

The Role of Information and Communication Technology for Economic Sustainability through Social Entrepreneurship Practices in Indonesia: A Preliminary Study

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Abstract

ICT provides an environment that encourages the development of social entrepreneurship. Regarding its definition, social entrepreneurship is the “third way” of the two sectors running dichotomously: business entities that tend to be profitable and social institutions that are not profit-oriented. The social business carries out business activities with a social mission. Social movements were at different poles from profit-seeking efforts in the past, and digital technology enabled them to achieve them simultaneously. One of the supporting factors is its ability to reduce production, distribution, and even promotion costs. On the other hand, ICT allows social entrepreneurs to amplify their stories. There are no fundamental differences between commercial and social business activities. Both of them produce goods or services. The distinguishing elements are how they do business, the actors involved, and the eventual pursuit. If the commercial company tends to profit, social enterprise talks about social impact. Profit is a medium or tool to have a social impact on business. In the last five years, social entrepreneurship trends have matured in Indonesia. This trend attracts researchers to take a deeper look at the sustainability aspects brought by social entrepreneurs. As preliminary research, this study explores how social entrepreneurship supports economic sustainability.

Keywords:

ICT; economic sustainability; social entrepreneurship

Introduction

Pandemic brings a significant impact on many sectors, especially the economic sector. One of the impacts is the increase in the poverty rate in almost all Indonesian regions. Based on statistics (BPS, 2021), in September 2020, the poverty rate in Indonesia was 10,19%, increasing by about 1,38% during 2020. Even though, two years ago, the poverty rate attained under 10%. In March 2018, the poverty rate in Indonesia was 25,95 million people (9,82%), a decrease of about 633,2 thousand people compared with September 2017. Despite controversy about the calculation formula (BBC News Indonesia, 2020).¹ This number is the

lowest rate in history, when the poverty rate in Indonesia reached one digit (under 10%).

During the pandemic, the increasing poverty rate in Indonesia was in line with the lower economic growth. BPS reported Indonesia's negative growth of around 2,07% during 2020 (BPS, 2020). Multiple effects of this growth were the increase of inequality in society. In September 2020, the Gini Ratio in Indonesia got 0,385, an increase of around 0,004 points compared with March 2020 (0,381) and an increase of 0 ,0005 points compared with September 2019 (0,380) (BPS, 2018).

calculation. The number didn't show the riil poverty in society but there are different methods and contexts that generate different results. This controversy was reported in the BBC.

1 There is a controversy about the method of poverty rate

However, the rate is not higher compared with 2018. In March (BPS, 2018), Gini Ratio got 0,389, a decrease of 0,002 points compared with September 2017 (0,291). This number showed that the negative economic growth did not significantly increase inequality in Indonesia. It means that economic growth did not immediately obstruct economic development.²

One of the strategic sectors contributing to economic growth and development is the business sector. President Joko Widodo said that Indonesia needs more entrepreneurs (Kuwado, 2018). Compared with developed countries, they had more than 14% of entrepreneurs from the total population, while Indonesia had 3,1%. Nevertheless, it showed a positive trend compared with the international standard that states the minimum rate of an entrepreneur in the number 2% (Walfajri, 2018).

Sectors that contribute to the increase of entrepreneurs are Small and Medium Enterprises (SMEs). In Indonesia, the Ministry of Cooperation and Small Medium Enterprise reported in March 2021, the number of SMEs attained 64,2 million, which contributed to PDB (Product Domestic Brutto) 61,07%, equal to 8.573,89 trillion rupiahs. This number increases significantly during the pandemic. Many people change their job because of many factors. One of the main reasons was layoffs because of the crisis. On the one hand, these trends indicate negative economic growth in line with decreasing individual income. Even many people have to lose their job. On the other hand, it was an opportunity to create new careers and employment for many people. However, it needs a support ecosystem to give them resources to develop its own business.

The trend of entrepreneurship also increased along with the direction of 'start-up fever' in the young generation. In the last five years, there have been a lot of programs, both from government and non-government organizations, that encourage the development of new businesses in Indonesia. This trend can't go regardless of the success of many start-ups from Indonesia that became unicorns, even decacorn; mention GOJEK, Traveloka, Bukalapak, Tokopedia, etc. It encourages young people to do the same with the founders of leading companies. Furthermore, the trend of start-ups is also supported by digital technology development, which differentiates the start-up from other new businesses. "Start-up" refers to a new company that uses digital technology in its primary business process and develops a digital platform to serve its customers.

Besides using technology, start-ups are identical with the fast-growing enterprise supported by investors or funding. It differentiates this new enterprise from the Small Medium Enterprise (SME), which also becomes a seed of a new enterprise in many cases. Many articles mention at least four factors that differentiate start-ups and SMEs. First, the product. Start-ups identically with the digital product and focus on tangible product service, while SMEs primarily produce a tangible product. Second acceleration. Start-ups are projected to be a big company in a short time. Therefore, they are prepared to have a fast speed of growth. While SMEs usually grow gradually. Third, Capital. Start-ups need more capital to accelerate their growth, so they need an injection from venture capital to do their business, while SMEs mainly depend on individual capital or bank loans. Fourth exit strategy. Most start-ups aim to gain an IPO, while SMEs usually become personal ones. Even so, both have a significant contribution to economic development, especially in the number of entrepreneurs.

2 Economic growth refers to the accumulation of production and consumption numbers without regard to the distribution. Whereas economic development refers to the distribution of economic growth in many sectors and various groups. One of the indicators of economic development is the Gini Ratio.

In addition, to increase the number of entrepreneurs, the leading start-up in Indonesia also expands employment. The digital platform gives new opportunities to many people to join a new job—mention GOJEK. Regardless of the controversy about the 'partnership trap' between the company and their worker, which they called 'Mitra (partner)', GOJEK succeeded in creating job opportunities for more than 2 million people in Indonesia. Besides that, they also encourage a thousand SMEs in the culinary sector to grow through their GO-FOOD services. BUKALAPAK and TOKOPEDIA also support many local digital products and reach more customers around the country, even abroad. Despite providing the hub to connect the supply and demand for their end users, they also develop many programs to increase the quality and skill of their local merchants. It represents the collaboration between start-ups and SMEs to accelerate economic growth. It also indicates the distribution of economic opportunities in Indonesia, which will be discussed later.

Discuss more distribution, alongside the growth of unicorn companies, and many start-ups also contribute to society; mention KITABISA.com, a leading digital platform that enables people to support other people who are needed. Based on their report (Kitabisa, 2020), more than 6 million people donated, more than 100 thousand projects have been granted, more than 3 thousand organizations use their platform to open donations, and more than 8 billion donations are paid through their platform. The health care and humanity project dominated the project that has been donated. Besides that, many projects provided 'seed capital' for disadvantaged groups that wanted to start their own business. It showed the power of social capital in Indonesia to distribute welfare. The business model of KITABISA.com was followed by many new enterprises with the same goals and visions.

Both two types of companies have significant contributions to economic growth.

They also bring social impact differently. These two groups of examples seem typical, but they have a different business model. In the first group, they do ordinary business processes which are profit-oriented. To optimize their profit, they build a partnership and collaboration with 'Mitra.' Because of their position as a hub, their 'Mitra' quality also indicates their quality. So, they must develop their 'Mitra,' which aims to build their own business. Good partiality from this company states the priority of the Mitra from the disadvantaged groups. Unlike the first group, KITABISA.com does not profit directly from its activities. They do not sell the product but provide service to enable people to help others. They take an administration fee of around 5% to reinvest in platform maintenance. They have other business activities to support their 'social mission' through their platform. Each of these models has strengths and weaknesses regarding creating social impact.

Discussion about social impact relates to the previous topic about economic development, which focuses on number and distribution. One of the concepts discussed is social entrepreneurship. Prof. Rhenald Kasali said that the number of entrepreneurs is not enough (Fransisca, 2014). The number of entrepreneurs in Indonesia has increased significantly, but not many have a spirit of sociopreneur. Even though social entrepreneurship, which is based on social action, could further boost the economy because it is based on the spirit "gotong royong" and involves various groups. Kasali said that sociopreneur implement the founding father's spirit.

There are various definitions of social entrepreneurship. Most of the stress on the new business model stands between commercial business and social activities, combining these two concepts to generate an enormous impact. Borgaza dan Defourny (2001), in their book entitled *The Emergence of Social Enterprise*, describes that "social business" is an evolution

from the pillar economy called “ the third sector ,” which stands between the private and public sector. This third model represents the civil society's dissatisfaction with state service and commercial interest, which run dichotomously . The emergence of CSO, NGO, etc., has become the third pillar that provides public services but is not profit-oriented. But further, as an evolution, different from ordinary social organizations, social enterprises do business and profit. It helps to assure their sustainability without being dependent on funding. It also increases their independence from various interests, sometimes contrary to their mission.

Another concept that stresses the social impact is a sustainable entrepreneur – this term emphasizes the aspect of sustainability that becomes the primary concern of the enterprise. If a social entrepreneur evolves from a social organization, sustainable entrepreneurship evolves from corporate social responsibility (CSR). Intention to the triple bottom line (planet, people, profit) becomes social responsibility and embedded in the production, distribution, and even becomes a primary value of these enterprises. Suppose a social entrepreneur figures a different entity from an ordinary business. In that case, a sustainable entrepreneur is trying to change an existing business with a new value that changes products, production, distribution, and consumption.

In the previous article (Lindawati, 2019), the author discusses the opportunity of a social entrepreneur in the digital ecosystem. Two factors help social entrepreneurs flourish in a digital ecosystem. First, Information and Communication Technology (ICT) provides a beneficial environment for social entrepreneurs. In the previous model, commercial purposes are contrary to the social mission because they need high production costs. Technology brings lower production, distribution, and promotional price through the enterprise. It supports the enterprise in making a profit and attains a social mission simultaneously.

Second, ICT provides a medium to tell “ the story .” In the book entitled *The Emergence of Social Enterprise*, Borgaza & Defourny (2001) described nothing different between social and commercial enterprise. Both of them produce goods or services. They also make a profit. The differentiator between them is the value and how they choose their resources. If a commercial enterprise aims to profit, social businesses use their profit to achieve their social mission. They must tell their 'story' to convince their stakeholders about their ultimate mission. Without a story, they will look like another business.

In Indonesia, the discourse about social enterprise emerged in the last decade and became more substantial over the previous five years. It regards the development of the digital native generation who have the significant skill to use digital media. The previous paragraph discusses the leading start-up that brings substantial social impact to many business models. Despite controversy about unequal relations among stakeholders, it indicates the opportunity at once challenges in using ICT to increase economic distribution. This trend leads to the question, how the role of ICT in achieving economic sustainability in Indonesia.

This study explores the role of information and communication technology in fostering economic sustainability through social entrepreneurship in Indonesia. The basic assumption of this study regards the ecological effect of ICT on social and economic life. On one hand , technology (ICT) promises a better quality of life through free access to knowledge and equal participation in many realms. But on the other hand, ICT also brings new challenges to strengthen the gap (digital divide) between the information-poor and information-rich. This study aims to define the opportunities and challenges regarding the two sides of ICT in fostering sustainable life.

This study starts with the concept of ICTs and sustainability. ICTs lead a million positive

impacts but on the other hand also potentially bring problems, dysfunctions, and distortions simultaneously (Carpentier, 2006). The role of ICT for sustainability is regarded as the part of communication for sustainability. Fuchs(2008) defines a sustainable information society, which considers the community with a deep concern for achieving sustainability through ICT use. On the other side, economic development also leads to the sustainability aspect. Economic sustainability, stress-free knowledge, and equal opportunity to gain wealth for all. The use of ICT for economic purposes is supposed to promote sustainability. This study explores the potential of social entrepreneurship to foster economic sustainability concerning the role of ICT in its activities.

Methods

This study aims to answer the role of Information and Communication technology in fostering economic sustainability in Indonesia. It assumes one sector which has the potential to attain sustainable (economic) goals is social entrepreneur. This study explores three key concepts to understand the correlation between ICT, sustainability, and social entrepreneurship. The preliminary research uses the desk study method, using 32 relevant journals and ten books published not more than ten years to gain a comprehensive framework. The desk study figures out the latest discourse about the related topic and gets the discourse map, which further helps the researcher develop the framework for empirical studies.

Results

Technology and Economic Sustainability

There are three critical criteria for corporate sustainability: eco-efficiency, eco-equity, and eco-effectiveness in terms of ecological footprint (Standing et al., 2008). *First*, Eco-efficiency has been built by many "green" organizations into their strategic framework. *Second*, Eco-equity needs to be instilled into

the organizational value system to increase the number of organizations embarking on eco-friendly strategies and processes, even in the absence of cost-efficiency. *Third*, Eco-effectiveness emerges as the ultimate goal of environmental protection. Instead of only slowing down their speed, it aims to stop contamination and depletion by directing individual and organizational attention to ecological problems' underlying and fundamental factors and making possible long-term prosperity through an entire system redesign.

ICTs have created several impacts that potentially foster sustainability. There are three elements to the use of ICT in their function regarding sustainability aspects (Kariuki, 2021). *First*, a sustainable manufacturing process should ensure the six-element. The elements are environmental certification of manufacturers, choice of cleaner manufacturing methods, designing less energy and material consumptive products, taking products from users for recycling and reuse after use, provision of environmental information of manufactured products, and clean sourcing of production materials. *Second*, Sustainable ICT Procurement/Purchasing Strategies can significantly minimize the ICT carbon footprint by purchasing the right ICT products and services. *Third*, Sustainable ICT Product Use and After-Use Management which is the sustainable handling of ICT equipment once its need has been fully realized, are critical in enhancing the sustainability of the ICT sector.

The development of Information and communication technology brings optimism for sustainability (Fuchs, 2008). Digital technology can reduce carbon emissions and natural resources efficiently and create a digital product that is environmentally friendly. ICT also brings a weightless economy because knowledge-based industries and services are less resource-intensive than industrial production. ICTs can reduce the negative environmental impacts

Table 1.
ICT dan Sustainability Dimensions

No	Dimensions	Quality	ICT and Information-related Opportunities and Risks
1	Ecological Sustainability	Biological Diversity	Ecologically sustainable vs. ecologically destructive ICTSs
2	Technological Sustainability	Usability	User-oriented, user-friendly, enabling vs. Unusable, constraining ICTSs
3	Economic Sustainability	Wealth for All	Free Knowledge and ICTs vs. knowledge and ICTs as a commodity and private property
4	Political Sustainability	Participation of All	Participation vs. Control enabled by ICTs
5	Cultural Sustainability	Wisdom	Wisdom vs. False Consciousness advanced by ICTs
6	Sustainability of Mass Media	Wise Knowledge and Media	Participatory, wise Online-Journalism vs. Manipulative, one dimensional online-journalism
7	Science	Truth	Speed vs Quality of e-science
8	Art	Beauty and Imagination	Aura gain and participatory Art vs. Aura and authenticity loss of

Source: Fuchs, (2008)

of traditional industries by allowing more efficient ways of production and distribution, in which certain products and services could be dematerialized/virtualized, reducing their environmental impact. Such goods are traded and transported over the Internet, reducing the amount of physical transport, and ICTs can increase transportation efficiency. However, Fuchs also said that the We couldn't be obtained without obstacles. ICT brings opportunities and also risks simultaneously. Research, evidence, and deep analysis are needed to optimize chance and reduce risks. ICT has also created damages, dysfunctions, and distortions that need to concern (Carpentier, 2006).

Representing the paradox, Fuchs frames the sustainable dimension created by ICT. This study focuses on the aspects of economic sustainability related to the other elements. Fuchs described ICT could strengthen economic sustainability by fostering welfare for all. ICT can create free knowledge, but privatization and property commodification, on the other hand, simultaneously.

In addition to the environmental discourse, ICT can create a sustainable information society. A sustainable information society is a society that uses ICTs and knowledge to foster a good life for all human beings of current and

future generations by strengthening biological diversity, technological usability, economic wealth for all, political participation of all, and cultural wisdom(Fuchs, 2008).

Servaes and Malikhao (2007) described knowledge as more than information concerning the knowledge aspect. Knowledge covers meaning and interpretation beyond Information. The information society transformed to become a knowledge society. Knowledge in a community is not objective or static but is ever-changing and infused with the values and realities faced by those who have it. Furthermore, meaning is something that is perceptibly or actively interpreted. Meaning needs interpretation and evaluation before serving life. Therefore, it needs to transform knowledge and promote participation in policy-making to attain sustainability. The citizen can learn, generate, and act based on their knowledge by understanding control, selection, purpose, power, and capacity where the knowledge developed.

The 'Digital Europe' project has defined the critical elements of the information society that support sustainable development. There are six significant elements: 1) Product and services have higher added value; 2) Some products need fewer material services; 3)

Supply chains and transport logistics become more efficient; 4) Buildings and Vehicles become more efficient in energy spending; 5) Infrastructure include building become more efficient in daily use, and people consider in work-life balance through the use of ICT; 6) Communities use the land effectively and plan well (Carpentier, 2006). Regarding sustainability goals through technology, there are three aspects that are essential (Carpentier, 2006). *First*, be mindful of the benefits and the risk of action. *Second*, commitment maximizes opportunity and minimizes the danger of technology. *Third*, improving public awareness and designing a new lifestyle for citizens to engage in the movement. In other words, we prioritize people first before technology. Based on the concepts, it is significant to explore the role of ICT in social business to foster the value of sustainability in the particular economic aspect indicated by the use of free knowledge to produce welfare for all and free of commodification and privatization from the specific groups.

ICT and Sustainable Entrepreneurship

In the last few years, many authors discussed entrepreneurship (Wustenhagen, 2018). Entrepreneurship can describe various phenomena. Some of the authors regard the start-up company. In this definition, an entrepreneur is an actor who creates a new company. Other perspectives about entrepreneurship also refer to the growth aspect. In this second definition, the entrepreneur is the actor who enlarges, innovates, or develops a business from the existing company. The third definition of entrepreneurship also refers to the social activist concerning the social or environmental movement. In this perspective, entrepreneurs guide the actor who wants to solve social problems.

Every business in this world is born out of Entrepreneurship. Entrepreneurship has been the sprouting ground for various discoveries,

inventions, innovations, products, and processes (Balachandran, 2013). Entrepreneurs are not merely about adding competitive advantages and innovating products, but also regard personal characteristics such as ambition, leadership, and team building.

Skinner (2009) studied success factors that affect ICT innovation regarding the unique value and the process. The study also investigates the creators and founders regarding their background, experience, and other personal characteristics. Based on its findings, they developed a scheme and metrics to guide the ICT innovation product. Three categories affect the success of the product. *First*, Innovation – is the improvement or added value of the existing product as an extension of the original concept. It is unique compared to the actual product but still serves the same purpose. *Second*, Evolution – is an approach that shows the gradual process of Innovation through the natural development process, which is affected by technology. The progression of technology creates new opportunities and realizes the execution of the new idea. *Third*, Motivation – is an embedded factor that comes from the entrepreneur. It manifests in some form, such as financial achievement and market opportunities from personal tendencies.

The progressive concept that stresses social values in the process of Innovation is social entrepreneurship. Its ideas have flourished in the last decade. Social entrepreneurship refers to innovative activity with a social objective in either the for-profit sector, such as in social-purpose commercial ventures or incorporate social entrepreneurship; or in the nonprofit sector, or across industries, such as hybrid structural forms that mix for-profit and nonprofit approaches (Austin, James; Stevenson, Howard; Wei-Skillern, 2006). Under the narrow definition, social entrepreneurship typically refers to applying business expertise and market-based skills in the nonprofit sector,

such as when nonprofit organizations develop innovative approaches to earn income (Nicholls et al., 2006).

One of the classical definitions of social entrepreneurship and the social entrepreneur is provided by Dees (1998), who says that social entrepreneurs play the role of change agents in the social sector by 1) adopting a mission to create and sustain social value (not just private value); 2) recognizing and relentlessly pursuing new opportunities to serve that mission; 3) engaging in the process of continuous innovation, adaptation, and learning; 4) acting boldly without being limited by resources currently at hand; and 5) exhibiting a heightened sense of accountability to the constituencies served and for the outcomes created (Nicholls et al., 2006).

Leadbeater (1997) defined the existence of social entrepreneurship in three models of entities: 1) the Public sector that adopts a business approach; 2) Business entities that focus on social problems; 3) the Non-profit sector or voluntary community that adopts an entrepreneurial approach. Moreover, Emerson (2003) adds another type of social entrepreneur: 4) Civic Innovator refers to the Founder of revenue-generating social enterprise; 5) Generator of commercial enterprise that uses the surplus to support social vision (Steyaert, 2006).

The new social entrepreneurship model has been affected across the sector, focusing on social activities and impact (Nicholls et al., 2006). In the non-governmental sector, it acts to reconfigure existing social entities such as charities, NGOs, and other forms of social ventures and philanthropy. In the governmental sector, the concept of social entrepreneurs has helped the public sector become more effective, accountable, and flexible. Furthermore, social entrepreneurship also exposes how profit-oriented companies synergize and integrate with social value creation.

Social entrepreneurs have at least two aspects (Nicholls et al., 2006). *First,*

social entrepreneurs create a combination of economic value and social impact in the same bucket, which is seen as valuable apart from the traditional ways. The value creation includes the advancement of service delivery, empowerment, and system innovation. *Second,* social entrepreneurs could create social impact in line with the primary business process. They create opportunities to add social impact throughout their entire value chain, often employing and training disenfranchised groups to deliver the social mission or recreate the limited resources that society needs.

The different processes of value creation, production, distribution, and consumption potentially foster the transformation of market structure that more partially tends to all rather than concentrate on the specific groups. However, these concepts imagine the new entity competing with the existing business. Another idea that is interesting to elaborate on is sustainable entrepreneurship. Its concept explicitly mentions sustainability in its term to stress its concern. Different from the idea of a social entrepreneur, its idea refers to the invention, creation, and exploitation of business opportunities that tend to contribute to and generate sustainability (Wustenhagen, 2018). The spirit and value of social entrepreneurship support the nature of economic sustainability.

Sustainable entrepreneurs stress value creation that benefits society through opportunity creation and development in an uncertain environment. Its implication for risk handling, attitude to innovation and ethical concerns. In line with social entrepreneurship, its concept stands between for-profit and not-for-profit organizations, in between cash and cause, in which the main goal is prosperity. Its spirit is in line with the spirit of economic sustainability. Based on this concept exploration, it is crucial to consider social entrepreneurship as an agent of economic sustainability, particularly those supported by ICT.

ICT adoption plays a significant role in achieving sustainability in entrepreneurship, which follows the a priori expectation (Ejemeyovwi et al., 2019). As highlighted by the study, ICT adoption could contribute to entrepreneurship sustainability through information symmetry and better value chain interaction across various economic sectors. Furthermore, and more importantly, research and development for new ideas, products, and processes should be taken seriously, and given priority.

In the context of entrepreneurship, sustainability not only becomes an attribute. Sustainable development is an intentional, closed-loop model where inputs and outputs are balanced, and materials are transformed and reused in self-perpetuating ways (Stenn, 2017). Regarding development, entrepreneurship assists in exaggerating value creation through innovation and new practice models. Sustainable development is starting to change the competitive environment, encouraging organizations to change how they think about products, technologies, business models, and process-supply chains.

The sustainability lens (SL) also creates great storytelling and marketing moments helping businesses to build their "unique selling point" and set themselves apart from the competition (Stenn, 2017). The SL also helps companies align with the community, building a more solid client base, happier employees, and mutually beneficial partnerships.

Sustainable growth is endogenous structural change with technology and environmental sustainability (Salim, 2010). The sustainability of economic growth with the endogenous factors of technology and Innovation is critical to more productive, competitive, and sustainable economic growth. Sustainable economic development requires the conservation of resources over time. In other words, ICT should enable an entrepreneur to gain sustainability in many ways.

Discussion

This study explores the challenge and opportunities among many possible aspects of ICT development in fostering economic sustainability. It starts with an exploration of the correlation between sustainability and technology. Based on the literature review, this study finds that technology promises to increase the ecological aspect of life through many features that allow people to use fewer natural resources in their daily lives. But, on the other hand, technology industries have not been free of emissions and potentially increasing the carbon emission regarding the exponential development and use over the world. The paradox has become a discussion in many kinds of literature and scholars. Nonetheless, this study does not discuss the ecological aspect more but looks more profound at the social and economic elements brought by ICT. Furthermore, it will focus on the social and economic aspects while considering the environment.

In this section, the article will discuss the critical desk study result with the empirical condition in Indonesia to understand the opportunity and challenge of using ICT to foster economic sustainability. Literature shows that ICT promises equality of access regarding the free flow of Information and communication. Ideally, it guarantees the freedom of knowledge, opportunities, and access to many economic resources for everyone, which fosters economic sustainability. However, ICT also challenges the domination of Information and the gap in digital skills that cause the inequality of access and participation, further reducing the equality of opportunities for everyone.

In Indonesia, the number of Internet users increased significantly in the last five years, moreover during the pandemic. Internet penetration in Indonesia reached 76,8% total population in March 2021, equal to 212,35 million users. The penetration level in Indonesia is higher than in other Asia Countries (an

average of 63,9% of the 4,3 billion population). It is also higher than the global penetration level of only 65,7% of the 7,86 billion population (databoks, 2021). On the other side, Indonesia still has poverty problems, and more than ten percent of people are still under the poverty line (BPS, 2021). It triggers the crucial question, is there an intersection between internet users and the poor, and is there any correlation between Internet use and welfare? Referring to the concept above, the Internet uses supposed forward people to gain economic opportunities.

Based on We Are Social 2021, the primary internet users in Indonesia are social media users, reaching 170 million users or about 61.8% of the total population. The most widely used social media include YouTube, WhatsApp, Instagram, Facebook, and Twitter, with an average usage of 3 hours and 26 minutes daily. This figure shows the level of community activity in accessing and producing information. Embedding the Indonesian people as an information society is certainly not an exaggeration. However, the big question is where this information-savvy society's transformation is going.

Referring to Fuchs (2008), the critical dimension of sustainability in the economic realms is welfare for all, and the guarantee of these dimensions is free over monopolistic and commodification of knowledge. Other literature also emphasizes the critical aspect of learning to create equal opportunity for everyone to participate in economic collaboration rather than competition. Therefore, ICT should provide openness and free knowledge to support sustainability. ICT also should enable people to process the knowledge into economic opportunities.

On the other hand, the power of knowledge also supports the sustainability discourse to spread in society. ICT should enable people to understand sustainability, become informed, and know about the issues. Therefore, they are encouraged to make the

right decision to support sustainability. The power of digital media as a product of ICT to spread the massive information into knowledge has to strengthen. According to the World Bank data for 2021, most users in Indonesia use the internet to communicate (36%), including using it to send messages and electronic mail. Other activities are opening social media (21%), relaxing (21%), surfing (11%), and only about 3% use it for buying and selling transactions. It shows that the internet potentially opens a new flow of information in society. But, it is insufficient. The overflow of information on the Internet supposes it could be interpreted as meaningful knowledge to create new opportunities. Unfortunately, it seems that inequality still exists. Based on data compiled by Databox from the World Bank as of July 2021, inequality in internet access still occurs in Indonesia (databoks, 2021). The World Bank notes that adults in the top 10% of the income distribution are five times more likely to be connected to the internet than those in the poorest decile. In addition, inequality of access also occurs between generations, young and adult groups are more likely to be connected than older people.

Regarding gender, the internet is also more accessible to men than women. No less important, in terms of area, the urban population who can access the internet is 62%, twice as large as the rural population, which is only 36%. The architecture of the knowledge ecosystem should be evaluated to optimize the impact of internet use for sustainability. The free flow of information should remain in harmony with increasing equal access and digital competence improvement for all groups.

The Ministry of Cooperation and Small Medium Enterprise (SME) said that 15,9 million or 24,9% of the total SME population entered the digital market. This number increases significantly during a pandemic. The data shows the increased digital competence in the middle-low group who dominated the SMEs.

It also indicates an enormous opportunity for the digital market to accelerate the economy in Indonesia. The next question is, is collaboration enough to distribute the income in Indonesia? Referring to the existing Gini Ratio, Indonesia still has homework to design a policy that supports economic equality. The inequality of access appears to be in line with the Gini ratio in Indonesia, which is still at 0.384 as of September 2021.

The digital ecosystem also creates a larger market with the development of e-commerce. On the one hand, a big company's digital platform takes control, mentioning Tokopedia, Bukalapak, Shopee, Blibli, etc. In the conventional business ecosystem, it is called monopolistic. However, in the digital ecosystem, it is called collaboration because the digital platform provides new opportunities for a more minor player to expose their product and make a transaction. However, the collaboration model doesn't necessarily guarantee an equal relationship between platform owners and their stakeholders, and this is due to benefit-sharing among them.

In some cases, the platform gets more profit with the number of transactions that occur, while the majority of vendors are SMEs that must comply with applicable policies, including providing low prices for their products. In other cases, the platform also offers various capacity-building programs for SMEs as an investment for both parties that are also beneficial for SMEs. It depends on the business model of both that regard to the further question about social entrepreneurs.

The second concept explored in this study is the discourse about entrepreneurship and sustainability. This study discusses the linkage of the entrepreneurial aspect toward sustainability. Moreover, it elaborates on the development of ICT toward strengthening sustainability aspects. This desk study finds that ICT potentially fosters economic sustainability through social entrepreneurship practices.

On the other hand, ICT also accelerates the number of entrepreneurs. The definitions we mentioned above refer to the individual quality of leadership, ambition, and smart thinking to create new opportunities and products. It also refers to the person who can innovate and make a change. The digital ecosystem enables everyone to create their enterprise. The abundance of knowledge and access provided by the Internet also supports the entrepreneurs' generation. It shows the ICT potential to create more economic opportunities for everyone.

In the last five years, social entrepreneurship trends matured in Indonesia. They are present in various models—no consensual definition and category of a social entrepreneur. There is a spectrum that depends on the degree of social value that they bring. In the loosest definition, any business with a social impact is categorized as a social entrepreneur. ICT enables 'ordinary' businesses to transform into a social company because it brings a substantial social impact; mentioned GOJEK, Bukalapak, Tokopedia, etc. From the perspectives of conventional concepts, it is debatable to categorize them into social enterprises. However, their social impact is real. The conventional form of a social entrepreneur is identical to a social group or organization that does business activities. They use their profit to reinvest in community welfare. Collectivity becomes the first principle that influences the business process. However, the new form of social entrepreneur also flourishes in line with ICT development. This article focuses on the new state of entrepreneurs that stresses social impact as their goal beyond profit. In this term, social entrepreneur refers to a business entity that focuses on empowering the community and leveraging its business model to distribute welfare in society.

According to data from the British Council (Kumparan, 2019), the leadership of social enterprises in Indonesia is currently dominated by young people, with 67 percent of individuals aged 18-34 years and 40 percent women. Most



social companies are engaged in five essential sectors: agriculture, education, health, and creative industries. Most of them utilize digital platforms to run their business. They develop various innovations that empower communities, such as AI for smart farming, e-learning innovation, e-health service, etc. Furthermore, the social enterprise sector has made a significant contribution in paving the way for women, with an estimated 69 percent female workforce, and was responsible for a 99 percent increase in female employees in 2016-2017. It shows that social entrepreneurs promote inclusivity and equality in their business model. Furthermore, the success of social enterprises can contribute around 1.91 percent of Indonesia's GDP of Rp. 19.4 billion.³ Indeed, it is insufficient to distribute welfare in society and needs more social entrepreneurs to spread it.

Conclusion

This study explores the role of information and communication technology in fostering economic sustainability through social entrepreneurship in Indonesia. The basic assumption of this study regards the ecological effect of ICT on social and economic life. On one hand, technology (ICT) promises a better quality of life through free access to knowledge and equal participation in many realms. But on the other hand, ICT also brings new challenges to strengthen the gap (digital divide) between the information-poor and information-rich. This study aims to define the opportunities and challenges regarding the two sides of ICT in fostering sustainable life.

This study explored three key concepts to understand the correlation between ICT, sustainability, and social entrepreneurship. This study finds that ICT potentially fosters economic sustainability through social

entrepreneurship practice based on the dialogue amongst concepts. In Indonesia, the internet potentially fosters new economic opportunities for everyone. The development of e-commerce and start-up fever that focuses on value creation simultaneously brings opportunity and challenges in creating an economic distribution.

The high internet penetration in Indonesia brings an opportunity to create a well-informed society. Accessing, distributing, and producing information through digital platforms as well as social media is potentially increasing the knowledge of the community. However, it doesn't take for granted but needs the digital capacity to process the information to become meaningful knowledge. Besides the gap in internet use in Indonesia, the ability to process information into opportunities should be improved. Moreover, the opportunity (economic opportunity) should be accompanied by the goodwill of stakeholders to create an equal and inclusive economic business model that accommodates and empowers a community. This article promotes the social entrepreneurship model as an alternative to fostering welfare distribution in society since this model proves its strength in creating social impact beyond profit.

Nowadays, sustainability can't just become an attribute but should become a value that influences the holistic business process. Besides protecting the planet and people, accentuating sustainability could optimize profit because of customer demand and protect the limited source. ICT potentially brings a new strategy to gain profit, people, and the planet in one shot. Regarding the previous discussion about free knowledge, ICT provides a resource to innovate, and even disrupt the market with new approaches and strategies. ICT also potentially helps the entrepreneur create a low-economic product with cheaper production, distribution, and easy ways to consume. Therefore, the potential couldn't

³ Unfortunately, data regarding the existence of social enterprise is difficult to obtain officially. The data is still mixed with the business in general, and further scrutiny is needed to sort out the data.

be obtained for free but must be brought by effort, commitment, and goodwill from many stakeholders because there are many requirements to ensure sustainable practices.

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