

Analysis of the Role of Information and Communication Technology (ICT) in Enhancing the Managerial Capacity of SMEs for Achieving Local Economic Sustainability

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ABSTRACT

Small and Medium Enterprises (SMEs) play a significant role in driving the local economy in many countries. SMEs contribute significantly to job creation, increasing per capita income, and reducing economic disparities. This research aims to examine the role of ICT in enhancing the managerial capacity of SMEs for achieving local economic sustainability. The research methodology employed in this study is a qualitative literature review that draws data from Google Scholar for the period 2012-2024. The study findings indicate that ICT has great potential in transforming the business paradigm of SMEs. Through appropriate adoption and adequate support, ICT enables SMEs to enhance operational efficiency, expand market reach, improve access to information and resources, and foster innovation and collaboration within the local business ecosystem.



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ABSTRAK

Usaha Mikro, Kecil, dan Menengah (UMKM) memainkan peran yang signifikan dalam menggerakkan ekonomi lokal di banyak negara. UMKM memberikan kontribusi penting dalam menciptakan lapangan kerja, meningkatkan pendapatan per kapita, dan mengurangi disparitas ekonomi. Penelitian ini bertujuan untuk menelaah peran TIK dalam meningkatkan kapasitas manajerial UMKM untuk pencapaian keberlanjutan ekonomi lokal. Metode penelitian yang digunakan dalam penelitian ini adalah tinjauan pustaka kualitatif yang mengambil data dari Google Scholar untuk periode tahun 2020-2012. Hasil studi menunjukkan bahwa TIK memiliki potensi besar dalam mengubah paradigma bisnis UMKM. Melalui adopsi yang tepat dan dukungan yang memadai, TIK memungkinkan UMKM untuk meningkatkan efisiensi operasional, memperluas jangkauan pasar, meningkatkan akses terhadap informasi dan sumber daya, serta mendorong inovasi dan kolaborasi dalam ekosistem bisnis lokal.

1. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) play an undeniable role in the dynamics of local economies in most countries (Subagja et al., 2022). The contribution provided by the MSME sector is crucial, not only in creating significant employment opportunities but also in increasing per capita income and reducing existing economic disparities. By being one of the main pillars in the economic structure, MSMEs not only provide positive socio-economic impacts but also demonstrate sustainability in sustainable economic development (Kamar et al., 2022).

Despite the significant role MSMEs play, they are often faced with various challenges that hinder their managerial ability to thrive. One of the main factors that often poses a constraint is the lack of access to Information and Communication Technology (ICT) (Ausat et al., 2022). Limitations in utilizing ICT optimally not only affect operational efficiency but also can lower the competitiveness of MSMEs in an increasingly competitive market. Therefore, policies and programs supporting broader access and utilization of information and communication technology among MSMEs are crucial to ensure sustainable growth and economic continuity at both local and national levels.

Information and Communication Technology (ICT) play a crucial role in enhancing the productivity

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and managerial capabilities of the Micro, Small, and Medium Enterprises (MSMEs) sector. By leveraging various ICT solutions available, MSMEs can experience significant improvements in their operational efficiency (Ausat & Peirisal, 2021). Moreover, the adoption of ICT also opens opportunities for MSMEs to expand their market reach, both regionally and globally, through digital platforms that allow them to connect with potential customers worldwide. Furthermore, accessibility to market information obtained through ICT can assist MSMEs in making more timely and informed decisions, thereby enhancing their competitiveness in the increasingly tight market (Arjang et al., 2023). Additionally, the utilization of ICT also strengthens the marketing and distribution strategies of MSMEs, enabling them to adopt more targeted and effective approaches to reach consumers and disseminate their products widely. This means that investment in the development and utilization of ICT is crucial for the growth and sustainability of MSMEs in the continually evolving global economy.

In the midst of the increasingly widespread globalization and digitalization era, it becomes increasingly important for the Micro, Small, and Medium Enterprises (MSMEs) sector to pay attention to and adopt the latest technology to maintain their competitiveness. Significant changes in the global economic landscape, including in countries worldwide, demand MSMEs to proactively adapt to ongoing digitalization trends (Martínez-Peláez et al., 2023). In facing this digital transformation, MSMEs must change their paradigms in operations, improve information and communication technology (ICT) infrastructure, and develop internal capacities to maximize the use of digital tools. By adopting these new technologies, MSMEs can not only maintain their positions in the increasingly competitive market but also open doors for sustainable local economic growth (Kuleh et al., 2023). Efforts to support MSMEs in facing digitalization challenges are crucial to ensure the sustainability and continuity of the local economy in this ever-changing global era.

The intelligent and effective utilization of Information and Communication Technology (ICT) by the Micro, Small, and Medium Enterprises (MSMEs) sector has the potential to significantly contribute to the sustainability of the local economy. More than just enhancing operational efficiency, wise use of ICT can create a more inclusive business environment by enabling broader participation from various segments of society (Bagdadi et al., 2020). ICT can enhance the productivity of MSMEs by providing tools that facilitate production, management, and marketing processes (Nurcaya et al., 2022). Its impact is not only felt at the individual level but can also enhance the overall competitiveness of MSMEs in the increasingly global and competitive market. Furthermore, the utilization of ICT can also strengthen the structure of the local economy by reinforcing connectivity among local businesses, customers, and other relevant stakeholders (Samara et al., 2023). Investment in the development and utilization of ICT by MSMEs is not only important for their own economic growth but also for strengthening the foundation of the local economy as a whole.

Although the importance of the contribution of Information and Communication Technology (ICT) in enhancing the managerial capacity of the Micro, Small, and Medium Enterprises (MSMEs) sector has been widely recognized, there is still a lack of literature presenting in-depth analysis regarding the specific impact of ICT on the sustainability of the local economy. Therefore, further research is needed to explore and analyze in more detail the relationship between the utilization of ICT by MSMEs and the achievement of local economic sustainability. This in-depth research will not only provide a more comprehensive insight into how ICT can affect various aspects of local economic sustainability but also provide a clearer view of strategies that can be adopted by MSMEs and governments to maximize the benefits of ICT for sustainable economic growth. This further research has the potential to make a significant contribution to the development of policies and best practices in integrating ICT into the MSME ecosystem to support inclusive and sustainable local economic growth.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

Information and Communication Technology (ICT)

Information and Communication Technology (ICT) refers to a collection of tools, infrastructure, and systems used to gather, store, process, transmit, and analyze information electronically (Prastyaningtyas et al., 2023). This includes hardware such as computers and network devices, software such as applications and database management systems, as well as network infrastructure such as the internet and other communication networks. ICT enables rapid and efficient exchange of information, as well as easier communication between individuals, organizations, and other entities (Manda HM & Abidin, 2023). Through ICT, data can be accessed, analyzed, and utilized to support various activities and decision-making processes. With its evolving

capabilities, ICT has become a crucial foundation in various aspects of modern life, including business, education, healthcare, and governance, opening up new opportunities for innovation and growth.

Micro, Small, and Medium Enterprises (MSMEs)

Micro, Small, and Medium Enterprises (MSMEs) are business entities with relatively small-scale operations, limited number of employees, and restricted capitalization (Yani et al., 2023). MSMEs often serve as the backbone of the local economy in many countries, providing significant employment opportunities and playing a role in supporting economic growth and poverty alleviation (Sutrisno, Permana, et al., 2023). Although MSMEs have limitations in financial resources and infrastructure, they often serve as sources of innovation and creativity in filling market gaps inaccessible to large corporations (Sutrisno, 2023). MSMEs play a crucial role in promoting economic equity and social inclusion, and they play a vital role in maintaining local economic sustainability by strengthening local business networks and effectively utilizing local resources (Sutrisno, Ausat, et al., 2023). Therefore, enhancing the managerial capacity of MSMEs is crucial in supporting sustainable local economic growth.

Local Economy

The local economy refers to economic activities occurring within a specific region or community, encompassing the production, distribution, and consumption of goods and services within a geographically limited scope (Rijal & Saranani, 2023). This involves economic transactions among economic actors within that region, including individuals, businesses, and local organizations. The local economy is often supported by MSMEs, which serve as the backbone in creating job opportunities, strengthening local business networks, and generating income and profits that circulate within the community (Ridwan Maksum et al., 2020). Local economic growth is typically driven by factors such as available natural resources, thriving industries, supportive government policies, and high levels of consumption within the community (Saleh et al., 2020). Enhancing local economic sustainability emphasizes efforts to strengthen existing economies, reduce dependence on external factors, and strengthen economic sovereignty and overall community welfare.

3. RESEARCH METHOD

The research method employed in this study is a qualitative literature review utilizing data from Google Scholar for the period of 2012-2024. A qualitative approach is chosen to delve deeply into understanding the role of Information and Communication Technology (ICT) in enhancing the managerial capacity of Micro, Small, and Medium Enterprises (MSMEs) for achieving local economic sustainability. Through a literature review, this research will gather and analyze various relevant articles, papers, and scholarly publications available on Google Scholar, carefully selecting data to ensure its quality and relevance to the research focus. Moreover, using Google Scholar as a data source will enable researchers to access the latest scholarly literature in the field of ICT and MSMEs, ensuring that this study is based on up-to-date and pertinent understanding.

4. DATA ANALYSIS AND DISCUSSION

In the context of growing globalisation and digitalisation, Information and Communication Technology (ICT) plays a crucial role as a catalyst to improve the managerial capacity of Micro, Small and Medium Enterprises (MSMEs). As significant contributors to the local economy, MSMEs require strong adaptability and resilient competitiveness amidst increasingly complex market competition. The key lies in their ability to optimally utilise and integrate ICT in all operational and managerial aspects. Thus, the effective implementation of these technologies can be a key driver in strengthening the position and performance of MSMEs in the face of ever-changing global market dynamics.

In this context, an in-depth analysis of the role of Information and Communication Technology (ICT) in improving the managerial capacity of Micro, Small and Medium Enterprises (MSMEs) is highly relevant. ICT provides opportunities for MSMEs to formulate more effective strategies in optimising their business processes, especially through improved operational efficiency (Anatan & Nur, 2023). With the adoption of integrated management systems and the implementation of appropriate software solutions, MSMEs have the opportunity to improve their productivity while reducing operational costs, which in turn will increase their competitiveness in local and global markets. A careful analysis of how ICT facilitates this transformation will

provide valuable insights for decision-makers in designing sustainable and future-oriented MSME development strategies.

In addition, Information and Communication Technology (ICT) also facilitates opportunities for Micro, Small and Medium Enterprises (MSMEs) to penetrate markets through e-commerce platforms and social media networks (Ndiege, 2012). The presence of these platforms allows MSMEs to reach consumers online, achieve a wider market share, and increase product accessibility for customers from different geographical areas. The impact is not limited to increasing MSME revenues, but also opens up new opportunities in the local economy by expanding income distribution and employment opportunities in local communities. Further analysis of how ICTs are driving this transformation will provide a deeper understanding of the economic and social implications of integrating these technologies in a holistic MSME development strategy.

Meanwhile, Information and Communication Technology (ICT) also plays a significant role in enhancing the managerial capacity of Micro, Small and Medium Enterprises (MSMEs) by providing easier access to relevant information and resources. With the internet and various applications available, MSMEs have the ability to access training, guidance, and other resources that are essential in strengthening their managerial and technical skills (Surya et al., 2020). Thus, ICT provides opportunities for MSMEs to continuously adapt, learn and develop themselves, which in turn enables increased innovation in both their products and business processes. The availability of this information also allows MSMEs to be better prepared for challenges that arise amid rapidly changing market dynamics. Further analysis of how ICTs support this access will provide deeper insights into the managerial and technological transformation that is leading MSMEs towards adopting best practices in the management of their businesses.

However, to reach the pinnacle of their potential, Micro, Small and Medium Enterprises (MSMEs) are faced with a number of challenges that need to be overcome regarding the adoption and utilisation of Information and Communication Technology (ICT). One of the main challenges is related to the limited access and skills in implementing technology among MSMEs (Abdurohim, 2023). Therefore, it is important for the government and other stakeholders to provide holistic support, including the provision of adequate ICT infrastructure, ongoing training programmes, and special mentoring for MSMEs. With these measures, it is hoped that MSMEs can optimally utilise technology, thereby improving their competitiveness, expanding their market share, and achieving sustainable business growth. An in-depth analysis of how this support can have a significant impact on MSMEs will provide a solid foundation in formulating the right policies and strategies to advance the MSME sector in an increasingly digitally connected economy.

In the context of local economic sustainability, the role of Information and Communication Technology (ICT) in improving the managerial capacity of Micro, Small and Medium Enterprises (MSMEs) has a much broader impact than simply increasing productivity. By facilitating the growth and development of MSMEs, ICT also indirectly strengthens the local economic structure by creating a sustainable ecosystem of small and medium enterprise actors. In this context, ICT serves as a catalyst that spurs the growth of the MSME sector, which in turn strengthens the resilience of local economies to changes occurring at the global level (Gherghina et al., 2020). By providing greater access to technology and markets, ICTs promote economic inclusion and empower local businesses, ultimately contributing to inclusive and sustainable economic development. A deeper analysis of how interactions between ICT and the MSME sector shape local economic ecosystems will provide valuable insights for the formulation of future-oriented economic policies.

Looking closely at the role of Information and Communication Technology (ICT) in improving the managerial capacity of Micro, Small and Medium Enterprises (MSMEs), it can be concluded that the contribution of ICT is not only local but also has significant implications for economic sustainability more broadly. When MSMEs are able to adopt technology appropriately and are supported by adequate infrastructure and policies, they can become a key pillar in building a resilient and sustainable local economy (Fahrati et al., 2024). In this context, MSMEs are not only a source of economic growth, but also an agent that plays an active role in improving the welfare of local communities. Through synergies between ICT and the MSME sector, an inclusive and dynamic economic environment can be created, which in turn will support sustainable growth and a more equitable distribution of economic benefits in society. Therefore, developing and strengthening the role of ICT in the context of MSMEs is not only relevant in stimulating local economic growth, but also in achieving broader economic development goals that are sustainable and inclusive.

The role of Information and Communication Technology (ICT) in improving the managerial capacity of Micro, Small and Medium Enterprises (MSMEs) also has a significant impact in reducing the economic gap between MSMEs and large companies (Hendrawaty et al., 2021). Previously, MSMEs often faced serious

challenges related to access to technology that tended to be available only to large companies. However, with the rapid advancement of technology and the increasing affordability of ICT solutions, this gap can be gradually overcome. By utilising ICT innovations, MSMEs now have an equal opportunity to adopt technologies that can improve their operational efficiency, enhance their competitiveness and expand their market reach. Through the application of technology, MSMEs can improve productivity as well as service quality, which in turn will drive more equitable and inclusive economic growth. An in-depth analysis of the role of ICT in addressing these economic disparities will provide valuable insights in designing policies and strategies aimed at strengthening the position of MSMEs in the overall economy.

Furthermore, the role of Information and Communication Technology (ICT) in improving the managerial capacity of Micro, Small, and Medium Enterprises (MSMEs) not only has an impact on improving operational efficiency, but also strengthens MSMEs' ability to innovate and diversify products. By adopting technology, MSMEs can more effectively respond to market changes and the dynamics of consumer needs. Through the use of ICT solutions, MSMEs are able to collect real-time data and feedback, conduct in-depth analysis of market trends, and develop new products or services that match market demand (Ausat & Sutherland, 2021). This innovative process not only improves the competitiveness of MSMEs on a local and global scale, but also makes a significant contribution to local economic growth. By creating added value and generating new jobs through product innovation, MSMEs become a driving force in strengthening the local economic structure, which in turn has a positive impact on the overall welfare of local communities. Further analysis of the interaction between ICT and product innovation in the context of MSMEs will provide a deeper understanding of the dynamics of economic growth and business development potential at the local level.

Moreover, the role of Information and Communication Technology (ICT) is also an important pillar in facilitating collaboration among Micro, Small and Medium Enterprises (MSMEs) and with other stakeholders in the local business ecosystem. With the adoption of digital platforms and the utilisation of social networks, MSMEs have the opportunity to establish strong partnerships with fellow MSMEs, large enterprises, financial institutions, and government agencies (Kuleh et al., 2023). Through these collaborations, there is a mutually beneficial exchange of knowledge, resources, and business opportunities, strengthening synergies between various stakeholders in the business environment. More than just enabling business growth, such collaboration also creates a more inclusive and sustainable environment, where MSMEs can collectively address complex challenges and capitalise more effectively on opportunities. Further analysis of the dynamics of collaboration between MSMEs and other stakeholders in the context of ICT will provide deep insights into ways to build sustainable and adaptive business ecosystems at the local level.

However, in optimising the role of Information and Communication Technology (ICT) in improving the managerial capacity of Micro, Small and Medium Enterprises (MSMEs), there are important considerations related to data security and privacy aspects. MSMEs must take appropriate measures to protect their sensitive information from increasingly complex potential cyber security threats. In this context, the implementation of adequate data protection policies and practices is imperative. In addition, the government and relevant agencies need to develop regulations that favour MSMEs and support their data protection and privacy efforts. By recognising the importance of these security aspects, MSMEs can adopt technology with greater confidence, allowing them to harness the full potential of ICT in developing their business operations and management. An in-depth analysis of policies and best practices in protecting MSME data will provide a strong foundation in designing an effective and sustainable protection system in the rapidly evolving digital era.

In a comprehensive evaluation of the role of Information and Communication Technology (ICT) in enhancing the managerial capacity of Micro, Small and Medium Enterprises (MSMEs) for local economic sustainability, the enormous potential of ICT in shifting MSME business paradigms and spurring inclusive and sustainable economic growth is illustrated. Using a cross-disciplinary approach that includes economic, technological, and policy analyses, it is evident that ICTs enable a fundamental transformation in the way MSMEs conduct their business operations. Through smart and scalable technology adoption, MSMEs can improve their efficiency, productivity and competitiveness in an increasingly complex marketplace. However, realising this potential requires comprehensive support from various parties, including the government, financial institutions, research institutions and the business community. With solid co-operation, MSMEs can more effectively tap into the opportunities offered by ICT, thereby becoming a key driver in

building a resilient and sustainable local economic foundation. Through a deeper understanding of the interaction between ICTs and MSMEs, we can design more appropriate strategies to create a dynamic, inclusive and adaptive business environment at the local level that will support sustainable economic growth.

5. CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS

An analysis of the role of Information and Communication Technology (ICT) in improving the managerial capacity of Micro, Small and Medium Enterprises (MSMEs) to achieve local economic sustainability shows that ICT has great potential in changing the business paradigm of MSMEs. Through proper adoption and adequate support, ICT enables MSMEs to improve operational efficiency, expand market reach, improve access to information and resources, and foster innovation and collaboration within the local business ecosystem.

The implication of this analysis is that increased adoption of Information and Communication Technology (ICT) by Micro, Small and Medium Enterprises (MSMEs) has the potential to strengthen local economies through the creation of sustainable business ecosystems. Enhanced collaboration between MSMEs and other stakeholders in the local business community can also result in positive impacts on the well-being of local communities. However, the advice provided emphasises the importance of support from the government and relevant agencies in the provision of adequate ICT infrastructure as well as training for MSMEs to improve their technological skills. Data protection and privacy are also an important focus in implementing ICT solutions, which require effective cyber security measures. Nonetheless, there are limitations that need to be recognised, including that this analysis is unlikely to cover all factors affecting the role of ICT in the managerial capacity of MSMEs, and that implementation of the suggestions may be hindered by limited access to and technological skills among MSMEs.

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