



Participation of Generation Z Farmers in Agricultural Regeneration in Indonesia: The Role of Internal Factors and Extension-Related Social Support

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HIGHLIGHTS

- Internal factors have a positive and significant effect on the participation of Generation Z farmers in agricultural regeneration ($\beta = 0.836$; $p = 0.027$).
- Extension-Related Social Support had a positive, but not significant, effect on the participation of Generation Z farmers in agricultural regeneration ($\beta = 0.069$; $p = 0.704$).
- The SEM model explained 74.5% of the variation in Generation Z farmers' participation in agricultural regeneration ($R^2 = 0.745$).
- Internal factors and extension-related social support showed a positive but nonsignificant relationship ($r = 0.360$; $p = 0.433$).

ARTICLE INFO

Keywords: Farmer regeneration, Generation Z, Internal factors, Social support related to extension, Social learning, Extension education.

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ABSTRACT

Farmer regeneration is a strategic issue for the sustainability of Indonesian agriculture, given the low participation of the younger generation in the sector. This study aims to analyze the relationships among internal factors, extension-related social support, and the participation of Generation Z farmers in agricultural regeneration. A survey of 160 Generation Z farmers in East Belitung Regency, selected through multistage random sampling was conducted during 2025. The data was analyzed using Structural Equation Modeling (SEM). The results showed that internal factors consisting of motivation, self-efficacy, and social learning were positively and significantly related to the participation of Generation Z farmers ($\beta = 0.836$; $p = 0.027$). In contrast, extension-related social support, represented by peers, community leaders, and the government, showed a positive but nonsignificant relationship ($\beta = 0.069$; $p = 0.704$). The structural model explained 74.5% of the variation in Generation Z farmers' participation ($R^2 = 0.745$), indicating high explanatory power. Generation Z's participation in agricultural regeneration is more closely related to individual psychological capacity and learning processes than to extension-related social support. The results imply that extension programs targeting the younger generation should be more focused on strengthening motivation, self-efficacy, and social learning through an approach aligned with Generation Z's characteristics.

INTRODUCTION

The farmer regeneration crisis is a global challenge that threatens the sustainability of food systems and agricultural development. In many countries, the increase in the age of farmers is not offset by the entry of younger generations into the agricultural sector,

thereby reducing the workforce's future sustainability (FAO, 2025). This condition is increasingly complex because the agricultural sector must compete with the industrial and service sectors, which offer more attractive career and income prospects for the younger generation. Agriculture is often perceived as a high-risk, low-profitability, and limited in career prospects (Pliakoura et al., 2023;

Salam. This situation makes farmer regeneration one of the strategic issues in extension education, as agricultural extension must increase the involvement of the younger generation through an approach that suits their characteristics (Mohanty et al., 2025; Singh et al., 2026).

Generation Z is a group with the potential to support agricultural regeneration, as it grows in a digital environment that encourages innovation, flexibility, and sustainable learning (Barhate & Dirani, 2021; Pichler et al., 2021). However, their involvement in agriculture is influenced not only by technological developments but also by psychological factors such as motivation, self-efficacy, and social learning, as well as support from the extension system. In this study, extension-related social support is defined as support received by farmers from peers, community leaders, and the government during the extension process. This support provides information, learning, and mentoring that can strengthen the participation of the younger generation. In line with the Agricultural Knowledge and Innovation Systems (AKIS) paradigm, extension no longer functions solely as a medium for technology transfer but also as a facilitator of learning, innovation, and the empowerment of farmers (Davis & Sulaiman, 2014; Tayang et al., 2023).

This study integrates the Theory of Planned Behavior (Ajzen, 1991), Social Cognitive Theory (Bandura, 1977), and Self-Determination Theory (Deci & Ryan, 2000) to explain the relationships among motivation, self-efficacy, social learning, extension-related social support, and participation among Generation Z farmers. Although various studies have shown that both internal and external factors influence the participation of the younger generation, most continue to examine these factors separately or focus on youth in general. The empirical evidence integrating these factors into a single Structural Equation Modeling (SEM) model, especially among Generation Z farmers, remains limited, so the relative contribution of each factor cannot be comprehensively explained.

East Belitung Regency was chosen as the research location because it is undergoing economic transformation driven by the development of the tourism, services, and mining sectors, which may reduce the younger generation's interest in agriculture (Ibrahim et al., 2020). This condition makes this area relevant to examine the factors that affect the participation of Generation Z farmers in agricultural regeneration. Based on these gaps, this study aims to analyze the relationships among internal factors, extension-related social support, and the participation of Generation Z farmers.

METHODOLOGY

This study uses a quantitative, explanatory, cross-sectional survey to analyze the relationships among internal factors, extension-related social support, and the participation of Generation Z farmers in agricultural regeneration. This approach was chosen because it allows testing relationships between latent variables simultaneously using Structural Equation Modeling (SEM) (Creswell & Creswell, 2018). The research was carried out in East Belitung Regency, Bangka Belitung Islands Province, Indonesia, which was purposively selected because it is an agricultural area undergoing economic transformation driven by the development of the mining, tourism, and service sectors.

The study population comprises Generation Z farmers, conceptually aged 15-29 years (Peredy et al., 2024). However, all respondents who participated in the study were aged 18-29 years. The sampling frame uses a database of Generation Z farmers managed by the East Belitung Regency Agriculture and Food Office. The sample was selected using multistage random sampling, namely the determination of the research location purposively, the selection of seven sub-districts based on agricultural potential, the selection of villages based on the area of agricultural land and the number of active farmers, and then the selection of random respondents based on the list of Generation Z farmers in each village (Pranoto et al., 2025). A total of 160 respondents were interviewed. After checking data completeness, missing data, and multivariate outliers using the Mahalanobis distance, 25 data points were removed, leaving 135 respondents for analysis.

Data collection was carried out from October to December 2025 through direct interviews using structured questionnaires in Indonesian. All respondents received an explanation of the research's purpose and provided informed consent before the interview. The instrument was developed through a literature review, adapting validated instruments from previous research and modifying them to reflect the characteristics of Generation Z farmers and the context of agricultural regeneration in East Belitung Regency. The instrument measures three latent constructs: internal factors (60 items) comprising motivation, self-efficacy, and social learning. Furthermore, the Extension-related social support construct (54 items) includes the role of peers, the role of community leaders, and the role of the government, and the participation of Generation Z farmers (18 items) including respect for the farmer's profession, the responsibility to continue the profession, and the freedom to choose a profession, using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree).

Data analysis was conducted using IBM SPSS Statistics version 23 and IBM SPSS AMOS version 22. Descriptive statistics are used to describe the characteristics of respondents. The measurement model was evaluated through Standardized Loading Factor (SLF), Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE). Furthermore, structural models were evaluated using a set of goodness-of-fit indices, including Chi-square, CMIN/DF, CFI, TLI, GFI, AGFI, and RMSEA. The relationship between variables was analyzed using standardized path coefficients at the 95% significance level (Hair et al., 2019; Sarstedt et al., 2017).

RESULTS

Data analysis was conducted on 135 Generation Z farmer respondents who met the criteria. Before analysis, all statement items have been tested for validity and reliability. The results of the validity test showed that all items had a correlation coefficient (r -calculus) ranging from 0.414 to 0.857, exceeding the r -table value of 0.155, indicating that all items were valid. Furthermore, the reliability test results showed that Cronbach's alpha ranged from 0.827 to 0.987, all of which exceeded the minimum limit of 0.70, indicating that the research instrument was reliable and suitable for use in Structural Equation Modeling (SEM) analysis.

Table 1. Descriptive summary and achievement categories of study variables

Variable / Dimension	Achievement (%)	Category
Motivation (X_2)	73	High
Self-Efficacy (X_3)	66	High
Social Learning (X_4)	72	High
Role of Peers (X_6)	54	Moderate
Role of Community Leaders (X_7)	50	Moderate
Role of Government (X_8)	51	Moderate
Appreciation for the farmer's profession (Y_1)	70	High
Responsibility to continue the profession (Y_2)	68	High
Freedom of choice of profession (Y_3)	69	High

Note: 1) Codes X_1 and X_5 are eliminated because they have a < loading factor of 0.50 so that the indicator code is maintained; 2) The percentage of achievement obtained is classified into five categories using the same interval, namely Very Low (0–20%), Low (21–40%), Medium (41–60%), High (61–80%), and Very High (81–100%).

Based on the descriptive analysis in Table 1, internal factors show a higher level of achievement than extension-related social support. Motivation (73%) and social learning (72%) were in the high category, while self-efficacy reached 66%. These findings show that the participation of Generation Z farmers in agriculture is driven more by positive perceptions of agriculture, motivation to farm, confidence in self-worth, and social learning processes gained through interactions and learning experiences.

On the other hand, the extension-related social support variable showed relatively lower achievement. The roles of peers, community leaders, and the government achieved 54%, 50%, and 51%, respectively, all in the medium category. These results indicate that Generation Z farmers have not fully benefited from the social support provided through the social environment and extension services.

In the participation variable, appreciation for the farming profession (70%), the responsibility to continue the profession

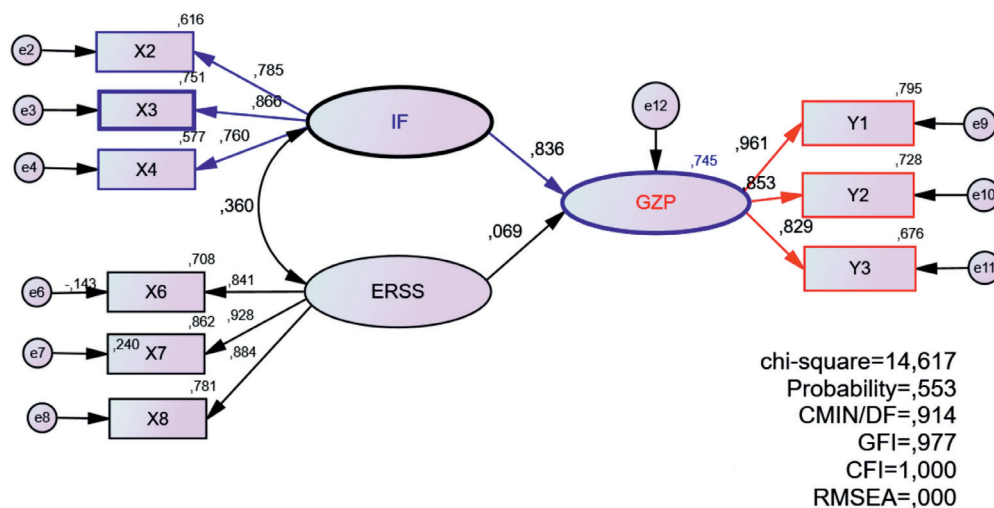
(68%), and the freedom to choose a profession (69%) were all in the high category. The findings show that respondents have a positive perception of the farming profession and choose to engage in agriculture based on awareness and personal choice. Overall, these results indicate that internal factors have a greater influence on Generation Z farmers' participation in agricultural regeneration than social support for extension.

Based on the trends identified in the descriptive analysis, a structural model was used to evaluate the influence of internal factors and extension-related social support on the participation of Generation Z farmers in agricultural regeneration. The conceptual model tested is presented in Figure 1.

Before conducting structural model testing, the measurement model's quality is evaluated using tests of convergent validity and construct reliability. The evaluation was conducted using standardized loading factor values, Average Variance Extracted (AVE), Composite Reliability (CR), and Cronbach's alpha. According to Hair et al. (2019), the construct is considered to have adequate convergent validity if the AVE is ≥ 0.50 and good reliability if the CR and Cronbach's alpha are ≥ 0.70 . The standardized loadings indicate that the research indicators have adequate relationships with the latent constructs they represent. Internal factors, Extension-related Social Support, and Generation Z farmer participation demonstrate good reliability and internal consistency, making them suitable for use in structural model testing. A summary of the measurement model's quality is presented in Table 2.

The final structural model shows a good degree of conformity with the empirical data. The results of the goodness-of-fit test resulted in a Chi-square value of 14,617 with a degree of freedom (df) of 16 ($p = 0.553$) and a ratio of Chi-square to degree of freedom (CMIN/DF) of 0.914. In addition, the RMSEA value of 0.000, GFI of 0.977, AGFI of 0.935, TLI of 1,000, and CFI of 1,000 indicate that the model meets the goodness-of-fit criteria recommended in the Structural Equation Modeling (SEM) analysis.

Overall, the goodness-of-fit index indicates that the proposed model has an adequate fit with the empirical data, so it is feasible

**Figure 1.** A structural equation model of the factors influencing the participation of Generation Z farmers

Note: IF = Internal Factors; ERSS = Extension-related Social Support; GZP = Generation Z Participation; Motivation (X_2); Self-Efficacy (X_3); Social Learning (X_4); Role of Peers (X_6); Role of Community Leaders (X_7); Role of Government (X_8); Appreciation for the farmer's profession (Y_1); Responsibility to continue the profession (Y_2); Freedom of choice of profession (Y_3).

Table 2. Measurement quality of latent constructs

Latent construct	Standardized loading range	AVE	Composite reliability	Cronbach's alpha
Internal Factors	0.760 - 0.866	0.648	0.846	0.728
Extension-related Social Support	0.841 - 0.928	0.781	0.914	0.859
Generation Z Participation	0.829 - 0.961	0.810	0.927	0.882

Note: AVE = Average Variance Extracted. The standardized loading range represents the minimum and maximum values of the loading factor indicators used to measure each latent construct.

Table 3. Structural relationships among study constructs

Relationship	Statistic	Estimate	p-value	Interpretation
Internal Factors → Participation of Generation Z Farmers	β	0.836	0.027	Positive and significant effect
Extension-related Social Support, → Participation of Generation Z Farmers	β	0.069	0.704	Positive but insignificant effect
Internal Factors ↔ Extension-related Social Support	r	0.360	0.433	Positive but insignificant relationships
Coefficient of Determination of Generation Z Farmers' Participation	R ²	0.745		High explanatory power

Note: β = standardized path coefficient; r = correlation coefficient; R² = coefficient of determination

to test the structural relationships among the constructs in this study. The results of the structural relationship estimation are then presented in Table 3.

Based on Table 3, internal factors have a positive and significant effect on the participation of Generation Z farmers in agricultural regeneration ($\beta = 0.836$; $p = 0.027$). These findings show that attitudes, motivation, self-efficacy, and social learning play an important role in encouraging Generation Z's involvement in the agricultural sector. These results indicate that factors within the individual, rather than external environmental influences, more strongly determine the younger generation's participation.

In contrast, social support related to extension did not show a significant association with Generation Z farmer participation ($\beta = 0.069$; $p = 0.704$). Although the path coefficient was positive, the test results indicated that the relationship between extension-related social support and Generation Z farmer participation was not statistically significant.

The relationship between internal factors and extension-related social support was positive but not significant ($r = 0.360$; $p = 0.433$). These results show that strengthening young farmers' internal factors is not always accompanied by increased social support. In addition, a determination coefficient (R²) of 0.745 indicates that the model explains 74.5% of the variation in Generation Z farmers' participation in agricultural regeneration, with the remaining 25.5% influenced by factors outside the research model. The findings indicate that internal factors and extended-related social support together have a high degree of clarity in explaining Generation Z's participation in the agricultural sector.

DISCUSSION

The results showed that internal factors had a positive and significant relationship with Generation Z farmers' participation in agricultural regeneration ($\beta = 0.836$; $p = 0.027$), whereas extension-related social support did not. These findings indicate that internal factors play a greater role in explaining the variation in Generation Z farmers' participation in this research model. The insignificance of extension-related social support can be influenced by the characteristics of construct measurement and the context of agricultural extension in the study area. The findings are in line with

the Theory of Planned Behavior, which asserts that a positive attitude towards a profession will increase an individual's tendency to choose and maintain that profession (Lantarsih et al., 2026; Ajzen, 1991). In the context of agricultural regeneration, positive perceptions of business opportunities, innovation and agricultural economic prospects become psychological capital for Generation Z (Pliakoura et al., 2023; Consentino et al., 2023). Thus, the influence of internal factors in this study reinforces previous findings that individual capacity and entrepreneurial competence are important determinants of sustainable youth participation in the agricultural sector (Gowda et al., 2023; Gupta et al., 2023; Singh et al., 2026).

The dominance of internal factors confirms the importance of self-efficacy in shaping Generation Z's decision to continue farming. According to Social Cognitive Theory, belief in one's own abilities plays an important role in encouraging individuals to face risks, adopt innovation, and develop businesses in a sustainable manner (Bandura, 1977). These findings are consistent with research that shows that self-efficacy is the main predictor of agripreneurship interest and youth farmer engagement in the digital transformation era (Kademani et al., 2020; Putri et al., 2025; Wulandari & Ratnawati, 2025; Kademani et al., 2025). In line with this, Mohanty et al. (2025) found that capacity-building and the economic empowerment of youth strengthened the sustainability of their involvement in the agricultural sector.

The high achievement in social learning shows that the learning process remains the foundation for the younger generation's participation, even as learning resources have shifted from conventional agricultural extension to a digital ecosystem. Generation Z is increasingly gaining knowledge through social media, online communities, and young farmer networks, enabling learning to take place more openly and independently. This condition corroborates the findings of Gailhard and Brennen (2022) and Nurfathiyah et al. (2025) that digital communication now plays an important role in shaping the career choices and adaptive capacity of the young generation in the agricultural sector. In addition, research on farmers' use of social media shows that access to digital information increasingly helps them obtain information and make farming decisions (Mishra et al., 2026).

In contrast, extension-related social support did not have a significant effect on the participation of Generation Z farmers in agricultural regeneration ($\beta = 0.069$; $p = 0.704$). These results show that support from peers, community leaders, and the government has not been the main factor determining Generation Z's involvement in the agricultural sector. These findings differ from previous research that established social support as an important driver of youth participation in agriculture (Geza et al., 2021; Giwu et al., 2024). This difference indicates a shift in decision-making patterns among Generation Z, who are more independent, self-development-oriented, and inclined to rely on personal considerations rather than traditional social influences (Barhate & Dirani, 2021; Pichler et al., 2021).

The insignificance of *extension-related social support* may indicate that the form of agricultural extension support received by respondents is not fully related to the participation of Generation Z farmers in this study. One possible explanation for these findings is the discrepancy between the agricultural extension approach applied and the characteristics of Generation Z. Several studies show that the younger generation tends to use faster, interactive, and digital technology-based information sources (Mohanty et al., 2025; Singh et al., 2026). However, this study did not directly measure the use of digital information sources or farmers' preferences for agricultural extension methods. Therefore, this interpretation needs careful consideration and requires further proof in subsequent research. In addition, respondents' low perception of the roles of peers, community leaders, and the government indicates that the available social support has not fully met their expectations. However, this study does not specifically identify the forms of support that Generation Z farmers need most, so this aspect still needs further study (Mdoda et al., 2026; Mollel et al., 2025).

Finally, this study shows that the effectiveness of agricultural extension cannot be measured solely by its ability to transfer information or technology to young farmers. When internal factors are shown to be more decisive for Generation Z participation than the extension of related social support, the role of agricultural extension needs to be repositioned from a technology-transfer paradigm to an innovation-facilitation model that strengthens young farmers' learning capacity, creativity, and independence. This shift is in line with the Agricultural Knowledge and Innovation Systems (AKIS) approach, which views extension workers as no longer the main source of knowledge, but rather facilitators who connect farmers with various sources of innovation, networks, and business opportunities (Tayang et al., 2023; Davis & Sulaiman, 2014). In the context of Generation Z, who are growing up in a digital environment, agricultural extension must adapt to a more open, collaborative, and technology-based learning approach. Therefore, the function of agricultural extension shifts from delivering information to facilitating learning, validating information, developing digital competencies, and strengthening innovation networks (Mollel et al., 2025; Gailhard & Brennen, 2022).

Further implications of these findings, which suggest that extension-related social support is not significantly associated with the participation of Generation Z farmers, require the development of agricultural extension strategies better aligned with the characteristics of young farmers. One approach that can be

considered is the development of a digital extension ecosystem, which is an agricultural extension system that integrates extension workers, young farmers, universities, agritech startups, digital communities, and markets into an interconnected learning ecosystem. In this approach, agricultural extension serves as an innovation broker, facilitating knowledge exchange, collaboration, and value creation for young farmers. However, this study did not directly measure digital literacy, access to technology, or farmers' preferences for agricultural extension methods. Therefore, the concept of a digital extension ecosystem in this study is presented as a practical implication supported by recent literature developments, rather than as empirical findings. Previous research has shown that the adoption of technology and the involvement of young generations in agriculture are increasingly influenced by digital literacy and access to the information ecosystem (Otang, 2026; Hapsari et al., 2026). Therefore, further research needs to empirically examine how digital literacy, technology access, and digital-based agricultural extension models affect the participation of Generation Z farmers in agricultural regeneration.

CONCLUSION

This study shows that internal factors are positively and significantly associated with the participation of Generation Z farmers in agricultural regeneration in Indonesia. Motivation, *self-efficacy*, and *social learning* were the aspects most related to Generation Z farmers' participation, while *extension-related social support* showed no significant relationship. These findings indicate that strengthening internal capacity should be a priority in the regeneration strategy for young farmers. For agricultural extension practices, the results of this study imply that the approach needs to be better aligned with the characteristics and needs of Generation Z farmers. Therefore, further research is recommended to integrate these variables to gain a more comprehensive understanding of the participation of Generation Z farmers.

DECLARATIONS

Ethical consideration and consent to participate: This research has been carried out in accordance with the ethical principles of social research. All respondents participated voluntarily after receiving an explanation of the research objectives, the benefits of the research, and assurances of data confidentiality. The identity of the respondents is kept confidential and is only used for academic purposes.

Conflict of interest: The authors state that there are no conflicts of interest, financial or non-financial, that could affect the implementation, analysis, or reporting of the results of this research.

Author's contributions: The first author develops the research concept, designs the methodology, conducts the data analysis, and prepares the manuscript. The second author contributes to data collection, validation of results, and manuscript revision. The third author supervises the research, interprets the results, and conducts a critical review of the manuscript. All authors have contributed to the preparation of the article and approved the final manuscript.

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REFERENCES

- Ajzen, I. (1991). *The Theory of Planned Behavior, Organizational Behavior and Human Decision Processes*, 50(2), 179–211.
- Bandura, A. (1977). *Social learning theory*. Prentice-Hall.
- Barhate, B., & Dirani, K. M. (2021). Career aspirations of generation Z: a systematic literature review. *European Journal of Training and Development*, 46(1–2), 139–157. <https://doi.org/10.1108/EJTD-07-2020-0124>
- Consentino, F., Vindigni, G., & Spina, D. (2023). An agricultural career through the lens of young people. *Sustainability Review*, 15(11148). <https://doi.org/10.3390/su151411148>
- Creswell, J. W., & Creswell, J. D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (5th ed.). Sage Publications.
- Davis, K., & Sulaiman, R. (2014). The new extensionist: roles and capacities to strengthen extension and advisory services. *Journal of International Agricultural and Extension Education*, 21(3). <https://doi.org/10.5191/jiaee.2014.21301>
- FAO. (2025). *The Status of Youth in Agrifood Systems*. FAO. <https://openknowledge.fao.org/handle/20.500.14283/cd5886en>
- Gailhard, I. U., & Brennen, M. A. (2022). How digital communications contribute to shaping the career paths of youth/ : a review study focused on farming as a career option. *Agriculture and Human Values*, 1491–1508. <https://doi.org/10.1007/s10460-022-10335-0>
- Geza, W., Ngidi, M., Ojo, T., Adetoro, A. A., Slotow, R., & Mabhaudhi, T. (2021). Youth participation in agriculture/ : A scoping review. *Sustainability*, 13(9120), 1–15. <https://doi.org/10.3390/su13169120>
- Giwu, O., Mdoda, L., Ntlanga, S. S., & Loki, O. (2024). Evaluating factors influencing youth participation in agricultural enterprises/ : Implications for food security and agribusiness. *The Southern African Journal of Entrepreneurship and Small Business Management*, 1–11. <https://doi.org/10.4102/sajesbm.v16i1.903>
- Gowda, M. J. C., Rana, R. K., Pal, P. P., Dubey, S. K., Meena, M. S., Singh, R., Bordoloi, R., Bhaskaran, A., Raut, A. A., Rajesh, T., & Kumar, B. (2023). Economic performance of enterprises promoted under ARYA and relationship with entrepreneurial competencies. *Indian Journal of Extension Education*, 59(2), 10–15. <http://doi.org/10.48165/IJEE.2023.59203>
- Gupta, S. K., Nain, M. S., Singh, R., Mishra, J. R., & Lata, A. (2023). Exploring the entrepreneurial climate and attributes of agripreneurs and its determinants. *Indian Journal of Extension Education*, 59(2), 93–97. <http://doi.org/10.48165/IJEE.2023.59220>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate Data Analysis* (8th ed.). Cengage.
- Hapsari, H., Tridokusumah, A. C., Yudha, E. P., Dewijanti, I. I., Setiawan, I., & Azizurohman, M. (2026). Hybrid agricultural extension and climate-smart practice adoption/ : Evidence from Indonesian rice farmers. *International Journal of Agriculture and Biosciences*, 15(2), 537–549. <https://doi.org/10.47278/journal.ijab/2025.197.537>
- Ibrahim, Zuhri, N., & Rendy. (2020). Dari Ekonomi Ke Ekonomi Politik: Transformasi Setengah Hati Sektor Ekowisata Di Bangka Belitung. *Jurnal Wacana Politik*, 5(2), 174–184.
- Kademani, S. B., Nain, M. S., Mishra, J. R., & Singh, R. (2020). Policy and institutional support for Agri-entrepreneurship development in India: a review. *Journal of Extension Systems*, 36(1), 15–22. <http://doi:10.48165/JES.2020.36104>.
- Kademani, S., Nain, M. S., Singh, R., Roy, S. K., Prabhakar, I., Ranjan, A., Karjigi, D. K., Patil, M., Das, D., & Quader, S. W. (2025). Quantifying support for agripreneurs: a multidimensional scale development and analysis of institutional mechanisms. *Journal of Global Entrepreneurship Research*, 15(1), 12. <https://doi.org/10.1007/s40497-025-00429-4>
- Lantarsih, R., Surono, U. B., & Mz, Y. (2026). Fostering entrepreneurial intentions among millennial farmers in the agricultural sector : An extended theory of planned behavior approach. *Bulgarian Journal of Agricultural Science*, 32(2), 238–259.
- Mdoda, L., Loki, O., Zantsi, Y., Mvelase, L., Nontu, Y., & Madende, P. (2026). Youth aspirations and entrepreneurial motivation in agriculture : insights from smallholder farmers in OR Tambo District, Eastern Cape. *Frontiers in Sustainable Food Systems*, 9(1727042). <https://doi.org/10.3389/fsufs.2025.1727042>
- Mishra, A., Singh, K., Singh, J., & Malik, J. S. (2026). Social media awareness among farmers in Haryana : An age-wise comparative analysis. *Indian Journal of Extension Education*, 62(2), 129–134. <https://doi.org/10.48165/IJEE.2026.62221>
- Mohanty, P. R., Sahoo, M., & Ghosh, S. (2025). Empowered by enterprise : Evaluating livelihood status improvement through attracting and retaining youth in agriculture (ARYA). *Indian Journal of Extension Education*, 61(2), 56–61. <https://doi.org/10.48165/IJEE.2025.61211>
- Mollel, M., Quiroz, L. F., Varley, C., Firestine, A., Mcloughlin, M., Kafunah, J., Kharkar, S., Farrell, J. O., Ndlovu, N., Johnston, A., Mckeown, P. C., Brychkova, G., Murray, U., Leiva, S., & Spillane, C. (2025). Digital technologies to accelerate the impact of climate-smart agriculture by next-generation farmers in Africa. *Frontiers in Sustainable Food Systems*, 9(1462328). <https://doi.org/10.3389/fsufs.2025.1462328>
- Nurfathiyah, P., Sarwoprasodjo, S., Muljono, P., & Matindas, K. (2025). Social learning model of ornamental plant farmers' use of social media for marketing. *Ornamental Horticulture*, 31, e312846. <https://doi.org/10.1590/2447-536X.v31.e312846>
- Otang, H. (2026). Factors influencing digital technology adoption among young farmers in Indonesia. *Journal of Agricultural Extension*, 30(1), 94–105. <https://dx.doi.org/10.4314/jae.v30i1.9>
- Peredy, Z., Vigh, L., Quingyu, W., & Muiy, J. (2024). Analysing generation Z communication attitudes, values and norms. *ACTA PERIODICA*, 4–19. <https://doi.org/10.47273/AP.2024.30.4-19>
- Pichler, S., Kohli, C., & Granitz, N. (2021). DITTO for Gen Z/ : A framework for leveraging the uniqueness of the new generation. *Business Horizons*, 64(5), 599–610. <https://doi.org/10.1016/j.bushor.2021.02.021>
- Pliakoura, A., Beligiannis, G., Mavrommati, A., & Kontogeorgos, A. (2023). Exploring the determinants of young agripreneurs' success toward sustainable agriculture: a regression approach.

- Management & Sustainability: An Arab Review*, 3(4), 462–483. <https://doi.org/10.1108/MSAR-05-2023-0027>
- Pranoto, Y. S., Samsi, S., & Bihrajihat, A. (2025). Motivation and perception underlying farmers' willingness to improve the implementation of Good Agricultural Practices - Pepper (GAP-Pepper). *Journal of Global Innovations in Agricultural Sciences*, 13(2), 475–484. <https://doi.org/10.22194/JGIAS/25.1356>
- Putri, D. I., Haryanto, L. I., Adi, R., & Sari, P. (2025). Examining self-efficacy as a mediating factor in urban generation Z' s agripreneurial interest. *Jurnal Ilmiah Agribisnis*, 10(6), 615–627.
- Sarstedt, M., Ringle, C. M., & Hair, J. F. (2017). Partial least squares structural equation modeling. In C. Homburg, M. Klarmann, & A. V. Vomberg (Eds.), *Handbook of Market Research* (pp. 1–40). Springer. https://doi.org/10.1007/978-3-319-05542-8_15-1
- Singh, S., Sonu, K., Doharey, R. K., Singh, S., & Sahoo, S. (2026). Understanding entrepreneurial behaviour of rural youth in agriculture and allied sectors. *Indian Journal of Extension Education*, 62(2), 10–14. <https://doi.org/10.48165/IJEE.2026.62201>
- Tayang, W., Lalruatfeli, P. C., Hnialum, M., & Sahoo, B. K. (2023). Agricultural extension and advisory services: enhancing access to knowledge and technologies for sustainable agriculture. In S. R. Kadam, L. Yosung, H. Mchishi, T. Malemngabi, & S. H. A (Eds.), *Advances In Agronomy* (1st ed., Vol. 2). Bigfoot06 Publications (OPC) Pvt.Ltd. www.bigfootpublications.in
- Wulandari, R., & Ratnawati, K. F. (2025). Motivation of the young farmer in agricultural entrepreneurship. *ICoNARD*, 665(01027). <https://doi.org/10.1051/e3sconf/202566501027>