

# CONSTRUCTION OF A CONVERGENCE COMMUNICATION MODEL: HARMONIZATION OF SOCIAL AND DIGITAL CAPITAL IN CROSS-GENERATIONAL AGRICULTURAL COLLABORATION

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Received: 10 March 2026

Accepted : 01 April 2026

Revised : 15 March 2026

Published : 28 April 2026

## Abstract

The global agricultural sector currently faces a serious threat in the form of a farmer regeneration crisis amidst the ambition to achieve sustainable food security. Although *Smart Farming technology* is readily available, its adoption rate is hampered by a sharp communication gap between senior farmers and the younger generation. This study aims to construct a convergence communication model capable of harmonizing the social capital of senior farmers and the digital capital of the younger generation. The method used is a qualitative systematic literature review approach. The analysis was conducted on various reputable literature from the Scopus, Web of Science, and Sinta databases spanning the past ten years. The results show a divergence in characteristics between *the bonding social capital* of senior farmers, which tends to be exclusive, and *the digital capital* of the younger generation, which is technocentric but lacks social relations. As a solution, this study constructs a Convergence Communication Model that integrates *reverse mentoring strategies* and cyclical dialogue to achieve mutual understanding. The implications of this model are the creation of an inclusive acceleration of farmer regeneration, increased resource efficiency based on a *green economy*, and strengthened national food stability through resilient intergenerational asset synergy.

**Keywords:** Convergence Communication, Social Capital, Digital Capital, Intergenerational Agriculture, *Smart Farming*.

## I. INTRODUCTION

The global agricultural sector is currently at a crucial crossroads, where the threat of a farmer regeneration crisis is becoming an existential challenge for human civilization (Ehrnström-Fuentes & Hokkanen, 2025). The phenomenon of *an aging population* or aging workforce in the agricultural sector is no longer merely a sectoral issue, but a real threat to economic stability and global food availability (Hussain et al., 2025). In many developing countries, including Indonesia, the average age of farmers has exceeded 50 years, while the interest of the younger generation to enter this sector continues to decline due to the perception of the low economic value and social status of traditional agriculture (Giwu et al., 2025).

This situation creates a gap that contradicts the ambition to achieve sustainable food security. On the one hand, the world's growing population demands a more massive and efficient increase in food production (Toumbourou et al., 2023). On the other hand, the remaining workforce is a group with physical limitations and a reluctance to change farming patterns that have been carried out for generations (Purc-Stephenson et al., 2025). Without a radical transformation in the involvement of the younger generation, the ideal of food sovereignty will be difficult to achieve due to obstacles such as stagnant production methods and limited productive human resources (Cremaschi & Marín, 2025).

Along with technological advancements, the emergence of *Internet of Things (IoT)* -based *Smart Farming innovations* offers a glimmer of hope for modernizing this sector (Thilakarathne et al., 2025). Digital technology promises efficient use of water and fertilizer, as well as *real-time land monitoring*, which should attract the interest of millennials and Gen Z, who are familiar with digital ecosystems (Balyan et al., 2024). However, the reality on the ground shows a technological paradox: although smart farming devices and systems are abundantly available, the level of adoption and implementation at the grassroots level remains very low and tends to be fragmented (Vasavi et al., 2025).

The main obstacle in adopting this innovation is not simply the availability of tools or infrastructure, but rather the very sharp communication gap between generations. (Sun et al., 2025) . A knowledge dichotomy exists where senior farmers control social capital in the form of land, practical experience, and local wisdom, while the younger generation controls digital capital in the form of technological literacy and access to modern markets (Rahman & Huq, 2023) . Unfortunately, these two pillars of strength rarely synergize harmoniously due to differences in mindset, communication styles, and mutual distrust regarding the effectiveness of old versus new methods (Yılmaz, 2025) . Senior farmers often view digital innovation as a threat to traditional values, while younger farmers feel that their knowledge is no longer relevant in the digital age (Bekee et al., 2024) . The lack of common ground in communication results in the strong social capital of seniors being unable to support the digital capital brought by the younger generation (Watkin & Conway, 2022) . Consequently, knowledge transfer fails, innovation stalls, and the intergenerational collaboration expected to drive *the Green Economy* remains largely a policy discourse (Zhou et al., 2025) . In the context of development communication, a more dialogic approach is needed than a linear model of innovation diffusion (Chen et al., 2023) . The Convergence Communication Model presents a conceptual answer to bridge this gap through a cycle of information exchange aimed at achieving shared understanding (Zhang et al., 2026) . Through convergence, communication is no longer viewed as instruction, but rather as a process of harmonization in which each generation feels valued for its contributions, both in terms of empirical experience and technical skills (Agus et al., 2025) .

Although numerous studies on farmer regeneration have been conducted (O'Donoghue et al., 2022 ; Beacham et al., 2023 ; Schreefel et al., 2022) , there is a significant *gap* in the current literature, where most studies still ignore the relational dynamics between generations in the process of capital convergence (Ozgun et al., 2022 ; Glass, 2023 ; Arjaliès & Banerjee, 2024) . The novelty of this study lies in the integration of Convergence Communication Theory to harmonize the social capital of senior farmers and the digital capital of young farmers, which have previously been considered divergent. This study views the generation gap not as a static obstacle, but as a potential synergy that can be constructed through ongoing dialogue. Therefore, this study seeks to construct a convergent communication model that specifically synergizes social and digital capital within the intergenerational agricultural ecosystem. By conducting an in-depth literature synthesis, it is hoped that a framework can be created that can guide stakeholders in building an effective collaborative narrative. Successfully harmonizing these intergenerational assets will not only accelerate the adoption of *smart farming* but will also serve as a key foundation for ensuring sustainable food security through planned and dignified farmer regeneration. The purpose of this study is to analyze various factors causing mismatch or divergence in communication between social capital and digital capital holders in the cross-generational agricultural ecosystem, while constructing a convergence communication model as a new framework to synergize intergenerational potential in accelerating inclusive digital agricultural transformation.

## II. LITERATURE REVIEW

### 2.1 Convergence Communication Theory

Convergence Communication Theory views communication as a dynamic process in which participants share information to achieve a shared understanding, not simply the one-way transmission of messages. Lawrence Kincaid (1979) emphasized that convergence occurs through a continuous cycle of information to reduce differences in perception between actors until a common ground is reached. Similarly, Everett M. Rogers (2003), in his updated theory, stated that the success of an innovation depends heavily on the quality of dialogue that allows for a convergence of interests between the innovator and adopter. Meanwhile, Jürgen Habermas (1984), through the concept of communicative action, strengthens this argument by emphasizing the importance of a domination-free dialogue space so that consensus or "shared understanding" in development can be achieved authentically.

### 2.2 Social Capital in Agricultural Sociology

Social capital in agricultural ecosystems is a foundation of stability that relies on the strength of human relationships rather than physical assets. Robert Putnam (1993) defines social capital as a combination of trust , norms, and networks that facilitate coordination for the common good, which in agriculture is reflected in the solidity of traditional farming groups. Pierre Bourdieu (1986) adds the perspective that social capital is the accumulation of resources associated with ownership of institutional networks that provide "prestige" and bargaining power for senior farmers in their local environment. On the other hand, Francis Fukuyama (1995) emphasizes that a high level of trust *within* a community is the main capital that determines the economic efficiency and sustainability of social organizations, including in maintaining local wisdom in the agricultural sector.

### 2.3 Digital Capital and Agriculture 4.0

Digital capital emerged as an evolution of capital in the information society era, determining actors' abilities to navigate the Agriculture 4.0 ecosystem. Massimo Ragnedda (2018) defines digital capital as the accumulation of digital competencies and technological access that can be converted into real-world social and economic benefits. According to Jan van Dijk (2005), digital capital is strongly influenced by the level of literacy and accessibility to data, which among the younger generation (Millennials and Gen Z) is a major force in adopting agritech innovations. Furthermore, Mark Prensky (2001) through the concept of *Digital Natives* explains that the innate character of the younger generation who are familiar with technology creates unique digital capital, but often requires a communication bridge to synergize with existing traditional social structures.

## III. RESEARCH METHODOLOGY

This research applies a descriptive-analytical qualitative approach using a library research method. According to Creswell (2014), qualitative research is a method for exploring and understanding the meanings that individuals or groups ascribe to social or humanitarian issues. In this context, researchers act as key instruments for analyzing the phenomenon of intergenerational communication through text. Similarly, Moleong (2017) asserts that qualitative research aims to understand the phenomena experienced by research subjects holistically through descriptions in the form of words and language. Through this method, researchers attempt to conduct in-depth theoretical construction of patterns of harmonization between social capital and digital capital recorded in previous academic texts.

The data collection procedure was carried out through documentation study techniques in various reputable databases such as Scopus, Web of Science, Google Scholar, and Sinta. Sugiyono (2018) stated that document study is a complement to the use of observation and interview methods in qualitative research to obtain higher credibility of research results through authentic secondary data. Data were collected using specific keywords such as "*Intergenerational Farmer*", "*Convergence Communication*", and "*Social vs Digital Capital*". Researchers conducted a strict literature selection by paying attention to inclusion and exclusion criteria to ensure that the data sources used have sufficient relevance and quality to answer the problem formulation regarding communication convergence in the agricultural sector.

The data analysis technique in this study used content analysis and integrative synthesis of the collected literature. Sugiyono (2018) explains that in qualitative research, data analysis is carried out from before entering the field until completion, which in literature studies means the analysis process is carried out simultaneously during the document review. Researchers performed data reduction, data presentation, and drawing conclusions through an *Integrative Literature Review* to create new perspectives from various article findings. Thematic analysis was then used to identify emerging harmonizing patterns. This process, as expressed by Creswell (2014), aims to reduce data into meaningful themes in order to construct a conceptual model that is complete, systematic, and has theoretical novelty.

## IV. RESULTS AND DISCUSSION

### 4.1 Characteristics of Divergence of Social Capital and Digital Capital in Agricultural Communication

The differences between the social capital of senior farmers and the digital capital of the younger generation are a major communication barrier in the adoption of agricultural innovations. Therefore, understanding the characteristics of this divergence is crucial as a basis for building cross-generational synergy towards sustainable agriculture.

#### 4.1.1 Exclusivity of Senior Farmers' Social Capital

*Bonding* social capital, which, according to Robert Putnam (2000), strengthens internal loyalty but often creates exclusivity that inhibits the entry of external innovation. This social structure functions as a support system that maintains community resilience through strong trust among long-standing members. However, its exclusive nature often means that new ideas from outside the group are seen as a threat to established social cohesion. Pierre Bourdieu (1986) adds that this social capital is the accumulation of prestige and institutional networks that make senior farmers heavily dependent on traditional group norms to maintain social stability and their bargaining position within the rural hierarchy. From an agricultural sociology perspective, this dependency is not only technical but also ideological. In line with this theory, recent research in the *Journal of Rural Studies* (2023) revealed that a heavy reliance on local wisdom creates a "psychological barrier" that rejects the logic of digital efficiency. Senior farmers view *Internet of Things* (IoT) technology not as a mere tool, but as a threat to the spiritual and empirical farming intuition they have passed down through generations for decades. For them, losing manual control of the land means

losing their identity as wise "guardians of nature." The impact of this exclusivity is the formation of passive but powerful communicative resistance. Literature analysis shows that while senior farmers are often open personally, they tend to close themselves professionally to mathematical managerial systems. This is exacerbated by a fear of marginalization; the presence of advanced technology is perceived as displacing their central role in the community. As a result, social capital, which should be a basis of strength, is transformed into an obstacle to the circulation of innovative information, as the authority of senior knowledge cannot find common ground with the logic of rapid digital mechanization.

#### **4.1.2 Characteristics of Digital Capital of the Young Generation**

The younger generation (Millennials and Gen Z) are dominated by digital capital, defined by Massimo Ragnedda (2018) as the ability to convert technical competencies into real-world economic benefits and social opportunities. This capital includes high digital literacy, the ability to process large amounts of data, and the speed of adopting digital marketing platforms. Jan van Dijk (2005) emphasized that the effectiveness of this capital is highly dependent on information literacy and data accessibility, which have become innate characteristics of this generation (*digital natives*), enabling them to see agricultural opportunities as a business ecosystem that can be optimized through algorithms and precision.

However, this abundance of digital capital is often not accompanied by the maturity of traditional social capital in agrarian environments. Findings in the journal *Sustainability* (2024) indicate that although young farmers excel in *smart farming operations*, they experience a deficit in "relational capital" within the rural sociological structure. They often fail to build trust with local communities due to a communication style perceived as overly technical, individualistic, and lacking empathy for the traditional social ethics held dear by their elders. This gap often leads to the innovations they bring being perceived as "foreign objects" lacking a cultural foothold in the village.

Further analysis found that young farmers tend to view land solely as an economic object, in contrast to the view of older farmers who view land as an ancestral inheritance. The inability of the younger generation to translate the technical value of *smart farming* into the language of "local wisdom" often results in their ideas being politely rejected. This creates a vicious cycle in which young farmers feel unappreciated and ultimately choose to work in isolation or even leave the agricultural sector, preventing their digital capital from truly being converted into impactful social change for the community.

#### **4.1.3 Point of Divergence: Analysis of Intergenerational Communication Barriers**

The point of divergence in agricultural communication arises from the clash of authority and the sharp differences in risk perception between the two generational groups. Lawrence Kincaid (1979) explains that this communication failure occurs because there is no two-way information cycle to achieve mutual understanding, so that information only stops at the presentation stage without becoming a shared meaning. Meanwhile, Everett M. Rogers (2003) sees this phenomenon as a failure in the innovation diffusion process due to the excessive social distance between the carriers of digital innovation and the owners of social capital on land, thus creating psychological friction that hinders harmonization.

According to a comprehensive study in *the International Journal of Agricultural Extension* (2025), these obstacles are further exacerbated by the imbalance of authority within formal organizations such as farmer groups. Senior farmers tend to maintain *the status quo* of leadership and traditional values as a means of protecting their existence. Meanwhile, younger farmers tend to withdraw from formal organizations because they feel their digital ideas lack adequate sociological validation. This situation creates a *stagnant situation* where knowledge transfer does not flow in both directions: senior farmers do not learn technology, and younger farmers do not learn practical wisdom.

Theoretically, this divergence is caused by differences in "cognitive maps" regarding the future of agriculture. Senior farmers prioritize stability and sustainability of tradition, while younger generations prioritize scalability and technological efficiency. Without intervention in the form of a convergent communication model, these two capitals (social and digital) will continue to operate in parallel without ever intersecting. This not only hinders the adoption of *smart farming* but also accelerates the farmer regeneration crisis due to the lack of a comfortable and respectful collaboration space for both parties.

**Table 4.1 Characteristics of Divergence of Social Capital and Digital Capital in Agricultural Communication**

Comparative Dimensions	Social Capital (Senior Farmers)	Digital Capital (Young Generation)
Main Characteristics	Bonding Social Capital: Bonding inward, high internal loyalty, and exclusive.	Digital Capital: Technical capabilities, data literacy, and converting digital opportunities into economic ones.
Theoretical Basis	Robert Putnam (2000), Pierre Bourdieu (1986).	Massimo Ragnedda (2018), Jan vanDijk (2005).
Value Orientation	Tradition, local wisdom, spiritual intuition, and preserving ancestral heritage.	Efficiency, scalability, algorithmic logic, and business ecosystem.
Communication Patterns	Closed to mathematical managerial systems; maintaining social harmony.	Technical, individualistic, and data-driven; often lacking cultural empathy.
Perception of Land	The subject of identity and "trust" that must be guarded (nature guardian).	Economic objects that must be optimized through precision ( <i>smart farming</i> ).
Major Obstacles	"Psychological wall" against technology; fear of role marginalization.	Relational capital deficit; failure to build trust with local communities.
Communicative Risk	Passive resistance; closing oneself off to external innovation.	Professional isolation; ideas are considered "foreign objects" by the community.
The main purpose	Social stability and continuity of tradition.	Business scalability and technology efficiency.

Based on the data in Table 4.1, it can be concluded that communication barriers in the agricultural sector are not only rooted in technical issues, but also in a sharp clash of cognitive maps where senior farmers view technology as a threat to their intuitive authority and spiritual values, while the younger generation tends to be trapped in the logic of digital efficiency that ignores local cultural foundations (*social distance*). This stagnant condition hinders the two-way transfer of knowledge and creates divergences that, if not immediately bridged through a convergent communication model to combine practical wisdom with digital innovation, will exacerbate the farmer regeneration crisis in the future.

#### 4.2 Construction of the Convergence Communication Model: Intergenerational Asset Synergy

After dissecting the obstacles in the previous section, this section formulates strategic steps to harmonize the potential of senior and young farmers into one collaborative ecosystem.

##### 4.2.1 Convergence Mechanism: Achieving *Mutual Understanding*

The convergence mechanism begins by shifting from a linear-instructive communication pattern to a cyclical-dialogical one. According to Lawrence Kincaid (1979), convergence does not mean that all parties become the same, but rather that all parties move toward a shared understanding of meaning through repeated information exchange. In this context, the dialogical stage begins by creating a space for equal discussion in which senior farmers share their empirical experiences and younger farmers explain the potential of technology, until a value agreement is reached on how the technology can strengthen local wisdom, not replace it. One of the main strategies in this mechanism is the implementation of *Reverse Mentoring*. This strategy reverses the traditional learning hierarchy: young farmers act as "digital mentors" who guide seniors in technological literacy (*Smart Farming*), while senior farmers act as "local wisdom mentors" who transfer practical knowledge regarding soil and climate characteristics. A literature analysis in the journal *Agricultural Systems* (2024) shows that *reverse mentoring* can reduce intergenerational sectoral egos because each party feels their contribution is functionally recognized.

##### 4.2.2 Integration of Social Capital and Digital Capital

This integration positions social capital as the "entry point" and digital capital as the "accelerator." Francis Fukuyama (1995) emphasized that *trust* is a prerequisite for economic efficiency; in this research, the trust that senior farmers have in the integrity of the younger generation is a key factor before technology can be adopted. Once *trust*

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has been built through the convergence process, social capital in the form of farmer group networks will become a powerful vehicle for collectively distributing digital capital, so that technology is no longer individualistic. This asset harmonization creates a robust mutualistic symbiosis. Senior farmers provide assets in the form of land, legality, and experience mitigating natural risks (Social Capital), while younger farmers inject efficiency through the use of IoT sensors, automation, and direct access to digital markets (Digital Capital). Literature in the journal *Land Use Policy* (2025) confirms that this combination produces a more resilient "New Capital," where the sharp intuition of senior farmers is validated by the precision data of younger generations, thereby minimizing crop failure and maximizing economic returns.

### 4.2.3 Visualization of the Cross-Generation Convergence Communication Model

The model constructed in this study is visualized as an interactive cycle that moves from divergence to convergence. This model flow consists of three main components:

1. Input (Cross-Generation Capital): Identifying social capital (Senior) and digital capital (Young) as raw materials for collaboration.
2. Process (Communication Convergence): The space between where *Reverse Mentoring* and two-way dialogue take place to erode prejudice and build shared understanding.
3. Output (*Sustainable Food Security*): The final result is an inclusive digital agricultural transformation, stable farmer regeneration, and the achievement of sustainable food security.

The explanation of this model's components emphasizes that without a convergence process at the center, social and digital capital inputs will remain merely assets operating in parallel without any real impact. This model offers theoretical novelty by positioning communication not merely as a means of conveying messages, but as a "harmonizing space" that transforms generational differences into competitive advantages in the agricultural sector. Thus, this model serves as a strategic framework for agricultural development policies that pursue not only technological targets but also the sustainability of human relations.

**Table 4.2 Construction of the Convergence Communication Model: Intergenerational Asset Synergy**

Model Components	Implementation Mechanism	Strategic Functions and Objectives
Communication Patterns	Transition from Linear-Instructive to Cyclic-Dialogical patterns (Kincaid, 1979).	Achieving <i>mutual understanding</i> where technology strengthens local wisdom, not replaces it.
Main Strategy	<i>Reverse Mentoring</i> (Exchanging the roles of digital mentor and wisdom mentor).	Reducing sectoral egos and providing functional recognition for the contributions of each generation.
Capital Integration	Placing Social Capital (Senior) as the entry point and Digital Capital (Young) as the accelerator.	Building <i>trust</i> (Fukuyama, 1995) so that technology is not considered individualistic but rather a collective asset.
Asset Symbiosis	Senior (Land, Experience, Risk Mitigation) + Junior (IoT, Automation, Digital Market Access).	Creating a resilient "New Capital": Senior intuition validated by the precision data of the younger generation.
Input (Assets)	Identification of Senior Social Capital and Younger Generation Digital Capital.	Providing raw materials for collaboration from two different poles of competence.
Process (Space Between)	Two-way dialogue, value negotiation, and reciprocal knowledge transfer.	Eroding sociological prejudice and harmonizing differences into competitive strengths.
Output (Result)	<i>Sustainable Food Security</i> and Digital Agricultural Inclusion.	Realizing stable farmer regeneration and socio-technical sustainable food security.

This convergent communication model reconstructs intergenerational relationships that previously ran parallel or divergently into a mutually reinforcing cycle. Through a process phase involving a *reverse mentoring mechanism*, psychological barriers can be broken down so that senior farmers gain technological literacy without feeling a loss of traditional authority, while the younger generation gains sociological validation and practical ecological understanding not found in algorithms. This integration emphasizes that the success of future digital

agricultural innovations depends not only on the sophistication of hardware such as *the Internet of Things* (IoT), but also on the quality of a harmonized communication space that can transform generational differences into a strategic advantage for national food security.

#### **4.3 Implications of the Model for Sustainable Food Security and *the Green Economy***

The construction of this model provides strategic implications that go beyond mere technology adoption, namely creating food system stability through the integration of mana values between humans, nature, and technology.

##### **4.3.1 Accelerating Inclusive Farmer Regeneration**

The convergence communication model serves as a key catalyst in accelerating farmer regeneration, which has been hampered by stigma and relational gaps. With a space for equal dialogue, the younger generation no longer feels like "outsiders" or "technological laborers" in the field, but rather as strategic partners with functional roles recognized by senior farmers. Literature analysis shows that inclusive regeneration occurs when there is a two-way value transfer. Young farmers gain social legitimacy through the blessing and guidance of senior farmers (Social Capital), while senior farmers feel relevant in the modern era because they are involved in the digital transformation process (Digital Capital). This model ensures that the transition of land leadership is not sudden or conflictual, but rather through a harmonious "knowledge relay" process, ensuring that the agricultural sector remains attractive to young talent without uprooting its local culture.

##### **4.3.2 Impact of Convergence on Resource Efficiency ( *Green Economy* )**

The implementation of this model directly supports *Green Economy principles* through data-driven resource efficiency and local wisdom. Communication convergence enables the creation of "Community-Based Precision Agriculture." For example, the use of IoT soil sensors (Digital Capital) combined with a deep understanding of natural cycles from senior farmers (Social Capital) will result in much more accurate fertilizer and water use and minimal waste. The impact of this harmonization is a reduction in environmental degradation due to excessive chemical use and more sustainable land optimization. From a green economy perspective, this model converts technical efficiency into ecological sustainability. The digital literacy of the younger generation helps monitor carbon footprints and energy efficiency, while the ethical environmental discipline of senior farmers ensures that technology is not used exploitatively, thus creating a balance between economic profitability and ecosystem sustainability.

##### **4.3.3 Strengthening National Food Stability**

At a macro level, the implications of this convergent communication model are the creation of national food stability that is more resilient to shocks. When social and digital capital synergize, the food supply chain becomes more transparent and efficient. Young farmers can use digital platforms to shorten the lengthy distribution chain, while older farmers ensure production consistency through their climate mitigation experience. This stability is achieved through an intergenerational "Information Security System," where the risk of crop failure is minimized by precise data, and the risk of market uncertainty is mitigated by a strong social network. This model emphasizes that sustainable food security cannot be achieved simply by purchasing machines or applications, but rather by building a "communication infrastructure" that enables all actors across generations to converge toward a common goal: sovereign and modern food self-sufficiency.

**Table 4.3 Model Implications for Sustainable Food Security and *the Green Economy***

Implication Dimension	Transformation Mechanism	Strategic Impact
Inclusive Farmer Regeneration	There is a two-way <i>value transfer</i> : social legitimacy for young people and role relevance for seniors.	Removing the stigma of "tech workers", creating a harmonious leadership relay, and attracting young talent without uprooting cultural roots.
Resource Efficiency ( <i>Green Economy</i> )	Integration of IoT sensors (Digital Capital) with understanding natural cycles (Social Capital).	The creation of "Community-Based Precision Agriculture" that minimizes chemical waste, optimizes water use, and prevents land exploitation.
National Stability	Food Synergy between digital supply chain transparency and experience-based climate risk mitigation.	Establishment of a food system that is resilient to market shocks and weather changes through intergenerational communication infrastructure.
Ecological Sustainability	Carbon footprint monitoring literacy combined with traditional environmental ethics.	The balance between short-term economic profitability and long-term ecosystem sustainability.

The implementation of the convergence communication model has an impact that goes beyond simply adopting technical tools, namely by creating food system stability through the integration of values between humans, nature, and technology. This model serves as a catalyst for farmer regeneration, where the younger generation gains social legitimacy through the guidance of seniors, while senior farmers remain relevant in the modern era through digital engagement. In the *Green Economy realm*, this harmonization results in extraordinary resource efficiency; precise data from digital technology ensures accurate use of agricultural inputs, while local wisdom ensures practices remain aligned with environmental carrying capacity. At a macro level, this synergy strengthens national food security by minimizing the risk of crop failure through data and shortening the distribution chain through digital platforms, thus realizing sovereign, modern, and sustainable food independence.

## V. CONCLUSION AND SUGGESTION

### 5.1 Conclusion

This research successfully constructs a Convergence Communication Model as a solution to the problem of intergenerational divergence in the agricultural sector by overcoming the psychological clash between the exclusive social capital of senior farmers and the technocentric digital capital of the younger generation. Through a *reverse mentoring mechanism*, this model transforms the traditional learning hierarchy into an equal cyclical dialogue, where young people act as technology mentors and seniors as practical wisdom mentors to reduce sectoral egos. The synergy between social trust and digital precision ultimately creates a resilient "New Capital", which not only accelerates inclusive farmer regeneration and increases resource efficiency based on *the Green Economy*, but also strengthens national food stability through a robust intergenerational information system.

### 5.2 Suggestions

Based on the results of this study, it is recommended that future researchers conduct empirical field trials to validate the effectiveness of the Convergence Communication Model across various commodities and regions. The government is also expected to shift its focus from physical assistance to extension programs that facilitate equal intergenerational dialogue. Furthermore, agricultural practitioners and facilitators need to adopt a *reverse mentoring approach* through informal dialogue spaces to ensure the natural transfer of local wisdom and digital literacy, ensuring that *smart farming technology* has a strong and sustainable cultural foundation at the rural level.

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# CONSTRUCTION OF A CONVERGENCE COMMUNICATION MODEL: HARMONIZATION OF SOCIAL AND DIGITAL CAPITAL IN CROSS-GENERATIONAL AGRICULTURAL COLLABORATION

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