al. (2019) emphasize that agricultural digitalization involves technological, organizational, and social transformations requiring adequate competencies and institutional support. Similarly, Rotz et al. (2019) highlight how digital technologies reshape agricultural employment opportunities, although their benefits depend on accessibility and socioeconomic conditions. From the Theory of Planned Behavior perspective, digital agricultural literacy may strengthen perceived behavioral control by increasing young people's confidence in managing technology-based agricultural activities (Gao et al., 2024; Wei et al., 2025). In this study, digital agricultural literacy is measured through access to digital agricultural information, evaluation of online knowledge, understanding of agricultural technologies, and utilization of digital platforms for business opportunities, which are expected to positively contribute to agricultural career intentions.

4. Perceived Economic Attractiveness

Perceived economic attractiveness refers to young people's evaluations of the income potential, profitability, financial stability, and entrepreneurial opportunities associated with agricultural careers. Bezu and Holden (2014) highlight that limited access to land and productive resources influences agricultural livelihood choices, while Sumberg et al. (2012) emphasize the importance of changing economic opportunities in shaping youth participation. According to Ajzen (1991), favorable economic expectations may strengthen positive attitudes toward agricultural employment and encourage career intentions. Similarly, HLPE (2021) and CFS (2022) emphasize the importance of decent employment, economic opportunities, and access to productive resources in promoting youth engagement. In this study, perceived economic attractiveness is measured through income potential, anticipated profitability, entrepreneurial opportunities, economic stability, and long-term career prospects, which are expected to positively influence young people's intentions to pursue agriculture.

5. Institutional Support

Institutional support refers to the assistance and resources provided by government agencies, educational institutions, financial organizations, and agricultural associations to facilitate youth participation in agriculture. CFS (2022) emphasizes that institutional coordination improves access to knowledge, financing, and employment opportunities, while HLPE (2021) highlights structural and institutional barriers affecting young people's agricultural engagement. From the Theory of Planned Behavior perspective, institutional support may strengthen perceived

behavioral control by reducing financial, technical, and managerial constraints. However, its effectiveness depends on the accessibility, relevance, and continuity of institutional programs. In this study, institutional support is measured through access to agricultural training, technical assistance, financing opportunities, entrepreneurship programs, and market information, which are expected to positively influence young people's intentions to pursue agricultural careers.

6. Hypothesis Development

6.1 Digital Agricultural Literacy and Young People's Intentions to Pursue Agriculture

Digital agricultural literacy is expected to positively influence young people's agricultural career intentions by enhancing technological competencies and confidence in modern farming practices. Klerkx et al. (2019) emphasize that agricultural digitalization transforms knowledge systems, technological capabilities, and agricultural organization, while Rotz et al. (2019) highlight its implications for agricultural employment and rural communities. Within the Theory of Planned Behavior framework, stronger digital literacy may enhance perceived behavioral control by enabling young people to access agricultural information, utilize digital technologies, and identify business opportunities. These capabilities can reduce uncertainty and strengthen perceptions of agriculture as an innovative and viable career pathway. Therefore, digital agricultural literacy is hypothesized to have a positive and significant influence on young people's intentions to pursue agriculture.

H1: Digital agricultural literacy has a positive and significant influence on young people's intentions to pursue agriculture in Sragen Regency, Central Java.

6.2 Perceived Economic Attractiveness and Young People's Intentions to Pursue Agriculture

Perceived economic attractiveness is expected to positively influence young people's agricultural career intentions by shaping their expectations of income, profitability, and entrepreneurial opportunities. Sumberg et al. (2012) emphasize that changing economic opportunities influence youth agricultural participation, while Bezu and Holden (2014) highlight how structural constraints affect agricultural livelihood choices. Within the Theory of Planned Behavior framework, favorable economic expectations may strengthen positive attitudes toward agricultural careers, whereas income instability and limited profitability may discourage participation. Similarly, CFS (2022) emphasizes the importance of providing economically rewarding agricultural opportunities for younger generations. Therefore, perceived economic attractiveness is hypothesized to have a positive and significant influence on young people's intentions to pursue agriculture.

H2: Perceived economic attractiveness has a positive and significant influence on young people's intentions to pursue agriculture in Sragen Regency, Central Java.

6.3 Institutional Support and Young People's Intentions to Pursue Agriculture

Institutional support is expected to positively influence young people's agricultural career intentions by improving access to resources, training, financing, and entrepreneurship opportunities. HLPE (2021) emphasizes that access to productive resources, agricultural knowledge, and supportive employment conditions is essential for encouraging youth participation, while CFS (2022) highlights the importance of institutional coordination in reducing barriers to agricultural engagement. Within the Theory of Planned Behavior framework, institutional support may strengthen perceived behavioral control by increasing young people's confidence in overcoming financial, technical, and managerial challenges. Conversely, limited institutional assistance may discourage agricultural participation. Therefore, institutional support is hypothesized to have a positive and significant influence on young people's intentions to pursue agriculture.

H3: Institutional support has a positive and significant influence on young people's intentions to pursue agriculture in Sragen Regency, Central Java.

6.4 Digital Agricultural Literacy, Perceived Economic Attractiveness, Institutional Support, and Young People's Intentions to Pursue Agriculture

Digital agricultural literacy, perceived economic attractiveness, and institutional support are expected to jointly influence young people's agricultural career intentions through complementary technological, economic, and institutional factors. Digital literacy enhances agricultural competencies, economic attractiveness strengthens perceptions of financial opportunities, and institutional support facilitates access to resources, training, and entrepreneurship assistance. According to the Theory of Planned Behavior, behavioral intentions are shaped by multiple psychological and contextual factors (Ajzen, 1991). Similarly, HLPE (2021) emphasizes the interconnected importance of knowledge, economic opportunities, productive resources, and institutional conditions in promoting youth agricultural participation. Therefore, these three variables are hypothesized to have a simultaneous and significant influence on young people's intentions to pursue agriculture.

H4: Digital agricultural literacy, perceived economic attractiveness, and institutional support simultaneously have a significant influence on young people's intentions to pursue agriculture in Sragen Regency, Central Java.

C. RESEARCH METHODS

This study employed a quantitative approach with an explanatory research design to examine the relationships between digital agricultural literacy (X1), perceived economic attractiveness (X2), institutional support (X3), and young people's intentions to pursue agriculture (Y). A cross-sectional survey was conducted in Sragen Regency, Central Java, Indonesia, involving 85 young respondents considered potential participants in agricultural employment or entrepreneurship. Sragen was selected because of its significant agricultural activities and increasing employment opportunities in nonagricultural sectors. Primary data were collected through a structured questionnaire using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Respondent participation was voluntary, and the collected data reflected their perceptions of agricultural technologies, economic opportunities, institutional assistance, and future agricultural careers.

The research variables were measured using indicators developed from the theoretical framework. Digital agricultural literacy was assessed through access to digital agricultural information, understanding of agricultural technologies, evaluation of digital information, and utilization of digital platforms. Perceived economic attractiveness was measured through income potential, profitability, economic stability, entrepreneurial opportunities, and long-term economic prospects. Institutional support was evaluated through access to agricultural training, technical assistance, financing, entrepreneurship programs, and market information. Meanwhile, agricultural career intentions were measured through interest in agricultural careers, willingness to participate in agricultural activities, entrepreneurial intentions, and commitment to future agricultural employment. Data were analyzed using IBM SPSS Statistics version 25. Instrument validity was assessed using corrected item-total correlations exceeding 0.30, while reliability was evaluated using Cronbach's alpha with a minimum acceptable value of 0.70.

Data analysis included descriptive statistics, classical assumption tests, multiple linear regression, and hypothesis testing. Normality was examined using the Shapiro–Wilk test, multicollinearity through tolerance and variance inflation factor (VIF), and heteroscedasticity through residual diagnostics and the Glejser test, while linearity was assessed using scatterplots. Multiple linear regression was employed to evaluate the individual and simultaneous relationships between the independent variables and agricultural career intentions using the model. Partial t-tests were conducted to evaluate individual hypotheses (H1–H3), while the F-test assessed the simultaneous contribution of the three predictors (H4), using a significance level of 0.05. The adjusted coefficient of determination (adjusted R^2) was used to assess the model's explanatory power. Given the cross-sectional design, the findings were interpreted as statistical associations rather than definitive causal relationships.

D. RESULTS AND DISCUSSION

1. Descriptive Statistical Analysis

Descriptive statistical analysis was conducted to examine the distribution of scores across the four research variables, namely digital agricultural literacy, perceived economic attractiveness, institutional support, and young people's intentions to pursue agriculture.

Table 1. Descriptive Statistics of Research Variables

Variable	N	Mean	SD	Min.	Max.
Digital Agricultural Literacy (X1)	85	3.214	0.697	1.60	4.80
Perceived Economic Attractiveness (X2)	85	3.294	0.684	1.20	4.60
Institutional Support (X3)	85	3.256	0.596	1.80	4.60
Agricultural Career Intentions (Y)	85	3.431	0.639	1.60	4.60

Table 1 presents the descriptive statistics of 85 respondents across four research variables. Agricultural career intentions (Y) recorded the highest mean score (3.431; SD = 0.639), indicating relatively favorable intentions to pursue agricultural careers. Perceived economic attractiveness (X2) followed with a mean of 3.294 (SD = 0.684), while institutional support (X3) recorded a mean of 3.256 (SD = 0.596). Digital agricultural literacy (X1) exhibited the lowest mean score of 3.214 (SD = 0.697), suggesting comparatively lower perceptions of digital agricultural competencies. The observed scores ranged from 1.20 to 4.80 across the variables, reflecting differences in respondents' perceptions. Overall, the findings indicate moderately favorable assessments of agricultural career opportunities, with digital agricultural literacy showing the greatest variability and institutional support exhibiting the most consistent responses.

2. Instrument Validity and Reliability

Instrument assessment was performed to evaluate the internal consistency and item-level validity of the measurement scales. Item validity was examined using corrected item-total correlations, with a coefficient greater than 0.30 adopted as the screening criterion. Reliability was assessed using Cronbach's alpha, with coefficients of at least 0.70 considered acceptable for internal consistency.

Table 2. Item Validity Test Results

Variable	Item	Corrected Item-Total Correlation	Decision
Digital Agricultural Literacy	X1.1	0.720	Acceptable
	X1.2	0.667	Acceptable
	X1.3	0.678	Acceptable
	X1.4	0.691	Acceptable
	X1.5	0.713	Acceptable
Perceived Economic Attractiveness	X2.1	0.648	Acceptable
	X2.2	0.640	Acceptable
	X2.3	0.688	Acceptable
	X2.4	0.738	Acceptable
	X2.5	0.686	Acceptable
Institutional Support	X3.1	0.618	Acceptable
	X3.2	0.657	Acceptable
	X3.3	0.652	Acceptable
	X3.4	0.519	Acceptable
	X3.5	0.583	Acceptable
Agricultural Career Intentions	Y.1	0.649	Acceptable
	Y.2	0.656	Acceptable
	Y.3	0.654	Acceptable
	Y.4	0.600	Acceptable
	Y.5	0.784	Acceptable

Table 2 presents the item validity test results for the four research variables using corrected item-total correlations. All 20 questionnaire items exceeded the minimum acceptance threshold of 0.30, indicating satisfactory item

discrimination. Digital agricultural literacy (X1) recorded correlation values ranging from 0.667 to 0.720, while perceived economic attractiveness (X2) ranged from 0.640 to 0.738. Institutional support (X3) exhibited values between 0.519 and 0.657, whereas agricultural career intentions (Y) ranged from 0.600 to 0.784. The highest correlation was observed for item Y.5 (0.784), while item X3.4 showed the lowest value (0.519). Overall, all measurement items met the established validity criterion and were retained for subsequent reliability testing and statistical analysis.

Table 3. Reliability Test Results

Variable	Number of Items	Cronbach's Alpha	Decision
Digital Agricultural Literacy (X1)	5	0.869	Reliable
Perceived Economic Attractiveness (X2)	5	0.861	Reliable
Institutional Support (X3)	5	0.815	Reliable
Agricultural Career Intentions (Y)	5	0.854	Reliable

Table 3 presents the reliability test results for the four research variables, each measured using five questionnaire items. All variables demonstrated satisfactory internal consistency, with Cronbach's alpha coefficients exceeding the minimum acceptable threshold of 0.70. Digital agricultural literacy (X1) recorded the highest reliability coefficient (0.869), followed by perceived economic attractiveness (X2) at 0.861, agricultural career intentions (Y) at 0.854, and institutional support (X3) at 0.815. These findings indicate that all measurement scales exhibit acceptable reliability, confirming their internal consistency and suitability for subsequent statistical analysis.

3. Classical Assumption Tests

Classical assumption tests were the diagnostic procedures included a residual normality test, multicollinearity assessment, and heteroscedasticity testing. Residual normality was evaluated using the Shapiro–Wilk test, multicollinearity was examined through tolerance and variance inflation factor (VIF) statistics, and heteroscedasticity was assessed using the Breusch–Pagan test. These diagnostics provide information regarding the suitability of the regression model for conventional statistical inference.

Table 4. Classical Assumption Test Results

Test	Indicator	Result	Interpretation
Normality	Shapiro–Wilk statistic	0.975	—
Normality	Shapiro–Wilk p-value	0.103	Normality not rejected
Multicollinearity (X1)	VIF	1.069	No concerning multicollinearity
Multicollinearity (X2)	VIF	1.110	No concerning multicollinearity
Multicollinearity (X3)	VIF	1.155	No concerning multicollinearity
Heteroscedasticity	Breusch–Pagan LM statistic	0.743	—
Heteroscedasticity	Breusch–Pagan p-value	0.863	No significant evidence of heteroscedasticity

Table 4 presents the classical assumption test results used to assess the suitability of the multiple linear regression model. The Shapiro–Wilk test produced a statistic of 0.975 with a p-value of 0.103 (> 0.05), indicating no significant deviation from residual normality. Multicollinearity testing showed variance inflation factor (VIF) values of 1.069 for digital agricultural literacy (X1), 1.110 for perceived economic attractiveness (X2), and 1.155 for institutional support (X3), all well below the threshold of 10, suggesting no concerning multicollinearity among the independent variables. Furthermore, the Breusch–Pagan test yielded an LM statistic of 0.743 with a p-value of 0.863 (> 0.05), indicating no statistically significant evidence of heteroscedasticity. Overall, the diagnostic results suggest that the regression model satisfies the assessed assumptions and is suitable for subsequent statistical inference.

4. Multiple Linear Regression Analysis

Multiple linear regression analysis was employed to examine the statistical relationships between digital agricultural literacy, perceived economic attractiveness, institutional support, and young people's intentions to pursue agriculture. Agricultural career intentions served as the dependent variable, while the three proposed determinants were entered simultaneously as independent variables.

Table 5. Multiple Linear Regression Results

Predictor	B	Std. Error	Beta	t	p-value
Constant	0.484	0.374	—	1.293	0.200
Digital Agricultural Literacy (X1)	0.159	0.077	0.174	2.062	0.042
Perceived Economic Attractiveness (X2)	0.442	0.080	0.473	5.510	<0.001
Institutional Support (X3)	0.300	0.094	0.280	3.196	0.002

Table 5 presents the multiple linear regression results examining the relationships between digital agricultural literacy, perceived economic attractiveness, institutional support, and agricultural career intentions. All three independent variables demonstrated positive and statistically significant associations with agricultural career intentions. Digital agricultural literacy (X1) showed a positive relationship (B = 0.159, β = 0.174, t = 2.062, p = 0.042), while perceived economic attractiveness (X2) exhibited the strongest standardized association (B = 0.442, β = 0.473, t = 5.510, p < 0.001). Institutional support (X3) also demonstrated a significant positive relationship (B = 0.300, β = 0.280, t = 3.196, p = 0.002). Meanwhile, the constant was not statistically significant (B = 0.484, p = 0.200). These findings indicate that perceived economic attractiveness is the strongest predictor of agricultural career intentions, followed by institutional support and digital agricultural literacy. Overall, the results support H1, H2, and H3, suggesting that technological competencies, economic perceptions, and institutional assistance are positively associated with young people's intentions to pursue agriculture.

5. Coefficient of Determination and Simultaneous Significance

The model summary results indicate that digital agricultural literacy, perceived economic attractiveness, and institutional support collectively demonstrate a moderately strong relationship with young people's agricultural career intentions, as reflected by the correlation coefficient (R = 0.679). The coefficient of determination (R^2 = 0.461) indicates that the three independent variables explain 46.1% of the variation in agricultural career intentions, while the remaining 53.9% is attributable to factors not included in the model and unexplained variation. The adjusted R^2 of 0.442 indicates that the model explains 44.2% of the variation after accounting for the number of predictors. Furthermore, the standard error of the estimate (0.477) reflects the residual variability in predicted agricultural career intention scores. Overall, these findings suggest that the regression model provides moderate explanatory power in understanding young people's intentions to pursue agricultural careers.

Table 6. Simultaneous Significance Test (F-Test)

Model	df	F-statistic	p-value	Interpretation
Regression	3	23.140	<0.001	Statistically significant
Residual	81	—	—	—
Total	84	—	—	—

Table 6 presents the simultaneous significance test results, indicating that digital agricultural literacy, perceived economic attractiveness, and institutional support jointly have a statistically significant relationship with young people's agricultural career intentions. The F-test yielded an F-statistic of 23.140 with degrees of freedom of 3 and 81 (F(3, 81) = 23.140, p < 0.001), demonstrating that the regression model is statistically significant at the 5% significance level. These findings indicate that the three independent variables collectively contribute to explaining variations in agricultural career intentions and that the model provides a significantly better fit than an intercept-only model. Therefore, the fourth hypothesis (H4) is supported, confirming the simultaneous statistical contribution of technological competencies, economic attractiveness, and institutional support to young people's intentions to pursue agricultural careers in Sragen Regency.

6. Discussion

The findings demonstrate that digital agricultural literacy has a positive and significant relationship with young people's intentions to pursue agriculture in Sragen Regency (β = 0.174, p = 0.042). This suggests that young individuals with stronger digital competencies are more likely to consider agriculture a viable career pathway. Digital literacy

facilitates access to agricultural information, technology-based production systems, and digital marketing opportunities, potentially increasing confidence in agricultural activities. These findings are consistent with Klerkx et al. (2019), who emphasize the importance of technological competencies and knowledge systems in agricultural digitalization. Similarly, Rotz et al. (2019) highlight the role of digital technologies in transforming agricultural employment and rural communities. From the Theory of Planned Behavior perspective, digital agricultural literacy may strengthen perceived behavioral control by improving individuals' confidence in their ability to engage in modern agricultural practices (Ajzen, 1991). However, its relatively smaller standardized coefficient compared with the other predictors suggests that technological knowledge alone may be insufficient to encourage agricultural career intentions without favorable economic prospects and institutional assistance.

Perceived economic attractiveness emerged as the strongest predictor of agricultural career intentions ($\beta = 0.473$, $p < 0.001$), indicating that financial considerations play a particularly important role in young people's willingness to enter the agricultural sector. The findings suggest that expectations regarding income potential, business profitability, financial independence, and long-term economic opportunities are strongly associated with agricultural career preferences. This result aligns with Sumberg et al. (2012), who emphasize the importance of changing economic opportunities in shaping youth agricultural participation. Bezu and Holden (2014) similarly highlight how structural constraints, particularly limited access to productive land, influence agricultural livelihood decisions. Furthermore, HLPE (2021) and CFS (2022) emphasize the importance of decent employment, productive resources, and sustainable economic opportunities in encouraging youth engagement in agrifood systems. Within the Theory of Planned Behavior framework, favorable economic expectations may strengthen positive attitudes toward agricultural careers (Ajzen, 1991). Therefore, improving the perceived profitability and economic viability of agricultural employment may be particularly relevant for encouraging agricultural workforce regeneration in Sragen Regency.

Institutional support also demonstrated a positive and significant relationship with agricultural career intentions ($\beta = 0.280$, $p = 0.002$), indicating that access to training, financial assistance, technical guidance, and entrepreneurship programs is associated with stronger willingness to pursue agricultural careers. This finding supports HLPE (2021), which identifies institutional and structural barriers as important constraints on youth participation in agrifood systems, and CFS (2022), which emphasizes institutional coordination and improved access to productive resources. Within the Theory of Planned Behavior framework, institutional assistance may strengthen perceived behavioral control by reducing perceived financial and technical barriers to agricultural participation (Ajzen, 1991). Furthermore, the simultaneous regression results ($F = 23.140$, $p < 0.001$) indicate that digital agricultural literacy, perceived economic attractiveness, and institutional support collectively explain significant variation in agricultural career intentions, with an adjusted R^2 of 0.442. These findings suggest that agricultural workforce regeneration strategies should integrate digital competency development, economically attractive agricultural opportunities, and accessible institutional assistance. Nevertheless, the unexplained variation of approximately 55.8% based on adjusted R^2 indicates that additional factors may contribute to agricultural career intentions. Given the cross-sectional research design, these findings should be interpreted as statistical associations rather than definitive causal relationships.

E. CONCLUSION

This study concludes that digital agricultural literacy, perceived economic attractiveness, and institutional support are positively and significantly associated with young people's intentions to pursue agricultural careers in Sragen Regency, Central Java. Among these factors, perceived economic attractiveness demonstrated the strongest relationship, indicating that expectations of income, profitability, and entrepreneurial opportunities are particularly important in shaping agricultural career intentions. Institutional support also plays a significant role by facilitating access to training, financing, and agricultural resources, while digital agricultural literacy contributes by strengthening technological competencies and confidence in modern farming practices. Collectively, the three variables explain 46.1% of the variation in agricultural career intentions, highlighting the importance of integrating technological, economic, and institutional perspectives in agricultural workforce regeneration strategies. These findings suggest that local governments and agricultural stakeholders should prioritize improving agricultural profitability, expanding accessible

institutional assistance, and strengthening digital agricultural education to encourage greater youth participation. However, the study is limited by its cross-sectional design, relatively small sample of 85 respondents, and geographical focus on Sragen Regency, which restrict causal interpretation and broader generalization. Future research should involve larger and more diverse samples, adopt longitudinal approaches, and examine additional factors such as family background, land accessibility, social influence, and entrepreneurial motivation to develop a more comprehensive understanding of youth agricultural career intentions.

REFERENCES

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Amalia, F. A., Sosianika, A., & Suhartanto, D. (2020). Indonesian Millennials' Halal food purchasing: merely a habit? *British Food Journal*, *122*(4), 1185–1198. https://doi.org/10.1108/BFJ-10-2019-0748

Badan Pusat Statistik. (2023). *Complete Enumeration Results of the 2023 Census of Agriculture – Edition 1*. https://www.bps.go.id/en/publication/2023/12/15/def0edfb13a6b16411ec8c80/complete-enumeration-results-of-the-2023-census-of-agriculture---edition-1.html?utm_source=chatgpt.com

Badan Pusat Statistik Kabupaten Sragen. (2026). *Kabupaten Sragen dalam Angka 2026*. https://sragenkab.bps.go.id/en/publication/2026/02/27/c7ccaffa6360af0e6eba677d/kabupaten-sragen-dalam-angka-2026.html?utm_source=chatgpt.com

Bezu, S., & Holden, S. (2014). Are rural youth in Ethiopia abandoning agriculture? *World Development*, *64*, 259–272. https://doi.org/10.1016/j.worlddev.2014.06.013

Food and Agriculture Organization of the United Nations (FAO). (2022). *Promoting Youth Engagement and Employment in Agriculture and Food Systems for Food Security and Nutrition*. https://www.fao.org/cfs/policy-products/voluntary-guidelines-and-policy-recommendations/promoting-youth-engagement-and-employment-in-agriculture-and-food-systems-for-food-security-and-nutrition?utm_source=chatgpt.com

Gao, F., Nketiah, E., & Shi, V. (2024). Understanding and Enhancing Food Conservation Behaviors and Operations. *Sustainability (Switzerland)* , *16*(7). https://doi.org/10.3390/su16072898

High Level Panel of Experts on Food Security and Nutrition (HLPE). (2021). *Promoting Youth Engagement and Employment in Agriculture and Food Systems*. Committee on World Food Security (CFS)

Klerkx, L., Jakku, E., & Labarthe, P. (2019). A review of social science on digital agriculture, smart farming and agriculture 4.0: New contributions and a future research agenda. *NJAS: Wageningen Journal of Life Sciences*, *90–91*, 100315. https://doi.org/10.1016/j.njas.2019.100315

Nutrition, H. L. P. of E. on F. S. and. (2021). *Promoting youth engagement and employment in agriculture and food systems*. Committee on World Food Security.

Rizkiatami, A., Masnita, Y., & Kurniawati. (2022). Embracing Sustainability in Purchase Behavior Using the Theory of Planned Behavior. *MIX: Jurnal Ilmiah Manajemen*, *18*(1), 31–43.

Rotz, S., Gravely, E., Mosby, I., Duncan, E., Finnis, E., Horgan, M., LeBlanc, J., Martin, R., Neufeld, H. T., Nixon, A., Pant, L., Shalla, V., & Fraser, E. (2019). Automated pastures and the digital divide: How agricultural technologies are shaping labour and rural communities. *Journal of Rural Studies*, *68*, 112–122. https://doi.org/10.1016/j.jrurstud.2019.01.023

Security, C. on W. F. (2022). *CFS policy recommendations on promoting youth engagement and employment in agriculture and food systems for food security and nutrition*. Food and Agriculture Organization of the United Nations. https://www.fao.org/cfs/policy-products/voluntary-guidelines-and-policy-recommendations/promoting-youth-engagement-and-employment-in-agriculture-and-food-systems-for-food-security-and-nutrition

Sumberg, J., Anyidoho, N. A., Leavy, J., te Lintelo, D. J. H., & Wellard, K. (2012). Introduction: The Young People and Agriculture "Problem" in Africa. *IDS Bulletin*, *43*(6), 1–8. https://doi.org/10.1111/j.1759-5436.2012.00374.x

Wei, W., Prasetyo, Y. T., Belmonte, Z. J. A., Cahigas, M. M. L., Nadlifatin, R., & Gumasing, M. J. J. (2025). Applying the technology acceptance model–Theory of planned behavior (TAM-TPB) model to study the acceptance of building information modeling (BIM) in green building in China. *Acta Psychologica*, *254*, 104790.