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Young farmers in agriculture: Synthesis of resilience factors to empirical gaps and new conceptual integration design (literature review)

M.Y. Wardhana¹, Agussabti¹, M.S. Samsurijan², T.S. Bahri¹¹*Universitas Syiah Kuala, Banda Aceh, Aceh, Indonesia*²*Universiti Sains Malaysia, Pulau Pinang, Malaysia*

Abstract

Background. The agricultural sector is experiencing a gradual decline in youth participation at a time when farming systems are confronted with climate risks, market volatility, and accelerating technological shifts. This situation elevates the importance of understanding and strengthening the resilience of young farmers as a key component of sustainable agricultural development.

Purpose. This study aims to review and integrate existing research published between 2015 and 2025 in order to identify major research trends, determine the principal internal and external drivers influencing youth farmer resilience, examine their interconnections, and develop an integrated conceptual framework explaining how young farmers maintain resilience within a rapidly evolving agricultural environment.

Materials and methods. A Systematic Literature Review (SLR) approach was applied following the PRISMA protocol to ensure transparency and methodological rigor. The review analyzed peer-reviewed national and international publications indexed in SINTA and Scopus databases during the period 2015–2025. The synthesis of these studies indicates that the resilience of young farmers is shaped through the interaction of three key dimensions: personal readiness (motivation, self-efficacy, entrepreneurial competence, and digital literacy), social readiness (family support, farmer networks, and institutional policies), and environmental adaptation (responses to climate change and technological developments).

Results. Analysis of 54 selected articles demonstrates a clear evolution in the scholarly discussion of young farmer resilience. Early studies (2015–2017) primarily examined youth participation and structural barriers such as limited land access and unstable income. Between 2018 and 2020, research increasingly emphasized agripreneurship

and adaptive capacity, presenting young farmers as active agents responding to market and environmental uncertainty. Since 2021, studies have adopted more integrative perspectives, linking resilience with digital agriculture, climate-smart farming, and broader sustainability transitions, often supported by advanced analytical methods including structural equation modelling and bibliometric analysis. Despite the global growth of this research area, empirical studies from Indonesia remain relatively limited within international knowledge networks.

Thematic analysis further identifies three interconnected dimensions shaping young farmers' resilience: personal readiness, social readiness, and environmental adaptation. Personal readiness relates to motivation, self-efficacy, entrepreneurial capacity, and digital competence that enable young farmers to remain engaged in agricultural activities. Social readiness refers to supportive relationships and institutional environments, including family encouragement, farmer organizations, and government policies that help mitigate social and economic risks. Environmental adaptation reflects the ability to respond effectively to climate variability, market dynamics, and technological innovation through the adoption of new knowledge and tools.

Nevertheless, the literature still reveals several conceptual and methodological limitations. Many studies address only one or two aspects of resilience rather than examining the phenomenon in an integrated manner. Quantitative methods dominate the field, whereas mixed-methods approaches remain relatively underutilized. Additional research gaps include the limited use of longitudinal studies, insufficient integration of social, ecological, and digital perspectives, weak application of spatial or big-data approaches, and limited attention to gender equity and local wisdom systems, particularly in the Indonesian context.

Overall, these findings indicate that young farmers' resilience should be understood as a dynamic and systemic process influenced by multiple interacting factors. More comprehensive and context-sensitive analytical frameworks are therefore needed to better explain and strengthen the resilience of young farmers in contemporary agricultural systems.

Keyword: young farmers; resilience; sustainable agriculture; systematic literature review; conceptual framework

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Introduction

The agricultural sector is currently experiencing structural reconfiguration driven not only by climate variability but also by accelerating technological change, shifting labor demographics, and increasing market unpredictability

[1; 2]. These dynamics have intensified production risks while simultaneously reshaping rural labor structures and livelihood opportunities. Within this changing context, the decreasing involvement of younger generations in farming has become a major concern for the long-term sustainability of food systems and the regeneration of the agricultural workforce [3; 4]. Although young farmers are frequently positioned as future innovators and strategic actors in sustainable food production, their participation remains constrained by limited control over productive assets, unstable income prospects, restricted access to capital, and institutional environments that often privilege established producers. These structural barriers interact with broader ecological and market pressures, creating a complex environment in which persistence in agriculture demands more than technical skill alone [5; 6].

Recent scholarship increasingly employs *resilience* as an analytical lens to understand how young farmers cope with uncertainty and sustain agricultural livelihoods. However, resilience in this context cannot be reduced to mere coping capacity. It reflects the ability to sustain engagement, reorganize resources, and pursue adaptive pathways under conditions of climatic fluctuation, technological transition, and socio-economic volatility. For young farmers, resilience involves the dynamic interaction between internal capacities and external enabling conditions [7; 8]. At the individual level, factors such as entrepreneurial orientation, confidence in one's own capability, and competence in utilizing digital tools shape the willingness and ability of young farmers to remain active in agriculture. These personal attributes influence not only productivity but also decision-making flexibility in the face of environmental and market instability [9; 10]. Beyond individual characteristics, social and institutional environments also play a crucial role in shaping resilience. Family encouragement, social networks, farmer organizations, and public policies can either facilitate or constrain access to resources, information, and opportunities. Supportive institutional arrangements may help reduce economic and social risks, while weak institutional support can limit the capacity of young farmers to adapt to emerging challenges [11; 12]. Environmental adaptation represents another important dimension of resilience. Climate variability, technological innovation, and shifting market dynamics increasingly influence agricultural production systems. Young farmers must therefore develop the ability to respond to these external pressures by adopting climate-smart practices, integrating digital tools, and adjusting production strategies in order to maintain agricultural viability [2; 13].

Although scholarly attention toward youth participation and resilience in agriculture has increased considerably, existing studies remain fragmented across

disciplines, methodological approaches, and regional contexts. Many studies focus on isolated dimensions of resilience, often privileging personal or social factors while insufficiently integrating environmental adaptation and digital transformation [14; 15]. Furthermore, empirical research from developing countries, particularly Indonesia, remains relatively limited. The lack of longitudinal, spatial, and gender-sensitive analyses further restricts a comprehensive understanding of how resilience evolves over time [16; 17]. This fragmentation hinders the development of comprehensive conceptual models and restricts the formulation of evidence-based policies aimed at enhancing youth farmer resilience and sustainable agricultural regeneration.

To address these gaps, this study undertakes a systematic literature review of peer-reviewed publications [18; 19] to synthesize peer-reviewed national and international research published between 2015 and 2025. By systematically mapping research trends, identifying multidimensional resilience factors, and uncovering persistent empirical gaps, this article proposes an integrated conceptual framework linking personal readiness, social readiness, and environmental adaptation. In doing so, it repositions young farmers not merely as beneficiaries of agricultural transformation but as adaptive agents whose resilience capacity is fundamental to sustainable agricultural regeneration.

Materials and methods

Study Design

To better understand how young farmers navigate challenges in agriculture, this study reviews and synthesizes a range of empirical and conceptual literature using a systematic literature review approach. The SLR approach was selected to ensure methodological rigor, transparency, and reproducibility in consolidating fragmented evidence across disciplines and geographical contexts [14; 20-22]. The review was conducted in line with PRISMA guidelines, which guide the stages of identifying, screening, and selecting relevant studies for inclusion [18; 19].

Data Sources and Search Strategy

The literature identification process was performed using several national and international scholarly databases. Indonesian publications were retrieved from the SINTA database, while international articles were obtained from Scopus-indexed platforms including ScienceDirect, SpringerLink, and Taylor & Francis. Articles published between 2015 and 2025 were considered to capture contemporary developments in youth resilience and agricultural sustainability.

A structured Boolean search strategy was applied using combinations of keywords such as “*young farmers*,” “*youth resilience*,” “*agriculture*,” “*agri-*

preneurship,” “*sustainable farming*,” and “*climate adaptation*.” The search strategy was refined iteratively to balance sensitivity and specificity, following established SLR guidelines [23].

The use of Boolean logic is standard practice in SLR to optimize the sensitivity and specificity of searches [24; 25].

Inclusion and Exclusion Criteria

The selection of studies in this review was guided by clearly defined inclusion and exclusion criteria to ensure that only relevant and high-quality sources were considered. Included studies were (i) peer-reviewed journal articles, (ii) published between 2015 and 2025, (iii) written in English or Indonesian, and (iv) Only studies that specifically addressed youth or young farmers in relation to resilience, participation, or adaptive capacity in agriculture were considered, while materials such as conference papers, theses, dissertations, policy reports, and studies outside this scope were not included.

Table 1.

Selection of inclusion and exclusion criteria

Criteria	Inclusion	Exclusion
Document Type	Articles published in peer-reviewed academic journals	Materials such as conference papers, academic theses and dissertations, as well as non-scholarly reports
Publication Period	Year, 2015–2025	Before 2015
Research Focus	Youth engagement, resilience, or adaptation in the agricultural sector	Research on resilience beyond youth or the non-agricultural sector
Publication Language	English and Bahasa (Indonesian)	Languages other than English and Bahasa (Indonesian)
Accessibility	Available in full text format	Studies for which the full text was not available

Literature Screening and Selection Process

The selection of relevant studies followed the PRISMA framework, which consists of four sequential stages: identification, screening, eligibility assessment, and final inclusion of eligible articles. An initial search yielded 190 articles, including manual additions. After removing duplicates and screening titles and abstracts, 61 articles were assessed for full-text eligibility. Following a detailed evaluation, 54 articles met all inclusion criteria and were retained for final synthesis. This process ensured consistency, transparency, and replicability of the review procedure [18; 19].

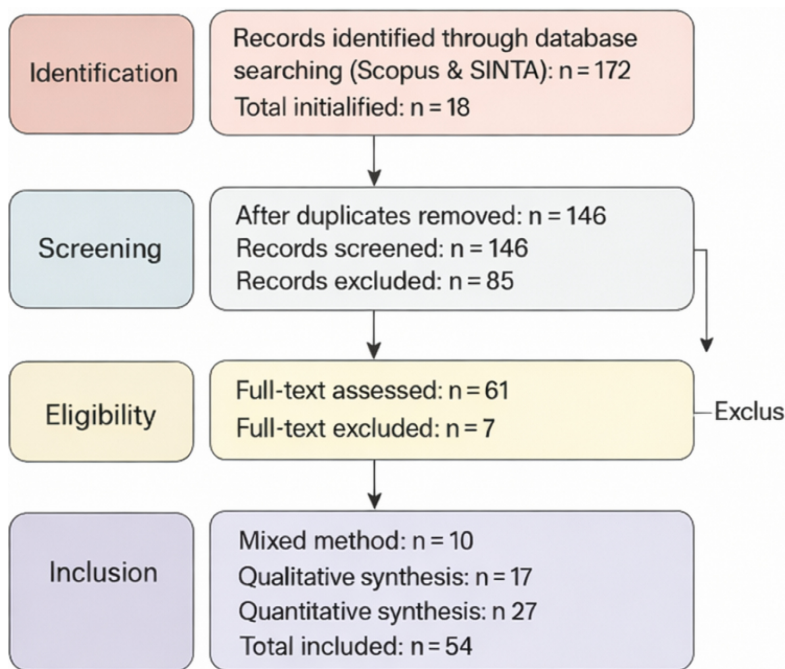


Fig. 1. PRISMA flow diagram, illustrating the protocol used in the literature review of the resilience of young farmers based on the PRISMA Statement (Preferred Reports Systematic Review and Analysis Protocols [18])

This multi-layered approach is in line with the systematic method guidelines for literature evaluation [26].

Quality Assessment

The selected studies were further assessed using a structured set of criteria to examine their methodological strength and overall relevance. The evaluation considered several aspects, including the clarity of research objectives, the suitability of the research design, the transparency of data collection procedures, the presence of validity and reliability measures, the clarity of analytical approaches, the contribution of findings, and the acknowledgment

of study limitations. Each criterion was scored on a scale of 0–2, yielding a maximum score of 14. Only studies with moderate to high quality scores (≥ 8) were included in the main synthesis, following best practices in systematic review methodology [22].

Table 2.

Criteria for Assessing Article Quality in SLR

Number	Quality Assessment Criteria	Description	Score
1	Clarity of Research Objectives	The research objectives and questions are explicitly stated and relevant to the resilience of young farmers.	0–2
2	Method Design Suitability	Research design in accordance with the objectives (quantitative, qualitative, mixed methods)	0–2
3	Clarity of Data Collection Procedures	The study clearly describes its sampling approach, data collection instruments, and the context in which the research was conducted.	0–2
4	Validity and Reliability	Validity, reliability, or trustworthiness tests are explained.	0–2
5	Clarity of Data Analysis	The analytical approach is clearly described and aligns with the nature of the data used in the study.	0–2
6	Relevance of Findings	The findings directly contribute to understanding the resilience of young farmers.	0–2
7	Transparency Limitations of the Study	The limitations of the study are acknowledged and explained.	0–2

Maximum Final Score: 14

Study Quality Classification

- 12 – 14 = High Quality
- 8 – 11 = Moderate Quality
- ≤ 7 = Low Quality (not included in the main synthesis)

Only articles of moderate to high quality were included in the final synthesis.

Quality assessment is conducted independently through repeated readings and expert guidance discussions, and verified through consistency of scores across criteria.

Validity, Reliability, and Trustworthiness of the Review

The credibility of this review was supported by a structured selection process guided by PRISMA, clearly defined inclusion and exclusion criteria, and

a careful evaluation of the quality of the selected studies. Reliability was reinforced through consistent search procedures, systematic thematic coding, and repeated verification of article classifications to maintain consistency during data extraction and synthesis. In addition, only studies demonstrating moderate to high methodological quality were retained, thereby strengthening the overall credibility of the findings [19; 27].

Data Extraction and Analysis

Data were extracted using a structured matrix designed to capture key aspects of each study, including its context, objectives, methodological approach, analytical techniques, and main findings. The analysis employed a thematic synthesis approach, integrating qualitative and quantitative evidence to identify recurring patterns and conceptual linkages [28]. For analysis, the reviewed studies were grouped into three broad dimensions of resilience: personal readiness, social readiness, and environmental adaptation, which formed the basis for the synthesis.

In addition, a descriptive bibliometric analysis was conducted using VOSviewer to map research trends, keyword co-occurrence, and thematic density across the reviewed literature, supporting the identification of dominant themes and research gaps [29].

Validity and Reliability

To strengthen the overall robustness of the review, several steps were taken, including using both national and international journal sources, repeating checks of thematic groupings, and consistently applying inclusion, exclusion, and quality evaluation criteria. These procedures ensured analytical robustness and minimized reviewer bias, in line with established SLR standards [14; 22].

Results and discussion

Overview of Selected Studies

After applying the screening and eligibility procedures, a total of 54 peer-reviewed articles satisfied all inclusion and methodological quality criteria and were included in the final synthesis. These studies were published between 2015 and 2025 and predominantly appeared in Scopus-indexed journals (Q1–Q4) and national journals indexed by SINTA (levels 1–5). From a methodological perspective, most of the studies relied on quantitative approaches (50%) in line with modern agricultural research trends [30; 31], followed by qualitative approaches (31.48%) emphasizing thematic analysis and case studies, common in rural social studies [32] and mixed-methods designs (18.52%) reflects a holistic approach but is still limited as stated by

Bryman in interdisciplinary research [33]. The reviewed studies were largely conducted in developing regions, particularly Asia and Africa, with relatively limited empirical contributions from Indonesia, highlighting a geographical imbalance in the literature.

The strong presence of quantitative studies can be linked to the widespread use of conceptual models grounded in socio-ecological and motivational perspectives, which typically call for statistical testing. Meanwhile, qualitative studies provide depth to the local context, especially regarding gender, social justice, and the dynamics of farming families [34; 35].

Trends in Research on Young Farmers' Resilience

The findings indicate a noticeable shift in research focus over time. During the early phase (2015–2017), studies primarily addressed youth participation and interest in agriculture, emphasizing socio-economic barriers and employment constraints [3]. The transitional phase (2018–2020) marked a shift toward agripreneurship and adaptive capacity, positioning young farmers as agents responding to market and livelihood uncertainty. In the integrative phase (2021–2025), research increasingly incorporated themes of climate resilience, digital agriculture, and sustainability transitions, often employing advanced analytical techniques such as Structural Equation Modeling (SEM) and mixed-methods designs [10; 13]. Bibliometric analysis further confirmed the growing prominence of resilience, climate change, and agribusiness as core thematic clusters, while studies explicitly focusing on Indonesia remained relatively scarce.

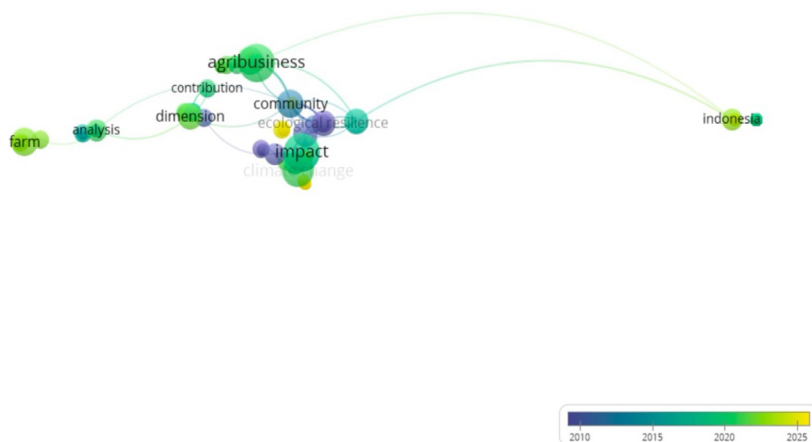


Fig. 2. Bibliometric Overlay Visualization: Trends and research focus on resilience and young farmers from 2010 to 2025 across 54 selected articles.

The bibliometric overlay visualization shows a clear evolution in research, from fragmented socio-economic discussions toward a more integrated framework that combines the dimensions of personal, social, and environmental resilience.

At the same time, it underscores persistent research gaps, particularly the scarcity of longitudinal, context-specific, and integrated studies. These findings reinforce the need for holistic conceptual models and empirically grounded research that captures the dynamic nature of young farmers' resilience across time and place.



Fig. 3. Bibliometric Density Visualization:

Trends in focus density and research variables related to the topics of resilience and young farmers in 54 selected articles.

In Figure 3, the trend illustrates the research density related to the topic of young farmer resilience, with several issues highlighted in bright colors (yellow) indicating the dominance of developing research (high frequency) in this area. While issues related to agribusiness resilience, climate change impact on resilience, and Indonesia indicate that there is still little research focusing on environmental resilience and the resilience of young farmers in Indonesia (slightly dim colors).

The bibliometric mapping suggests that research attention is not evenly distributed, with a stronger focus on individual and socio-economic aspects of resilience, while environmental, technological, and spatial dimensions receive comparatively less attention.

This imbalance points to a notable gap in the literature and highlights the need for more integrative approaches that bring together personal readiness, social readiness, and environmental adaptation. The findings from the density analysis thus provide empirical justification for the proposed integrated conceptual framework and highlight priority areas for future research on young farmers' resilience.

Thematic Dimensions of Young Farmers' Resilience

Thematic synthesis revealed that young farmers' resilience is consistently conceptualized through three interrelated dimensions: personal readiness, social readiness, and environmental adaptation.

Personal readiness emerged as a central dimension in the literature, encompassing intrinsic motivation, self-efficacy, agripreneurial skills, and digital literacy. Multiple studies demonstrated that young farmers with higher levels of entrepreneurial motivation and technological competence exhibit stronger adaptive capacity and persistence in agricultural livelihoods, even under conditions of limited land access and financial constraints [9; 10; 16; 36; 37]. Evidence from Indonesia and other developing contexts also indicated that access to climate and production information significantly enhances productivity and resilience outcomes [17; 38].

Social readiness was identified as a critical external dimension shaping resilience. More than half of the reviewed studies emphasized the importance of family support, peer networks, farmer organizations, and institutional arrangements in strengthening young farmers' confidence and capacity to withstand economic and environmental shocks [11; 12; 39; 40]. Community-based initiatives, cooperatives, and youth-led farming groups were found to facilitate knowledge exchange and collective adaptation. However, several studies highlighted persistent policy gaps, particularly the limited involvement of young farmers in decision-making processes and unequal access to land and financial resources [5; 6].

Environmental adaptation emerged as a third key dimension, highlighting how young farmers respond to changing climate conditions, market uncertainty, and ongoing technological developments. Recent studies point to the growing importance of approaches such as climate-smart agriculture, precision farming, and the use of digital platforms in strengthening both adaptive and transformative capacities [7; 13; 41; 42]. Empirical evidence suggests that young farmers with access to climate information, digital tools, and innovative systems tend to be more resilient than those relying on conventional practices [38; 43].

Conceptual Integration Design for Visual Resilience of Young Farmers

This design simultaneously integrates personal, social, and environmental dimensions in the context of young farmers' resilience, which in previous literature has been studied separately. This model also opens up space for quantitative and longitudinal empirical testing.

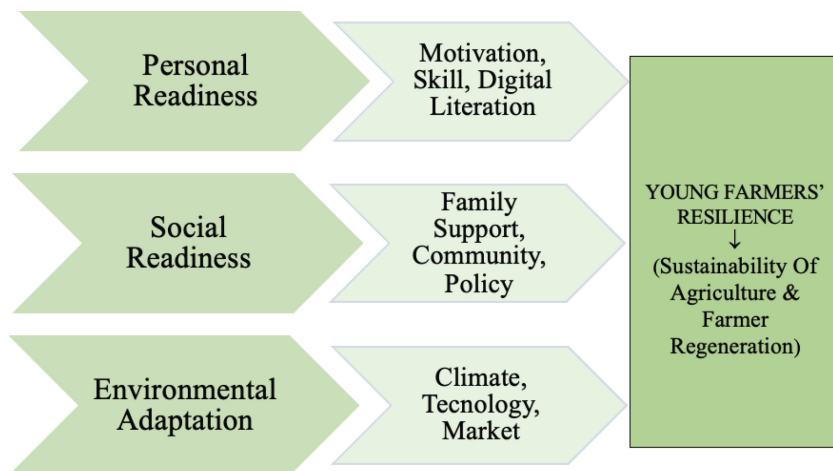


Fig. 4. Schematic Representation of New Conceptual Integration of Research on the Resilience of Young Farmers in Agriculture

Distribution of Conceptual Approaches

Table 3.

Distribution of Number & Percentage of Conceptual Types

Number	Conceptual Type	Number of Articles	Percentage
1	Personal & Social Readiness	16	29,63%
2	Social Readiness and Environmental Adaptation	9	16,67%
3	Personal Readiness	9	16,67%
4	Environmental Adaptation	9	16,67%
5	Social Readiness	8	14,81%
6	Personal Preparedness & Environmental Adaptation	1	1,85%
7	Integrated (Personal–Social–Environmental)	2	3,7%
Total		54	100%

The review identified seven types of conceptual approaches used to examine young farmers' resilience. The most dominant approach combined personal and social readiness (29.63%), followed by studies focusing exclusively on personal readiness (16.67%), social readiness (14.81%), or environmental adaptation (16.67%). In contrast, fully integrated conceptual models incorporating personal, social, and ecological dimensions simultaneously accounted for only 3.7% of the reviewed studies.

This distribution indicates a strong tendency toward partial analyses and highlights the limited adoption of holistic resilience frameworks in existing research.

Identified Empirical and Methodological Gaps

Across the reviewed literature, several consistent gaps were identified. These include the scarcity of longitudinal studies capturing changes in resilience over time [44; 45], limited use of spatial and digital data, insufficient attention to gender and social inclusion [46], and a lack of context-specific analyses incorporating local knowledge systems, particularly in Indonesia. The dominance of cross-sectional and sectoral approaches constrains the ability to fully explain the dynamic and systemic nature of young farmers' resilience [14; 15].

This gap indicates that research on youth resilience is still developing and has ample room for new approaches based on technology, social justice, and a sustainability perspective.

Conclusions

This study offers an integrated synthesis of contemporary scientific literature addressing the resilience of young farmers within the agricultural sector. The findings demonstrate that research on this topic has evolved from a narrow focus on youth participation and employment toward a broader understanding of resilience as a multidimensional and dynamic process shaped by social, economic, and environmental uncertainties. However, empirical evidence remains unevenly distributed across regions, with developing countries particularly Indonesia still underrepresented in the global literature.

The review confirms that young farmers' resilience is not determined by a single factor but emerges from the systemic interaction of three core dimensions: personal readiness, social readiness, and environmental adaptation. Personal readiness manifested through motivation, self-efficacy, agripreneurial competence, and digital literacy forms the foundational capacity for adaptation. Social readiness, reflected in family support, community networks, institutional arrangements, and policy environments, serves as a key enabling context that shapes access to resources and opportunities. Meanwhile, environmental adaptation, which involves responding to climate change, technological shifts, and market perspectives, represents the space where personal and social capacities are put into practice and sustained within agricultural activities.

Despite growing scholarly attention, the literature remains dominated by partial and cross-sectional approaches, with limited adoption of integrated, longitudinal, and context-sensitive frameworks. The scarcity of holistic models, combined with insufficient consideration of gender, digital inequality, spatial

dynamics, and local knowledge systems, constrains a full understanding of how resilience is built and sustained among young farmers over time.

Addressing these limitations, this study proposes an integrated conceptual framework that views young farmers as adaptive and transformative actors within sustainable agricultural systems. By bringing together personal readiness, social readiness, and environmental adaptation into a single model, the framework contributes to the development of resilience theory and provides a basis for future empirical work. Overall, strengthening young farmers' resilience requires ecosystem-based, cross-sectoral, and evidence-driven approaches to ensure farmer regeneration and long-term agricultural sustainability.

Conflict of interest information. The authors report no conflicts of interest associated with this study.

Description of the application of the generative model. During the preparation of this article, the authors used ChatGPT (OpenAI, GPT-4.0 version) to assist in language refinement and grammatical editing of selected manuscript sections. The AI tool was not used for data analysis, study design, or interpretation of findings. All conceptual development, synthesis, and final editing were conducted by the authors. The authors reviewed and revised the AI-assisted outputs as necessary and take full responsibility for the content of the published article.

References

1. FAO. (2021). *The State of Food and Agriculture 2021*. <https://doi.org/10.4060/cb4476en>
2. Intergovernmental Panel on Climate Change (IPCC). (2023). *Climate Change 2022 – Impacts, Adaptation and Vulnerability*. Cambridge University Press. <https://doi.org/10.1017/9781009325844>
3. Leavy, J., & Hossain, N. (2014). Who wants to farm? Youth aspirations, opportunities and rising food prices. *IDS Working Papers*, 2014(439), 1–44. <https://doi.org/10.1111/j.2040-0209.2014.00439.x>
4. Brooks, S. (2021). Configuring the digital farmer: A nudge world in the making? *Economy and Society*, 50(3), 374–396. <https://doi.org/10.1080/03085147.2021.1876984>. EDN: <https://elibrary.ru/GFNOED>
5. Chamberlin, J., et al. (2021). *Youth and the rural economy in Africa: Hard work and hazard*. CABI. <https://doi.org/10.1079/9781789245011.0000>
6. Kumeh, E. M., & Omulo, G. (2019). Youth's access to agricultural land in Sub-Saharan Africa: A missing link in the global land grabbing discourse. *Land Use Policy*, 89, 104210. <https://doi.org/10.1016/j.landusepol.2019.104210>

7. Smit, B., & Wandel, J. (2006). Adaptation, adaptive capacity and vulnerability. *Global Environmental Change*, 16(3), 282–292. <https://doi.org/10.1016/j.gloenvcha.2006.03.008>
8. Folke, C. (2016). Resilience. In *Oxford Research Encyclopedia of Environmental Science*. Oxford University Press. <https://doi.org/10.1093/acrefore/9780199389414.013.8>
9. Bandura, A. (1997). *Self-Efficacy: The Exercise of Control*. W. H. Freeman & Co.
10. Birner, R., Daum, T., & Pray, C. (2021). Who drives the digital revolution in agriculture? A review of supply-side trends, players and challenges. *Applied Economic Perspectives and Policy*, 43(4), 1260–1285. <https://doi.org/10.1002/aepp.13145>. EDN: <https://elibrary.ru/IOAOSH>
11. Lin, N. (2001). *Social Capital*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511815447>
12. LaRue, K., Daum, T., Mausch, K., & Harris, D. (2021). Who wants to farm? Answers depend on how you ask: A case study on youth aspirations in Kenya. *European Journal of Development Research*, 33(4), 885–909. <https://doi.org/10.1057/s41287-020-00352-2>. EDN: <https://elibrary.ru/UFJDMY>
13. 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(1), 1–16. <https://doi.org/10.1016/j.njas.2019.100315>. EDN: <https://elibrary.ru/VHSTUI>
14. Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104, 333–339. <https://doi.org/10.1016/j.jbusres.2019.07.039>
15. Geza, W., Ngidi, M., Ojo, T., Adetoro, A. A., Slotow, R., & Mabhaudhi, T. (2021). Youth participation in agriculture: A scoping review. *Sustainability*, 13(16), 9120. <https://doi.org/10.3390/su13169120>. EDN: <https://elibrary.ru/PDHPIS>
16. Mulema, J., et al. (2021). Barriers and opportunities for the youth engagement in agribusiness: Empirical evidence from Zambia and Vietnam. *Development Practice*, 31(5), 690–706. <https://doi.org/10.1080/09614524.2021.1911949>. EDN: <https://elibrary.ru/YTXMIK>
17. Rope, R., Marengke, M., Mulyo, J. H., Waluyati, L. R., Masyhuri, & Perwitasari, H. (2024). Resilience of farmers on the sustainability of natural farming systems for upland rice in Morotai Island. *Journal of Law and Sustainable Development*, 12(2), e2600. <https://doi.org/10.55908/sdgs.v12i2.2600>. EDN: <https://elibrary.ru/KKVAKF>
18. Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *PLoS Medicine*, 6(7), e1000097. <https://doi.org/10.1371/journal.pmed.1000097>
19. Page, M. J., et al. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*, n71. <https://doi.org/10.1136/bmj.n71>. EDN: <https://elibrary.ru/JFSQRW>

20. Petticrew, M., & Roberts, H. (2006). *Systematic Reviews in the Social Sciences*. Wiley. <https://doi.org/10.1002/9780470754887>
21. Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management*, 14(3), 207–222. <https://doi.org/10.1111/1467-8551.00375>. EDN: <https://elibrary.ru/ETVJFT>
22. Kitchenham, B., & Brereton, P. (2013). A systematic review of systematic review process research in software engineering. *Information and Software Technology*, 55(12), 2049–2075. <https://doi.org/10.1016/j.infsof.2013.07.010>
23. Okoli, C., & Schabram, K. (2010). A guide to conducting a systematic literature review of information systems research. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.1954824>
24. Booth, A., Papaioannou, D., & Sutton, A. (Eds.). (2016). *Systematic Approaches to a Successful Literature Review* (2nd ed.). SAGE Publications Inc.
25. Mugridge, R. L. (2011). Introduction to modern information retrieval, 3rd ed. *Library Collections, Acquisitions, & Technical Services*, 35(4), 136–137. <https://doi.org/10.1080/14649055.2011.10766318>
26. Higgins, J. P. T., et al. (Eds.). (2024). *Cochrane Handbook for Systematic Reviews of Interventions* (Version 6.5, updated August 2024). Retrieved from www.cochrane.org/handbook
27. Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, 133, 285–296. <https://doi.org/10.1016/j.jbusres.2021.04.070>. EDN: <https://elibrary.ru/XAJQYQ>
28. Thomas, J., & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Medical Research Methodology*, 8(1), 45. <https://doi.org/10.1186/1471-2288-8-45>. EDN: <https://elibrary.ru/XEPHGZ>
29. Amirbagheri, K., Merigó, J. M., & Corrons, A. (2025). 30 years of energy for sustainable development: A bibliometric overview. *Energy for Sustainable Development*, 87, 101741. <https://doi.org/10.1016/j.esd.2025.101741>. EDN: <https://elibrary.ru/IFFEEL>
30. Sarstedt, M., Hair, J. F., Nitzl, C., Ringle, C. M., & Howard, M. C. (2020). Beyond a tandem analysis of SEM and PROCESS: Use of PLS-SEM for mediation analyses! *International Journal of Market Research*, 62(3), 288–299. <https://doi.org/10.1177/1470785320915686>. EDN: <https://elibrary.ru/RWZEDQ>
31. Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>

32. Creswell, J. W., & Creswell, J. D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (5th ed.). SAGE Publications, Inc.
33. Bryman, A. (2016). *Social Research Methods* (5th ed.). Oxford University Press.
34. Gaviglio, A., Bertocchi, M., Marescotti, M. E., Demartini, E., & Pirani, A. (2016). The social pillar of sustainability: A quantitative approach at the farm level. *Agricultural and Food Economics*, 4(1), 15. <https://doi.org/10.1186/s40100-016-0059-4>. EDN: <https://elibrary.ru/ZNLPEG>
35. Kristjanson, P., et al. (2017). Addressing gender in agricultural research for development in the face of a changing climate: Where are we and where should we be going? *International Journal of Agricultural Sustainability*, 15(5), 482–500. <https://doi.org/10.1080/14735903.2017.1336411>
36. Ninson, J., & Brobbey, M. K. (2023). Review on engaging the youth in agribusiness. *Cogent OA*. <https://doi.org/10.1080/23311886.2023.2193480>
37. Slovic, P. (2016). *The Perception of Risk*. Routledge. <https://doi.org/10.4324/9781315661773>
38. Tamru, S., et al. (2025). Climate information services enhance farmers' resilience to climate change: Impacts on agricultural productivity. *Climate Risk Management*, 49, 100724. <https://doi.org/10.1016/j.crm.2025.100724>. EDN: <https://elibrary.ru/YSOJKD>
39. Ungar, M. (2011). Community resilience for youth and families: Facilitative physical and social capital in contexts of adversity. *Children and Youth Services Review*, 33(9), 1742–1748. <https://doi.org/10.1016/j.childyouth.2011.04.027>
40. Ungar, M. (2006). Resilience across cultures. *British Journal of Social Work*, 38(2), 218–235. <https://doi.org/10.1093/bjsw/bcl343>
41. Nocezo, Y.-I., Manyike, J. Z., Zhou, L., & Ngarava, S. (2024). The impact of access to climate services on smallholder farmers' cropping decisions and household food security in Elundini municipality, Eastern Cape province. *Frontiers in Climate*. <https://doi.org/10.3389/fclim.2024.1458999>
42. Hassan, R., Suhaili, W. S., Nore, B. F., & Basuni, M. A. (2024). Youth resilience toward climate smart agriculture technology adoption in Brunei Darussalam. *ASEAN Journal on Science and Technology for Development*, 40(3). <https://doi.org/10.61931/2224-9028.1545>. EDN: <https://elibrary.ru/YOXHJL>
43. Rosman, A., MacPherson, J., Arndt, M., & Helming, K. (2024). Perceived resilience of community supported agriculture in Germany. *Agricultural Systems*, 220, 104068. <https://doi.org/10.1016/j.agsy.2024.104068>. EDN: <https://elibrary.ru/BADOWO>
44. Holling, C. S. (1973). Resilience and stability of ecological systems. *Annual Review of Ecology and Systematics*, 4(1), 1–23. <https://doi.org/10.1146/annurev.es.04.110173.000245>

45. Walker, B., Holling, C. S., Carpenter, S. R., & Kinzig, A. P. (2004). Resilience, adaptability and transformability in social-ecological systems. *Ecology and Society*, 9(2), art5. <https://doi.org/10.5751/ES-00650-090205>
46. Faizien, H. A. (2025). Peran perempuan dalam pembangunan ekonomi pertanian. *Jurnal Riset Rumpun Ilmu Tanaman*, 4(1), 49–63. <https://doi.org/10.55606/jurrit.v4i1.4695>. EDN: <https://elibrary.ru/WGTIHS>

DATA ABOUT THE AUTHORS

Muhammad Yuzan Wardhana, S.P., M.E.P., Head of Agribusiness Laboratory, Lecture & Researcher

Universitas Syiah Kuala

Banda Aceh, Aceh, Indonesia

yuzan@usk.ac.id

ORCID: <https://orcid.org/0000-0003-3052-8933>

Scopus Author ID: 57201196197

Agussabti, M.Si., IPU., Vice Rector I., Lecture & Researcher

Universitas Syiah Kuala

Banda Aceh, Aceh, Indonesia

agussabti@usk.ac.id

ORCID: <https://orcid.org/0000-0002-8540-0841>

Scopus Author ID: 54974389300

Mohamad Shahrudin Samsurijan, Dean, School of Social Sciences, Lecturer & Researcher

Universiti Sains Malaysia

Pulau Pinang, Malaysia

msdin@usm.my

Researcher ID: D-6583-2016

ORCID: <https://orcid.org/0000-0002-9281-5252>

Scopus Author ID: 56245564400

T. Saiful Bahri, S.P., M.P., Lecture & Researcher

Universitas Syiah Kuala

Banda Aceh, Aceh, Indonesia

tsaifulbahri@usk.ac.id

ORCID: <https://orcid.org/0000-0003-0707-6051>

Scopus Author ID: 5722214856

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