

## **From Recipients to Drivers: Community–MSME Collaboration in Building a Digital Economic Ecosystem**

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### **Abstract**

This study analyzes the transformation of the community's role from beneficiaries into drivers of the digital economic ecosystem through collaboration with MSMEs. The study employs a Systematic Literature Review (SLR) of 30 scientific articles published between 2020 and 2026, with the selection process based on PRISMA 2020 and the analysis conducted using the Theory–Context–Characteristics–Methodology (TCCM) framework and thematic synthesis. The findings indicate that digital empowerment develops through the stages of digital inclusion, digital literacy, digital capability, community participation, community–MSME collaboration, digital value co-creation, and the formation of a local digital economic ecosystem. This study develops the Community–MSME Digital Ecosystem Framework, which explains the transformation of the community's position from recipient, participant, collaborator, and digital economic actor to ecosystem driver. The findings emphasize that community service needs to move beyond knowledge transfer toward capability development, collaboration, value co-creation, and ecosystem building. This framework offers an empowerment approach that positions communities and MSMEs as collaborative actors in creating value, strengthening self-reliance, and building a sustainable local digital economic ecosystem.

**Keywords:** Community Empowerment, MSMEs, Digital Economy, Collaboration, Value Co-Creation, Digital Ecosystem

## **Dari Penerima menjadi Penggerak: Kolaborasi Masyarakat dan UMKM dalam Membangun Ekosistem Ekonomi Digital**

### **Abstrak**

Penelitian ini menganalisis transformasi peran masyarakat dari penerima manfaat menjadi penggerak ekosistem ekonomi digital melalui kolaborasi dengan UMKM. Penelitian menggunakan *Systematic Literature Review* (SLR) terhadap 30 artikel ilmiah periode 2020–2026, dengan proses seleksi berdasarkan PRISMA 2020 serta analisis *Theory–Context–Characteristics–Methodology* (TCCM) dan sintesis tematik. Hasil penelitian menunjukkan bahwa pemberdayaan digital berkembang melalui tahapan *digital inclusion*, *digital literacy*, *digital capability*, *community participation*, *community–MSME collaboration*, *digital value co-creation*, hingga pembentukan *local digital economic ecosystem*. Penelitian ini menghasilkan *Community–MSME Digital Ecosystem Framework*, yang menjelaskan perubahan posisi masyarakat dari *recipient*, *participant*, *collaborator*, *digital economic actor*, hingga *ecosystem driver*. Temuan menegaskan bahwa pengabdian kepada masyarakat perlu bergeser dari sekadar *knowledge transfer* menuju *capability development*, *collaboration*, *value co-creation*, dan *ecosystem building*. Kerangka ini menawarkan pendekatan pemberdayaan yang menempatkan masyarakat dan UMKM sebagai aktor kolaboratif dalam menciptakan nilai, memperkuat kemandirian, dan membangun ekosistem ekonomi digital lokal yang berkelanjutan.

**Kata kunci:** Pemberdayaan Masyarakat, UMKM, Ekonomi Digital, Kolaborasi, *Value Co-creation*, Ekosistem Digital

## INTRODUCTION

Digital transformation has changed the way communities participate in economic activities. The internet, social media, marketplaces, digital payments, and various technology-based platforms not only provide new ways of conducting transactions but also expand opportunities for communities to participate in production, marketing, distribution, and value creation. In the context of MSMEs, the development of digital ecosystems is determined by interactions between MSMEs and consumers, communities, governments, financial institutions, technology providers, and various other actors. Aminullah et al. (2024) demonstrate that an inclusive digital MSME ecosystem is formed through interacting components, indicating that digital transformation needs to be understood as a process that extends beyond the mere adoption of technology by individual business actors. Thus, digital transformation creates opportunities to shift the position of communities from users and beneficiaries of technology to actors who actively contribute to shaping digital economic activities.

This issue is particularly important in the context of community empowerment because increased access to technology does not automatically result in empowerment. Digitalization programs for communities and MSMEs still largely rely on training, socialization, and mentoring approaches to improve knowledge and skills in using technology. These approaches provide important benefits, but program sustainability requires a process that goes beyond the improvement of basic skills. Surbakti (2025), for example, shows that increased digital awareness needs to be followed by advanced training and mentoring to ensure the sustainability of MSME digital transformation. Lawson et al. (2025) similarly demonstrate that community-based digital empowerment cannot be achieved merely by providing access to technology and digital skills training. Sustainable programs also require partnerships with local organizations, community involvement in decision-making, the ability to adapt programs to community needs, and collaborative relationships that can be maintained after the intervention ends. These findings indicate that digital empowerment needs to move beyond technology access toward enabling communities to use technology independently and productively.

The transition from digital inclusion to digital empowerment has therefore become increasingly relevant. Digital inclusion provides a foundation through access to technology, connectivity, and the ability to use digital devices, whereas empowerment requires the capacity to transform such access into social and economic benefits. Studies on digital empowerment suggest that effective approaches need to consider community needs, build partnerships, and involve communities in decision-making processes (Lawson et al., 2025). In the context of Indonesian MSMEs, recent empowerment models also demonstrate a progression from strengthening basic literacy, practical training, and mentoring toward expanding networks and collaboration, which subsequently generates social and economic impacts. This pattern indicates that the central issue of digital transformation is no longer merely who can use technology, but rather the extent to which technology strengthens the capacity of communities to participate, collaborate, and create economic value.

At the same time, Micro, Small, and Medium Enterprises (MSMEs) occupy a strategic position in connecting digital transformation with the economic lives of communities. Digitalization provides MSMEs with opportunities to expand their markets, improve customer communication, build brands, and utilize various platforms to support business activities. Community service programs targeting MSMEs also demonstrate that the use of social media can generate tangible impacts on business activities. Ariyanti et al. (2024), for example, found a 30% increase in sales following a mentoring program that combined product development with the use of social media among MSME groups producing mangrove-based products. Fathony & Romli (2024) also demonstrate that digital marketing training and mentoring can improve MSMEs' ability to use social media and marketplaces to expand their market reach. These findings illustrate the potential of digital technology as an instrument of economic empowerment while simultaneously demonstrating that its benefits are strongly influenced by the capacity of communities and MSMEs to use it effectively.

However, the digital transformation of MSMEs should not be viewed solely as an issue concerning individual business actors. MSMEs operate within social environments that contain local knowledge, networks, consumers, communities, labor, and various resources that can support business development. Empirical evidence has begun to demonstrate that collaboration constitutes an important element of the digitalization process. Harsono & Rinanda (2025) found that collaboration among government, the private sector, and civil society can support MSME digitalization through strengthened digital literacy, financial support, decision-making processes, and the creation of more sustainable ecosystems. A study conducted in Makassar also demonstrates that communities contribute through social capital, participation, and adaptive local practices in supporting MSME digital innovation (Sahid et al., 2025). Communities should therefore not be positioned merely as consumers or recipients of digitalization programs but can instead serve as resources and partners in the digital transformation of MSMEs.

This relationship creates opportunities for a transition from a one-way empowerment model toward collaborative empowerment. Communities possess local knowledge, social networks, creativity, skills, consumer experience, and an understanding of the needs of their environment, whereas MSMEs possess products, production activities, business experience, market relationships, and economic opportunities. When these resources are brought together, communities can assume broader roles in economic activities, including digital marketing, content creation, distribution networks, promotion of local products, community management, and market development. Research on collaboration in MSME digitalization indicates that the integration of various enablers can improve digital literacy, technology adoption, and MSME competitiveness (Widyawan et al., 2025). Digital cooperative-based programs even demonstrate that shared platforms can create integrated business environments that support collaboration in branding, resource sharing, and market expansion (Prihandono et al., 2025). These findings provide a foundation for viewing communities and MSMEs as actors capable of jointly creating value rather than merely as groups receiving interventions.

This perspective can be explained through several complementary theoretical foundations. Community Empowerment Theory provides a basis for understanding the enhancement of communities' capacity to control resources and take action, while Community Participation positions community involvement as part of the development process rather than merely as the recipient of its outcomes. Social Capital Theory further explains the role of networks, trust, norms, and social relationships in facilitating collective action. In the context of the digital economy, these relationships can be extended through the Value Co-Creation perspective, in which value is not generated solely by firms but develops through the interactions and contributions of multiple actors. Evidence concerning MSME collaboration indicates that social capital and community participation can play important roles in digital innovation, while the pentahelix approach demonstrates that the development of local entrepreneurial ecosystems requires the involvement of MSMEs, communities, government, academia, and other actors (Sahid et al., 2025; Waskita, Widi Ashari, et al., 2026).

This approach also changes the way the digital economic ecosystem is understood. An ecosystem is not formed merely because marketplaces, social media, digital payments, or internet connectivity are available, but rather through relationships among actors that enable the exchange of resources, knowledge, information, and value. Research on Indonesia's digital MSME ecosystem highlights the importance of interacting components in promoting a more inclusive digital economy (Aminullah et al., 2024). In practice, ecosystem-based approaches have also begun to be implemented in empowerment programs. Prihandono et al. (2025), for example, demonstrate that digital cooperative platforms can establish an integrated business environment for rural MSMEs, while Damayanti et al. (2026) show that a collaborative ecosystem approach involving universities, local governments, financial institutions, and MSMEs can produce a more sustainable empowerment model. Digital empowerment therefore needs to be directed toward strengthening relationships among actors rather than merely improving individual capabilities.

Although the literature on digital transformation, MSME digitalization, community empowerment, and digital ecosystems has expanded, these discussions still tend to develop around separate areas of focus. MSME research has largely concentrated on technology adoption, digital marketing, e-commerce, digital literacy, and business performance, whereas community empowerment programs frequently focus on training and skills development. For example, various community service programs have demonstrated that training and mentoring can improve MSME actors' knowledge, skills, and utilization of digital marketing (Alteza et al., 2025; Ariyanti et al., 2024; Mirani et al., 2022; Sari et al., 2023). However, this literature raises a further question regarding how established digital capabilities can be developed into mechanisms for sustainable collaboration between communities and MSMEs so that their benefits do not end when training or mentoring activities are completed.

This gap has important implications for community service. The sequence of socialization → training → mentoring → evaluation remains valuable, but it needs to

evolve toward an approach that produces capabilities, networks, and economic activities that can continue after a program ends. Experiences from various programs indicate that collaboration, local institutions, and long-term partnerships are essential for sustainability. Harsono & Rinanda (2025) emphasize the importance of stakeholder collaboration in creating sustainable digital MSME ecosystems, while Sahid et al. (2025) recommend community-based innovation hubs and long-term partnership models to support digital transformation. Community service therefore needs to move from knowledge transfer toward capability development, from individual participants toward community–MSME collaboration, and from short-term outputs toward the development of local economic ecosystems capable of growing independently.

Based on this gap, this study employs a Systematic Literature Review (SLR) to analyze the paradigm shift from communities as beneficiaries toward communities as drivers of the digital economy through collaboration with MSMEs. The review seeks to integrate the literature on community empowerment, community participation, social capital, value co-creation, MSME digital transformation, and digital ecosystems. Specifically, the study addresses four questions: (1) how has the concept of community empowerment evolved in the context of digital transformation and the digital economy; (2) what forms of community–MSME collaboration contribute to value creation through digital technologies; (3) what capabilities, opportunities, and challenges influence the success of community–MSME collaboration; and (4) how can a community service framework be developed to transform communities from beneficiaries into drivers of the digital economic ecosystem?

This study is expected to provide both theoretical and practical contributions to the development of community service. Theoretically, it seeks to integrate Community Empowerment, Community Participation, Social Capital, Value Co-Creation, and the Digital Ecosystem perspective to explain the changing position of communities within the digital economy. Practically, the study aims to develop a community service framework that progresses through digital inclusion → digital capability → community participation → community–MSME collaboration → digital value co-creation → local digital economic ecosystem → community empowerment. This framework no longer positions communities merely as program participants or MSMEs merely as objects of mentoring; instead, both are positioned as actors who collaborate to create value and build an inclusive, self-reliant, and sustainable local digital economic ecosystem. Evidence from various programs and collaborative studies indicates that the integration of digital capabilities, participation, networks, and cooperation among actors constitutes an important foundation for the sustainability of digital transformation at the local level (Harsono & Rinanda, 2025).

### **Digital Economic Transformation and Changes in the Role of Communities**

Digital economic transformation is characterized by changes in the ways individuals, organizations, and communities interact and create value. Digitalization enables economic activities that previously depended on physical spaces to develop through social

media, marketplaces, digital platforms, electronic payments, and various forms of technology-based networks. In the context of MSMEs, this transformation creates opportunities to expand markets, improve customer interactions, access resources, and build relationships with other actors within the digital ecosystem. Aminullah et al. (2024) show that the development of digital MSMEs does not occur independently but is influenced by interactions among various ecosystem components, including technology, policies, business actors, markets, and supporting actors. Therefore, the digital economy is more appropriately understood as a system of interactions among actors rather than merely as the use of technology in economic activities.

These changes also create opportunities for the role of communities to evolve. Communities that were previously positioned primarily as technology users or consumers can become involved in the creation, distribution, promotion, and exchange of value through digital platforms. However, these opportunities depend on the ability of communities to transform technological access into productive activities. Pujiyanto & Bratamanggala (2024) show that digital transformation at the village level can strengthen human resource development and increase the capacity of communities to participate in development. In the MSME context, Ariyanti et al. (2024) also demonstrate that strengthening knowledge and skills in using social media can expand markets and increase sales among business groups. These findings indicate that technology has empowering value when its use develops from mere access and use toward participation and value creation.

### **Community Empowerment in the Digital Era**

The concept of community empowerment essentially positions communities as subjects with the capacity to make choices, utilize resources, and influence their living conditions. Zimmerman (2000) explains empowerment as both a process and an outcome related to the ability of individuals and communities to gain control, develop capacity, and participate in community life. This perspective is important because it distinguishes empowerment from the mere provision of assistance. Communities that receive assistance do not necessarily become empowered if they remain dependent on the parties providing the intervention. Conversely, empowerment occurs when the knowledge, skills, networks, and resources acquired enhance the community's ability to act independently and collectively.

In the digital environment, empowerment acquires a new dimension because the ability to use technology can expand access to information, services, networks, markets, and economic opportunities. However, increased digital literacy does not automatically result in empowerment. Wahid et al. (2024), for example, show that digital literacy-based empowerment programs can improve communities' skills in accessing digital services. Astuti et al. (2024) also demonstrate a relationship between local community empowerment and digital transformation in the context of cultural preservation and tourism. These findings indicate that literacy and access are important foundations, but this article positions them as initial stages rather than the final outcomes of empowerment.

More substantive digital empowerment occurs when communities are able to use technology to make decisions, solve problems, build networks, collaborate, and generate social and economic benefits.

Accordingly, this article distinguishes among digital inclusion, digital literacy, digital capability, and digital empowerment. Digital inclusion concerns opportunities to obtain access; digital literacy concerns the ability to understand and use technology; while digital capability refers to the ability to apply such knowledge to perform particular activities. Digital empowerment exists at a broader level because digital capabilities are used to strengthen agency, participation, self-reliance, problem-solving, and value creation. This distinction is important in community service because program success should not stop at the question, “Can the community use technology?” but should develop into the question, “What can the community do with that technology to improve its own economic conditions and those of its community?”

### **Community Participation: From Recipients to Participants**

Community participation is an important element in the empowerment process because it determines the extent to which communities have opportunities to influence the direction of activities that affect their lives. One of the classical foundations is Arnstein’s (1969) Ladder of Citizen Participation, which demonstrates that participation occurs at different levels, ranging from highly limited forms of participation to conditions in which communities gain greater influence over decision-making processes. This perspective indicates that the presence of communities in an activity does not necessarily mean that they have acquired a substantive role. Communities may attend as participants, while program design, resources, decisions, and evaluation remain entirely controlled by external parties.

In the context of community service, this distinction is particularly important. Programs that merely invite communities to attend socialization or training activities still primarily position them as recipients, whereas empowerment requires movement toward becoming participants and subsequently collaborators. Communities need opportunities to identify problems, determine needs, utilize local knowledge, implement activities, evaluate outcomes, and develop activities after facilitators are no longer intensively involved. Therefore, participation in this article is viewed not only in terms of the number of community members attending activities, but also in terms of the degree of community involvement in the process of creating change.

Within the digital economy, such participation can develop further into economic participation. Communities can use their digital capabilities to support the marketing of local products, create content, build consumer networks, become resellers or affiliates, manage customer communities, support distribution, provide market information, or even develop new businesses. Thus, the position of communities can develop through the stages of recipient → participant → collaborator → economic actor. These stages constitute one of the conceptual foundations of this article in explaining that the ultimate goal of

community service is not to make communities continuously dependent on programs, but to strengthen their ability to take an active role in the local economic ecosystem.

### **Social Capital Theory in Community–MSME Collaboration**

Collaboration between communities and MSMEs requires social relationships that enable the exchange of resources. Social Capital Theory provides a foundation for explaining the role of networks, trust, norms, and social relationships in facilitating collective action. Putnam et al. (1994) position networks, norms, and trust as components that can enhance coordination and cooperation to achieve mutual benefits, while Nahapiet & Ghoshal (1998) explain social capital through structural, relational, and cognitive dimensions. In the community context, social capital means that resources are embedded within relationships among individuals and organizations.

This perspective is highly relevant to MSMEs because local business activities often develop through close relationships with communities. More recent evidence from Indonesia demonstrates this relationship. Putri et al. (2025) show that digital transformation among community-based MSMEs in Minangkabau can be accelerated through a combination of social capital and digital technology. Their study of Kampung Rendang and Kampung Tenun found that networks, norms, and trust support technology adoption and market expansion, leading the researchers to propose a combination of social capital and digital capital as a framework for the development of community-based MSMEs. This finding is important because it demonstrates that digitalization does not eliminate the relevance of social relationships; instead, technology can expand the economic value of social networks already possessed by communities.

Within the framework of this article, social capital serves as a bridge between community participation and community–MSME collaboration. Trust enables communities and MSMEs to share knowledge and resources; networks allow information and economic opportunities to spread; while collaborative norms help sustain relationships beyond the completion of a particular program. The success of a local digital economic ecosystem is therefore determined not only by the quality of technology but also by the quality of relationships among the actors who use that technology.

### **Value Co-Creation in Community–MSME Relationships**

The concept of Value Co-Creation provides a broader perspective on the relationship between communities and MSMEs. Within Service-Dominant Logic, Vargo & Lusch (2004, 2008) explain a shift in the understanding of value from something solely produced by firms and delivered to customers toward value that develops through interaction and resource integration among actors. This perspective enables communities to be understood as actors possessing resources that can be combined with MSME resources to generate value.

Developments in the literature indicate that value co-creation is becoming increasingly relevant in digital and MSME contexts. Mbanefo & Grobbelaar (2025) show that the understanding of value creation within platform ecosystems has shifted from a firm-centered perspective toward a multi-actor perspective, in which various actors integrate

resources in the process of jointly creating value. For MSMEs with limited resources, participation in an ecosystem provides access to the capabilities and resources of other actors, expands market channels, and supports innovation. The study specifically emphasizes the importance of actor-to-actor engagement and collaborative relationships in the development of platform ecosystems.

These findings are reinforced by the growing literature on value co-creation in MSMEs. Nisa & Syah (2024) demonstrate through a systematic literature review that value co-creation is associated with social interaction, trust, loyalty, and improved MSME competitiveness. Masroor et al. (2024) also show that value co-creation can serve as a mechanism linking service ecosystems to improved SME performance. Thus, economic value does not need to be created by MSMEs individually. Value can emerge when MSMEs combine their products, business knowledge, and market access with the creativity, social networks, local knowledge, consumer experiences, and digital capabilities of communities.

In this article, value co-creation is therefore positioned as a mechanism that explains how collaboration is transformed into value. Communities do not merely receive benefits from MSMEs, and MSMEs do not merely receive support from communities. Instead, both parties integrate their resources. Communities can contribute creativity, networks, content, market information, and promotional support, while MSMEs can provide products, business experience, business networks, and economic opportunities. These interactions subsequently generate digital value co-creation, which may take the form of market expansion, increased visibility of local products, innovation, stronger customer relationships, income opportunities, or the development of new economic activities.

### **MSMEs as Actors in the Digital Economic Ecosystem**

The ecosystem perspective expands the analysis from relationships between two actors toward more complex relationships among multiple actors. A digital ecosystem consists of various interdependent actors that use technology as a medium to integrate resources, conduct exchanges, and create value. Therefore, the success of MSME digitalization is not determined solely by whether a business has a social media account, uses a marketplace, or accepts digital payments. The ability of MSMEs to derive benefits from technology is also influenced by the quality of networks, access to resources, institutional support, customers, communities, platforms, and the digital environment in which MSMEs operate.

Aminullah et al. (2024) show that the development of Indonesia's digital MSME ecosystem requires interaction among various components so that digitalization can contribute to an inclusive digital economy. Meanwhile, Mbanefo & Grobbelaar (2025) demonstrate that the development of platform ecosystems requires an understanding of the interdependence among SMEs, platform operators, and other actors. These two perspectives reveal the limitations of approaches that position MSMEs as stand-alone units. Digitalization is more appropriately understood as a process that takes place within a network of actors, resources, institutions, and technologies.

For community service, this perspective has important consequences. Universities do not always need to serve as the center of all activities while communities and MSMEs remain recipients of interventions. Universities can instead take the role of facilitators and ecosystem connectors that help identify needs, develop capabilities, connect actors, and facilitate value creation processes. Governments can provide regulations and infrastructure; digital platforms can provide spaces for interaction and transactions; MSMEs can provide business activities; while communities can contribute local knowledge, networks, creativity, skills, and participation. Community service therefore shifts from delivering a program to the community toward building an ecosystem with the community.

### **Dynamic Capabilities in the Sustainability of Digital Collaboration**

Although empowerment and social capital can encourage collaboration, ecosystem sustainability also requires the ability to adapt to change. Dynamic Capabilities Theory explains the ability of organizations to integrate, build, and reconfigure internal and external competencies in response to changing environments (D. J. Teece et al., 1997). D. Teece & Leih (2016) further explain dynamic capabilities through the processes of sensing, seizing, and transforming. This perspective is highly relevant to the digital economy because technology, consumer behavior, platform algorithms, marketing practices, and competitive patterns can change rapidly.

In the community–MSME context, dynamic capabilities should not be interpreted solely as formal capabilities possessed by large organizations. Its principles can be used to explain how MSMEs and communities learn to identify market changes (sensing), exploit opportunities through collaboration (seizing), and adjust their skills, processes, and forms of cooperation when the digital environment changes (transforming). From this perspective, one-off digital training is insufficient. Communities and MSMEs require learning capability and adaptive capability so that the capabilities developed through community service programs do not become obsolete when technologies or platforms change.

Accordingly, digital capability in this article is not viewed merely as the technical ability to use applications. It also encompasses the ability to learn, produce content, manage customer relationships, use information, develop networks, collaborate, and adapt strategies. This position is important because it explains why two communities with access to the same technology may produce different outcomes. Technology functions as an enabler, whereas the ability to combine and adapt resources determines whether such technology can generate empowerment and economic value.

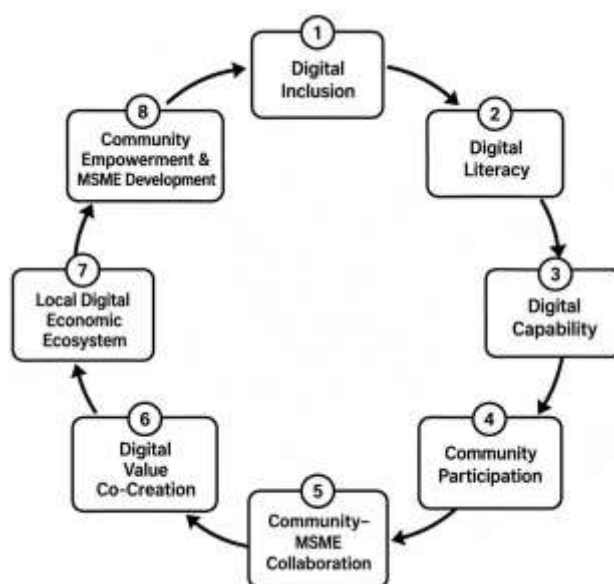
### **Theoretical Integration: From Community Empowerment to Digital Ecosystem**

Based on the literature, each perspective explains a different but interconnected part of the process. Community Empowerment explains the development of community capacity and agency; Community Participation explains changes in the level of community involvement; Social Capital Theory explains how networks and trust enable collaboration; Value Co-Creation explains how interactions between communities and MSMEs generate

value; Dynamic Capabilities explains how these capabilities are developed and adapted; while the Digital Ecosystem perspective explains how various actors and resources are connected within a broader system. Such integration is necessary because community empowerment in the digital economy cannot be explained solely through the ability to use technology.

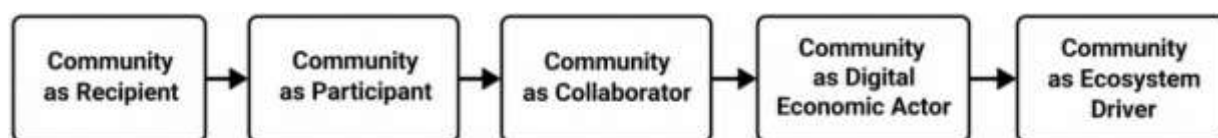
From this integration, this article proposes that community transformation occurs through a gradual process. Digital inclusion provides access, digital literacy provides understanding, and digital capability enables communities to use technology productively. These capabilities subsequently create opportunities for community participation. When participation is combined with social capital and MSME resources, community–MSME collaboration emerges. Collaboration then enables digital value co-creation, which can generate economic benefits while simultaneously strengthening relationships among actors. If this process can be sustained and adapted, communities no longer remain merely beneficiaries of digitalization but develop into actors who actively contribute to driving the digital economic ecosystem.

Based on this reasoning, the conceptual relationship proposed in this article can be formulated as follows:



**Figure 1.** Framework for Community Transformation from Beneficiaries to Drivers of the Digital Economic Ecosystem

The framework also illustrates the changing position of communities, which constitutes the main proposition of the study:



**Figure 2.** Stages of Community Transformation in the Digital Economy

This transformation provides the basis for developing a community service model that does not stop at the transfer of knowledge and technology but is directed toward capability development, collaboration, value co-creation, and ecosystem building. Accordingly, the success of community service should not be assessed solely by the number of participants, improvements in knowledge, or the ability to use applications, but by the extent to which communities are able to sustain activities, build relationships with MSMEs, create economic value, expand networks, solve problems collectively, and reduce dependence on facilitators.

## **METHOD**

### **Research Design**

This study employs a Systematic Literature Review (SLR) approach to analyze the development of the literature on community empowerment, digital transformation, community–MSME collaboration, and the development of digital economic ecosystems. The SLR approach was selected because it enables the systematic identification, comparison, and synthesis of findings from previous studies to provide an understanding of the changing position of communities within the digital economy. The review focuses on the relationships among digital inclusion, digital literacy, digital capability, community participation, social capital, community–MSME collaboration, digital value co-creation, digital economic ecosystems, community empowerment, and MSME development.

The review process follows PRISMA 2020 as a guideline for the identification, screening, eligibility assessment, and selection of the literature. PRISMA 2020 provides reporting guidelines and a flow diagram that allow the study selection process to be transparently presented, from the articles initially identified to those included in the final analysis (Page et al., 2021). Subsequently, the selected articles were analyzed using the Theory–Context–Characteristics–Methodology (TCCM) framework to identify theoretical developments, research contexts, key characteristics, methodologies, and research gaps. The TCCM approach has been employed in various systematic reviews to organize the literature and develop research agendas based on the dimensions of theory, context, characteristics, and methodology (Roy Bhattacharjee et al., 2022).

### **Literature Search Strategy**

The literature search was conducted across three databases, namely Scopus, Web of Science, and Google Scholar, covering publications from 2020 to 2026. This period was selected to capture recent developments in research on community empowerment and MSMEs following the increasing use of digital technologies in social and economic activities. Seminal articles published before 2020 were retained as theoretical foundations in the literature review but were not included among the 30 articles analyzed in the SLR. Accordingly, the SLR corpus specifically represents developments in the literature during the 2020–2026 period.

The search employed combinations of keywords representing communities, MSMEs, digital transformation, collaboration, and empowerment. The Boolean operators AND

and OR were used to broaden while simultaneously refining the search results. The primary search string was as follows:

("community empowerment" OR "community participation" OR "community engagement" OR "community development") AND ("MSME" OR "MSMEs" OR "SME" OR "SMEs" OR "small and medium enterprises") AND ("digital transformation" OR "digital economy" OR "digital capability" OR "digital literacy" OR "digital ecosystem") AND ("collaboration" OR "value co-creation" OR "social capital" OR "digital empowerment")

To accommodate differences in terminology across studies, the search also employed variations such as community-based SMEs, digital community empowerment, MSME digital ecosystem, community–SME collaboration, digital inclusion, collaborative ecosystem, and platform ecosystem. The initial search identified 312 articles, consisting of 121 articles from Scopus, 83 from Web of Science, and 108 from Google Scholar.

### Inclusion and Exclusion Criteria

Inclusion and exclusion criteria were established to ensure that the articles analyzed were substantively related to the objectives of the study. Articles were not required to address all concepts included in the research framework simultaneously. An article could still be included if it provided theoretical or empirical evidence concerning at least one important relationship, such as digitalization and empowerment, digital capabilities and MSMEs, community participation, social capital, collaboration, value co-creation, or the development of digital economic ecosystems.

**Table 1.** Inclusion and Exclusion Criteria for the Literature

| Aspect                  | Inclusion Criteria                                                                                                | Exclusion Criteria                                                                  |
|-------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Period</b>           | 2020–2026                                                                                                         | Before 2020                                                                         |
| <b>Publication Type</b> | Peer-reviewed journal articles                                                                                    | Books, theses, dissertations, conference proceedings, editorials, and news articles |
| <b>Language</b>         | English and Indonesian                                                                                            | Languages other than English and Indonesian                                         |
| <b>Focus</b>            | Empowerment, participation, collaboration, communities, MSMEs, and the digital economy                            | Not related to communities or MSMEs                                                 |
| <b>Digitalization</b>   | Digital transformation, digital literacy/capability, platforms, or digital ecosystems                             | Technology discussed only from a technical perspective                              |
| <b>Characteristics</b>  | Participation, capability, social capital, collaboration, value co-creation, empowerment, or business development | No conceptual or empirical relationship with the research focus                     |
| <b>Context</b>          | Communities, community groups, MSMEs/SMEs, and local entrepreneurship                                             | Large corporations without relevance to communities/MSMEs                           |
| <b>Access</b>           | Full text available                                                                                               | Full text unavailable                                                               |
| <b>Relevance</b>        | Provides a substantive contribution to the research questions                                                     | Concepts are merely mentioned without being analyzed                                |

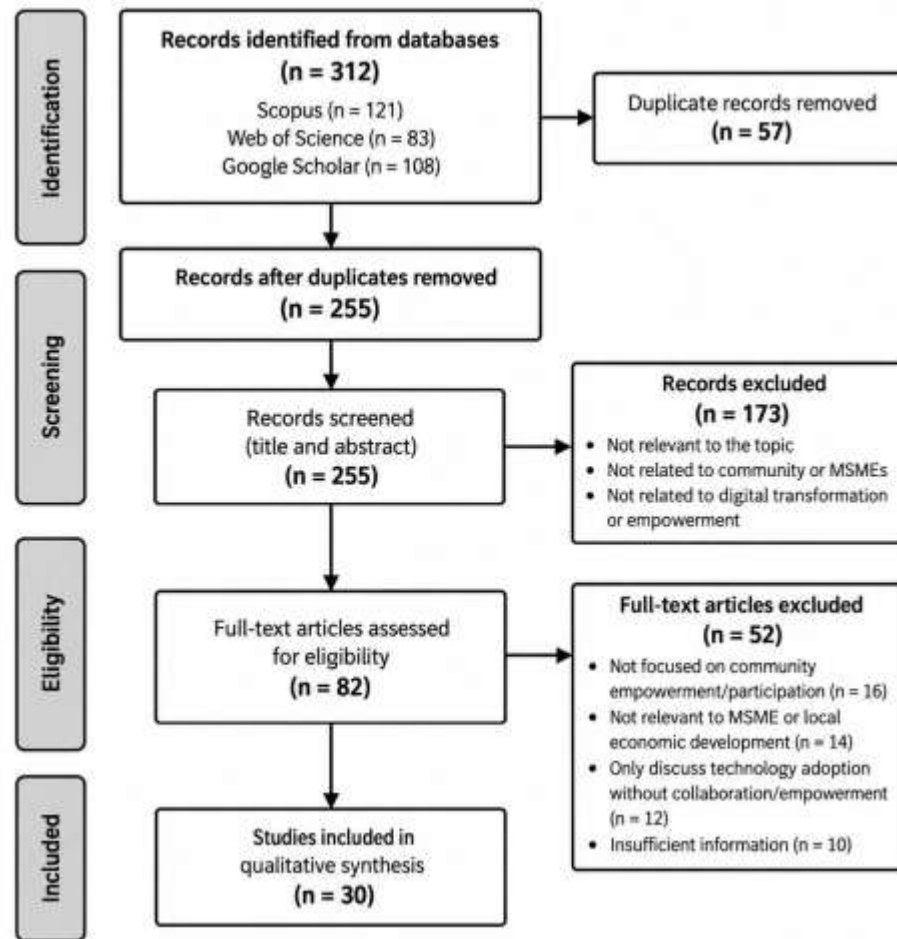
### Literature Selection Process Using PRISMA

The selection process was conducted through the stages of identification, screening, eligibility, and inclusion. At the identification stage, 312 articles were identified, consisting of 121 articles from Scopus, 83 from Web of Science, and 108 from Google Scholar. After all search results were combined, 57 duplicate articles were identified and subsequently removed. As a result, 255 articles proceeded to the screening stage.

At the screening stage, the titles and abstracts of the 255 articles were examined based on their relevance to the research objectives. A total of 173 articles were excluded because they were not relevant to the focus on community empowerment, MSMEs, collaboration, or digital economic transformation. Subsequently, 82 articles were assessed in full text. At the eligibility stage, 52 articles were excluded, comprising 16 articles that did not have a substantive focus on community empowerment or participation, 14 articles that were not relevant to MSMEs or local economic development, 12 articles that focused solely on technology adoption without dimensions of collaboration or empowerment, and 10 articles that did not provide sufficient information for analysis. Consequently, 30 articles met all criteria and were included in the final analysis. The presentation of the selection process and reasons for exclusion follows the PRISMA 2020 reporting principles.

**Table 2.** Summary of the Literature Selection Process

| Stage                    | Process                                                     | Number     |
|--------------------------|-------------------------------------------------------------|------------|
| <b>Identification</b>    | Scopus                                                      | 121        |
|                          | Web of Science                                              | 83         |
|                          | Google Scholar                                              | 108        |
|                          | <b>Total articles identified</b>                            | <b>312</b> |
| <b>Duplicate Removal</b> | Duplicate articles removed                                  | 57         |
|                          | <b>Articles after duplicate removal</b>                     | <b>255</b> |
| <b>Screening</b>         | Articles screened based on titles and abstracts             | 255        |
|                          | Articles excluded                                           | 173        |
|                          | <b>Articles assessed for full-text eligibility</b>          | <b>82</b>  |
| <b>Eligibility</b>       | No substantive focus on community empowerment/participation | 16         |
|                          | Not relevant to MSMEs/local economic development            | 14         |
|                          | Focused only on technology adoption                         | 12         |
|                          | Insufficient information                                    | 10         |
|                          | <b>Total full-text articles excluded</b>                    | <b>52</b>  |
| <b>Included</b>          | <b>Articles included in the final analysis</b>              | <b>30</b>  |



**Figure 3.** PRISMA 2020 Flow Diagram of Literature Selection

### Data Extraction and TCCM Analysis

The 30 selected articles were subsequently extracted using a structured data extraction sheet. The information collected included authors and year of publication, country, research objectives, theories employed, research context, key concepts or variables, research design, sample, data collection methods, analytical techniques, and main findings. In addition to this information, each article was classified according to its contribution to the community transformation process, including digital inclusion, digital literacy, digital capability, participation, collaboration, value co-creation, ecosystem development, and community empowerment.

The data were then analyzed using the TCCM framework. The Theory dimension was used to map the theoretical foundations underlying the studies; Context was used to analyze countries, sectors, communities, MSMEs, and research environments; Characteristics was used to identify the concepts, variables, and relationships examined; while Methodology was used to identify research designs, samples, data collection techniques, and analytical methods. The use of TCCM enables the review to move beyond merely summarizing individual articles toward identifying broader patterns and research gaps (Paul & Rowley, 2020).

**Table 3. TCCM Analysis Framework**

| <b>Dimension</b>       | <b>Analytical Focus</b>        | <b>Indicators Analyzed</b>                                                                                                                     |
|------------------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Theory</b>          | Theoretical foundations        | Community Empowerment, Community Participation, Social Capital, Value Co-Creation, Dynamic Capabilities, Digital Ecosystem, and other theories |
| <b>Context</b>         | Research environment           | Country, developed/developing economy, communities, community groups, MSMEs, sectors, and rural–urban settings                                 |
| <b>Characteristics</b> | Key concepts and relationships | Digital inclusion, literacy, capability, participation, social capital, collaboration, co-creation, empowerment, and MSME development          |
| <b>Methodology</b>     | Research approaches            | Quantitative, qualitative, mixed methods, SLR, case studies, PAR, samples, and analytical techniques                                           |

### Thematic Synthesis

In addition to the TCCM analysis, the 30 articles were analyzed using thematic synthesis to identify substantive patterns explaining community transformation within the digital economy. The process began by examining the objectives and main findings of each study, followed by coding recurring concepts. Related codes were subsequently grouped into broader themes. Through this process, the synthesis not only identifies how many articles address a particular concept but also explains how relationships among concepts have developed across the literature.

The coding process was organized around eight initial categories: digital inclusion, digital literacy, digital capability, community participation, social capital and collaborative networks, community–MSME collaboration, digital value co-creation, and community empowerment and MSME development. These categories were then compared with the actual findings of the 30 articles to identify dominant themes, relationships that had received strong empirical or conceptual support, and aspects that remained relatively underexplored. The results of this synthesis subsequently formed the basis for discussing the transformation of communities from beneficiaries into drivers of the digital economy.

### Conceptual Framework Development

The final stage integrates the results of the TCCM analysis and thematic synthesis to develop a conceptual framework explaining the relationships among communities, MSMEs, and the digital economic ecosystem. The framework was developed based on patterns of relationships identified across the 30 articles, particularly regarding how digital access and literacy develop into capabilities, how capabilities encourage participation, how participation evolves into community–MSME collaboration, and how collaboration generates value co-creation and empowerment.

The conceptual framework follows the sequence Digital Inclusion → Digital Literacy → Digital Capability → Community Participation → Community–MSME Collaboration → Digital Value Co-Creation → Local Digital Economic Ecosystem → Community Empowerment & MSME Development. At the level of changes in the community's position, the synthesis explains the progression from Community as Recipient → Community as Participant → Community as Collaborator → Community as Digital

Economic Actor → Community as Ecosystem Driver. These two frameworks subsequently provide the basis for formulating a community service model that moves from knowledge transfer toward capability development, collaboration, value co-creation, and ultimately ecosystem building.

## **FINDING AND DISCUSSION**

### **Overview of the Analyzed Literature**

Based on the selection process using PRISMA 2020, 30 articles published between 2020 and 2026 were included in the final analysis. Overall, the literature indicates a shift in attention from the use of digital technology as a marketing tool toward a broader understanding of digitalization as part of community empowerment and the development of local economic ecosystems. In MSME-oriented studies, digital technology is frequently associated with market expansion, improved marketing capabilities, enhanced business visibility, and greater efficiency in business activities. However, more recent literature has begun to position networks, collaboration, community participation, social capital, and value co-creation as factors that determine whether digitalization can generate more sustainable benefits. A study of community-based SMEs in Minangkabau, for example, shows that digital transformation is accelerated by a combination of networks, norms, trust, and the use of digital technology, indicating that digitalization cannot be separated from the social structures within which MSMEs develop (Putri et al., 2025).

These developments indicate that discussions of the digital economy are beginning to move from a technology-centered perspective toward an actor- and ecosystem-centered perspective. Several community service studies still focus on digital marketing training, the use of social media, the creation of business accounts, or the utilization of digital platforms. These approaches remain important because they build the basic capabilities of communities and MSMEs. However, more recent studies demonstrate a progression toward the formation of inter-MSME networks, community engagement, cross-actor collaboration, and value co-creation. KembaranFest, for example, not only increased the use of digital promotion among MSMEs but also established networks among MSMEs, local youth, and village governments. Another study even developed a knowledge-sharing community as a communication infrastructure following mentoring activities (Jatisdi & Syah, 2025). Thus, the literature indicates that digital empowerment is a gradual process that progresses from access and skills toward participation, collaboration, and value creation.

### **TCCM Analysis**

#### ***Theory***

From the Theory dimension, the analyzed literature demonstrates the use of relatively diverse conceptual foundations. Several studies employ perspectives such as community empowerment, community participation, Social Capital Theory, Service-Dominant Logic, Value Co-Creation, Dynamic Capabilities, and ecosystem approaches. However, some community service studies do not explicitly employ a particular theory and instead place

greater emphasis on intervention processes and changes in participants' capabilities. This condition indicates that research on the digitalization of communities and MSMEs has developed considerably in practical terms, while its theoretical integration remains relatively fragmented.

An important finding is that no single perspective can fully explain the process of community transformation within the digital economy. The empowerment perspective explains the development of capacity and agency but does not necessarily explain how economic value is created. Social capital explains networks and trust, whereas value co-creation explains how resources among actors are integrated to generate value. A recent study of value co-creation among micro-entrepreneurs shows that value creation within digital creative ecosystems is embedded in relational trust, community reciprocity, digital-community interactions, and identity formation (Waskita, Ashari, et al., 2026). Therefore, the integration of Community Empowerment–Social Capital–Value Co-Creation–Digital Ecosystem provides a more comprehensive explanation than the use of any single theoretical perspective in isolation.

### *Context*

Within the Context dimension, studies have largely been conducted among MSMEs, local communities, business communities, villages, and entrepreneurial groups in emerging economies. Indonesia has received considerable attention because of the substantial role of MSMEs in local economies and the persistent gaps in digital capabilities. Research contexts have also become increasingly diverse, ranging from rural MSMEs, culture-based business groups, creative enterprises, women-owned MSMEs, village communities, to diaspora entrepreneurs. This diversity indicates that digital transformation does not occur within a homogeneous environment; therefore, the same empowerment model may not necessarily generate the same outcomes across different communities.

The local context also determines the resources that can be utilized in the empowerment process. In communities with strong social capital, for example, networks and trust can serve as resources that accelerate digital transformation (Putri et al., 2025). Among women-owned MSMEs, recent research demonstrates the need for a gradual empowerment process, beginning with strengthening basic literacy, followed by training and mentoring, expanding networks and collaboration, and ultimately increasing socio-economic impacts (Pranitasari et al., 2026). Thus, context is not merely the location of a study but also determines how technology, capabilities, social relationships, and economic opportunities interact.

### *Characteristics*

The Characteristics dimension reveals several major groups of concepts, namely digital access and inclusion, digital literacy and capability, community participation, social capital, collaboration, value co-creation, MSME development, and empowerment. Literature focusing on the initial stages of digitalization generally emphasizes the ability to use social media, marketplaces, Google Business Profile, digital payments, and marketing

content development. At subsequent stages, attention begins to shift toward how these capabilities are used to expand networks, build customer relationships, improve market access, and create economic opportunities.

A relationship that remains relatively underintegrated is community participation → community–MSME collaboration → value co-creation → ecosystem development. Nevertheless, empirical evidence has begun to demonstrate such a relationship. Research on community-based MSME digitalization indicates the emergence of collaboration among MSMEs and the formation of digital communities following mentoring processes (Eko et al., 2025). Meanwhile, research on micro-entrepreneurs in the digital gig economy shows that value co-creation develops through trust, community reciprocity, and digital interaction (Waskita, Ashari, et al., 2026). Therefore, the literature gap is no longer merely concerned with whether digitalization is beneficial, but rather with how individual digital capabilities develop into collaborative capabilities and subsequently into ecosystem capabilities.

### ***Methodology***

From the Methodology dimension, the literature employs quantitative, qualitative, case study, mixed-methods, systematic review, and participatory approaches in community empowerment activities. Quantitative studies provide evidence regarding the relationships among capabilities, technology adoption, and performance, while qualitative studies provide deeper insights into networks, trust, community experiences, and collaborative processes. Participatory approaches are particularly relevant because communities are not merely treated as respondents but are actively involved in identifying needs and developing interventions. Several recent studies have even employed community-based participatory research and adaptive mentoring approaches (Hindardjo et al., 2025).

However, important methodological limitations remain. Many empowerment studies measure immediate outcomes after training through changes in knowledge, the ability to create digital accounts, social media use, or improvements in skills. Evidence regarding whether these capabilities continue to be used after programs end, whether collaborative networks are sustained, and whether communities actually gain stronger positions within the economic ecosystem remains relatively limited. Because empowerment is a process, longitudinal research, participatory action research, and multi-actor ecosystem studies are important for understanding the transition from individual capabilities toward collective empowerment.

### **From Digital Inclusion to Digital Empowerment**

The literature synthesis indicates that digital inclusion is the starting point rather than the final objective of empowerment. The availability of devices, internet access, digital platforms, and digital financial services provides communities with opportunities to participate in the digital economy, but such access does not necessarily guarantee the ability to generate economic benefits. Several studies have identified a gap between

awareness of the benefits of technology and the practical ability to use it. Among women-owned MSMEs in Indonesia, for example, awareness of the benefits of e-commerce was found to be relatively high, while its actual adoption remained lower (Pranitasari et al., 2026). Therefore, the empowerment model developed progresses through strengthening literacy, training and mentoring, expanding networks and collaboration, and ultimately generating socio-economic impacts.

The next stages are digital literacy and digital capability. Literacy provides the ability to understand technology, whereas capability reflects the ability to use technology productively according to specific needs. In the MSME context, this may include the ability to create content, use social media, manage marketplaces, utilize digital payments, interpret market information, and develop customer communication. Empowerment programs across various communities demonstrate that practical training and mentoring can improve these capabilities. However, the literature also indicates that standardized training is not always effective because participants differ in their levels of digital readiness (Karya et al., 2025). Adaptive and continuous mentoring therefore becomes important to ensure that digital capabilities do not remain merely technical knowledge.

Digital empowerment emerges when these capabilities enhance agency, namely the community's ability to use technology to determine actions, access opportunities, solve problems, and create value. Therefore, the identified relationship should not be understood as a mechanical process in which access automatically produces empowerment. Learning processes, social support, economic opportunities, and institutional conditions influence each stage. This synthesis produces the conceptual progression Digital Inclusion → Digital Literacy → Digital Capability → Digital Participation → Digital Empowerment. The fundamental transformation occurs when communities are no longer merely able to use technology but are also able to determine how technology should be used and what value can be generated through its use.

### **From Community as Recipient to Community as Ecosystem Driver**

One of the main findings of the synthesis is the need to change how the position of communities is perceived within community service programs. Traditional approaches often position communities as recipients, namely parties that receive training, technology, assistance, or knowledge from external institutions. This model can improve knowledge in the short term but carries the risk of dependency if communities are not given opportunities to determine their needs, make decisions, and independently develop activities. Therefore, the presence of communities as participants alone is insufficient to demonstrate that empowerment has occurred.

The next stage is community as participant, in which communities begin to become involved in identifying needs, implementing activities, and conducting evaluations. Participation becomes more substantive when communities have influence over decisions rather than merely attending activities. Research on community-based MSME digitalization indicates that participatory approaches can encourage community involvement in the use of technology while simultaneously fostering collaboration among

MSMEs (Eko et al., 2025). In this context, community service shifts from activities that are “provided to the community” toward processes that are “carried out with the community.”

A further transformation occurs when communities become collaborators and digital economic actors. At this stage, communities do not merely participate in programs but combine their knowledge, networks, creativity, and digital capabilities with MSME resources. Communities can contribute to the promotion of local products, content creation, market development, customer networks, the organization of economic activities, and the development of local identities. KembaranFest provides an illustration of how community-based activities can connect MSMEs, local youth, and village governments while simultaneously strengthening digital promotion and collaborative networks (Jatisdi & Syah, 2025).

The highest stage in the framework developed in this study is community as ecosystem driver. Communities in this position are able to sustain networks, connect actors, share knowledge, develop new economic activities, and adapt their activities to changes in the digital environment without continuously depending on external interventions. This transformation can be summarized as Recipient → Participant → Collaborator → Digital Economic Actor → Ecosystem Driver. These stages represent one of the conceptual contributions of this study because empowerment is assessed through changes in the position and capabilities of communities within the digital economic ecosystem.

### **Community–MSME Collaboration as an Empowerment Mechanism**

The synthesis indicates that collaboration serves as a mechanism connecting community capabilities with economic value creation. MSMEs possess products, business experience, market access, and business knowledge, while communities possess social networks, local knowledge, creativity, skills, and community relationships. When these resources remain separate, their benefits are relatively limited. In contrast, when resources are integrated through collaboration, new activities can emerge, such as collective marketing, community branding, content development, distribution networks, knowledge sharing, and local market development.

Social capital constitutes an important foundation for such collaboration. A study of community-based SMEs in Minangkabau demonstrates that networks, norms, and trust strengthen the digital transformation process and support market expansion. The study develops the concept of hybrid capital, referring to the combination of social capital and digital capital in the development of traditional MSMEs (Putri et al., 2025). These findings demonstrate that digital transformation does not mean replacing social relationships with technology. Instead, technology expands the capacity of social networks to generate economic value.

The implications for community service are significant. Interventions should not be directed solely toward improving the capabilities of individual MSMEs but should also focus on establishing collaborative mechanisms. Knowledge-sharing forums, digital communities, joint promotion, collective catalogs, creative hubs, and collaboration with

local youth are several forms that can be developed. A recent study on knowledge-sharing communities even demonstrates how WhatsApp-based communication channels can be established as infrastructure following individual mentoring. However, the study cautiously states that the sustainability of collective learning remains a possibility rather than a demonstrated outcome (Burhan, 2026). This highlights the importance of distinguishing the formation of collaboration from the sustainability of collaboration.

### **Digital Value Co-Creation as a Link Between Collaboration and Ecosystem Development**

Collaboration acquires strategic value when it generates value co-creation. The synthesis indicates that value creation in the digital economy is increasingly difficult to understand as a one-way process from producers to consumers. Communities, consumers, MSMEs, platforms, governments, and supporting institutions can integrate resources to generate value. In the context of Indonesian micro-entrepreneurs, recent research shows that value co-creation is shaped through relational trust, community reciprocity, digital–community interaction, and identity formation. Value creation also functions as a mechanism for collective resilience and entrepreneurial legitimacy rather than merely increasing transactions (Waskita, Ashari, et al., 2026).

Within community–MSME relationships, digital value co-creation can emerge when communities do not merely purchase products but also participate in introducing and recommending them, creating content, providing information about market needs, or developing the identity of local products. At the same time, MSMEs provide products, business experience, and economic opportunities. These interactions generate value that cannot be fully created by either party independently. At a broader level, this mechanism can transform the relationship between communities and MSMEs from a beneficiary–provider relationship into an actor–actor relationship.

These findings strengthen the position of value co-creation as a link between collaboration and ecosystem development. When collaboration consists only of coordination, relationships may end once a program is completed. In contrast, when collaboration generates value for the actors involved, stronger incentives emerge to sustain those relationships. Therefore, ecosystem sustainability depends not only on technology or government support but also on the ecosystem's ability to generate mutual value for communities, MSMEs, and supporting actors.

### **Formation of a Local Digital Economic Ecosystem**

The synthesis indicates that a local digital economic ecosystem emerges when relationships among actors develop from individual activities into an interdependent network. Within such an ecosystem, MSMEs do not operate independently. Governments can provide policies and infrastructure; universities can provide knowledge and facilitation; platforms can provide technology and market access; financial institutions can provide financing; communities can provide networks, local knowledge, creativity, and markets; while MSMEs serve as one of the centers of productive activity. Thus, ecosystem

capability is determined by the quality of interactions rather than merely by the number of actors involved.

Evidence from community-based digitalization programs demonstrates this direction. MSME mentoring can evolve into the formation of digital communities and collaboration among MSMEs, while platform-based programs can connect digital literacy, financial literacy, mentoring, and local economic development (Eko et al., 2025). This demonstrates that digital platforms can generate greater benefits when embedded within supportive social and institutional networks. In other words, a digital ecosystem is not simply a collection of technologies but rather a configuration of actors, relationships, resources, and technologies that enables value creation to occur sustainably.

Within the community service framework, universities should therefore not be positioned as actors that continuously control the ecosystem. A more appropriate role is that of facilitator, capability builder, knowledge broker, and ecosystem connector. Program success becomes greater when functions initially performed by community service teams can gradually be undertaken by communities and MSMEs themselves. This logic shifts the measure of success from “how many activities were conducted by the university” toward “how many capabilities and relationships continue to function after the program has ended.”

### **Opportunities and Challenges of Community–MSME Collaboration**

Collaboration between communities and MSMEs offers several opportunities. Digital technology reduces communication barriers, expands market access, facilitates information sharing, and enables economic activities to operate through broader networks. For MSMEs, community involvement can strengthen promotion, local legitimacy, consumer understanding, and innovation. For communities, collaboration can provide opportunities to acquire skills, networks, experience, and new economic activities. The development of creative hubs and the gig economy also demonstrates that the boundaries among consumers, communities, independent workers, and entrepreneurs are becoming increasingly fluid, creating greater opportunities for co-creation (Waskita, Ashari, et al., 2026).

However, several challenges cannot be overlooked. Differences in digital literacy levels, limited devices and connectivity, financial capacity, low levels of trust, inequalities in capabilities among community members, changes in digital platforms, and weak continuity of mentoring can hinder the empowerment process. Recent findings even indicate that standardized training can fail when it assumes that all participants possess the same level of readiness (Burhan, 2026). Thus, digital empowerment requires an adaptive rather than uniform approach. Interventions need to consider levels of readiness, needs, local resources, and the social characteristics of communities.

Another challenge concerns sustainability. Successfully creating social media accounts or improving knowledge after training is relatively easy to measure, but these achievements do not automatically indicate that communities have become empowered. Stronger indicators include whether technology continues to be used, whether

collaboration is sustained, whether networks expand, whether economic value is created, and whether communities are able to make decisions without high dependence on facilitators. Therefore, digital empowerment requires a shift in evaluation from activity-based indicators toward capability-, collaboration-, and ecosystem-based outcomes.

### Research Gaps Based on TCCM

The synthesis of the 30 articles identifies four major gaps. From the Theory dimension, the literature remains fragmented across community empowerment, MSME digitalization, social capital, value co-creation, and digital ecosystems. Studies integrating these concepts into a unified explanation of community transformation remain limited. Consequently, the literature can explain why digital capabilities are important or why collaboration is beneficial, but it has not sufficiently explained how communities gradually move from recipients of interventions to drivers of ecosystems.

From the Context dimension, considerable attention has been given to MSMEs as business units, while communities often appear merely as the surrounding environment or as beneficiaries. Although community-based studies are increasingly developing, the two-way relationship between communities and MSMEs still requires greater attention. From the Characteristics dimension, studies frequently connect digitalization with marketing, adoption, literacy, and performance, whereas the relationship digital capability → participation → collaboration → co-creation → ecosystem → empowerment has rarely been analyzed in an integrated manner. The available evidence is instead dispersed across different studies (Putri et al., 2025).

From the Methodology dimension, short-term studies and post-intervention evaluations remain more prominent than studies that follow community development over extended periods. Consequently, the literature is better able to demonstrate immediate outcomes, such as increased knowledge and adoption, than long-term outcomes, such as network sustainability, self-reliance, collective value creation, and changes in the community's position within the ecosystem. Future research agendas should therefore expand the use of longitudinal studies, participatory action research, comparative community studies, and multi-actor network analysis.

**Table 4.** Research Gaps Based on TCCM

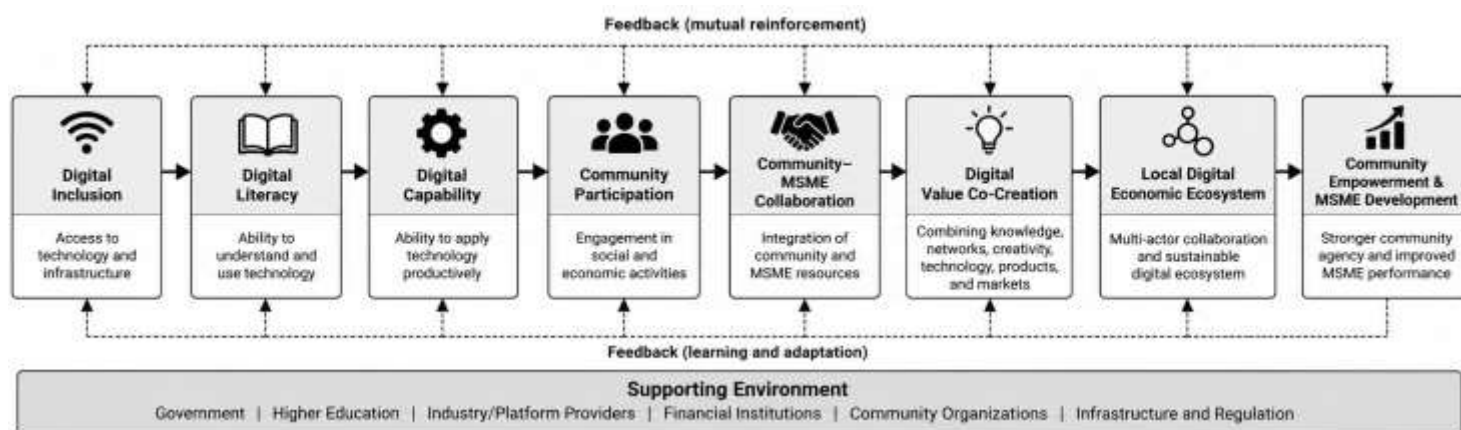
| Dimension              | Findings from the Literature                                       | Research Gap                                                                                 | Future Research Direction                    |
|------------------------|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------|----------------------------------------------|
| <b>Theory</b>          | Various theories are applied separately                            | Limited integration of empowerment–social capital–co-creation–ecosystem perspectives         | Develop an integrative theoretical framework |
| <b>Context</b>         | MSMEs and digitalization programs dominate the literature          | Communities are still rarely positioned as economic actors                                   | Examine community–MSME collaboration         |
| <b>Characteristics</b> | Literacy, adoption, marketing, and capability are widely discussed | The transition from capability → collaboration → ecosystem remains insufficiently integrated | Examine the community transformation process |

|                    |                                                                             |                                                                        |                                                              |
|--------------------|-----------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------|
| <b>Methodology</b> | Many studies use cross-sectional designs and short-term program evaluations | Evidence regarding sustainability and long-term change remains limited | Conduct longitudinal, PAR, and multi-actor ecosystem studies |
|--------------------|-----------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------|

### Community–MSME Digital Ecosystem Framework

Based on the overall synthesis, this study develops the Community–MSME Digital Ecosystem Framework. The framework begins with Digital Inclusion, which refers to the availability of access to technology and infrastructure. Access then needs to develop into Digital Literacy, namely the ability to understand and use technology, and subsequently into Digital Capability, namely the ability to apply technology productively. These capabilities create opportunities for Community Participation, in which communities begin to apply such capabilities in social and economic activities.

Participation subsequently develops into Community–MSME Collaboration when community and MSME resources begin to be integrated. Such collaboration generates Digital Value Co-Creation through the combination of local knowledge, social networks, creativity, technology, products, markets, and business experience. When this value creation process occurs repeatedly and involves other supporting actors, a Local Digital Economic Ecosystem is formed. The ultimate outcomes are improved MSME performance and Community Empowerment & MSME Development. Accordingly, the resulting model is presented as follows:



**Figure 4.** Community–MSME Digital Ecosystem Framework

The framework is not intended to represent a rigid linear relationship. Feedback can occur across different stages. Successful collaboration can enhance capabilities; value creation can strengthen participation; and a developing ecosystem can provide new access, knowledge, and opportunities. Therefore, the model is more appropriately understood as a developmental and reinforcing process, in which capabilities, participation, collaboration, and value creation mutually reinforce one another.

### **Implications for Community Service**

The findings have direct implications for the orientation of community service programs. Training-centered community service models remain necessary, particularly for communities with low levels of digital literacy, but training should be positioned as an entry point rather than the final objective. Programs need to establish a clear developmental pathway from access → literacy → capability → participation → collaboration → value creation → ecosystem building. Through this approach, activities do not end once participants are able to use digital applications but continue until these capabilities can be applied to create collective economic activities.

Universities also need to transform their position from knowledge providers into ecosystem facilitators. At the initial stage, universities can provide knowledge and intensive mentoring. At subsequent stages, the focus should shift toward developing local mentors, MSME networks, knowledge-sharing communities, connections with platforms and governments, and collaborative mechanisms that can operate independently. Evidence from several community-based programs indicates that the development of local networks and knowledge-sharing spaces can extend the functions of programs beyond individual training (Jatisdi & Syah, 2025).

Ultimately, the measurement of community service success needs to be expanded. Outputs such as the number of participants, training sessions, social media accounts, or digital products can still be used, but they need to be complemented by outcomes such as sustained digital capabilities, levels of participation, number of collaborations, network expansion, economic value creation, continuity of activities, and the community's ability to solve problems independently. From this perspective, the ultimate goal of community service is not to make communities increasingly skilled recipients of programs, but to create conditions that enable them to gradually become participants, collaborators, digital economic actors, and ultimately ecosystem drivers. This represents the fundamental transformation from community service as knowledge transfer toward community service as ecosystem empowerment.

### **CONCLUSION**

This study analyzes how digital transformation can encourage a shift in the role of communities from merely being beneficiaries to becoming drivers of the digital economic ecosystem, particularly through collaboration with MSMEs. Based on a synthesis of 30 scientific articles published between 2020 and 2026, the findings indicate that community empowerment cannot be achieved solely through providing access to technology and digital skills training. Access and literacy constitute the initial foundations, whereas more substantive empowerment occurs when communities are able to use technology productively, participate in economic activities, establish collaboration with MSMEs, and contribute to value creation. The TCCM analysis also indicates that the perspectives of Community Empowerment, Community Participation, Social Capital, Value Co-Creation, Dynamic Capabilities, and Digital Ecosystem need to be integrated to explain this process more comprehensively. Within this relationship, digital capabilities enable the

productive use of technology, social capital provides trust and networks, participation creates opportunities for involvement, while value co-creation enables community and MSME resources to be combined to generate economic and social benefits.

The literature synthesis produces the developmental process of Digital Inclusion → Digital Literacy → Digital Capability → Community Participation → Community–MSME Collaboration → Digital Value Co-Creation → Local Digital Economic Ecosystem → Community Empowerment & MSME Development. Based on this process, the main contribution of the study is the Community–MSME Digital Ecosystem Framework, which conceptualizes empowerment as a developmental and reinforcing process rather than a rigid linear relationship. The position of communities evolves through the stages of Community as Recipient → Community as Participant → Community as Collaborator → Community as Digital Economic Actor → Community as Ecosystem Driver. Thus, successful empowerment is no longer assessed solely through improvements in digital knowledge or skills, but through communities' ability to participate, integrate local knowledge, creativity, social networks, and digital capabilities with MSME resources, create economic value, sustain collaborative networks, and increasingly develop activities independently. This framework also demonstrates that the benefits of digital transformation become greater when individual capabilities evolve into collaborative capabilities and ultimately into ecosystem capabilities.

For community service, these findings emphasize the need to shift the orientation from knowledge transfer toward capability development, collaboration, value co-creation, and ecosystem building. Digital training remains necessary but should be positioned as an initial stage toward more sustainable empowerment, while universities need to evolve from merely serving as knowledge providers into facilitators, capability builders, knowledge brokers, and ecosystem connectors. Program success should therefore be measured through the sustainability of capabilities, participation, collaborative networks, value creation, and community self-reliance rather than merely through the number of participants or activities. Nevertheless, this review is limited to 30 articles published between 2020 and 2026, and part of the literature remains oriented toward short-term outcomes. Future studies should empirically test the Community–MSME Digital Ecosystem Framework through longitudinal studies, participatory action research, comparative community studies, or mixed methods, while also developing measures of community agency, collaborative capability, digital value co-creation, network sustainability, and ecosystem self-reliance. Accordingly, the new direction of community service is not merely to bring technology to communities, but to build the capabilities of communities together with MSMEs to create, sustain, and develop their own digital economic ecosystems.

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