



# Exploring Innovation Barriers within Local Communities: Toward Sustainable Local Human Resource Development

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## Abstract

*An alternate strategy to improve the standard of living in a community is innovation. A community that is creative or innovative can manufacture products or develop unique ways to do so. The abundance of local resources can serve as a source of inspiration and possible resources to help them support their local innovation. The local community may encounter obstacles even with its wealth of resources. The Community of Sontoh is one of those local communities. Sontoh is blessed with a mangrove habitat and stunning maritime landscape. Sontoh offers marine-based, natural tourism. It also becomes research site. This study intends to investigate the innovation that the Sontoh community faces. The novelty of this study is reflected in its investigation of the multidimensional challenges that constrain local communities from independently developing collective innovation. The study uses qualitative techniques. Direct participant observation is used to collect the data. The community of Sontoh, particularly the women who participate in the study, operate home-based businesses to boost their family's income. They make a variety of local foods, including tahu krispi, kerupuk, otak-otak, pentol ikan, and opak. The two primary obstacles mentioned by the female participants are financial and ICT difficulties. A number of potential supporting factors that can encourage the growth of local innovation are suggested by the study. Information and technology, education, financial inclusion, literacy, community social capital, and organisational building capability are some of these.*

**Keywords:** *community-based innovation, financial barrier, ICT barrier, innovation barriers, local resources*

## Introduction

As communities develop throughout time, social challenges continue to surface. Diverse communities may have distinct life obstacles, necessitating the exploration of innovative approaches to address them. Many times, local people use local resources to create simple innovations. As a result, local communities are able to create wisdom-based innovation. When the current methods or resources are no longer sufficient to address the issues facing the community, this innovation is typically produced. People's efforts to address their present needs may therefore lead to local innovation in the community, as the older methods are no longer able to work successfully.

Local innovation can come from the ideas, knowledge, and initiative of the local community to create new or different products. The innovation is typically adapted to the community innovator's location. The method of trial and error may also be used by the

community for original creation, implementation, and modification. Since the creation is adapted to the specifics of the community that created it and the setting in which it was made, it may be unique.

Community-based innovation, as opposed to market- or commercial-oriented innovation, is typically more pragmatic and socially focused. Potential advantages of local-based innovation can be realised by the community that creates or uses it to meet their needs. Since grassroots innovation is based on contextualised knowledge gathered by the local community, it can offer more appropriate solutions than top-down ones, as noted by Burgess et al. (2003, cited in Seyfang & Smith, 2006). Community innovation can support the community's ability to survive. It speaks of the creativity in sustainable community development. As mentioned by Tapia et al. (2019), innovation for sustainable development encompasses a variety of innovations developed to make a community's environment, social conditions, and economic standing more harmonious.

Even though innovation has had a positive impact on community development, local communities nevertheless regularly confront a number of difficulties. These obstacles may take many different forms, contingent on the community's circumstances and the surrounding environment. This indicates that community resources—including social, human, cultural, and natural resources—are what drive creativity in the community. Therefore, the ability of the local community to overcome innovation hurdles is essential to the development and maintenance of innovation for local sustainable development. In order to foster grassroots innovation, the community must overcome obstacles such as a shortage of essential personnel, resources, and enabling circumstances (Seyfang & Smith, 2006). Therefore, it is crucial to identify inventive impediments to local community innovation. Identification of innovation hurdles can yield valuable information for decision-making to overcome them (D'Este et al., 2012).

The purpose of the study is to investigate the *Sontoh* Community's innovation obstacles. As a maritime community, the *Sontoh* Community, faces challenges in surviving. Because Surabaya is a metropolitan area with a shrinking coastal area, the *Sontoh* Community must increase their economic and social activities in order to survive. They are attempting to explore their distinctive local assets in a new and inventive manner. But they continue to face a number of challenges. This study examines the local community and the reasons behind their perceived challenges in fostering local-based innovation, in contrast to the majority of research in the field of innovation, which mostly concentrates on organisational performance and innovation management. According to Seyfang and Smith (2007), grassroots ideas are often overlooked in traditional business settings. Existing studies have largely concentrated on innovation in business and industrial settings. Nevertheless, the difficulties encountered by local or marine communities in developing innovation independently remain insufficiently explored. Previous studies have extensively discussed the importance of innovation in fostering community resilience, sustainability, and improved living standards (Daniel & Jenner, 2022; Harinurdin et al., 2025; United Nations, 2017a). However, the innovation challenges experienced by marginalized communities remain relatively underexplored in the literature. This issue is significant, as many communities do not possess strong linkages with industries capable of providing financial support and resources. Thus, this study aims to contribute to the literature by providing empirical evidence on the challenges confronting urban marine communities in their efforts to achieve independence in resource management. The study offers novelty by bridging a gap in community innovation research through acknowledging barriers to innovation and identifying several networked dimensions that may contribute to communities' future innovation potential. This is accomplished through rigorous engagement between the current findings and prior empirical studies.

Since innovation has the power to transform communities, it is a prominent and extensively studied topic in the field of development. Several earlier studies have attempted to investigate the nature of innovation, specifically the fundamental concepts and important factors that influence it. Numerous studies define innovation as both the development of new items and the enhancement of existing methods. Innovation, according to the United Nations (2017b), is defined as various organisational and social practices, improved procedures, and technical products that not only accomplish goals but also serve as a major facilitator of those aims. Innovation can alternatively be defined as novelty that arises from human endeavour and inspiration (IIASA, 2020). New institutions and new social processes are related to innovation (IIASA, 2020).

Innovation is also linked to changes, according to several research. Miller et al. (2008) note that innovation is associated with change that is exhibited through the development and manifestation of novel concepts in the global, a country, a region, industry, and firm scales. These entities can be further classified into agglomeration and entity levels. Salge and Vera (2012, cited in Prasetyo et al., 2017) define innovation as the formation, development, and adaptation of new concepts or behaviours. According to Hessebein, Goldsmith, and Somerville (2002, cited in Prasetyo et al., 2017), innovation is a phase of change aimed at enhancing performance. Innovation is linked to unpredictability in relation to change. In addition to being free and unpredictable, innovation is associated with uncertainty; some initiatives succeed while others fail (IIASA, 2020). Innovation is more than just coming up with something fresh on your own. It must instead incorporate a methodical procedure that is introduced, improved, and learnt (Phan et al., 2020). Experimentation is a component of innovation (Seyfang & Smith, 2007). Additionally, creative activity encompasses the creation, development, and dissemination of new or enhanced services, processes, and products at the local, regional, national, and worldwide levels (Seiler-Hausmann, 2002).

It is expected that grassroots innovation would enhance the local community's quality of life. According to Prasetyo et al. (2022), innovation is viewed as a paradigm for community empowerment, diffusion, and protection, despite the fact that it still requires prototype creation, capacity building, distribution, and vendor commercialisation. Additionally, grassroots innovation refers to bottom-up solutions that are typically developed by organisations and activists to promote sustainable development by addressing local conditions, community values, and interests (Seyfang & Smith, 2007). Maiolini and Guida (2014) propose that social innovation arises from driving sets that are focused on the so-creative process, global demands, social requirements, and collaborative networks.

There are several important factors that determine how effective grassroots innovations are. According to Seyfang and Smith (2007), grassroots innovations require greater human resources, skills, resilience, and a resource base in order to continue and expand. Seyfang and Smith (2007) also mention that grassroots inventions require initiative, which is bolstered by a combination of skills, important individuals, resources, and a supportive environment.

Social invention is related to community innovation. Social innovation, according to Maiolini and Guida (2014), is a sort of innovation that addresses particular problems in the modern community and seeks to establish the groundwork for new categories of innovation and ways of thinking. Social innovation encompasses methods and endeavours to address societal issues and satisfy human requirements (Boni et al., 2018, p. 68, cited in García-Flores & Martos, 2023). According to Young Foundation (2010, cited in Maiolini & Guida, 2014), several fundamental components of social innovation, including invention, creativity, change, and improvement. Social innovation addresses the demands of the community. According to Maiolini and Guida (2014), social innovation is becoming more and more popular as a means of addressing social issues, developing new services to enhance the quality of life for both individuals and communities, and implementing new procedures, tasks, and competencies.

According to Santos (2024), social innovation is also seen as a tactic for tackling societal problems like poverty, human rights abuses, corruption, social isolation, and immigration brought on by conflict. Santos (2024) also mentions that social innovation can be crucial for empowering people and groups, improving social inclusion and equity, encouraging networking and collaboration, maintaining the environment, and bolstering a community's potential for resilience. Additionally, the six fundamental areas of rural development, community empowerment, governance, employment, community development, local development, and alternative consumption can be used to analyse the effects of social innovation in the socioeconomic domain (García-Flores & Martos, 2023). Additionally, García-Flores and Martos (2023) highlight the primary impacts of social innovation in a number of areas, including governance (by questioning the established system of governance), employment (by reducing unemployment, increasing employment, and improving working conditions), community development and citizen empowerment (by establishing networks that allow people to work together to accomplish goals that are impossible to accomplish individually), rural development (by addressing issues in rural communities, such as unemployment, population decline, and lack of economic dynamism), local development (by boosting local resources potential), and alternative consumption (by identifying and generating new types of production and consumption). The social and environmental consequences of innovation, on the other hand, are typically more challenging to assess due to the numerous factors, interrelationships, and uncertainties involved (Barbieri et al., 2010). In contrast, the economic effects of innovation are plainly evident. Additionally, Barbieri et al. (2010) state that shared codified knowledge in the form of digital forms, patent applications, scientific papers, and manuals is necessary for sustained innovation. Additionally, sustainable innovation must have simultaneous good effects on the economy and the environment (Barbieri et al., 2010).

Local communities may also experience sustainable innovation. To meet their demands, a creative and proactive community may create sustainable innovation. To innovate, the local community might take part in community actions. According to Seyfang and Smith (2006), there is a connection between innovation and community activity. Additionally, community service is a potential location for creative endeavours (Seyfang & Smith, 2006). Increasing creativity is a means of fostering community. Innovation in and for development is necessary to achieve the sustainable development goals (United Nations, 2017b).

Local innovations can be produced by utilising local resources or circumstances in novel ways. The materials' easy accessibility and unique qualities can present opportunities for the local community to develop its innovative spirit. According to Tapia et al. (2019), innovation for sustainable development has three key characteristics: context-specificity, positive impact, and change. A variety of forms of innovation, such as social, grassroots, and pro-poor innovation, can be influenced by community innovation. Pro-poor and inclusive innovation, according to the United Nations (2017b), is innovation that involves marginalised communities through the adoption of new concepts, the use of inexpensive labour and materials, and large-scale production. In contrast, grassroots innovation is socially inclusive and incorporates a wider range of actors in the practice of innovation in both technology and services.

The social and grassroots innovations created by the local community may improve their quality of life or have other beneficial effects. According to García-Flores and Martos (2023), social innovation can also have an impact on sustainability and well-being in the following areas: education (by transforming educational institutions into hubs for knowledge and creativity development), housing (by providing homes for the homeless through innovative projects like cohousing and floating houses), agriculture (creative agriculture to reduce social exclusion and increase employment), health (social initiatives to address unmet health needs), and energy (social innovation promoting alternative energy sources).

Through social innovation, community also can solve their life problems as social innovation can be a means to reach SDGs and emphasize the significance of effective problem solving to respond sustainable development challenges (García-Flores & Martos, 2023). Social innovation often closely related to collaboration, grassroots approach, addressing a wide range of social issues and their solution which are different from traditional approaches (Martinez et al., 2019, cited in García-Flores & Martos, 2023).

Innovation in the community is often impacted by a number of things. Tang et al. (2011) list a number of factors influence community innovation, such as organisational structures or member organisation, crucial individuals or participants in the innovation process, human resource skills, financial support, innovation and research-development, the way the community develops its ideas, the economic environment, the space for new ideas to emerge, intellectual property management, knowledge dissemination, and communication channels. Additionally, innovations require a comprehensive educational system that embraces knowledge sharing, transcends traditional learning boundaries, and responds to the uniqueness of each location (Rust & Rust, 2024). According to Barbieri et al. (2010), sustainable innovation also requires the application of appropriate and effective innovating processes, such as the production, assimilation, and exploitation of products, services, management, and business processes. These processes can greatly improve the state of the organisation and have a positive impact on the economy, society, and environment when compared to other processes.

## Methods

A community service project that is carried out in the *Sontoh* community is the source of the study. The *Sontoh* community is a marine community with a natural marine environment that is a gift with promise for the growth of natural marine tourism. The *Sontoh* community can improve the quality of their lives by utilising the natural resources found in both sea areas and mangrove ecosystems. If managed responsibly, the *Sontoh* community's mangrove ecology can be utilised to boost their income (Nor et al., 2022). In order to sustain itself, the *Sontoh* community also creates UMKMs and maritime-based tourism (Ramadhani, 2022; Saosang & Kurniawan, 2023; Widawati, Arifin, Pranata, & Mustika, 2022). The process of community empowerment and the growth of UMKMs have been the subject of several earlier studies (Saosang & Kurniawan, 2023; Suherman et al., 2024; Widawati, Arifin, Pranata, Mustika, et al., 2022).

In contrast to earlier research, this study intends to investigate the difficulties the *Sontoh* community faces in fostering grassroots creativity. The study uses a qualitative approach to its investigation. To investigate and comprehend the personal and societal implications of their social or human challenges, qualitative research design is employed (Creswell, 2009). Given the nature of qualitative research, the study's goal is pertinent. Participant observation is used to gather the data. The writers or researchers are the community service team that creates and implements the empowerment program for the *Sontoh* community.

The main goal of community empowerment is to exchange ideas on how to use their UMKMs' marine goods in an inventive way. Several women from the *Sontoh* community who actively participate in the local women's organisation are among the program's participants. A common gathering area offered by the Community of *Sontoh* serves as the venue for the activities. Data for qualitative research are typically gathered naturally in the participants' environment (Creswell, 2009).

Particularly, the data is gathered from the dialogue session. Throughout the dialogue session, the community service team and participants have a conversation in which the women participants share their challenges in managing their UMKMs, offer comments, and spark creative ideas. The data are grouped into a number of topics that were created based on the

participants' discussions of new and creative barriers. Data from qualitative studies are analysed inductively, moving from specifics to broad themes (Creswell, 2009).

This research constitutes part of a community-based program, with particular emphasis on dialogue sessions involving community members and the community program team. The program involved 15 female participants coordinated by Bunga Lestari Organization. Participants were selected based on their involvement in home-based industries and their membership within Sontoh community. The program covers a variety of activities. The program's primary goal is to educate the community on "Business Management on the Basis of Sustainable-Oriented Innovation." Opening, introduction, material delivery, and debate are some of those activities. The offered materials centre on creative packaging and marketing strategies for the goods produced by the community home sector. At *Balai Pertemuan Masyarakat Pengawas "Bunga Lestari,"* Kelurahan Tambak Sari Oso, Kecamatan Asem Rowo, Surabaya, the program is carried out.

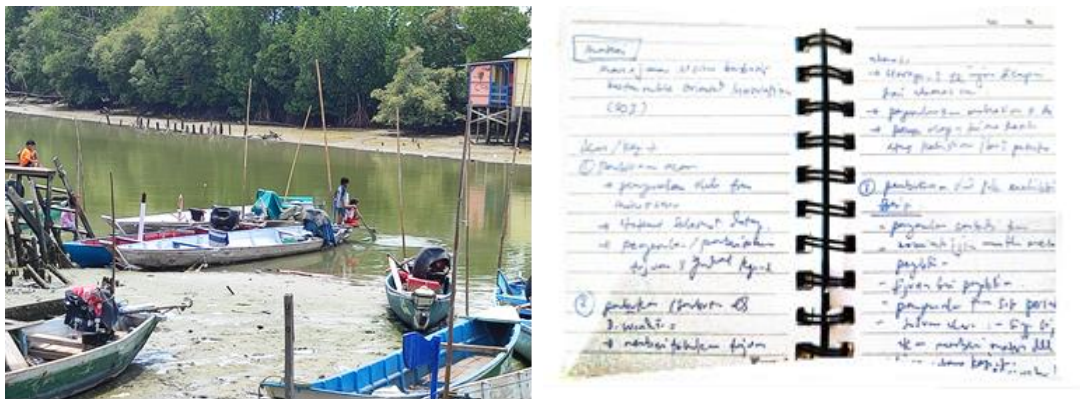


Figure 1. Methods of Data Collection

Figure 1 shows the data collection process. It presents the condition of the Sontoh community based on direct observation and screenshots of the field notes. The data were analysed by employing inductive and thematic analysis techniques. Themes were identified through field notes documented during the activities. The data were primarily derived from question-and-answer sessions and further supported by direct observations of the Sontoh community and biodiversity tourism. During the analysis, the findings were interpreted by relating them to previous studies to obtain a deeper understanding of the data. This process also enabled the identification of a network of barriers, including both direct and indirect barriers. To manage potential bias emerging from the researcher's dual roles as both program executor and researcher, several bias-reduction strategies were adopted. The researcher engaged in reflexive practices through critical analysis of field notes and direct observational data, including participants' reactions and questions raised during interactive sessions. The trustworthiness of the findings was further enhanced through triangulation, whereby data from question-and-answer sessions were validated against direct observations within the community environment.

## Results and Discussion

The Community of *Sontoh* has two primary obstacles in their efforts to promote their creative products. They are financial obstacles and ICTs. These barriers are described in the discussion that follows. According to Madeira et al. (2017), barriers to innovation are those that can hinder or prevent institutions from innovating, reduce their ability to implement and maintain newly introduced processes or products, influence innovative activity, lower the achievement of anticipated results, and have an impact on business performance. Hartono and

Kusumawardhani (2018) mention that innovation barriers are those elements that hinder or delay the innovation process. Sandberg and Stenroos (2014) argue that innovation obstacles can also be described as problems that prevent innovative activity.



Figure 2. The condition of the *Sontoh* community

Figure 2 presents the socio-environmental condition of the *Sontoh* community as a marine community located within an urban industrial setting. The expansion of industrial activities tends to isolate and marginalize the community, whose traditional dependence on natural resources and fishing livelihoods has become increasingly unsustainable. Although livelihood diversification is necessary, the community encounters challenges in generating innovation and developing alternative economic strategies.

The *Sontoh* community's innovation barriers are also reflected from the following field note.

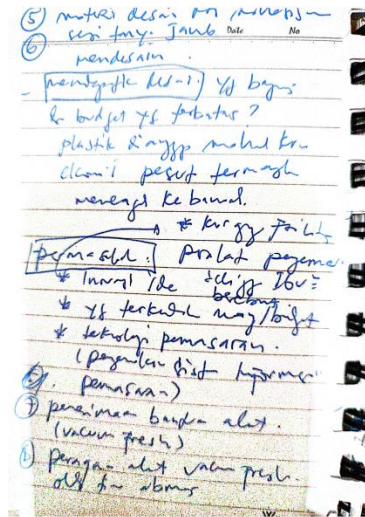


Figure 3. Sample of Field Note Relating to Innovation Barriers

The study reveals that the female participants are able to recognise their obstacles to innovation. The above sample of field note (Figure 3) mentions that:

Problems identified in the community include:

1. limitations in generating innovative ideas,
2. financial or budgetary constraints, and
3. limitations in marketing technology, particularly in the utilization of marketing information systems.

(Translated extracts from the field notes are provided in Figure 3.)

This suggests that the community is aware of the things that are impeding their local growth. Different kinds of impediments must be considered from the innovators' point of view. Therefore, the way the women participants view their innovation problems in the local community plays a crucial role in categorising the different kinds of innovation barriers they face. Institutional perceptions of innovation constraints also have an impact, according to Hartono and Kusumawardhani (2018). Additionally, innovation barriers can be identified at their source (root cause) by examining them from the perspective of the host (local) communities. Since local users and entrepreneurs are more likely to be aware of their own opportunities and demands, innovation in developing nations must be centred on the local level (Kraemer-Mbula, 2010).

The following discussion provides an analysis of the challenges faced by the community. The thematic categories of these challenges were identified through issues emerging from the field note samples and their corresponding extracts presented in Figure 2. The discussion is enriched by connecting the findings with existing literature to generate deeper interpretation of the data. This linkage further facilitates the exploration of complex and interrelated factors surrounding the central issues.

#### **A. Information, Communication and Technology Barrier**

The participants don't advertise their products on Instagram. As housewives, they attempt to supplement their family's income by selling local foods, such *tahu krispi*, *pentol ikan*, *kerupuk*, *otak-otak*, and *opak*. The women expand the range of their food products by using the rich natural resources in their area, such fish. The women participants do, however, express that they struggle to come up with creative strategies to market and promote their goods.

They are unable to use Instagram and other social media platforms, particularly WhatsApp Business, for business or product marketing. The women admit they have no idea how to use Instagram. This suggests that in order for women to create creative items, they require not only resources and technology but also skills. The United Nations (2017b) notes that while competences are important for successful innovation, they are not equally distributed. Because social and technical changes are interconnected, sustainable growth requires both (Schot & Geels, 2008). Significant disparities in technological proficiency and information distribution can impede innovation (Kraemer-Mbula, 2010). But from a wider perspective, Hartono and Kusumawardhani (2018) point out that members' resistance to change, leaders' or managers' opposition to change, and organisational rigidity are all factors that contribute to innovation obstacles.

Figure 4 shows the women participants are highly knowledgeable and skilled in their maritime resources. Nevertheless, their expertise and experience in information processing and technology use are inadequate. Seyfang and Smith (2006) note that local action organisations typically possess expertise and understanding about their communities and what works there. But merely giving them hardware (like a manufacturing facility and equipment) is insufficient to foster community innovation; they also need software (like knowledge, know-how, and skills) and factor inputs (like capital, raw materials, energy, and labour) (Tapia et al., 2019).

The following data extract is taken from field note during question-answer session with participants.

Community challenges:

1. limited familiarity with Instagram, and
2. limited understanding of WhatsApp Business

(Translated extracts from the field notes are provided in Figure 4.)

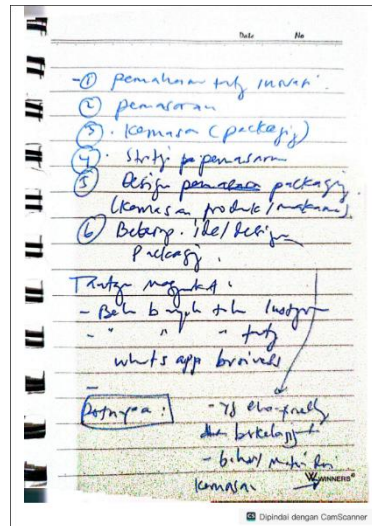


Figure 4. Sample of Field Notes Relating to Participants' Limited Capacity to Use Information Technology

The data indicate that the female participants had prior experience with technology, specifically mobile phones. However, understanding how to use Instagram or other corporate social media is their biggest obstacle. This suggests that knowledge about technology is necessary to support technology as hardware. According to Phan et al. (2020), innovation is often thought of as always beginning with technology rather than foundation, which refers to people and process. Technology is not the only area of innovation (Phan et al., 2020).

Numerous studies emphasise how crucial technology is to innovation. Communities can address challenges, optimise resources, and boost resilience to resist environmental, economic, and social pressures through technological advances, process and product innovations, or new business models (Park et al., 2022). Nonetheless, the study concludes that knowledge and technology are interconnected and recommends the urgent integration of knowledge, technology, and information to foster innovation. According to IIASA (2020), it is not just standard technology but also technology that is customised to the economic circumstances of the society. Not just the right technology or a certain kind of technology is required; the community's ability to learn must also be taken into consideration. Place-based innovations require inclusive education that employs bidirectional pedagogies that integrate sustainability and system thinking across disciplines, as stated by Rust and Rust (2024).

This is supported by other research that argues that technology cannot affect innovation on its own. Knowledge capacity is required to support it. Lack of technology and research and development efforts can impede innovation (Lakitan, 2013). According to Phan et al. (2020), entrepreneurship, talent, and technology are some of the factors that influence innovation. In addition to a typical and local focus on supply, innovation requires a technical transfer procedure. Technology advancement must therefore be taken into account (Kraemer-Mbula, 2010). The research indicates that in order to foster community creativity, both technical hardware and expertise are required. Furthermore, the economic, social, and environmental problems of today call for innovative solutions that are grounded on technological advancement (Kraemer-Mbula, 2010).

## B. Financial Barrier

The participants also mention finance as a barrier to developing innovative home-based products. In addition to their ignorance (specifically on how to expand their product marketing

via the use of modern information and technology), the women lack the funds necessary to develop their products and make them more unique and innovative. To meet their daily needs, the women can only operate their home-based business. The women wish to improve the financial situation of their families.

The primary issue with innovation, according to a number of earlier research, is finance. According to Radicic (2021), the two biggest obstacles to radical innovation are perceived to be knowledge and money. In a similar vein, Hartono and Kusumawardhani (2018) discover that risk and money are the biggest obstacles to innovation.



Figure 5. Sample of Field Notes Relating to Participants' Financial Issue

Figure 5 shows data extract is taken from field note during question-answer session with participants.

**How can high-quality designs be developed under financial constraints?**

Plastic is considered costly, as the participants largely belong to lower-middle-income economic groups.

*(Translated extracts from the field notes are provided in Figure 5.)*

The field note data indicate that participants are highly interested in developing attractive packaging for their homemade food products within limited financial capacity. They also express interest in alternative packaging materials, as plastic packaging is perceived as relatively expensive given their predominantly middle- to lower-income socioeconomic backgrounds.

The financial difficulty facing the community's innovation has multiple effects on how problems are solved. The implications might not only be focused on resolving immediate financial issues, but also on a number of supporting factors that facilitate effective financial solutions in the community. The first implication is that other financial solutions are required. The new problem demonstrates how expensive innovation is. Trial and error are a part of it, and it contributes to the high cost of processing innovation. Community innovation is the process of trying, learning, and suggesting various strategies to determine which one may be used to bring about significant, constructive change in the community (Cheuy, 2017). Additionally, according to Madeira et al. (2017), the costs of innovation, the unpredictability of demand, and the marketplaces for new products and services are the main obstacles to innovation. Four categories of factors can be used to categorise barriers to innovation: market factors, knowledge factors, economic considerations, and reasons not to innovate (CIS, 2010, P. 2, cited in Madeira et al., 2017). The majority of research indicates that the primary obstacle to innovation is the financial barrier. In actuality, additional obstacles that could affect the innovation process include market uncertainty and knowledge management (Radicic, 2021).

The participants expressed that there is a need to address financial difficulties with creative financial solutions due to the inadequate funding allocated to foster innovation. For

the local community, particularly the marginalised group, social inclusion is one of the probable or feasible remedies. Research from all around the world repeatedly shows that those who are poor, old, unemployed, part of religious or ethnic minorities, or living in rural regions are often financially excluded (Carbo et al., 2007; Corrado & Corrado, 2015; Demirgüç-Kunt et al., 2017). Having access to inexpensive financial services for all community members is known as financial inclusion (Arner et al., 2020; Corrado & Corrado, 2015; Fernández-Olit et al., 2019). Similarly, financial inclusion is defined by Marhaeni et al. (2023) as fair access to cheap financial services, including credit, insurance, and payment systems, which are essential for attaining sustainable economic growth.

It is expected that the local *Sontoh* community (the women participants) will be able to use a variety of alternative financial services to address their financial issues rather than relying solely on conventional or classical solutions if they have access to financial services, financial literacy, and financial technology. This confirms the results of earlier research that focusses on and emphasises the purposes or possible advantages of financial inclusion. According to Arowosegbe and Chukwunweike (2024), financial inclusion can enable people, especially those in developing nations, to improve their productivity, education, and standard of living. According to Ahmed et al. (2023, cited in Sularmi et al., 2023), financial inclusion helps people and businesses, fosters economic growth, and reduces poverty. It can also be a growth engine and an enabler for long-term economic development (Arousable & Chukwunweike, 2024).



Figure 6. Education for The *Sontoh* Community Regarding The Use of Innovative Packaging Products and Design

Figure 6 demonstrates a community education program that aims to improve community economic sustainability through the adoption of durable product packaging. This strategy emphasizes value enhancement through packaging innovation and preservation technology. Such an approach is expected to provide an alternative diversification strategy beyond conventional financial assistance.

For local groups like the *Sontoh* community, which begin small-scale entrepreneurship with their own funds or financing, the existence of a financial inclusion system might be a ray of hope. Marine tourism has not fully capitalised on *Sontoh's* natural attractiveness. Due to *Sontoh's* unique community and its natural mangrove ecology, most visitors come there for educational or research objectives. *Sontoh's* community's income is constrained by this market demand. In the meanwhile, they require more funding to maintain both their tourist and local tourism businesses, which are managed by the local population.

Because of the community of *Sontoh's* uniqueness and its natural mangrove ecosystem, visitors primarily come for study or research purposes, which limits the community's income. At the same time, they require more funding to sustain their tourism and local tourism industries, which are run by their local community. Local communities that begin their small-

scale entrepreneurship using their own funds or finance, like the community of *Sontoh*, may find hope in the existence of a financial inclusion system. The growing number and quality of tourist attractions developed by different local communities exacerbates this situation by making local communities more competitive. *Sontoh's* community must innovate in order to remain competitive. As mentioned by Hartono and Kusumawardhani (2018), competitiveness is determined by innovation success. The community must therefore expand its options for financial solutions to include more modern financial services. The process of giving people and businesses, particularly those who are underserved by traditional financial institutions, access to practical and reasonably priced financial services is known as financial inclusion, according to Arowosegbe and Chukwunweike (2024). By promoting equality, reducing poverty, and empowering individuals, financial inclusion contributes significantly to economic growth and can be more beneficial to the economy (Demirgüç-Kunt et al., 2017). Financial services are triggered by innovation waves, which also present opportunities to meet the needs of disadvantaged and low-income populations (Kerse et al., 2024). However, not every community is eager to accept or attempt new financial services, and not every town may be able to participate in the most recent financial inclusion system. Both internal and external barriers may stand in the way of financial inclusion. Financial inclusion has been restricted by a number of factors, including cultural barriers (related to the belief that finances should be handled internally within the community rather than involving outside parties), a lack of trust in financial institutions and providers, and accessibility problems (including difficulties with physical and technological access) (Sularmi et al., 2023). Sularmi et al. (2023) also list a number of characteristics that influence financial inclusion, including cultural norms, education level, accessibility to banking procedures, geographic closeness to financial institutions, and internet connectivity.

Fintech has the potential to effectively promote financial inclusion. In order to learn about and interact with financial innovations, including fintech, the women participants can utilise their mobile phones. Fintech, which uses technologies like peer-to-peer lending, mobile banking, and blockchain to expand the breadth of financial services, has expanded financial inclusion, according to Arowosegbe and Chukwunweike (2024). Small enterprises and individuals without access to traditional banking can benefit from fintech (Arowosegbe & Chukwunweike, 2024). Additionally, fintech enables SMEs to obtain the money they require for growth, innovation, and employment creation—all of which are critical for long-term economic viability (World Bank, 2020, cited in Arowosegbe & Chukwunweike, 2024). According to Arowosegbe and Chukwunweike (2024), fintech innovation is a financial transformative force that may serve underprivileged communities in emerging markets that traditional banking systems are unable to service. Therefore, a typical or conventional financing mechanism might not be enough to foster communal innovation. They could need a more creative financing scheme. According to Akhtar et al. (2017), innovative financing is defined as financing methods that deviate from conventional investing or financing methods that may have favourable socioeconomic and environmental effects. Moreover, innovative financing involves more than simply technological hardware; it also involves holistic elements. The scope and diversity of finance are noted by Akhtar et al. (2017) and Shen et al. (2018). Its mechanism encompasses a number of sectors, such as innovative public financing design and finance, development-oriented financing products from the private sector, policies that encourage investment in development, and novel systemic approaches as development means.

The second implication is the need for the host community to acquire financial literacy and current information on new financial innovations or systems. The ability to make sound financial decisions is referred to as financial literacy (Arner et al., 2020; Shen et al., 2018). Understanding a wide range of potential and safe financial services is made possible by financial literacy. According to Arowosegbe and Chukwunweike (2024), financial services can

be provided in a sustainable and responsible manner and include insurance, savings, credits, and payments. Numerous earlier research emphasises how crucial it is to take a wider view of the financial answer. A financial solution must take into account a number of things in addition to simply lending or donating money. Developing innovative financial inclusion involves a number of factors, according to the G20. These include establishing a strong commitment from the leadership, offering a wide range of financial services, developing technological and institutional innovations, protecting consumers, enhancing financial capability and financial literacy, improving knowledge, balancing policy and regulation that take risks and benefits into account, and creating a framework that takes into account national circumstances, international standards, and support for the competitive landscape (G20 Financial Inclusion Experts Group, 2010).

### C. Contributing Factors for Enabling Community-Based Innovations

The study suggests a number of contributing elements that may have a beneficial effect on the innovation of the local, even marginalised, community based on the barriers expressed by the women participants. Community-based innovation can improve a community's social-cultural life and economic situation. According to García-Flores and Martos (2023), social innovation can be crucial in accomplishing the Sustainable Development Goals (SDGs) by solving complex and significant social problems in an efficient manner. Meanwhile, Tang et al. (2011) mention that innovation by, for, and with the community is becoming important because it fosters creativity on the ground and helps the community come up with audacious solutions to problems.

Local communities can create communities of practice through community-based innovation. *Sontoh's* community, for example, has developed a women's organisation (group) that shares their concern for supporting their husbands' family income. Figure 7 illustrates how the women are eagerly attending the event together.



Figure 7. The Women Participant Active Involvement in The Program

This supports earlier research that highlights the contribution of community groups to creativity. Communities of practice are appropriate for encouraging innovation through communication and engagement, as noted by Ye et al. (2015). Additionally, the practice community is defined by Sarazin et al. (2021) as a group of people who routinely meet and engage in similar activities based on specialised expertise.

The community can foster collaboration and teamwork among members in their local communities by establishing a community of practice. Additionally, they have the ability to create and fortify bonds within the organisation. The process of innovation is not a solitary or autonomous one. Rather, a collaborative method is required. For grassroots innovators or aspiring business owners, the innovation process is typically open and inclusive (Landorff & Kerting, 2021). This suggests that a robust community is essential for creativity. According to Sarazin et al. (2021), strong communities typically form close bonds based on a shared passion

and dedication to achieving a common objective. Additionally, trust and respect constitute the foundation of community interactions (Sarazin et al., 2021).

The *Sontoh* community can collaborate with other communities and parties in addition to strengthening their ties. Educational institutions that offer training, research development, and community service programs are one example. Beyond the local community, other stakeholders need to be involved in the grassroots and social innovation process. An innovation community is made up of informal groups that include both internal and external members, as stated by Sarazin et al. (2021).

The roles that various stakeholders play in community innovation may vary. According to Guida and Maiolini (n.d., cited in Maiolini & Guida, 2014), social innovation is a creative communal process that seeks social usefulness by building linkages between various actors' knowledge and competencies for community well-being and plays disseminator roles. Other research also focusses on creative problem solving, which requires teamwork to produce workable answers. A social innovation network is a group of various individuals and groups that choose to work together to address social concerns and take advantage of new opportunities, according to Swift and Wellbeing Enterprises CIC (2020). Collaboration is necessary because social innovation typically happens through trial and error, experimentation, and idea sharing in groups to discover new methods of doing things (Bernardino & Santos, 2017). It is the outcome of a hybridisation of different previous elements that are combined across boundaries (Joseph, 2013, cited in Cheuy, 2017), and it is the result of cross-sector collaborations in terms of long-term partnership across sectors (Clarke & Crane, cited in Blanchet, 2024). Additionally, diversity in innovation must be addressed immediately because innovation is characterised by heterogeneity, which necessitates different growth and innovation patterns, different institutions performing different functions, attention to various contexts and cultural considerations, and different competencies resulting in different strategies (Kraemer-Mbula, 2010). The participation of societal, regional, global, and individual actors is necessary for sustainable development initiatives (Santos, 2024).

The study finds that there are two primary obstacles limiting the *Sontoh* community's innovative endeavours. These are the financial and ICT constraints. Depending on their resources and requirements, different communities may face different problems. Resources needed to function vary by area. Therefore, it's critical to support local human resources in order to act, engage, and build organisational capacity for innovation (Prasetyo et al., 2022). Although the study only identifies a few impediments, it concurs with other research that shows more intricate obstacles. A number of studies categorise the barriers to innovation according to the sources of the problem, including financial, knowledge, and competition (Radicic, 2021), market and institution barriers, employee and organisation attitude, risk and finance, knowledge and cooperation (Hartono & Kusumawardhani, 2018), knowledge and skills, lack of technological development, inadequate budget for research and development, and lack of education (Okamoto & Sjöholm, 2001, cited in Hartono & Kusumawardhani, 2018). Several studies classify the innovation barriers based on the sources of issue, such as financial, knowledge and competition (Radicic, 2021), barriers in market and institution, the attitude of employee and organization, risk and finance, knowledge and cooperation (Hartono & Kusumawardhani, 2018), knowledge and skills, lack of technological development, insufficient budget for research and development, lack of education (Okamoto & Sjöholm, 2001, cited in Hartono & Kusumawardhani, 2018). More specifically, CIS (2010, cited in Madeira et al., 2017) lists a number of obstacles to innovation, such as a lack of equity capital, a lack of funding, high costs for innovation, a lack of qualified human resources, a lack of partnerships, markets dominated by established firms, uncertain demand or market, perceptions that innovation is unnecessary because of previous innovation, and the belief that innovation

is not required because of a lack of market or demand. In the meantime, other studies, like Madeira et al. (2017), pinpoint the origin of barriers, whether they are external or internal.

Based on the two primary obstacles mentioned by the *Sontoh* community—the financial and ICT barriers—the study concludes that there are connections between them. The community's access to digital technology devices may allow people to learn more about financial literacy and knowledge, as well as the potential for and availability of digital financial services and financial inclusion. According to Haider (2018), financial services like online and mobile banking as well as digital credit are made possible by digital technology, particularly the use of mobile phones, internet connectivity, and biometric authentication. Their access to knowledge and technology allows them to obtain financial services. Supporting community innovation can be facilitated by adequate and safe financial services. Financial services have the potential to improve people's quality of life and other aspects of the economy, including lowering poverty (Suri & Jack, 2016), securing agricultural payments, increasing savings, enabling individuals to cope with income shocks, strengthening social networks, and empowering women (Haider, 2018).

When compared to traditional banking services, digital financial services can be more practical and cost-effective. They enable low-income and impoverished individuals in developing nations to borrow and save within the official financial system, earn financial returns, and streamline their spending (Haider, 2018).

The study affirms that the influence of digital technologies on community innovation depends not only on technological improvement but also on the cooperation of relevant additional factors. Digital technology alone does not enable digital finance services, as noted by Haider (2018). Rather, the success of financial services depends on other elements, such as infrastructure, consumer demographics, understanding and awareness of the significance of financial literacy, rules to protect consumers, and consumer trust.

According to the study's analysis and direct observation data, there are a number of characteristics that could encourage innovation in the *Sontoh* community, especially in the women participants' home-industry and culinary items. These potential aspects are presented in the following table. They were synthesized by the researchers based on the analytical results, which incorporated the main findings and linked them with previous studies. Accordingly, these aspects were derived from a network of factors mapped from the solutions suggested in earlier studies. Through this process, the study is expected to provide insights into several possible solutions for addressing community innovation barriers shows on Table 1.

Table 1. Potential Aspects Which May Support Community Innovation

| No | Potential Aspects  |
|----|--|
| 1  | The development and implementation of appropriate technology                                     |
| 2  | Capacity building relevant to local community's resources and needs                              |
| 3  | Technological infrastructure   |
| 4  | Collaboration and partnership with other external parties  |
| 5  | Community-based education, entrepreneurship education  |
| 6  | Budget advocacy  |
| 7  | UMKM management and leadership   |
| 8  | Financial inclusion, financial digital literacies, financial management and innovative financing |
| 9  | Community actions and practices  |
| 10 | Organizational and management practices  |
| 11 | Community learning practices   |

Several elements that can enhance community creativity are suggested by the study. These elements can be divided into a number of groups:

1. Information and technology, including the creation and application of suitable technologies and infrastructure

2. Education (community-based learning, entrepreneurship education, and capacity building pertinent to the resources and needs of the local community)
3. Increasing social capital through community actions and practices, partnerships with other external parties, and community learning methods
4. Finance (advocacy for the budget, financial inclusion, financial management, financial digital literacy, and creative financing)
5. Organisational capacity building (management and leadership, organisational and management practices, and UMKM management).

The study recognises other characteristics suggested by other studies in addition to the clustering supportive aspects mentioned above for fostering communal creativity. According to Prasetyo et al. (2017), a number of motivating elements, including leadership, collaboration and networks, and the institutionalisation of sustainability initiatives, can facilitate innovation. The enhancement of local competencies, which include not only technical capacities but also organisational and managerial competences at the firm and policy making levels (Kraemer-Mbula, 2010), the organisational and managerial competences that are crucial for facilitating technology transfer, and the transformation of traditional business attraction to a community development view (Phan et al., 2020) are additional aspects suggested by other studies.

## Conclusion

Community innovation has tended to be overlooked in the literature, as the majority of studies focus on innovation within companies and corporate organizations. Community innovation has the potential to strengthen the economic and socio-cultural conditions of host communities. Through the exploration and utilization of local resources, communities may create new forms of innovation or creatively transform existing practices in unique ways. However, the innovation challenges experienced by local communities are often context-specific and may differ across communities. This study therefore focuses on investigating the innovation challenges faced by the *Sontoh* community. The findings indicate that the *Sontoh* community experiences two major barriers, namely ICT and financial barriers. The study further recommends strengthening several supporting dimensions to address these barriers and improve the community's innovation capacity. These dimensions include information and technology, education, community social capital, financial inclusion, literacy, and organizational capacity building.

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