

Role of Information Communication Technology in Accelerating the Sustainable Development Goals in Financial Inclusion

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Abstract—The UN has assigned Sustainable Development Goals (SDGs) as a framework for development agendas and political strategies for the next 15 years. To accomplish the SDGs, both developed and developing countries must adopt the SDGs. SDGs consist of 17 goals that address a wide variety of sustainable development issues. The objective of this study was to analyze the roles of ICT in accelerating the achievement of the SDGs, to investigate in which number of SDGs the ICT can be utilized to accelerate financial inclusion, and to identify the success factors toward ICT-enabled financial inclusion. This study employed a qualitative research design by using a systematic literature review (SLR) approach. Secondary data gathered from various resources related to the research topic, such as national journals, international journals, proceedings, books, reports, and other relevant scientific sources from 2016 to 2022 were used in this study. The finding of the study highlights the importance of ICT in accelerating the implementation in all of the 17 SDGs. In relation to SDGs in financial inclusion, ICT has an essential role in SDG 1 (ending poverty), SDG 5 (gender equality), SDG 8 (small businesses and entrepreneurship), and SDG 9 (sustainable infrastructure). Some factors that affect the success of ICT-enabled financial services include policy framework between financial institutions and mobile providers, adequate financial and technical resources, and, a collaborative effort among banks, operators, and agents.

Keywords: ICT; Sustainable Development Goals, Financial Inclusion; Green Economy; E-commerce

1. INTRODUCTION

Sustainable development is development that attempts to improve the quality of life for people all over the world, both current and future generations, without using natural resources beyond the earth's capacity and carrying capacity (Mensah, 2019). In September 2015, 193 UN member nations decided in a high-level conference at the UN headquarters to use the Sustainable Development Goals (SDGs) as a framework for development agendas and political strategies for the next 15 years, from 2016 to 2030 (Bexell & Jönsson, 2017). To accomplish the SDGs, both developed and developing countries must adopt the SDGs (Kawakubo et al., 2018). The SDGs are made up of 17 goals that address a wide variety of sustainable development issues (Figure 1).



Figure 1. Sustainable Development Goals

The list of 17 goals in the SDGs is as follows. First is poverty with the aim to end poverty in all its forms everywhere. Second is food with the aim to end hunger, achieve food security, improve nutrition, and promote sustainable agriculture. The third is health with the aim to ensure a healthy life and promote health/well-being for all at all ages. Fourth is education with the aim to ensure quality, inclusive and fair education, increase opportunities for lifelong learning for all. Fifth are women with the aim of achieving gender equality and empowering all women and girls. Sixth is water with the aim of ensuring the availability and sustainable management of water and sanitation for all. Seventh is energy with the aim of ensuring access to affordable (purchasable), reliable, sustainable and modern energy for all. Eighth is economy with the aim to promote sustainable and inclusive economic growth; full participation in productive work, decent work for all. Ninth is Infrastructure with the aim to build durable/strong infrastructure, promote inclusive and sustainable industrialization, and support innovation. Tenth is inequality with the aim of reducing inequality within and

between countries. Eleventh is habitation with the aim of building cities and human settlements that are inclusive, safe, durable/strong, and sustainable. Twelfth is consumption with the aim of ensuring sustainable consumption and production patterns. Thirteenth is climate with the aim to take urgent action steps to address climate change and its impacts. Fourteen is marine ecosystem with the aim to protect and sustainably use the oceans, seas and marine resources for sustainable development. Fifteenth is ecosystems with the aim to protect, restore and promote sustainable use of the earth's ecosystems, sustainably manage forests, stop and reverse soil degradation (destruction) and loss of biodiversity (biodiversity). Sixteenth is an institution with the aim of creating peaceful and inclusive societies for sustainable development, providing access to justice for all, building effective, accountable and inclusive institutions at all levels. The last one is sustainability with the aim of strengthening the means of implementation and revitalizing (reviving) the global partnership for sustainable development.

Many firms in many country are actively focusing on the Sustainable Development Goals (SDGs) (Pedersen, 2018). One strategy to achieve the SDGs is to include the green economy concept in business operations. The green economy is the concept of an economy that produces little or no carbon emissions from business activities, which might harm or endanger the environment, while also preserving and maximizing natural resource efficiency (Bogovic & Grdic, 2020). Apart from lowering carbon emissions, the common thread that can be taken from this situation is the support of information technology (IT) to establish an ecosystem that can eventually sustain the green economy itself. Global technology firms may supply information technology to help accelerate sustainable development. As a result, the role of information technology in the SDGs, especially the green economy, becomes essential in the end. ICT can play a critical role in achieving the SDGs (Jones et al., 2017). ICT could lowering service delivery unit costs, broadening the range of services available; conserving scarce resources (ICT can be used to up skill local workers, who can be trained online rather than sending a trainer to a physical location), and accelerating institutional learning through online communities.

The Indonesian government also employs the green economy concept in the establishment of sustainable infrastructure. Since 2018, the government has also utilized SDGs Indonesia One (SIO) as a platform to aid in the fulfillment of the SDGs in Indonesia (Hendriwardani & Geddes, 2022). The green economy is one of the development directions that the government places a great priority on. The green economy is seen to be more sustainable, and Indonesia can play a significant role as digitalization progresses.

The growing public awareness of environmental sustainability drives the development of green products and the economy. The green economy is expected to have an influence on the world economy and business in the next stage, which will, in turn, have an impact on the Indonesian economy. From a business standpoint, the option of a sustainable and environmentally friendly firm (green investment) is gaining traction due to its increased value (Hendriwardani & Geddes, 2022). Consumers increasingly prefer ecologically friendly items as a result of improved awareness.

A number of previous studies on the green economy in various fields have been carried out. The study of (Lavrinenko et al., 2019) conclude that implementation of green economy concept in the EU countries in the period 2016-2017 has a positive role to the economic development. Another study conducted by (Aldieri & Vinci, 2018) who investigate the economic impact of innovation on employment in Italy revealed that stronger efforts in favor of job creation for environmental activities are required for firms to achieve full sustainability. Moreover, Khoshnava et al., (2020) conclude their study that criteria of green infrastructure in term of affordability and resource efficiency contributed to empowering green infrastructure for the implementation of the green economy in the sustainable development context. Another study by (Liu et al., 2020) revealed that green finance sees social responsibility and environmental protection as central to development, and it has emerged as a new growth point and a new engine for promoting the growth of the green economy. Based on the available literature, studies on financial sustainable development are still relatively rare and still ongoing.

In Indonesia, according to the Financial Services Authority (OJK), the financial services industry plays a significant role in changing traditional business practices to become more sustainable (Hendriwardani & Geddes, 2022). To expedite the application of environmental, social, and governance principles in Indonesia, OJK has developed the Roadmap for Sustainable Finance Phase II (2021-2025) (Desdiani et al., 2021). Based on the explanation above, author interest to conduct a research entitled “**Role of Information Communication Technology in Accelerating Sustainable Development Goals in Financial Service**”. This study has three purpose namely to analyze the roles of ICT in accelerating the achievement of the SDGs, to investigate in which number of SDGs the ICT can be utilized to accelerate financial inclusion, and to identify the success factors toward ICT-enabled financial inclusion.

2. RESEARCH METHODOLOGY

2.1 Research Design

This study employed the qualitative research design with descriptive approach. The technique of data collection in this research is library research that also known as library research. Library research is a technique of collecting data by learning and understanding data which has close relation with the problems from books, theories, notes, and documents. The author utilized the Systematic Literature Review (SLR) method in this library research. According to (Kitchenham & Charters, 2007), the systematic literature review starts with a deliberate and purposeful selection of data, which includes the types of information to be included in the review, such as policy documents, journal articles, book chapters, and publications related to the research questions. We understand the breadth and depth of the existing body of work by

reviewing relevant literature and identifying gaps to investigate (Xiao & Watson, 2019). SLR is defined as the process of identifying, assessing, and interpreting all available research evidence in order to provide answers to specific research statements. Meanwhile, (Calderon, 2015) defines systematic Literature Review as a method of identifying, evaluating, and interpreting all available research that is relevant to the formulation of the problem or topic area under consideration.

The Systematic Literature Review method consists of three major stages: planning, implementation, and reporting. The process carried out by the author in the first stage includes identifying and selecting literature on research topics related to the green economy, SDGs, the role of ICT in supporting SDGs, and the role of ICT in accelerating SDGs in financial services. Therefore the data used in this study were secondary data gathered from various resources related to the research topic, such as national journals, international journals, proceedings, books, reports, and other relevant scientific sources from 2016 to 2020. The author then generates literature on research topics by searching for publications published by financial institutions or the government, such as the Financial Services Authority (OJK), Bank Indonesia (BI), and reports from other credible institutions. The final step in the planning stage is literature evaluation, which is accomplished by analyzing the content of existing literature.

The authors select research results, sources from publications of financial institutions, governments, and report from other institutions that will be included in a systematic review based on quality during the implementation stage of the Systematic Literature Review method. The author then extracted data from the existing literature and synthesized it using narrative techniques. The last stage of the Systematic Literature Review method is the presentation of the report. In this step, the authors write the findings of the study on the role of ICT in accelerating the SDGs in financial services. After describing the data, draw conclusions based on the synthesis of the literature.

2.2 Research Framework

The role of ICT in accelerating, monitoring and implementing the achievement of the 17 SDGs is divided into seven pillars, namely: ICT and Health, ICT and Education, ICT and Economic, ICT and Financial Inclusion, ICT and Infrastructure, ICT and Energy, and ICT and Climate Change. Figure 2 shows these seven pillars. The current study focus to investigate the role of ICT in financial service.

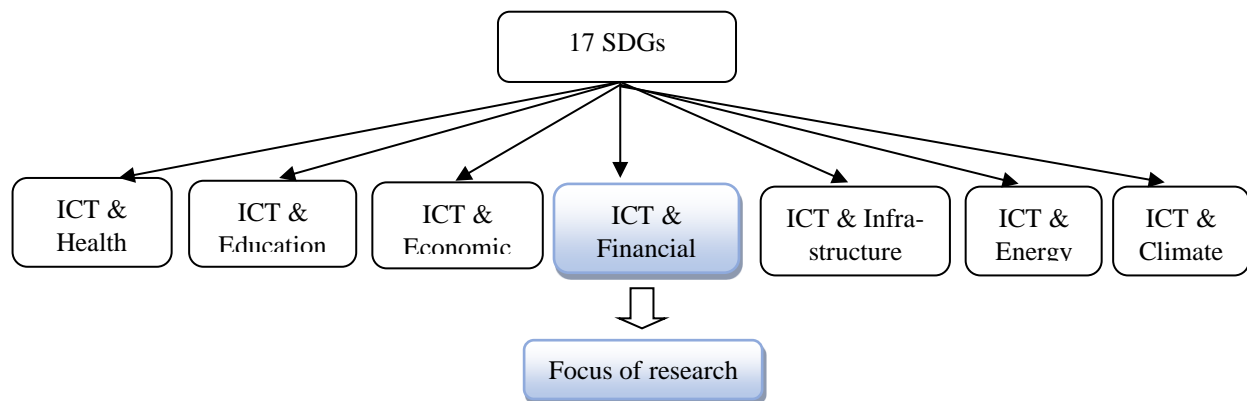


Figure 2. Research Framework

The link between ICT and financial inclusion has become clear in a relatively short period of time. ICT provides a low-cost solution to many countries' current lack of banking infrastructure. It can be rapidly scaled, provides significant efficiency gains, and has low entry barriers for individual users. Financial inclusion is a crucial determinant for achieving the SDGs. Therefore, ICT and financial inclusion are the primary locus of this research.

3. RESULTS AND DISCUSSION

The fundamental premise of Sustainable Development is that "the spread of information and communication technology and global interconnectedness has great potential to accelerate human progress, bridge the digital divide, and develop knowledge societies". ICT must play a key role in all three pillars of sustainable development: economic development, social inclusion, and environmental protection. According to report by The Earth Institute at Columbia University e Ericsson, 2016) entitled "ICT & SDGs Final Report", there are some roles of ICT in accelerating the achievement of the SDGs:

1. End poverty

ICT is essential to ending poverty by increasing productivity among millions of people, allowing them to better provide for themselves and their families and move out of poverty.

This can be accomplished in a variety of ways, including providing timely and accurate information services to aid in the equitable distribution of economic resources, as well as enabling services such as mobile banking and micro-credit, and assisting small producers in locating the best markets for their products

2. End hunger & achieve food security

ICT can help to reduce hunger and increase food security by providing farmers with direct access to market information, weather forecasts, planting, harvesting, and targeted irrigation advice, logistics, and storage, allowing them to increase yield, restore soil, reduce waste, and improve productivity and effectiveness.

3. Healthy lives & promote wellbeing

ICT has the potential to provide substantial and significant benefits across the entire global healthcare ecosystem.

Connectivity allows health workers to access information and diagnostic services, while analytics can aid in forecasting disease outbreaks, health service usage, patient knowledge, attitudes, personal disease management, and health practices.

4. Ensure inclusive and equitable quality Education for all

ICT is assisting in the global improvement of education by allowing students to access learning assets and teachers to prepare for classes at any time and from any location. ICT can help to increase access to education for all, especially underserved populations and those living in remote, resource-limited areas. It can also provide online certification and student advisory services, resulting in increased economic opportunities for all

5. Achieve gender equality and empower all women and girls

ICT can improve gender equality and empowerment by providing women and girls with access to information relevant to their productive, reproductive, and community roles, as well as by involving women in urban planning.

Women's sustainable livelihoods can be improved through increased market access, education, training, and employment.

6. Water & sanitation for all.

ICT will be critical in ensuring universal access to and sustainable management of water and sanitation.

ICT is especially important in smart water management, infrastructure location, better and lower-cost maintenance, optimized operations, and improved customer service.

7. Ensure access to energy for all

ICT is already demonstrating its strong potential to improve energy efficiency and reduce emissions, both by making ICT more environmentally sound and less carbon-intensive, and by enabling other sectors of the economy to improve their energy efficiency and lower energy consumption through ICT-enabled solutions such as smart grids, smart buildings, homes, and smart logistics.

8. Economic growth, employment and decent work for all

ICT skills have become a requirement for many types of jobs in the twenty-first century.

Traditional employment sectors such as farming, manufacturing, and the health sector are being transformed by digital technology, as are new sectors such as offshore services. Furthermore, ICT is critical for economic and productivity growth.

9. Infrastructure, industrialization, innovation

ICT will continue to play an important role in the development and maintenance of resilient infrastructure, the promotion of inclusive and sustainable industrialization, and the promotion of innovation in emerging information and knowledge societies that rely on open access to academic research, transparency to make informed decisions, and the power of online collaboration to support cross-sector and in-house co-creation, learning, and work.

10. Reduce inequality

ICT can help reduce inequality within and between countries, particularly when used to bring information and knowledge, and thus social and economic progress, to underserved segments of society, such as people with disabilities and women and girls.

11. Sustainable cities and communities

With ICT basic infrastructure and applications such as smart buildings, smart water management, intelligent transport systems, and new efficiencies in energy consumption and resource waste management, ICT is critical in offering innovative approaches to more effectively and holistically managing cities.

12. Sustainable consumption & production patterns

Through product-specific improvements, increased dematerialization and virtualization, and the implementation of smart technologies in sectors such as agriculture, transportation, energy, supply chain management, and smart buildings, ICT can promote sustainable consumption and production.

13. Urgent action to combat climate change and its impacts

Smart ICT applications, particularly in the areas of energy, transportation and buildings, manufacturing (Industry 4.0), smart services, agriculture, and urbanization in general,²⁶ can help combat and mitigate the effects of climate change. ICT has the potential to optimize value chains, reduce resource usage and waste, and play an important role in the sharing of climate and real-time weather information, forecasting early warning systems, and supporting resilience and climate adaptation

14. Oceans, seas and marine resources

Ocean conservation and sustainability can be aided by ICT. Satellite monitoring provides timely and accurate global data, which improves accountability, whereas big data can be used to analyze biodiversity, pollution, weather patterns, and ecosystem evolution, as well as to aid in the planning of mitigation and adaptation strategies.

15. Halt and reverse land degradation

ICT can play an important role in the conservation and sustainable use of terrestrial ecosystems, as well as in preventing biodiversity loss, by improving monitoring and reporting, which leads to increased accountability, and by using big data to analyze short- and long-term trends and plan mitigation activities.

ICT also improves land restoration efficiency through sensors, data collection, and analysis.

16. Peace, justice & strong institutions

Through the use of crowd sourcing, ICT has proven to be a powerful tool in areas such as crisis management, humanitarian aid, and peace building. The use of open data by the government increases transparency, empowers citizens, and contributes to economic growth

17. Strengthen the means of implementation & partnerships for development

The financial sector has begun to use computer-based technology to facilitate customer transactions as technology has advanced, particularly in banking (Siska, 2022). The banks which previously served customers by having to meet or customers come to bank branches provided by the bank for saving/investing became easier because banks began to use computer-based technology and can now access via the internet (Muljani & Elliatan, 2019). Figure 3 displays the financial services linked to ICT.

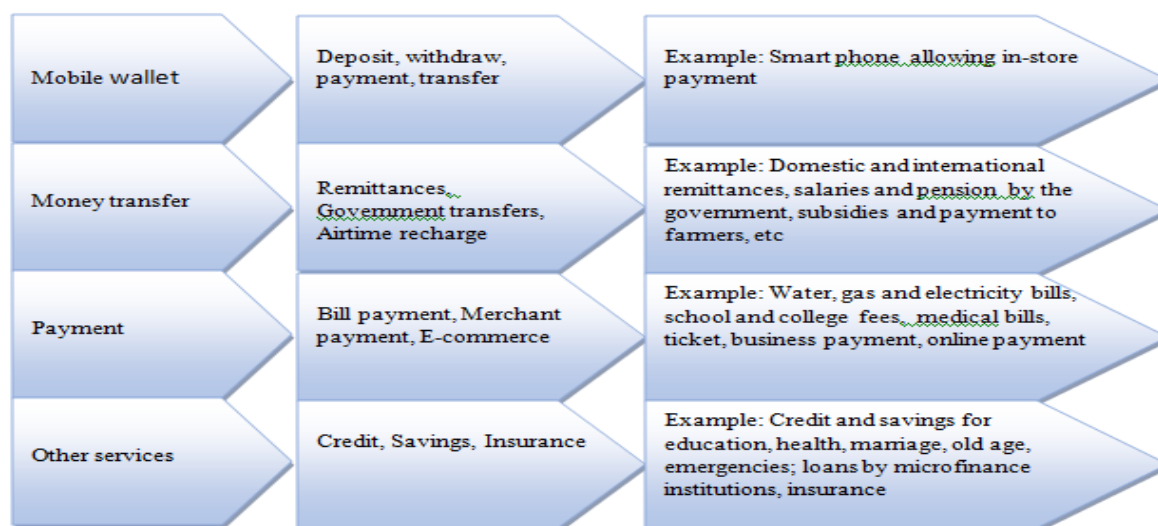


Figure 3. Financial Service Linked to ICT

In recent years, the rapid adoption and evolution of ICT has fueled innovation in financial services, with significant potential to drive achievement of development goals related to financial inclusion. There are numerous successful applications from around the world today, many of which can be replicated and scaled. Mobile money is more prevalent in low-income countries than in lower-middle-income and upper-middle-income countries. One of the most significant advantages of using ICT to deliver services is that once the infrastructure is in place, access can be cost effectively scaled. People living in poverty gain the ability to improve their economic situation by accessing dependable financial services that can provide a vital safety net through Internet, broadband, and mobile phone-based ICT infrastructure. Increased access to financial services enabled by ICT can then spur private investment, resulting in job creation and economic growth for vulnerable target populations.

In addition to increasing access, mobile or branchless banking provides a number of quality and efficiency benefits (Muljani & Elliatan, 2019). It saves people time and money by eliminating the need for them to travel to bank locations and wait in line, for example, to pay bills. ICT-enabled information flow and data collection can improve customer service by facilitating deposits and transfers and assisting banks in making faster credit decisions. It also provides a way to provide financial services to those who would otherwise be ineligible for banking services due to a lack of assets.

Financial inclusion via e-commerce is a growing ICT application that can benefit businesses. Global e-commerce is rapidly evolving, creating new opportunities for SMEs and rural businesses (Khaskheli et al., 2017). High service costs, high interest rates, and a disproportionate share of the profit going to middlemen all discourage small entrepreneurs from approaching banks for capital to start and grow their businesses. ICT can help to overcome these barriers by lowering service costs. Where producers' shares of the local and global value chains remain low, ICT can improve access to market information and new markets (Nyangarika & Ngasa, 2020). Higher product prices and a larger share of the value chain will increase business profitability and income per capita, thereby reducing poverty.

Platforms for sellers, customer service, payment processing, shipping, delivery, and return processing have all been created by online marketplaces. Affordably priced Internet payment mechanisms for goods and services are an effective enabler of goods delivery via online transactions. SMEs that can leverage this technology will be able to enter international markets, export their products and services, and gain a competitive advantage due to lower production and service delivery costs (Hsu et al., 2020)

Improvements in skills and capacity are thus required for these businesses to gain access to ICT-financial services. In developing countries where youth and women are unemployed or underemployed, the expansion of micro and small businesses can create critical employment opportunities needed to eradicate poverty (Maengwe & Otuya, 2016). Policymakers can help the SDGs for small business development by addressing low levels of digital literacy and promoting SME access to ICT-led financial services (Adeola et al., 2021)

ICT will support public-sector budgets and transfer payments, as well as expand online banking and payments. In relation to SDGs, financial inclusion (banking, payments, insurance and other risk protection, and other financial services), we identified the ICT as critical for ending poverty (SDG 1), gender equality (SDG 5), small businesses and entrepreneurship (SDG 8), and sustainable infrastructure are all related to the SDGS (SDG 9). Following is the explanation for goal of each number of SDGS, target and outcome.

1. Goal 1: End poverty in all its forms

Target: Ensure equal access to financial services, including microfinance, for all men and women, particularly the poor and vulnerable.

Outcome: Poverty has been reduced as a result of ICT-enabled financial services. More people have access to the Internet, broadband, cell phones, and financial services.

2. Goal 5: Achieve gender equality and empower all women and girls

Target: Increase the use of enabling technologies, particularly information and communication technology (ICT), to promote women's empowerment.

Outcome: Women's financial control has grown; women are increasingly using ICT in their businesses, particularly for product marketing.

3. Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

Target: Encourage entrepreneurship and micro, small, and medium-sized businesses by providing access to financial services. Everyone has equal access to banking, insurance, and financial services

Outcome: Increased employment and income generation through the operation of more micro and small businesses; women's empowerment and more people are getting financial service

4. Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Target: Credit at a reasonable cost for small-scale industrial and other enterprises, particularly in developing countries, as well as integration into value chains and markets.

Outcome: More people working in small businesses; more opportunities for employment and income generation.

The success of future efforts toward ICT-enabled financial services will be determined by a number of factors, including the need for interoperability in order to secure nationwide scale up and cross-national transactions. The e-commerce landscape in developing and least developed countries must be improved so that businesses there can upgrade to a technology-based business platform and remain competitive. Additionally, other factors to be considered are: first, to achieve financial inclusion through ICT, appropriate national policies integrating financial institutions and mobile providers are required. Given the numerous security and privacy concerns associated with technology-enabled financial services, there should be clearly defined policies and a strong regulatory framework in place. Second, adequate financial and technical resources must be made available to accelerate technology adoption. The cost of technology will determine its use and adoption. Third, collaborative efforts are needed to create enabling ecosystems, such as favorable regulations among banks, operators, and agents. Capable agents are essential for distribution networks and integration in local communities, businesses, and other settings.

4. CONCLUSION

Based on the discussion, we can draw some conclusion in this study. ICT play a key role in all three pillars of sustainable development: economic development, social inclusion, and environmental protection. ICT has essential role in accelerating the achievement of the SDGs: In connection with technological advances, there are several banking services that use computer-based technology, namely mobile wallet (deposit, withdraw, payment, transfer), money transfer (remittance, government transfers, airtime recharge), payment (bill payment, merchant payment, e-commerce), and other service (credit, saving and insurance). The link between ICT and financial inclusion has become clear. In relation to SDGs in financial inclusion, ICT has an essential role in SDG 1 (ending poverty), SDG 5 (gender equality), SDG 8 (small businesses and entrepreneurship), and SDG 9 (sustainable infrastructure). ICT and financial inclusion has clear relationship. ICT provides a low-cost solution for banking infrastructure, provides significant efficiency gains, and has low entry barriers for individual users. The success of ICT-enabled financial services will be determined by a number of factors including policy framework between financial institutions and mobile providers, adequate financial and technical resources, and, a collaborative effort among banks, operators, and agents.

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REFERENCES

- Adeola, O., Gyimah, P., Appiah, K. O., & Lussier, R. N. (2021). Can critical success factors of small businesses in emerging markets advance UN Sustainable Development Goals? *World Journal of Entrepreneurship, Management and Sustainable Development*, 17(1), 85–105. <https://doi.org/10.1108/WJEMSD-09-2019-0072>
- Aldieri, L., & Vinci, C. P. (2018). Green economy and sustainable development: The economic impact of innovation on employment. *Sustainability (Switzerland)*, 10(10). <https://doi.org/10.3390/su10103541>
- Bexell, M., & Jönsson, K. (2017). Responsibility and the United Nations' Sustainable Development Goals. *Forum for Development Studies*, 44(1), 13–29. <https://doi.org/10.1080/08039410.2016.1252424>
- Bogovic, N. D., & Grdic, Z. S. (2020). Transitioning to a green economy—possible effects on the croatian economy. *Sustainability (Switzerland)*, 12(22), 1–19. <https://doi.org/10.3390/su12229342>
- Desdiani, N. A., Afifi, F. A. R., Cesarina, A., Sabrina, S., Husna, M., Violeta, R. M., Adinegoro, A., & Halimatussadiyah, A. (2021). Climate and Environmental Financing at Regional Level: Amplifying and Seizing the Opportunities. In *LPEM Working Paper* (Vol. 067, Issue December).
- Hendriwardani, M., & Geddes, A. (2022). *Using Public Funding to Attract Private Investment in Renewable Energy in Indonesia*.
- Hsu, K. Y., Fu, H. P., Lin, A. J., & Ou, T. Y. (2020). Factor analysis of SMEs entering foreign markets: The case of Taiwanese SMEs in Vietnam. *European Journal of International Management*, 14(3), 524–550. <https://doi.org/10.1504/EJIM.2020.107020>
- Jones, P., Wynn, M., Hillier, D., & Comfort, D. (2017). The Sustainable Development Goals and Information and Communication Technologies. *Indonesian Journal of Sustainability Accounting and Management*, 1(1), 1. <https://doi.org/10.28992/ijSAM.v1i1.22>
- Kawakubo, S., Murakami, S., Ikaga, T., & Asami, Y. (2018). Sustainability assessment of cities: SDGs and GHG emissions. *Building Research and Information*, 46(5), 528–539. <https://doi.org/10.1080/09613218.2017.1356120>
- Khaskheli, A., Jun, Y., & Ahmed Bhuiyan, M. (2017). M-Commerce and Mobile Apps: Opportunities for SMEs in Developing Countries. *Journal of International Business Research and Marketing*, 2(2), 20–23. <https://doi.org/10.18775/jibrm.1849-8558.2015.22.3003>
- Kitchenham, B., & Charters, S. M. (2007). *Guidelines for performing Systematic Literature Reviews in Software Engineering* Guidelines for performing Systematic Literature Reviews in Software Engineering EBSE Technical Report EBSE-2007-01 Software Engineering Group School of Computer Science and Ma. October 2021.
- Lavrinenko, O., Ignatjeva, S., Ohotina, A., Rybalkin, O., & Lazdans, D. (2019). The role of green economy in sustainable development (Case study: The eu states). *Entrepreneurship and Sustainability Issues*, 6(3), 1113–1126. [https://doi.org/10.9770/jesi.2019.6.3\(4\)](https://doi.org/10.9770/jesi.2019.6.3(4))
- Liu, N., Liu, C., Xia, Y., Ren, Y., & Liang, J. (2020). Examining the coordination between green finance and green economy aiming for sustainable development: A case study of China. *Sustainability (Switzerland)*, 12(9). <https://doi.org/10.3390/su12093717>
- Maengwe, J. O., & Otuya, W. I. (2016). A Critical Review on Micro-financing of Small Businesses in Kenya. *Pyrex Journal of Business and Finance Management Research*, 2(2), 6–11. <http://www.pyrexjournals.org/pjbfmr>
- Mensah, J. (2019). Sustainable development: Meaning, history, principles, pillars, and implications for human action: Literature review. *Cogent Social Sciences*, 5(1). <https://doi.org/10.1080/23311886.2019.1653531>
- Muljani, N., & Elliatan, L. (2019). The Importance of Information Technology Implementation in Facing Industrial Revolution 4.0 Case Study of The Importance of Information Technology Implementation in Facing Industrial Revolution 4.0: Case Study of B. *International Journal of Trend in Scientific Research and Development (IJTSRD)*, 4(1), 409–413.
- Nyanganika, A., & Ngasa, Z. J. (2020). Profitability of ICT Usage towards Productivity of Small Business Enterprises in Tanzania. *International Journal Of Advance Research And Innovative Ideas In Education* , 6(3), 1504–1512.
- Pedersen, C. S. (2018). The un Sustainable Development Goals (SDGs) are a Great Gift to Business! *Procedia CIRP*, 69(May), 21–24. <https://doi.org/10.1016/j.procir.2018.01.003>
- Siska, E. (2022). Financial Technology (FinTech) and Its Impact on Financial Performance of Islamic Banking. *ARBITRASE: Journal of Economics and Accounting*, 2(3), 102–108. <https://doi.org/10.47065/arbitrase.v2i3.338>
- The Earth Institute at Columbia University e Ericsson. (2016). *ICT & SDGs Final Report*. 108.
- Xiao, Y., & Watson, M. (2019). Guidance on Conducting a Systematic Literature Review. *Journal of Planning Education and Research*, 39(1), 93–112. <https://doi.org/10.1177/0739456X17723971>