

The Role of Social and Technological Innovation in Enhancing Economic Well-being and Empowering Rural Communities

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Abstract

Social and technological innovations have become key factors in addressing the challenges faced by rural communities, particularly regarding economic well-being and empowerment. This study aims to explore the role of social and technological innovations in improving the economic welfare and empowerment of rural communities. A literature review methodology with a qualitative descriptive analysis approach was employed. Data for this study were collected from Google Scholar, focusing on publications from 2018 to 2024. The study findings show that social and technological innovations play an important role in improving the economic welfare and empowerment of rural communities in Indonesia. Programmes such as 'Tempe Producer Cooperative,' 'Digital Book,' 'Smart Village,' 'Bumdes,' and 'Telemedicine' demonstrate that the application of innovative solutions can have a significant positive impact in improving the quality of life in rural areas. Through an approach that involves active community participation and appropriate use of technology, these initiatives are successfully addressing local problems, expanding access to services and information, and directly empowering communities. These programmes prove that the combination of social innovation and technology can drive sustainable and significant change in rural communities.

Keywords: Social Innovation, Technology, Economic Welfare, Rural Community Empowerment

Peran Inovasi Sosial dan Teknologi dalam Meningkatkan Kesejahteraan Ekonomi serta Pemberdayaan Masyarakat Pedesaan

Abstrak

Inovasi sosial dan teknologi telah menjadi faktor penting dalam mengatasi tantangan yang dihadapi oleh masyarakat pedesaan, khususnya dalam hal kesejahteraan ekonomi dan pemberdayaan. Penelitian ini bertujuan untuk mengkaji lebih dalam peran inovasi sosial dan teknologi dalam meningkatkan kesejahteraan ekonomi serta pemberdayaan masyarakat pedesaan. Penelitian ini menggunakan metode tinjauan pustaka dengan pendekatan kualitatif analisis deskriptif. Data untuk penelitian ini diambil dari Google Scholar dengan fokus pada publikasi yang diterbitkan antara tahun 2018 hingga 2024. Temuan studi menunjukkan bahwa inovasi sosial dan teknologi memainkan peran penting dalam meningkatkan kesejahteraan ekonomi dan pemberdayaan masyarakat pedesaan di Indonesia. Program-program seperti Koperasi Produsen Tempe, Buku Digital, Desa Pintar, Bumdes, dan Telemedicine menunjukkan bahwa penerapan solusi inovatif dapat memberikan dampak positif yang signifikan dalam meningkatkan kualitas hidup masyarakat pedesaan. Melalui pendekatan yang melibatkan partisipasi aktif masyarakat dan penggunaan teknologi yang tepat, inisiatif-inisiatif ini berhasil mengatasi masalah lokal, memperluas akses terhadap layanan dan informasi, serta memberdayakan masyarakat secara langsung. Program-program ini membuktikan bahwa kombinasi antara inovasi sosial dan teknologi dapat mendorong perubahan yang berkelanjutan dan signifikan di masyarakat pedesaan.

Kata kunci: Inovasi Sosial, Teknologi, Kesejahteraan Ekonomi, Pemberdayaan Masyarakat Pedesaan

INTRODUCTION

Social and technological innovations have become essential factors in tackling the challenges faced by rural communities, especially in terms of economic well-being and empowerment. In this context, social innovation refers to the implementation of new solutions that meet societal needs more effectively and efficiently than conventional approaches. Meanwhile, technology provides tools that facilitate the dissemination of information, skills, and access to wider markets. Various studies show that rural communities are often isolated from the economic developments occurring in urban areas (Cattaneo et al., 2022; Gebre & Gebremedhin, 2019), and thus require tailored approaches to empower them economically and socially.

Technology holds great potential for addressing various barriers faced by rural communities. Through access to information and communication technologies (ICT), communities can access information on market opportunities (Ruhjana & Essa, 2020), more efficient production methods, and other innovations that can enhance their productivity. In many developing countries, including Indonesia, the application of advanced agricultural technologies has been shown to increase yields and reduce production costs. Technology also allows for access to broader markets, whether through e-commerce platforms or by expanding the distribution networks of local products.

In addition to technology, social innovation plays a vital role in creating sustainable change in rural communities. Social innovation often involves active community participation in creating solutions to the challenges they face (Blanchet, 2024). For example, initiatives such as agricultural cooperatives or joint business groups managed by local communities have proven effective in improving the economic well-being of rural populations. Social innovations aim to enhance income, strengthen social cohesion, and improve quality of life by providing better access to basic services such as education, healthcare, and clean water.

The role of government and non-governmental organizations (NGOs) in supporting social and technological innovations cannot be overlooked. Policies that support investment in technology and community empowerment programs can accelerate the transformation process in rural areas (Rijswijk et al., 2021). In many countries, governments have adopted various policies to support rural economic growth through technological innovations, such as subsidies for internet access and digital skills training programs. In Indonesia, the Village Fund Program is a concrete example of how the government seeks to facilitate economic development in remote areas by providing funding for various infrastructure development projects, community empowerment, and business development.

Financial technology (fintech) also plays a crucial role in increasing rural communities' access to financial services (Friedline et al., 2020). Previously, rural populations often struggled to access business loans due to the lack of financial institutions in their areas. However, with the development of fintech, various online lending and digital payment platforms are now easily accessible to rural communities, allowing them to secure business capital and expand their enterprises. Moreover, fintech simplifies financial transactions,

both in terms of payments and remittances, directly contributing to increased economic activity.

Women's empowerment in rural areas is another positive impact of social and technological innovation. Many studies show that women in rural areas often play important roles in the local economy but have limited access to business opportunities and resources (Feb Amni & Rani, 2023; Kitole & Genda, 2024). Social innovations aimed at empowering women, such as skills training and providing business capital, have been shown to improve the well-being of families and communities as a whole. Technology also plays a key role in granting women access to education and information that were previously difficult to obtain, allowing them to actively participate in economic activities.

However, the implementation of social and technological innovations in rural areas is not without challenges. One of the biggest challenges is the lack of adequate infrastructure, such as access to electricity and the internet. In addition, the low level of digital literacy and technological skills among rural populations also hinders the optimal utilization of technology. Therefore, efforts to improve digital literacy and provide supportive infrastructure are key factors in ensuring the success of social and technological innovations in rural areas.

Thus, social and technological innovations hold great potential in enhancing economic well-being and empowering rural communities. However, the success of their implementation depends on the synergy between the government, the private sector, and local communities. Policy support, infrastructure development, and capacity building for communities are essential elements that must be addressed. In the long term, social and technological innovations can reduce poverty in rural areas and increase community resilience against various economic and social challenges. This study aims to explore in greater depth the role of social and technological innovations in improving the economic welfare and empowerment of rural communities in Indonesia.

Social Innovation

Social innovation is the process of creating new solutions aimed at meeting social needs more effectively and efficiently than traditional methods, involving the active participation of affected communities (Svensson et al., 2018). Its focus is on sustainable and far-reaching change, whether socially, economically, or environmentally, to improve the quality of life. Social innovation often arises from collaboration among various stakeholders, including government, non-profit organizations, the private sector, and local communities, with the goal of addressing challenges such as poverty, social inequality, and access to basic services. Notable examples of social innovation include the development of cooperatives, microfinance systems, and community-based educational programs, all of which are designed to empower vulnerable groups and create lasting positive impacts.

Technology

Technology refers to the application of scientific knowledge for practical purposes in everyday life, primarily to solve problems or meet human needs (Harahap,

Kraugusteeliana, et al., 2023; Wahyoedi et al., 2023). It encompasses a wide range of tools, systems, and devices designed to enhance efficiency, productivity, and accessibility across various fields such as communication, transportation, healthcare, education, and agriculture. In the modern context, technology is often associated with digital advancements like computers, the internet, and mobile devices, which have transformed how individuals, organizations, and societies interact and operate (Sutrisno et al., 2023). The appropriate use of technology can accelerate economic development, improve access to information, and foster innovation across sectors. However, the application of technology also requires good digital literacy to ensure that its benefits are enjoyed equitably by all segments of society (Harahap, Sutrisno, et al., 2023).

Economic Welfare

Economic well-being is a condition where individuals or communities have sufficient access to resources and economic opportunities that allow them to meet basic needs, such as food, clothing, shelter, healthcare, and education, as well as achieve a decent standard of living (Rao & Min, 2018). Economic well-being is measured by various indicators, such as per capita income, unemployment rates, access to employment, and wealth distribution (Sultan et al., 2023). Additionally, economic well-being includes non-material aspects, such as financial stability, fairness in access to economic opportunities, and social security that can protect people from the risk of poverty. When economic well-being is achieved, people tend to be more productive, have higher purchasing power, and are better able to participate in sustainable economic activities, thereby contributing to inclusive economic growth and overall quality of life improvement.

Rural Community Empowerment

Rural community empowerment is a process aimed at enhancing the capacity of individuals and groups in rural areas to independently manage the resources and potentials around them, as well as actively participate in economic, social, and political development (Waridin et al., 2018). This process involves providing access to education, skill training, healthcare services, and business capital so that communities can make better decisions to improve their well-being. Empowerment also encourages rural communities to engage in sustainable economic activities, such as agriculture, livestock, or small and medium-sized enterprises (SMEs), which can increase their income and quality of life. Additionally, social and political empowerment is crucial to ensure that communities have a voice in local decision-making processes that affect their lives. Ultimately, rural community empowerment is an effort to reduce their dependence on external assistance and foster self-reliance and the strengthening of local communities to effectively address economic and social challenges (Sarjiyanto et al., 2024).

METHOD

This research employs a literature review method with a qualitative descriptive analysis approach. The goal of the study is to contribute to the literature on community service by

examining the role of social innovation and technology in improving economic well-being and empowering rural communities. This literature review method allows researchers to explore and analyze various relevant sources of literature to gain an in-depth understanding of the researched topic. The data for this study was gathered from Google Scholar, focusing on publications from 2018 to 2024. The data collection process began with a broad search that yielded 41 relevant articles. These articles were then rigorously selected based on relevance, quality, and contribution to the research topic. This strict selection ensured that only the most relevant and high-quality articles were used in the study. After the selection process, 24 articles that met the criteria were chosen for further analysis. A descriptive analysis was conducted to present the findings from the selected articles. This research focuses on systematically presenting and interpreting the data, emphasizing patterns, key themes, and insights obtained from the existing literature. Through this approach, the study aims to make a meaningful contribution to the literature on community service, particularly in the context of social innovation and technology and their impact on economic well-being and rural community empowerment.

FINDING AND DISCUSSION

Social and technological innovations play a crucial role in enhancing economic well-being and empowering rural communities. In Indonesia, various case studies highlight the positive impact of the combination of these two elements in improving the quality of life in rural areas. Social innovation involves creative approaches that engage active community participation to develop solutions for specific social needs. Technology, on the other hand, provides tools that broaden access to information, skills, and markets. The integration of these two factors improves living conditions and fosters profound and sustainable change in rural communities.

One concrete example of social innovation in Indonesia is the "Tempe Producers Cooperative" program in Bantul Regency, Yogyakarta. This program integrates local soybean farmers into a cooperative, allowing them to collectively purchase raw materials, process soybeans into tempeh, and market their products to a broader market. Through the cooperative, farmers not only receive better prices for their products but also gain access to training on more efficient and sustainable tempeh production practices. This program demonstrates how social innovation can address local market issues and empower rural communities in a structured and sustainable way (Živojinović et al., 2019).

On the technological side, the "Digital Books" program launched by Indonesia's Ministry of Education and Culture offers a solution to overcome barriers to accessing educational materials in rural areas. The program provides textbooks in digital format, enabling students in remote areas to access quality learning materials without logistical hurdles. The use of digital books also contributes to reducing educational costs and improving students' digital skills in underdeveloped areas. This program not only expands access to education but also supports students' academic progress by providing them with tools for independent learning and integrating technology into education (Mika & Anis, 2024).

The "Smart Village" initiative, led by the Ministry of Villages, Development of Disadvantaged Regions, and Transmigration, is another example of integrated social and technological innovation. The program aims to develop villages into smart villages by utilizing information and communication technology to enhance public services, local economies, and the quality of life. Cibeureum Village in Tasikmalaya Regency is a successful example of this initiative, with the implementation of an e-village system that manages village data, speeds up administrative services, and facilitates communication between the village government and its residents. This program shows how technology can transform village governance and accelerate local development by addressing the specific needs of the community, improving transparency, efficiency, and accountability in village governance (Oktarina et al., 2023).

The "Bumdes" (Village-Owned Enterprises) model in various Indonesian villages demonstrates how rural community empowerment can be achieved. Bumdes enable villages to establish and manage local businesses run by the villagers themselves. For instance, the "Bumi Rancah" Bumdes in Ciamis Regency manages agricultural businesses, processing agricultural products, and village tourism. Through Bumdes, villagers have the opportunity to participate in local economic activities, earn additional income, and improve their overall well-being. This initiative also proves how the independent management of local resources can strengthen village economies and promote local economic sustainability (Bahrudin et al., 2022).

Technology also plays a vital role in improving the well-being of rural communities through telemedicine initiatives. The telemedicine program launched by several hospitals and healthcare institutions, such as RSUP Dr. Sardjito in Yogyakarta, allows patients from rural areas to receive remote medical consultations without traveling long distances. This initiative helps address accessibility challenges and provides better healthcare services to rural communities, making it easier for them to obtain medical care that was previously difficult to access. It also highlights the potential of telemedicine to bridge the healthcare service gap between urban and rural areas.

However, a major challenge in implementing technology and social innovation in rural Indonesia is the lack of basic infrastructure, such as electricity and internet access. The "Listrik Desa" program, carried out by PLN, aims to address this issue by providing electricity to underserved areas. This program supports rural communities in utilizing technology more effectively, such as using solar-powered lamps to replace oil lamps, which offer better lighting for evening activities. With electricity, communities can access information and digital services more easily, supporting the further adoption of technology (Weck & Afanassieva, 2023). This program also facilitates the use of more advanced technologies, such as modern production tools that require electrical power, thereby accelerating local economic development.

In addition, low digital literacy among rural communities poses a significant challenge that can reduce the effectiveness of technology. Digital literacy training programs such as the "National Digital Literacy Movement" by Kominfo aim to address this issue by providing basic training on the use of computers, the internet, and the utilization of social

media and digital platforms for business. This training is essential to ensure that communities have the necessary skills to maximize the use of technology, improving productivity and their quality of life (Puspita, 2024). Rural communities can become more active in the digital economy and take advantage of opportunities in online markets by enhancing digital literacy.

Social innovation that involves active community participation also plays a role in accelerating empowerment. The "Community Empowerment Based on Thematic Villages" program in Malang Regency, which engages communities in the development of thematic villages such as batik villages and tempeh villages, demonstrates the positive impact of participatory approaches. Involving the community in every stage of planning and implementation creates a stronger sense of ownership and responsibility, contributing to the success and sustainability of these projects (Rijal, 2023). This approach shows how active community involvement in local development can create projects that are more aligned with their needs and desires, as well as increase support and participation.

Another example of how social and technological innovation can create economic opportunities in rural areas is the "Development of Tourism Villages." Villages in Bali, such as Penglipuran Village, have leveraged local tourism potential by developing tourism villages that offer cultural and natural experiences to visitors. These villages have successfully attracted domestic and international tourists, boosting local income and promoting local culture and the environment by utilizing digital marketing technology and social media. This demonstrates how marketing technology can enhance the appeal of rural tourism and provide significant economic benefits to local communities.

The integration of social and technological innovations offers significant impacts on improving economic well-being and empowering rural communities. The success of various programs and initiatives shows that with the right approach and adequate support, rural communities in Indonesia can overcome the challenges they face and achieve sustainable development. The government, non-governmental organizations, and the private sector must continue to collaborate in creating and implementing innovative solutions to improve the quality of life in rural areas, as well as address and overcome existing barriers. The combination of social innovation and technology, with a focus on local needs and community empowerment, is key to achieving inclusive and sustainable development.

CONCLUSION

Social and technological innovation play a crucial role in improving economic well-being and empowering rural communities in Indonesia. Programs such as "Koperasi Produsen Tempe," "Digital Books," "Smart Village," "Bumdes," and "Telemedicine" demonstrate that the implementation of innovative solutions can significantly impact the quality of life in rural areas. Through approaches involving active community participation and the appropriate use of technology, these initiatives have successfully addressed local challenges, expanded access to services and information, and directly empowered

communities. These programs prove that the combination of social innovation and technology can drive sustainable and significant changes in rural communities.

Findings from various case studies have broad implications for policy development and strategies for rural community empowerment in Indonesia. First, it is important to continue and expand programs that have been proven effective in improving community welfare, such as village cooperatives and telemedicine technology. Second, there is an urgent need to improve basic infrastructure, such as electricity and internet access, so that rural communities can fully utilize technology. Third, digital literacy training must become an integral part of empowerment efforts, given the low levels of digital skills among rural populations.

To enhance the effectiveness of social innovation and technology in empowering rural communities in Indonesia, several recommendations can be made. First, improving basic infrastructure, including providing electricity and internet access to underdeveloped rural areas, is essential. The government and private sector must collaborate to ensure that all rural areas have adequate access to the necessary infrastructure to support the effective implementation of technology. Additionally, expanding digital literacy training programs, focusing on local needs, is crucial to ensure that rural communities can better utilize technology. Support for social innovation initiatives such as Bumdes and rural tourism development must also be strengthened, including providing technical assistance and managerial training to ensure the sustainability of these programs. For telemedicine programs, it is important to expand coverage and improve system capacity so that healthcare access is equitable across Indonesia.

On the other hand, there are several limitations to consider. Reliance on inadequate basic infrastructure can hinder the effectiveness of technology, making addressing this issue a priority. Low digital literacy rates among rural communities also pose a significant barrier to the success of the programs. Limited financial and human resources often constrain the scale and impact of various initiatives. Moreover, the variability of local conditions requires adjustments in program implementation, as each area has unique needs and challenges. Community involvement in planning and implementation is essential; without active participation, the positive impact of social and technological innovations may not be optimized. Overcoming these limitations, along with implementing the above recommendations, will help achieve greater and more sustainable results in rural community empowerment.

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