

# Economic Recovery Following the Covid-19 Pandemic in Indonesia with a Local Branding Strategy Leveraging Youth Participation in the Green-Creative Economy Digitization Program (PRO-DEKHA)

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## ABSTRAK

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*The Covid-19 domino effect impacts both the health sector and the Indonesian economy. In 2020, there was a 2.07 percent economic decline compared to 2019 due to the prevention of an increasing number of Covid-19 spreads, which hampered economic activities and impacted social welfare felt by the community, one of which was Micro, Small, and Medium Enterprises (MSMEs). MSMEs contributed 61.97 percent of the national Gross Domestic Product (GDP) in 2020, indicating that MSMEs play an important role in the Indonesian economy. This raises awareness about the importance of creating a sustainable economy, which can be accomplished through economic digitization. Economic digitization uses the internet and artificial intelligence (AI) to facilitate economic activity. During the epidemic, one of the economic sectors that survived was the digital economy, for example, Shopee, Tokopedia, and others. Thus, economic digitalization assists the younger generation's 'green-creative economy.' Indonesian youth can leverage the digitalization of the green-creative economy to benefit the Indonesian economy as a whole. This article will address the issue of how youth can contribute to economic digitization by promoting local branding of local vegetables and fruits in a 'green-creative economy' to help Indonesia recover from the pandemic. This article aims to ascertain the role of youth in promoting economic digitization in Indonesia following the pandemic by strengthening local branding for the 'green-creative economy.' This relates to the Green Economic and Digital Economy concepts, which aim to enhance human well-being and sustainable green economic growth to improve environmental quality through digital technology. The paper uses qualitative research methodologies in conjunction with descriptive analysis research via a literature review. Thus, the community's Green-Creative Economic Digitization Program (PRO-DEKHA) aims to promote local branding of a 'green-creative economy' as a means of economic recovery by Indonesia's eighth Sustainable Development Goal (SDG) on decent work and economic growth.*

**Keywords:** MSMEs, Green Economy, Digital Economy, SDGs, Youth Role

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## INTRODUCTION

Humans sustain their welfare as the era progresses by depending on the potential of natural resources such as water, air, and soil as sources of food, energy, and minerals. In this instance, Indonesia's economy can benefit from these natural resources. However, Indonesia's economic growth must transition to a green economy to maintain its sustainability. This transition to a green economy is necessary in response to climate change, which is gradually wreaking havoc on the earth's surface. Indonesia can accomplish this accordingly [1].

The green economy is defined as an economy that improves human well-being and social fairness while significantly decreasing environmental consequences and ecological constraints (UNEP, 2011). The Indonesian government has a program that promotes the development of a green economic climate, dubbed the Indonesian Green Growth Program. The Indonesian government and the Global Green Growth Institute (GGGI) are implementing this program through the Ministry of National Development Planning (BAPPENAS), which involves several ministries and local governments. In 2012, Indonesia became a co-founder of the GGGI, an organization dedicated to economic growth and environmental sustainability [1]. The Indonesian Green Growth Program was

established to promote green economic growth and assure social inclusion, ecological sustainability, and resource efficiency. Using Nationally Determined Contributions to Sustainable Development Goals (SDGs), build bank-compliant projects and connect them to appropriate financial sources. Then, include enablers, or variables that facilitate green growth investment, in the sectoral, district, provincial, and national planning sectors relevant to green growth. It is envisaged that implementing this green economy program will encourage and integrate other economic sectors, one of which is the creative economy. Furthermore, income and employment growth in a Green Economy is driven by public and private investment that reduces carbon emissions and pollution promotes energy and resource efficiency and prevents biodiversity and ecosystem loss. Running a green economy necessitates creative innovation, known as a creative economy, to reach this wealth.

The creative economy began in Australia in the early 1990s due to the arts and cultural sector's funding system. In Indonesia, the creative economy is regulated by Presidential Instruction No. 6 of 2009 on the Development of the Creative Economy (Ekraf). The creative economy is defined as economic activities driven by individual creativity, abilities, and talents to generate meaningful individual creativity and ingenuity. Partnership or collaboration with the Penta-helix concept from various actors, including academia, business, government, communities, and companions, can create a creative economy [2]. Indonesian Chamber of Commerce and Industry (KADIN), in developing the Indonesian Creative Economy 2025 with the theme "Indonesia's New Strength Towards 2025," collaborates with fifteen creative economy subsectors, including advertising, architecture, art goods, crafts, design, fashion, video film and photography, music, performing arts, publishing and printing, computer services and software, television and radio [2]. In addition, the creative economy also needs to be encouraged by developing technology to give rise to the term "economic digitization."

According to [3], economic digitization is a sociopolitical situation and financial system that resembles an intelligence space containing information and access mechanisms and the capacity and arranging of information. In Indonesia, economic digitization has considerably contributed to the country's GDP. The Central Statistics Agency (BPS) indicated that in 2019 and 2020, economic digitization contributed to Indonesia's economic growth, contributing 9.42 percent to GDP growth in 2019 and 10.58 percent to GDP growth in 2020 [4] and 6.81 percent in 2021 [5].

Table. 1 Digital Economy to Indonesia's GDP

2019	9.42 %
2020	10.58 %
2021	6.81%

Source: Central Bureau of Statistics

On the other hand, the current era of the Covid-19 epidemic has shifted the traditional economic sector into economic digitization, affecting the growth of a green economy in Indonesia's vegetable and fruit sector. In this context, it is critical to maximize the use of e-commerce platforms such as Shopee, Tokopedia, Vegetable Box, and Tanihub to distribute indigenous agricultural products in Indonesia. During the Covid-19 epidemic, imported fruit sales declined in Indonesia,

while the number of enthusiasts and sales of local farm produce increased. In January and February 2020, imported fruit and vegetable production declined by 45-60 percent. Meanwhile, as of August 1, 2021, local vegetables and fruits output totaled 7.9 million tons, with exports increasing by 30.31 percent to USD 645.48 million in 2020 [6]

According to Randy Jusuf, Managing Director of Google Indonesia, Indonesia's digital economy continues to expand double-digit, particularly in e-commerce and online media. In line with that, Southeast Asia's digital economy has grown at a breakneck pace, notably during the Covid-19 pandemic. The digital economy in Southeast Asia reached \$100 billion in 2020 and is expected to reach \$300 billion in 2025. Additionally, because young people play a significant part in implementing the digital economy via social media and e-commerce, they can efficiently channel their creativity into creative and digital economic activities and become content creators with an emphasis on online business [7].

Another problem faced by the green economy is land availability. The issue of land availability does not just affect Indonesia; it affects the entire world, as it is anticipated that humanity will require between 125 and 416 million ha of land for agriculture and pasture by 2030 [8]. Indonesia has converted most of its fertile agricultural area into industrial land, infrastructure, and towns. Thus, agricultural and non-agricultural land rivalry for land ownership [9]. Additionally, agricultural lands have been displaced by mining industrial businesses and contaminated by industrial waste due to their existence and activities [10].

Due to land scarcity and the degradation of agricultural land due to industrial activity, alternative new locations are considered critical in resolving these issues. Hydroponic plant cultivation techniques may provide a solution. Hydroponic plants do not require a conventional planting medium or soil but are directly connected to nutrient solution-filled water growing media [11]. On the other hand, hydroponic plants can conserve water and fertilizers often utilized in plant production [12]. Thus, creative innovation in developing hydroponic technologies attempts to advance Indonesia's green-creative plantation economy. This is consistent with the development of a creative-green economy in Indonesia. Additionally, green-creative economic growth can be used to educate the public about hydroponic cultivation.

Numerous innovations have been applied to build a green economy in Indonesia's vegetable and agricultural fruit industry. Among them is the use of android-based gadgets for nutrition, hydroponic installation, and the transmission of horticultural plant information in Pasundan, West Java [13]. Hydroponic media is required along with hydroponic plant nutrition, as with the technique of sowing seeds in Muara Gembong, West Java, using specialized planting material such as rock wool.

Based on the preceding explanations of the concepts of a green-creative economy and economic digitization, it is necessary to establish a Green-Creative Economy in Indonesia's agricultural sector. This is due to Indonesia's limited vegetable and fruit growing area, which necessitates the existence of creative green-economy digitization. We acknowledge in this study that local branding is also necessary to promote hydroponic development innovation to enhance the green-creative economy. Local branding uses labeling to aid in selling a product in a particular area or location to the general public. Local branding begins with efforts to increase the product's position in the minds of consumers by imbuing the product's name with value [14]. Thus, local branding can be utilized to sell indigenous Indonesian vegetable and fruit goods, which is accomplished through

economic digitalization, pursued through the PRO-DEKHA initiative, via websites, and social media. Additionally, the younger generation plays a critical part in attaining the Indonesian government's ideas of implementing a creative-green economic system through digital capabilities and innovation. In this regard, it is believed that a green-creative economy powered by the younger generation can enhance Indonesia's farmer production. Thus, through digitization, using a green-creative economy in the vegetable and fruit farm sector with local branding is critical for economic growth in Indonesia. The youth's role in economic digitization via the PRO-DEKHA program.

### **RESEARCH METHODS**

This study uses a qualitative method to analyze collected data. The data consists of primer and seconder data. The primer data was collected through interviews with selected participants using purposive sampling. The source person for the interview is Ms. Wiwit. Mrs. Wiwit was invited for the interview because she is a farmer and entrepreneur in Sawangan, Depok, West Java. Secondary data was collected through library research. It enables researchers to employ references from books, scientific journals, news stories, and official reports to increase the density of the data collected.

Through PRO-DEKHA, this research will examine the usage of e-commerce, Instagram, and websites as a form of digitization for local hydroponic farmers. In this arrangement, the researcher sets aside Rp. 56,000.00 for the supply of 2 kg of hydroponic veggies and Rp. 51,000.00 for the buyer's shipping fees. the hydroponic vegetables that we sell consist of hydroponic Green Spinach, hydroponic Red Spinach, and hydroponic Pakcoy for Rp. 7,500 per kg, which has been sold for 1.6 kilograms of Rp. 35,000. After collecting all of the data, the researcher classifies and groups the data based on their relevance and novelty so that the data can be examined and transformed into a hypothesis, new science, or new knowledge.

### **RESULT AND DISCUSSION**

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After collecting all of the data, the researcher classifies and groups the data based on their relevance and novelty so that the data can be examined and transformed into a hypothesis, new science, or new knowledge. Researchers are utilizing social media to expand the client base and capture teenagers' interest to contribute to post-pandemic economic recovery efforts, particularly by enhancing local branding for hydroponic farming products. In this example, the researchers partnered with Rumah Kebun Hidroponik Sawangan, Depok. Instagram and, in the future, websites

will be used to implement PRO-DEKHA. However, social media cannot be used as a reference point for applying PRO-DEKHA automatically. This is triggered by PRO-DEKHA's shortcomings in increasing engagement to promote our products and services. In this situation, the researcher meets obstacles in the shape of algorithms and a limited number of followers.

Since 2015, Indonesia has aspired to create a Green Economy [1]. These objectives aim to enhance human well-being by promoting sustainable economic growth while protecting the environment. In this case, human survival is contingent on natural resources that are becoming increasingly scarce due to an economic development process that disregards nature conservation. As a result, the Indonesian government recognizes the urgency of implementing a system that reduces poverty and increases social inclusion while preserving the environment and accelerating Indonesia's economic growth.

Indonesia would adapt to a digitalized environment where technology is critical to human life to realize these principles. Digitization is a first step toward educating the public about the importance of collaborating between technology and the economy to expand the availability of institutions, services, products, and financial services in society. In this situation, the Digital Economy is deemed capable of assisting the community in developing and managing the economy in a transparent, accountable, and secure manner [7].

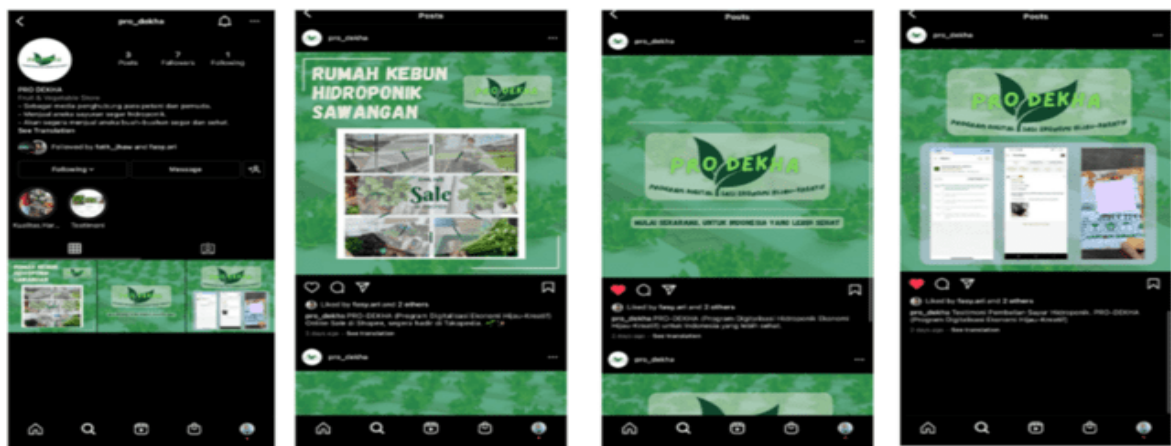
According to the PRO-DEKHA program's SWOT analysis, a strong strategy for creativity and digital technology is required to develop Indonesia's green-creative digital economy system. In this scenario, Indonesia's younger generation has the opportunity to hone their skills in advocating for the establishment of a green-creative digital economy system. The PRO-DEKHA program's drawback is that it is attempting to compete with foreign markets that already have a high level of quality. Additionally, the PRO-DEKHA program can help hydroponic farmers in Indonesia, particularly those at Rumah Kebun Hidroponik Sawangan Depok, maximize their income using digital e-commerce platforms. Additionally, PRO-DEKHA incorporates it into its local branding efforts via a website and social media profiles. The PRO-DEKHA program faces a threat because hydroponic growers at Rumah Kebun Hidroponik Sawangan in Depok have not engaged in local branding and distribution via e-commerce. As a result, the PRO-DEKHA program's Instagram and e-commerce pages currently lack sufficient enthusiasm.

#### **A. Application of a Green-Creative Economy as a Program Core in Indonesia**

The PRO-DEKHA program encourages the cultivation of vegetable and fruit plantations based on a creative-green economy aligned with local branding for these plantation products. Such as encouraging local branding of hydroponic farmers in Indonesia. In promoting this, innovations such as the Hydropo 4.0 Device are needed in Pasundan, West Java. The device is used to mix water and nutrients, managed through an android device—then equipped with temperature and ultrasonic sensors in the water and nutrient mixture container. In addition, the Hydropo 4.0 device is used to store information on environmental conditions for hydroponic cultivation, in this case, the Pakcoy plant [13]. In addition to the Hydropo Device, hydroponic empowerment using the Wick System in Muara Gembong, West Java, is another innovation. Where this system uses Rockwool to sow the planted vegetable seeds. The system also uses economical fertilizer derived from liquid organic fertilizer [12]. In addition, PRO-DEKHA is in line with the Sustainable Development Goals in Goal 08, which supports inclusive and sustainable economic growth, full and productive employment, and decent work.

Based on an interview conducted by the researchers with Mrs. Wiwit Putri Pujianti, the proprietor of Rumah Kebun Sawangan Depok, on March 14, 2022. Mrs. Wiwit noted that her plantation does not yet utilize technology, relying on traditional machinery and a pump system. This is because Mrs. Wiwit employs more natural notions throughout the process, from sprouting to harvesting. Then, when it comes to local branding, the Rumah Kebun Hidroponik has opted out of using social media or websites. As such, the PRO-DEKHA program attempts to promote the advancement of hydroponics through local branding via social media and websites.

The social media accounts that we use for local branding for the PRO-DEKHA program are Instagram. We have used PRO-DEKHA social media accounts to promote Sawangan Depok hydroponic vegetables. The PRO-DEKHA social media accounts are as follows:



Picture 1. PRO-DEKHA’s Instagram

Another media social of PRO-DEKHA is a website, for local branding, our website’s design is as follows:



Picture 2. PRO-DEKHA’s Website

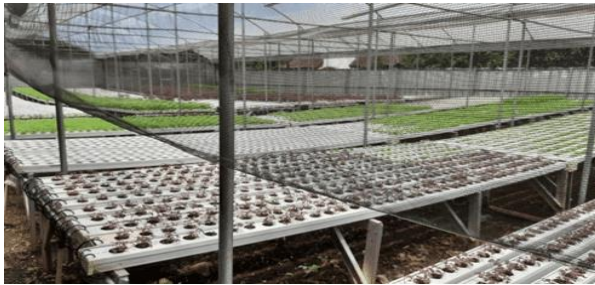
The program has innovation through branding with the website mentioned above, which can be used to expand the hydroponic products that the author got from the Sawangan hydroponic farmers. After promoting through the website. PRO-DEKHA distributes products through e-commerce.



## B. Economic Digitization for Hydroponic Farmers in Sawangan, Depok, West Java, Indonesia

Based on Presidential Decree (Keppres) No. 15 of 2021 establishing the Gernas Proud Team as an Indonesian-made entity (Gernas BBI), improving the digital ecosystem for Micro, Small, and Medium-Sized Enterprises (MSMEs), especially creative economy actors, is critical for the Indonesian economy to boost purchasing power, expand markets, and access finance. According to the interview with Mrs. Wiwit, a hydroponic farmer in Rumah Kebun Sawangan, the usage of Grab Mart for distribution has restrictions in terms of farmers' availability in the garden when orders are received. This includes packing and production, which are currently limited, necessitating the temporary suspension of Grab Mart use. Thus, Rumah Kebun Hidroponik Sawangan Depok favors a direct ordering approach in which clients visit the plantation to make purchases in person. Therefore, the researchers formed PRO-DEKHA, which uses local branding through the website.

The researchers opened an e-commerce account on March 16, 2022, before distributing the vegetables to purchasers. On March 19, 2022, the researchers distributed and sold hydroponic vegetables from Rumah Kebun Hidroponik Sawangan Depok via Shopee. The documentation gathered during this procedure is as follows:



Picture 3. Sawangan Hydroponic Garden vegetables.



Picture 4. Fathul bought hydroponic



Picture 5. Hidroponic Mustard



Picture 6. Mrs. Wiwit sold hydroponic vegetables



Picture 7. Green Spinach, Red Spinach, and Mustard



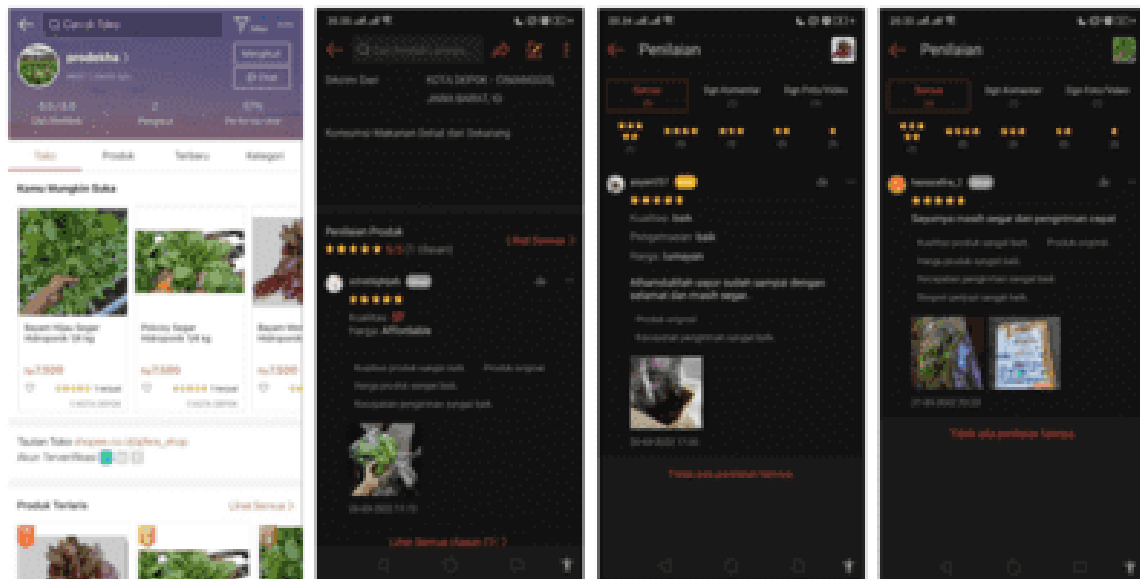
Picture 8. Mrs. Wiwit sold hydroponic vegetables

After purchasing hydroponic veggies from Rumah Kebun Hidroponik Sawangan Depok, we distribute them via e-commerce, a method that Mrs. Wiwit has not yet explored as a hydroponic farmer. Mrs. Wiwit recognized that limitations existed in limited area coverage in establishing Grab Mart as a location for Rumah Kebun Hidroponik Sawangan Depok to conduct cross-regional buying and selling activities. Thus, we hypothesize that the user's e-commerce can realize local hydroponic vegetable branding PRO-DEKHA's.

E-commerce has dominated the global market, and Southeast Asia is no exception. In first place, there is South East Asia Group (SEA Group), the leading e-commerce company in Southeast Asia based on its valuation; SEA Group has won the first rank of start-ups in Southeast Asia. Shopee's e-commerce platform, developers, and others derive from SEA. Additionally, the e-Commerce SEA 2020 study notes that e-commerce performed admirably during the Covid-19 pandemic. When other industries, such as travel and transportation, are being impacted by the spread of Covid-19, which is forcing the world's population to remain at home, e-commerce and social media are proving to be viable solutions to current problems. This affects people's desire to start an online business and their ability to adjust to conducting online transactions [7].

Delivery is a critical component of marketing since it allows for the distribution of products to consumers. In its simplest form, distribution delivers a product to a buyer following a transaction. Distribution can be classified into numerous categories, and the researchers, in this case, employ an indirect distribution method.

The Shopee PRO-DEKHA accounts that we have formed and distributed hydroponic vegetables from Rumah Kebun Hidroponik Sawangan Depok, which have been sold from March 20, 2022, to March 22, 2022, are as follows:



Picture 9. PRO-DEKHA Shopee

In images 1 to 9, PRO-DEKHA has promoted hydroponic veggies on a local level via social media platforms such as Instagram and the PRO-DEKHA website design. Additionally, PRO-DEKHA has distributed hydroponic vegetable sales to various locations throughout Jabodetabek, where several consumers have left product assessment comments. PRO-DEKHA has established a



sales distribution center in the Jabodetabek area. Then, in the future, PRO-DEKHA will aim to implement this initiative throughout Indonesia and possibly throughout the Southeast Asian site. In this example, it is a region that has been digitized and is supported by the same program, Shopee.

## CONCLUSION

Covid-19's spread in Indonesia has had a detrimental effect on MSME actors. The existence of the digital economy has become a viable option for mitigating the impact of COVID-19-related societal limitations. PRO DEKHA has established a program dedicated to distributing hydroponic vegetables, the program's primary objective, as healthy, pesticide-free local crops. Apart from distribution, PRO-DEKHA utilizes social media to connect local farmers, youth, and shoppers throughout JABODETABEK. PRO-DEKHA shares the same objectives as Sustainable Development Goals (SDGs) aim 08, which focuses on sustainable economic growth. Additionally, e-commerce and social media are the most prominent business platforms in the Covid-19 Pandemic era, particularly among the younger generation, who are already digitally educated and contribute to the development of MSMEs in Indonesia. Furthermore, PRO-DEKHA faces one impediment that must be overcome in the future, namely the lack of local branding on the website and social media platforms used to introduce PRO-DEKHA. Likewise, there are still many farmers who are unfamiliar with social media.

## SUGGESTIONS

It is envisaged that the presence of PRO-DEKHA will enable it to operate via the Penta helix collaboration. We may advise hydroponic plants, particularly those located in Rumah Kebun Hidroponik Sawangan, Depok, to enhance their local branding through the website and social media, as we previously did with the Instagram account and PRO-DEKHA social media. This can boost farmers' income in Rumah Kebun Hidroponik Sawangan, Depok, and pique youth interest in the digitalization of Indonesia's Green-Creative economy.

## REFERENCES

- [1] Global Green Growth Institute, "Mewujudkan Pertumbuhan Ekonomi Hijau untuk Indonesia yang Sejahtera," *Glob. Green Growth Inst.*, pp. 1–21, 2015, [Online]. Available: [www.ggp.bappenas.go.id](http://www.ggp.bappenas.go.id)
- [2] M. Syahbudi and S. E. I. MA, *Ekonomi Kreatif Indonesia: Strategi Daya Saing UMKM Industri Kreatif Menuju Go Global (Sebuah Riset Dengan Model Pentahelix)*. Merdeka Kreasi Group, 2021.
- [3] D. Tapscott, "The Digital Economy: Promise and Peril in the Age of Networked Intelligence," 1995.
- [4] BPS Kota, "Berita Resmi Statistik," *Bps.Go.Id*, vol. 19, no. 27, pp. 1–16, 2021.
- [5] M. A. Rizaty, "Jasa Kesehatan dan Kegiatan Sosial, Lapangan Usaha dengan Pertumbuhan Tertinggi pada 2021," *Databooks.katadata.co.id*, p. 2021, 2022, [Online]. Available: <https://databoks.katadata.co.id/datapublish/2022/02/08/jasa-kesehatan-dan-kegiatan-sosial-lapangan-usaha-dengan-pertumbuhan-tertinggi-pada-2021>
- [6] <https://www.pertanian.go.id/home/?show=news&act=view&id=4887> accessed on 4 Maret 2022, "Kementerian Pertanian (KEMENTAN) Republik Indonesia. 2021. Presiden Jokowi: Tingkatkan Konsumsi Buah Lokal, Sejahterakan Petani."
- [7] F. L. P. Irawan, "Startup Sebagai Platform Creative dan Digital Economy. Masyarakat Asean," pp. 29–32, 2021.
- [8] E. F. Lambin and P. Meyfroidt, "Global land use change, economic globalization, and the looming land scarcity," *Proc. Natl. Acad. Sci. U. S. A.*, vol. 108, no. 9, pp. 3465–3472, 2011, doi: 10.1073/pnas.1100480108.
- [9] A. Mulyani, S. Ritung, and I. Las, "Potensi dan ketersediaan sumber daya lahan untuk

- mendukung ketahanan pangan," *J. Litbang Pertan.*, vol. 30, no. 2, pp. 73–80, 2011.
- [10] D. & S. Laksono, *Sexy Killers*, (2019). [Online]. Available: //youtu.be/qlB7vg4I-To
- [11] S. Swastika, A. Yulfida, and Y. Sumitro, "Buku petunjuk teknis budidaya sayuran hidroponik (bertanam tanpa media tanah)," *Riau Balai Pengkaj. Teknol. Pertan. Balitbangtan Riau, Badan Penelit. dan Pengemb. Pertanian, Kementeri. Pertan.*, 2018.
- [12] B. R. Putra *et al.*, "PEMBERDAYAAN MASYARAKAT PESISIR DESA PANTAI HARAPANJAYA, MUARA GEMBONG, BEKASI DENGAN BUDI DAYA HIDROPONIK WICK SYSTEM," in *Prosiding Seminar Nasional Pengabdian Masyarakat LPPM UMJ*, 2021, vol. 1, no. 1.
- [13] E. Mulyati, D. Hamidin, and M. N. Fauzan, "KELAYAKAN TEKNOLOGI IOT UNTUK KEBUN HIDROPONIK HOLTIKULTURA MENGGUNAKAN HYDROPO 4.0 DI PERKEBUNAN ALAM PASUNDAN, JAWA BARAT," *J@ ti Undip J. Tek. Ind.*, vol. 16, no. 2, pp. 109–115.
- [14] G. M. Sjaida, "Strategi Komunikasi Pariwisata Pemerintah Kota Bandung Melalui Program Co-working Space," *Tornare J. Sustain. Res.*, vol. 1, no. 1, pp. 31–41, 2019.