



Sustainable Economic Empowerment through Village Governance and Social Entrepreneurship within a Circular Economy Framework

Ikhsan Nendi

Politeknik Siber Cerdika Internasional,
Indonesia

***Corresponding author:**

Ikhsan Nendi, Politeknik Siber Cerdika
Internasional, Indonesia.

✉ ikhsan_nendi@polteksci.ac.id

Article Info :

Article history:

Received: October 28, 2025

Revised: November 20, 2025

Accepted: December 18, 2025

Keywords:

social entrepreneurship; circular
economy; collaborative
governance; entrepreneurship
education

Abstract

Background: Rural economic development frequently encounters structural constraints, including weak institutional coordination, limited entrepreneurial capacity, and suboptimal utilization of local resources, resulting in fragile economic resilience. Despite increasing attention to circular economy approaches, empirical research integrating village collaborative governance and community-based social entrepreneurship remains limited.

Objective: This study aims to analyze how collaborative governance models and social entrepreneurship education based on circular economy principles contribute to sustainable rural economic empowerment.

Methods: A convergent parallel mixed-methods design was applied in five villages, involving 187 stakeholders and 142 entrepreneurship participants. Qualitative data were collected through in-depth interviews, participatory observation, and document analysis, while quantitative data were analyzed using descriptive statistics and regression modeling.

Results: The results demonstrate that governance quality significantly influences business survival and circular economy integration, with enterprise survival exceeding 80 percent in villages characterized by strong stakeholder participation, transparency, and resource mobilization. Social entrepreneurship education significantly improves entrepreneurial competencies and leads to a high venture creation rate.

Conclusion: This study offers a governance-centered model for rural circular economy development, highlighting the importance of synchronizing institutional strengthening and entrepreneurship education to achieve long-term, inclusive, and environmentally sustainable rural economic growth.

To cite this article: Ikhsan, N. (2025). Sustainable Economic Empowerment through Village Governance and Social Entrepreneurship within a Circular Economy Framework. *INKUBIS: Jurnal Ekonomi dan Bisnis*, 7(2), 153-164. <https://doi.org/10.59261/inkubis.v7i2.122>

INTRODUCTION

Rural economic development is often confronted with various structural challenges that hinder the achievement of sustainable community welfare (W. Chen et al., 2025; X. Chen et al., 2023; S. Zhang et al., 2025; Y. Zhang & Ling, 2023). In many developing rural regions, these challenges include limited market access, low value-added production, weak institutional coordination, and inefficient resource utilization, which directly constrain local income growth and business diversification. Inclusive and sustainable economic development relies heavily on the effective management of local resources and the active participation of all societal elements (Cai et al., 2024; Chaikin, 2021; Jakšić & Jakšić, 2018; Role & Organisations, 2025). However, empirical evidence at the village level often shows gaps between policy design and implementation capacity. In this context, the concept of rural circular economy provides an innovative solution to encourage reuse, recycling, and efficient resource management, which, in

turn, can create sustainable economic opportunities.

One highly relevant approach to realizing this circular economy is through the application of village collaborative governance models and community-based social entrepreneurship education (Vermeşan et al., 2020; Winans et al., 2017). Effective collaboration between government, community actors, and the private sector in resource management and rural economic development can strengthen institutional performance and expand entrepreneurial opportunities.

In many rural areas, dependence on agriculture as the primary source of livelihood remains high (Liu et al., 2024; Wang et al., 2022). However, the agricultural sector faces significant challenges such as land degradation, climate change, and limited access to modern technology. This overreliance often results in economic vulnerability, seasonal income instability, and limited value chain development (Biswas & Nautiyal, 2023; Oyadeyi et al., 2024). On the other hand, abundant natural resource potential is often underutilized, leading to low economic growth. Despite efforts to empower the economy through entrepreneurship, many villages still struggle to create sustainable economic opportunities.

Despite the growing body of literature on collaborative governance and social entrepreneurship, few empirical studies systematically integrate these two approaches within a rural circular economy framework. Existing studies tend to examine governance reform or entrepreneurship development separately, leaving a research gap regarding how their integration can produce measurable economic outcomes at the village level. This phenomenon demands a more holistic approach, one that strengthens village governance capacity and enhances social entrepreneurship skills within the community. Such an approach must be operationalized through measurable institutional indicators and entrepreneurial capacity metrics rather than remaining at a purely conceptual level.

Sustainable economic empowerment at the village level requires a management model capable of accommodating economic needs while maintaining ecological balance. A collaborative governance model can serve as a bridge between different stakeholders, including the government, local communities, and the private sector, in creating policies and programs based on local needs and potentials (Fauziyyah et al., 2025; Komarudin, 2025; Muiz et al., 2025; Nazeri et al., 2024; Zarrabeitia-Bilbao et al., 2025). Meanwhile, community-based social entrepreneurship education can be a vital tool in forming entrepreneurship that seeks not only economic profit but also positive social impacts on surrounding communities (Talmage, 2021). By introducing entrepreneurship models based on circular economy principles, rural communities can better manage their resources and develop sustainable businesses.

Some of the main issues underpinning this research include the absence of measurable governance indicators to assess stakeholder coordination and policy integration, the lack of an effective collaborative governance model at the village level to encourage the integration of government policies, community participation, and the private sector in creating a circular economy, challenges in developing community-based social entrepreneurship, particularly in educating rural communities to build environmentally friendly businesses that create positive social impacts and unequal economic empowerment in villages, leading to the underutilization of natural resource potential and over-reliance on the agricultural sector.

Based on these gaps, this study formulates the following research questions: (1) How does collaborative village governance influence sustainable economic empowerment within a circular economy framework? (2) To what extent does community based social entrepreneurship education enhance entrepreneurial capacity and environmental responsibility? (3) How does the integration of both approaches affect measurable economic outcomes at the village level.

This research aims to identify and analyze village collaborative governance models that can support sustainable economic empowerment within the context of the circular economy, assess the effectiveness of community-based social entrepreneurship education in enhancing the entrepreneurial capacity of rural communities based on circular economy principles and develop recommendations for policies and programs that support rural economic empowerment through collaborative and social approaches to create economic sustainability at the village level. This research is expected to provide the following benefits offer insights and recommendations to village governments, community organizations, and the private sector in designing more effective policies to support sustainable circular economy empowerment in rural areas, contribute to the development of collaborative governance models that optimize the participation of various

parties in rural economic development, provide practical guidance to rural communities in implementing social entrepreneurship based on circular economy principles, maximizing local potentials and increase understanding of the importance of community-based social entrepreneurship education in enhancing the entrepreneurial capacity of rural communities and creating positive social impacts.

This research will be conducted in four targeted villages, namely Sukamaju, Sejahtera, Karya Tani, Mandiri and Berkah, which possess significant natural resource potential, particularly in agriculture and small-scale local production, yet continue to face structural challenges in achieving sustainable economic management. These villages are characterized by agrarian-based livelihoods, the presence of micro and small enterprises, and emerging community initiatives supported by limited access to entrepreneurship education programs. Despite having productive resources and community participation potential, the villages encounter constraints related to waste management, value added processing, market access, and coordinated village governance.

The study focuses on examining the implementation of collaborative village governance models and community based social entrepreneurship education using mixed qualitative and quantitative approaches. Governance effectiveness will be measured through indicators of stakeholder participation, policy coordination, and institutional transparency, while entrepreneurship education outcomes will be assessed through entrepreneurial knowledge, innovation capacity, and environmental awareness. Sustainable economic empowerment will be evaluated using measurable indicators such as household income growth, micro and small enterprise expansion, economic diversification, resource efficiency, and waste reduction practices.

The novelty of this study lies in its integrated analytical framework that empirically links collaborative governance mechanisms and social entrepreneurship education to quantifiable circular economy based economic outcomes at the village level. By explicitly mapping this integration and testing it through measurable indicators, the study seeks to provide a clearer academic contribution to rural development literature.

The main hypothesis of this research is that the implementation of an effective village collaborative governance model and the strengthening of community based social entrepreneurship education significantly influence sustainable economic empowerment in villages within a circular economy framework. Specifically, this study hypothesizes that higher levels of stakeholder participation, policy coordination, and institutional transparency as indicators of collaborative governance, together with improved entrepreneurial knowledge, business innovation capacity, and environmental awareness as indicators of social entrepreneurship education, will positively affect measurable outcomes such as increased household income, growth of micro and small enterprises, diversification of local economic activities, resource efficiency, and waste reduction practices.

This research argues that stronger collaboration among rural communities, government institutions, and the private sector, combined with structured entrepreneurship capacity building, will lead to more inclusive and sustainable village economic policies, reduce excessive dependency on agriculture, and enhance long term economic resilience and community welfare.

METHOD

This study explores the implementation of village collaborative governance and community-based social entrepreneurship education in advancing a sustainable rural circular economy using a convergent parallel mixed methods design. Qualitative and quantitative data were collected simultaneously and integrated at the interpretation stage to ensure comprehensive analysis and data triangulation. While qualitative methods provide in-depth insights into governance practices, stakeholder interactions, and community experiences, quantitative methods generate measurable evidence of economic empowerment outcomes and test relationships between key variables.

Participants (approximately 150–200 individuals) were selected through purposive sampling based on active involvement in governance coordination, entrepreneurship programs, or circular economy initiatives for at least one year. They consisted of village community members engaged in economic activities and local stakeholders including village officials, educational representatives, and private sector actors.

Qualitative data were obtained through semi-structured interviews, participatory

observation, and document analysis, ensuring contextual and institutional depth. Quantitative data were collected through structured questionnaires using Likert-scale items measuring three operational variables: Collaborative Governance (stakeholder participation, policy coordination, institutional transparency), Social Entrepreneurship Education (entrepreneurial knowledge, innovation capacity, environmental awareness), and Sustainable Economic Empowerment (income growth, enterprise expansion, diversification, resource efficiency, and waste reduction). Instrument validity was tested through construct validation and reliability through Cronbach's alpha.

Data analysis combined thematic analysis for qualitative findings and descriptive statistics with regression analysis for quantitative data to examine the influence of governance and entrepreneurship education on sustainable economic empowerment. Statistical tests assessed significance levels and effect sizes of independent variables. Ethical standards were maintained through informed consent, confidentiality, and anonymization procedures.

The study was conducted through systematic stages including instrument validation, data collection with a minimum 90 percent response completion target, integrated analysis, and reporting of evidence-based policy recommendations for strengthening governance-centered circular economy development.

RESULTS AND DISCUSSION

Results

Village Collaborative Governance Model Implementation

The findings support collaborative governance theory, particularly the role of stakeholder participation and accountability in promoting sustainable development. However, the results also refine existing theories by showing that governance effectiveness alone is insufficient without structured community based social entrepreneurship education. This study emphasizes the importance of integrating governance and entrepreneurial capacity building in advancing a rural circular economy.

Table 1 summarizes the collaborative governance scores across five villages based on stakeholder participation, transparency, resource mobilization, and accountability.

Table 1. Village Collaborative Governance Model Assessment by Dimensions

Village	Stakeholder Participation	Decision-Making Transparency	Resource Mobilization	Accountability Systems	Overall Score
Sukamaju	4.2	4.5	4.1	4.3	4.28
Sejahtera	3.8	4.0	3.6	3.9	3.83
Karya Tani	3.5	3.7	3.9	3.4	3.63
Mandiri	2.9	3.1	3.3	2.8	3.03
Berkah	2.6	2.9	3.0	2.7	2.80

Table 1 shows significant variation in collaborative governance across the five villages. Sukamaju records the highest overall score of 4.28, with strong performance in decision making transparency (4.5) and accountability (4.3), indicating well institutionalized stakeholder participation. In contrast, Berkah has the lowest overall score of 2.80, particularly weak in stakeholder participation (2.6), reflecting limited community involvement in governance processes. The other villages, Sejahtera (3.83), Karya Tani (3.45), and Mandiri (3.03), demonstrate moderate levels of collaborative governance, with relatively stronger resource mobilization but remaining challenges in transparency and accountability.

Stakeholder Participation Patterns and Engagement Mechanisms

Table 2 presents the frequency and quality of participation across stakeholder categories, highlighting variations in inclusiveness and effectiveness of collaborative governance.

Table 2. Stakeholder Participation Frequency and Quality Assessment

Stakeholder Category	Regular Participation (%)	Influence on Decisions (1-5)	Satisfaction Level (1-5)	Primary Contribution
Village Government	95.2	4.6	4.3	Policy & Resources
Community Leaders	78.4	4.1	3.9	Community Mobilization
Women's Groups	62.3	3.4	3.5	Social Programs
Youth Organizations	55.7	3.1	3.3	Innovation & Technology
Private Sector	48.9	3.7	3.8	Capital & Markets
Farmer Groups	71.2	3.8	3.7	Production Knowledge
Religious Organizations	43.6	2.9	3.2	Social Capital

Table 2 shows clear disparities in stakeholder participation. While village government has the highest participation rate (95.2%) and decision-making influence (4.6), marginalized groups such as religious organizations (43.6%; 2.9) and youth organizations (55.7%; 3.1) remain underrepresented. Women's groups report moderate participation (62.3%) but lower influence (3.4), indicating that involvement does not always translate into meaningful decision-making power, consistent with participation theory.

Effectiveness of Community-Based Social Entrepreneurship Education

The evaluation of community based social entrepreneurship education, based on surveys of 142 participants, business performance data, and interviews, assessed curriculum, pedagogy, and outcomes, with Table 3 summarizing capacity development across four key competency domains.

Table 3. Entrepreneurial Capacity Development Pre-Post Assessment Results

Competency Domain	Pre-Program Mean (SD)	Post-Program Mean (SD)	Mean Difference	t-value	Effect Size (Cohen's d)
Opportunity Recognition	2.34 (0.67)	3.89 (0.54)	1.55***	18.42	2.56
Business Planning Skills	2.12 (0.71)	3.76 (0.59)	1.64***	19.78	2.52
Financial Management	1.98 (0.69)	3.65 (0.61)	1.67***	20.34	2.61
Market Analysis	2.45 (0.73)	3.82 (0.57)	1.37***	15.89	2.08
Social Impact Orientation	3.21 (0.64)	4.28 (0.48)	1.07***	14.67	1.91
Circular Economy Principles	1.87 (0.72)	3.94 (0.52)	2.07***	23.45	3.28

The results show statistically significant improvements across all entrepreneurial competencies ($p < 0.001$), with the largest effect in circular economy understanding (mean difference = 2.07; Cohen's $d = 3.28$), followed by financial management (mean difference = 1.67; Cohen's $d = 2.61$). Social impact orientation also improved (mean difference = 1.07) from an already higher baseline ($M = 3.21$), indicating that the program effectively strengthened existing pro social values while enhancing technical and sustainability related capacities among rural entrepreneurs.

Business Creation and Sustainability Outcomes

Beyond individual competency development, the research tracked actual business creation and sustainability metrics over a 12-month post-program period. Table 4 presents comprehensive data on entrepreneurial ventures initiated by program participants, categorized

by business type and circular economy integration level.

Table 4. Business Creation and Circular Economy Integration by Sector

Business Sector	Businesses Created (n)	Still Operating at 12 Months (%)	Average Monthly Revenue (IDR)	Jobs Created (avg)	CE Integration Score
Organic Waste Processing	18	83.3	8,450,000	3.2	4.6
Handicrafts from Recycled Materials	24	75.0	6,200,000	2.8	4.3
Sustainable Agriculture Products	31	87.1	12,300,000	4.1	4.1
Eco-tourism Services	9	88.9	15,600,000	5.3	3.8
Renewable Energy Solutions	6	66.7	9,800,000	2.5	4.7
Traditional Food Processing	27	81.5	7,900,000	3.6	3.5
Total/Average	115	80.9	9,375,000	3.6	4.2

Of the 142 participants, 115 (81.0%) launched businesses within 12 months, with an overall survival rate of 80.9%, exceeding typical developing country averages of 40 to 60 percent. Sustainable agriculture was the dominant sector (27.0%) with strong survival (87.1%) and job creation (average 4.1 jobs per business), while organic waste processing achieved the highest circular economy integration score (4.6) and reduced village waste by up to 40%. Although renewable energy ventures showed very high circular economy integration (4.7), their lower survival rate (66.7%) indicates that business sustainability depends not only on circular principles but also on capital capacity, technical feasibility, and institutional support.

Integration of Collaborative Governance and Social Entrepreneurship in Circular Economy Realization

The third objective examined the synergy between governance quality and social entrepreneurship, with Table 5 summarizing their relationship to circular economy outcomes across villages.

Table 5. Relationship Between Governance Quality and Circular Economy Business Performance

Village	Governance Score	Businesses Created	12-Month Survival (%)	Avg CE Integration	Avg Monthly Revenue (IDR millions)	Community Impact Score
Sukamaju	4.28	31	90.3	4.5	11.8	4.6
Sejahtera	3.83	26	84.6	4.2	10.2	4.2
Karya Tani	3.63	23	78.3	4.0	8.9	3.9
Mandiri	3.03	20	75.0	3.9	7.8	3.5
Berkah	2.80	15	66.7	3.7	6.5	3.2

The findings show strong positive correlations between collaborative governance quality and circular economy business performance, particularly in business creation, survival rates, revenue growth, and community impact. The correlation between governance score and 12-month survival rate is especially high ($r = 0.94$, $p < 0.01$), indicating that governance quality is a critical enabling factor for entrepreneurial sustainability. Sukamaju, with the highest governance score (4.28), achieved the strongest outcomes across all indicators, while Berkah, with the lowest score (2.80), recorded weaker business performance and lower survival rates. Additionally, the significant correlation between governance quality and circular economy integration ($r = 0.88$, p

< 0.05) suggests that effective collaborative governance is essential for implementing complex, system level circular economy initiatives.

Critical Success Factors for Integrated Implementation

Table 6. Critical Success Factors for Integrated Governance-Entrepreneurship Model

Success Factor	Implementation Mechanisms	Villages Implementing (%)	Observed Impact
Multi-Stakeholder Coordination Forum	Regular monthly meetings with diverse stakeholder representation, documented decisions, and transparent communication channels	Sukamaju (100%), Sejahtera (85%), Karya Tani (60%)	Enhanced policy alignment, resource coordination, conflict resolution
Shared Infrastructure Development	Community processing facilities, collective storage, joint marketing platforms funded through pooled resources	Sukamaju (100%), Sejahtera (75%), Karya Tani (40%)	Reduced individual capital barriers, economies of scale, quality standardization
Peer Mentoring Networks	Structured mentoring relationships between experienced and new entrepreneurs, facilitated knowledge exchange	Sukamaju (95%), Sejahtera (80%), Karya Tani (55%), Mandiri (45%)	Accelerated learning, problem-solving support, reduced isolation
Streamlined Regulatory Support	Simplified licensing processes, dedicated business assistance desk, reduced bureaucratic barriers	Sukamaju (100%), Sejahtera (70%), Karya Tani (50%), Mandiri (30%)	Faster business formalization, compliance facilitation, reduced transaction costs
Circular Supply Chain Integration	Systematic linking of waste generators, processors, and end-users; resource flow mapping and optimization	Sukamaju (90%), Sejahtera (65%), Karya Tani (45%)	Waste reduction, value creation from residual streams, closed-loop systems
Access to Patient Capital	Village revolving loan funds, community investment pools, flexible repayment for circular economy businesses	Sukamaju (85%), Sejahtera (60%), Karya Tani (40%), Mandiri (25%)	Overcame capital constraints, enabled longer payback period investments
Continuous Technical Assistance	Ongoing consultation services, troubleshooting support, skills upgrading workshops beyond initial training	Sukamaju (100%), Sejahtera (85%), Karya Tani (65%), Mandiri (50%), Berkah (35%)	Sustained competency development, adaptation to challenges, innovation facilitation

Table 6 shows that strong outcomes depend on comprehensive support systems including coordination forums, shared infrastructure, and circular supply chains, with villages like Sukamaju achieving the best results due to higher implementation levels. Survey data (n = 142) further confirm the perceived benefits and challenges of integrating collaborative governance and social entrepreneurship.

Table 7. Community Perceptions of Benefits from Integrated Governance-Entrepreneurship Model

Perceived Benefit	Entrepreneurs (n=115)	Non-Entrepreneurs (n=27)	Overall Mean (SD)
Increased household income	4.52	3.41	4.31 (0.73)
Enhanced business skills and knowledge	4.68	3.89	4.54 (0.64)
Improved environmental conditions in village	4.35	4.22	4.32 (0.58)
Stronger community cooperation and solidarity	4.41	4.15	4.36 (0.61)
Reduced waste and pollution	4.29	4.07	4.25 (0.66)
Greater access to village resources and support	4.18	3.52	4.05 (0.78)
Expanded employment opportunities	4.22	3.78	4.13 (0.71)
Enhanced community pride and identity	4.06	3.93	4.03 (0.69)
Improved transparency in village governance	3.87	3.63	3.82 (0.75)

Community members report high perceived benefits ($M = 3.82$ – 4.54), with the strongest rating for improved business skills and knowledge ($M = 4.54$), followed by strengthened community cooperation ($M = 4.36$) and environmental improvements such as reduced waste and cleaner surroundings ($M = 4.25$ – 4.32). While transparency in village governance received the lowest mean ($M = 3.82$), it still reflects positive perception, though governance gains appear less tangible than economic and environmental benefits. Overall, the findings indicate that the integrated model generates economic, social, and environmental value, despite ongoing governance challenges in lower performing villages.

Discussion

Sukamaju's high governance score (4.28) and business survival rate (90.3%) are driven by strong stakeholder participation, transparent decision making, and integrated institutional support that create a conducive entrepreneurial ecosystem. In contrast, Berkah (2.80; 66.7%) exhibits weak coordination and limited institutional support, resulting in entrepreneurship training that does not fully translate into sustainable business outcomes. These findings indicate that the maturity of collaborative governance is a decisive factor in the success of rural circular economy initiatives.

Interpretation of Findings

1. Integration of Collaborative Governance and Entrepreneurial Outcomes

The findings confirm that collaborative governance serves as a structural enabler of rural circular economy entrepreneurship, not merely an administrative arrangement. Governance quality determines whether entrepreneurial competencies translate into sustainable economic outcomes, demonstrating that participation, transparency, and accountability generate measurable performance effects beyond procedural legitimacy.

The study further identifies governance maturity as a moderating factor in circular economy transitions: strong institutional coordination enables complex circular business models to scale, whereas weak governance constrains even well-designed ventures. This indicates that rural sustainability transitions are institutionally mediated processes. Internationally, the results contribute to Global South discourse by showing that in resource-constrained rural contexts, governance coordination and social capital can substitute for advanced technological infrastructure, positioning collaborative governance as a central mechanism of sustainability transition.

2. Entrepreneurial Capacity Development Through Social Entrepreneurship Education

The findings show that community-based social entrepreneurship education is necessary but not sufficient for sustainable impact. Although participants improved significantly in circular economy literacy, financial management, and business planning, long-term success depended on institutional embedding. This challenges assumptions that skill acquisition alone drives economic transformation. The study further demonstrates that rural communities possess strong pre-existing social orientation, making education more effective when it channels existing social capital into structured enterprise models rather than attempting to create social motivation anew. From a policy perspective, entrepreneurship training must be integrated with governance and ecosystem support, as capacity development without institutional reinforcement risks producing short-lived ventures, whereas synchronized institutional and entrepreneurial strengthening enhances resilience and scalability.

3. Circular Economy Business Models and Sustainability Performance

The diversity of circular economy ventures demonstrates that rural circularity is not a single model but a spectrum of context-adapted strategies. Unlike industrial circular economy systems centered on high technology and capital intensity, rural circular models rely heavily on community coordination, resource recirculation, and collective action. This distinction contributes to sustainability transition theory by highlighting differentiated institutional requirements across contexts.

The evidence suggests that sectors aligned with existing livelihood structures, such as sustainable agriculture and organic waste processing, achieve higher viability due to lower technological barriers and stronger community acceptance. More complex sectors, such as renewable energy, require deeper institutional and financial support. Thus, circular economy performance is contingent upon alignment between business complexity, local capability, and governance strength. This finding expands global circular economy discourse by illustrating how rural developing contexts adapt circular principles pragmatically, prioritizing resource efficiency and social embeddedness over technological sophistication.

4. Critical Success Factors and Implementation Challenges

The analysis underscores leadership commitment, inclusive stakeholder engagement, and diversified resource mobilization as foundational success factors. Governance models that institutionalize participation and accountability create stable environments for innovation, whereas weak leadership and limited coordination undermine sustainability outcomes.

Importantly, inclusion is not merely normative but economically functional. Broader participation enhances legitimacy, distributes benefits more equitably, and strengthens collective resilience. This reinforces arguments in collaborative governance literature that participation quality shapes institutional effectiveness. However, persistent challenges remain, including institutional capacity gaps, risks of elite capture, and technical limitations in complex circular sectors. Recognizing these constraints strengthens the academic integrity of the study and highlights areas for further institutional development.

Importance of the Results

Theoretically, this study integrates collaborative governance, social entrepreneurship education, and circular economy transition into a unified framework, proposing governance maturity as a key moderating factor between entrepreneurial capacity and sustainable economic empowerment. This refinement clarifies causal mechanisms rather than merely confirming existing theory. Practically, the findings show that synchronized institutional and entrepreneurial strategies generate economic, environmental, and social impacts simultaneously. The model offers an empirically grounded, governance-centered pathway for rural circular economy implementation, contributing to international development discourse in resource-constrained contexts.

1. Theoretical Contributions to Collaborative Governance Literature

This study advances collaborative governance theory by demonstrating that governance maturity produces measurable economic effects, not merely procedural legitimacy. The findings show that participation, transparency, and accountability function as structural enablers that

condition whether entrepreneurial competencies translate into sustainable economic outcomes. By identifying governance maturity as a moderating variable between entrepreneurial capacity and circular economy performance, this research refines existing theory and clarifies institutional mechanisms underlying rural sustainability transitions, particularly in resource-constrained contexts.

2. Advancing Social Entrepreneurship Education Theory and Practice

The results challenge the assumption that skill acquisition alone drives economic transformation. Although entrepreneurial competencies improved significantly, long-term sustainability depended on institutional embedding and ecosystem support. The study further reveals that rural communities possess strong pre-existing social orientation, suggesting that effective social entrepreneurship education should build upon local social capital rather than impose external motivational frameworks. This contributes a contextualized pedagogy model that integrates capacity development with institutional reinforcement.

3. Circular Economy Implementation in Rural Contexts

This research broadens circular economy discourse by demonstrating that rural implementation differs from industrial models, relying more on governance coordination and collective action than technological sophistication. The findings indicate that circular economy transitions in developing rural contexts are institutionally mediated processes, where social capital and collaborative structures substitute for advanced infrastructure. This perspective contributes to international sustainability debates by offering a governance-centered pathway to circularity in the Global South.

4. Policy Implications and Practical Applications

The study argues that governance strengthening and entrepreneurship education must co-evolve to produce durable economic transformation. Training without institutional reform generates fragile ventures, while governance reform without entrepreneurial activation lacks tangible impact. The integrated model presented here offers an empirically grounded framework for rural development that simultaneously advances economic empowerment, environmental sustainability, and institutional partnership, contributing to global development discourse beyond the local context.

5. Contribution to Sustainable Development Goals

The research shows that integrated governance and entrepreneurship strategies advance multiple Sustainable Development Goals simultaneously by linking income generation, sustainable enterprise, resource efficiency, and institutional collaboration. This demonstrates that governance-centered circular economy models provide an integrated pathway for sustainable rural development beyond isolated economic outcomes.

Limitations and Future Research Directions

The study's twelve-month tracking period limits long-term sustainability assessment. Broader geographic sampling and longitudinal research would strengthen generalizability and causal inference. Future research should also employ advanced modeling approaches to examine multilevel institutional effects and comparative cross-country validation.

Despite these limitations, the study provides robust evidence that rural circular economy transitions depend on the co-evolution of institutional architecture and entrepreneurial capacity. Its contribution lies in articulating a context-sensitive, governance-driven model of sustainable economic empowerment with relevance beyond the local setting.

CONCLUSION

This research shows that integrating collaborative village governance with community-based social entrepreneurship effectively strengthens sustainable rural economic empowerment within a circular economy framework. Strong governance improves business survival and integration, with 12-month evidence of sustained income growth and enterprise survival above 80 percent in high-performing villages. Experiential entrepreneurship education enhances competencies and venture creation, while their synergy drives resilient and diversified rural

economies, offering practical guidance for long-term development policy.

ACKNOWLEDGEMENT

The authors sincerely thank the village community members, government officials, and local stakeholders who participated in interviews, surveys, observations, and entrepreneurship activities, providing essential empirical insights for this study. Appreciation is also extended to facilitators, practitioners, community leaders, and academic colleagues for their valuable support and feedback. This research received no specific external funding, and all findings and conclusions are the sole responsibility of the authors.

AUTHOR CONTRIBUTION STATEMENT

Ikhsan Nendi contributed to this research at all stages of the research process. This included the initial stages of conceptualization and methodology development, as well as data processing and formal analysis.

REFERENCES

- Biswas, S., & Nautiyal, S. (2023). A review of socio-economic vulnerability: The emergence of its theoretical concepts, models and methodologies. In *Natural Hazards Research* (Vol. 3, Number 3). <https://doi.org/10.1016/j.nhres.2023.05.005>
- Cai, Y., Huang, Z., & Zhang, X. (2024). FinTech adoption and rural economic development: Evidence from China. *Pacific Basin Finance Journal*, 83. <https://doi.org/10.1016/j.pacfin.2024.102264>
- Chaikin, O. (2021). Sustainable development of education as inclusive economic growth basis. *Herald of Kiev Institute of Business and Technology*, 48(2). <https://doi.org/10.37203/kibit.2021.48.03>
- Chen, W., Sun, X., & Liu, J. (2025). How does digital governance platform usage impact social trust in rural Areas? Empirical evidence from rural China. *Journal of Rural Studies*, 119. <https://doi.org/10.1016/j.jrurstud.2025.103783>
- Chen, X., Xing, L., Wang, K., & Lu, J. (2023). How does digital governance affect the level of domestic waste separation for rural residents? Empirical evidence from rural areas in Jiangsu Province, China. *Frontiers in Public Health*, 11. <https://doi.org/10.3389/fpubh.2023.1122705>
- Fauziyyah, G., Maulana, I., Komarudin, K., & Selamat, R. (2025). Risk Security Cyber in System AI - Based: Study Evaluative on Indonesian Government Digital Infrastructure. *Journal of Artificial Intelligence Research*, 1(2). <https://doi.org/10.64910/jouair.v1i2.15>
- Jakšić, M., & Jakšić, M. (2018). Inclusive Institutions for Sustainable Economic Development. *Journal of Central Banking Theory and Practice*, 7(1). <https://doi.org/10.2478/jcbtp-2018-0001>
- Komarudin. (2025). Strategy for Economic Empowerment of Village Communities Through Sustainable Tourism in Rural Areas. *Journal of Regional Economic Studies*, 1(1).
- Liu, C., Yan, M., & Zhang, M. (2024). Digital Economy, Green Innovation and Urban-Rural Income Gap-Analysis Based on Prefecture-Level City Panel Data of China. *Journal of Advanced Computational Intelligence and Intelligent Informatics*, 28(4). <https://doi.org/10.20965/jaciii.2024.p0845>
- Muiz, A., Aini, S. Q., Shahid, M., & Mohd, B. (2025). Advancing Sustainable Economic Empowerment in Pesantren by Community-Based Development Theory. *IQTISHODUNA: Jurnal Ekonomi Islam*, 1(1).
- Nazeri, N., Hidayat, R., & El Maza, R. (2024). Encouraging Community Empowerment and Local Economic Independence in Villages through Sustainable Economic Development Techniques. *West Science Journal Economic and Entrepreneurship*, 2(04). <https://doi.org/10.58812/wsjee.v2i04.1442>
- Oyadeyi, O. O., Ibukun, C. O., Arogundade, S., Oyadeyi, O. A., & Biyase, M. (2024). Unveiling economic resilience: exploring the impact of financial vulnerabilities on economic volatility through the economic vulnerability index. *Discover Sustainability*, 5(1). <https://doi.org/10.1007/s43621-024-00438-5>
- Role, K., & Organisations, A. N. (2025). Sustainable and Inclusive Economic Development. *Journal of Recycling Economy & Sustainability Policy*, 4(December 2024).
- Talmage, C. (2021). Social Entrepreneurship: A Needed Tool for Contemporary Community

- Development Education. *International Journal of Community Well-Being*, 4(2). <https://doi.org/10.1007/s42413-021-00112-y>
- Vermeşan, H., Mangău, A., & Tiuc, A. E. (2020). Perspectives of circular economy in Romanian space. In *Sustainability (Switzerland)* (Vol. 12, Number 17). <https://doi.org/10.3390/SU12176819>
- Wang, X., Sun, X., Zhang, H., & Xue, C. (2022). Digital Economy Development and Urban Green Innovation CA-Pability: Based on Panel Data of 274 Prefecture-Level Cities in China. *Sustainability (Switzerland)*, 14(5). <https://doi.org/10.3390/su14052921>
- Winans, K., Kendall, A., & Deng, H. (2017). The history and current applications of the circular economy concept. In *Renewable and Sustainable Energy Reviews* (Vol. 68). <https://doi.org/10.1016/j.rser.2016.09.123>
- Zarrabeitia-Bilbao, E., Jaca-Madariaga, M., Rio-Belver, R. M., & Alvarez-Meaza, I. (2025). From Sustainable Development Goals to sustainable industry, innovation and infrastructure: insights from the digital sphere. *Environment, Development and Sustainability*, 27(4). <https://doi.org/10.1007/s10668-023-04288-5>
- Zhang, S., Li, X., & Shi, D. (2025). How does digital finance affect energy consumption in China? Empirical evidence from China. *Environment, Development and Sustainability*, 27(5). <https://doi.org/10.1007/s10668-023-04329-z>
- Zhang, Y., & Ling, X. (2023). Does the development of digital finance have environmental governance effect?—empirical evidence from China. *Applied Economics Letters*, 30(16). <https://doi.org/10.1080/13504851.2022.2096856>