Paving the Way for Inclusive Digitalization in Indonesia: Policy and Governance Perspectives

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Abstract. This study aims to explore the shape of inclusive digital transformation policies within the governance of the Indonesian government during the pre-pandemic and post-pandemic periods of Covid-19. The study employs a qualitative-exploratory method through a survey mapping policy from the perspective of inclusive digital transformation governance during and after the Covid-19 pandemic in Indonesia. The results of this study indicate that the policies restricting public activities during the Covid-19 emergency period had a direct impact on the economic sector in Indonesia. It is evident that there is still a lack of integration of digital policies, including the absence of an interactive system among stakeholders, transparency to assess the effectiveness of the digital economy that has not been comprehensively observed, and the impact of the lack of policy integration. Effective control over the digital economy has yet to be established, and in terms of accountability, there is still no trustworthy big data for evaluating the benefits of the digital economy. Other findings also show a significant shift in Indonesia's economic digitalization, particularly in the era of Society 5.0, where digital marketing strategies offer more promise than conventional concepts in boosting post-Covid-19 economic growth in Indonesia.

Keywords: Inclusive Digitalization, Digital Transformation, ICT Policy.

1   Introduction

Digitalization and demographic change are two major social transformations. They are interrelated and will significantly shape the future and potentially benefit society in the 21st century (Wanka, A. et al., 2023). Digital technology penetrates all aspects of life. This is not limited to the younger generation but also applies to older people (Wanka, A. et al., 2023). As a result, being able to access, use, and critically reflect on the process of digitization is a crucial factor in today's knowledge society, based on conceptual

approaches from several disciplines. Even though the new aging population is increasingly digitized, research is still coming to the conclusion that the digital divide between age groups persists and continues to intersect with gender and other categories of difference (Wanka, A. et al., 2023; Nguyen, H., 2023).

The uptake of digital technologies in the context of an aging population is a widely researched and widely discussed topic (Wanka, A. et al., 2023; Nguyen, H., 2023). Most research focuses on the positive potential of digitalization and highlights the anticipated outcomes of digital inclusion, for example, improvements in physical and mental health and cognitive functioning, mobility, social connectedness, safety, everyday leisure activities, also for the elderly with mobility restrictions, disabilities or dementia, living in a nursing home or in the community. Conversely, digital exclusion can negatively impact various areas of life and can result in limited access to information, social connections, and various online services from banking to shopping and healthcare, which provide especially sensitive areas of exclusion for older adults. More recently, the Covid-19 pandemic has demonstrated how social engagement and non-participation in the digital world can result in a dual danger of social exclusion, especially during times of physical distancing (Wanka, A. et al., 2023; Nguyen, H., 2023). Digital Transformation takes the idea of digitization to a whole new level, making collaboration and connectivity agnostic, opening up new business models, and enabling ecosystem growth (Vrana, J., & Singh, R., 2021).

Digital transformation efforts in Indonesia were strengthened during the Covid-19 pandemic due to the unprecedented impact of the pandemic. A series of policies related to the Covid-19 pandemic have been introduced at the national and regional levels. The purpose of this policy is to mitigate these problems, including the Large-Scale Social Restrictions policy which requires a digital public service model. As a consequence, the Indonesian government is forced to adapt to more digital technology and develop digital public services. In terms of digital transformation, the Covid-19 pandemic has made progress in e-government possible, but uneven access to internet services has made the issue of digital inequality one of the most prominent development issues (APJII, 2023).

Data shows that internet penetration in Indonesia has increased significantly from 64.80% in 2018 to 77.02% in 2022 (APJII, 2023). This means that 22.08% of Indonesians living in rural and remote areas, including indigenous peoples, remain cut off and unable to access public services. Among them, the construction of the Palapa Ring Sky toll road project (2016-2019) succeeded in connecting almost all cities and regencies in Indonesia. This article discusses the role of the Indonesian government in overcoming the problem of the digital divide. To what extent can this policy overcome the digital divide during the post-pandemic era? This article also highlights some notes from the School of Internet Community (SCN) which was initiated and implemented by the Common Room Network Foundation in 11 provinces in Indonesia as an alternative model for building inclusive digital transformation and ensuring meaningful connectivity for those living in rural, remote areas. and disadvantaged and vulnerable community groups (APJII, 2023).

According to Moodie, J. et al. (2017) and Wanka, A. et al. (2023) inclusive digitalization is an important instrument for driving regional growth and development. This

brief report highlights the potential benefits that digitalization can bring as well as the challenges faced in implementing an effective digital agenda. This short report also provides key recommendations that identify possible initiatives and policies that can assist during and post Covid-19 social-economic recovery and achieve successful digital transformation.

This research focuses on how inclusive digitalization is an important instrument for driving regional growth and development during and after the Covid-19 pandemic in Indonesia. This research contributes to references and insights in encouraging benefits to avoid things that pose a threat to Indonesia's economic sovereignty.

2   Methods

This research is qualitative research that utilizes library research using books and other literature as the main object. The type of research used is qualitative, namely research that produces information in the form of notes and descriptive-analytic data contained in the documents, text, images, and also audio & video under study. Public policies in the development and service sectors are one of the important factors that play a role in national progress in Indonesia. Policies can produce optimal benefits if implemented properly, namely by considering and fulfilling the various factors that affect the implementation process. According to Prakoso (2016), these factors consist of Integrative, Interactive, Transparency, Controlling, and Accountability (IITCA) factors. The analysis technique in this study is interactive analysis (Miles, et al., 2018) where the data owned is analyzed through data collation, data reduction, data verification, data display, and drawing conclusions.
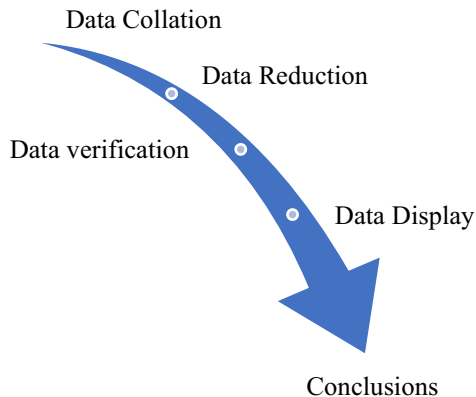
Data Collation

Data Reduction

Data verification

Data Display

Conclusions

Fig. 1. The steps of research data analysis

(Source: Processed from qualitative data analysis Miles et al. (2018), 2023)

3   Results And Discussion

3.1   Digitalization, Covid-19 Pandemic & Challenges in Indonesia

Digital transformation is also the conversion of analog information into digital form. Digitization is technically explained as the representation of signals, sound images, and objects by generating a series of numbers, expressed as discrete values. This means that the majority of sectors and industries in the banking and financial media, including telecommunications, have been affected by digital transformation. In doing so, this process has made possible many phenomena known as the Internet of Things, the Internet industry, and big data. Digitalization is basically the use of information technology in order to enable and take advantage of digital technology and data. Today digitalization is associated with a holistic view of business and social change, horizontal organization, and the development of business and information technology.

The digital transformation that has taken place so far has also penetrated the social and economic scene, which has indirectly influenced contemporary culture. This culture that was born from new habits and adaptation to digitalization certainly influences all sectors of life, including digital business. In other words, digital culture is the unification of cyberspace with culture. This can be traced by seeing the increase in people's habits in shopping online during the Covid-19 pandemic (Arianto, B., 2021).

Various new phenomena that occurred during the Covid-19 pandemic finally had a major influence on the formation of changes in behavior, governance, policies, institutions, and development models in Indonesia (Putera, P. B., et al. 2022). In this context, digital culture during the Covid-19 pandemic is where the Covid-19 pandemic has encouraged individuals or institutions to produce digital-based thoughts, creations, and human works (Arianto, B., 2021). That is, the digital space has gradually influenced every human being and institution in using communication and interacting. So that the digital world will become a new reality that must be explored in depth and dynamically by the public. This means that the public is currently moving towards digital life, which of course has many negative impacts (Harini, S., et al., 2022).

Digitalization has become a part of people's lives around the world. Mobile phone connections outnumber the world's population of 8 billion. Internet users are more than 5 billion and social media users are almost 5 billion (Ganie-Rochman, M., 2023). In Indonesia, the same pattern occurs. Namely, there are around 354 million cell phones, 213 internet users, and 167 million social media users out of a population of around 275 million (WeAreSocial, 2023). Digital technology and in its advanced form, artificial intelligence (AI), have many positive impacts, such as better and wider management, broad exchange of ideas that generate more innovation, facilitate collaboration, more precise predictions and targeting, and many more (Ganie-Rochman, M., 2023). On the other hand, there have been various negative impacts that have become a problem after the Covid-19 pandemic in the digitalization era in Indonesia (shown in Figure 2).
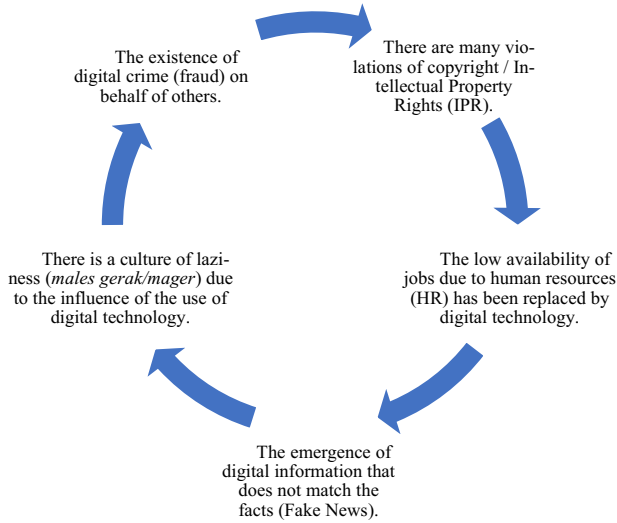
The existence of digital crime (fraud) on behalf of others.

There are many violations of copyright / Intellectual Property Rights (IPR).

There is a culture of laziness (*males gerak/mager*) due to the influence of the use of digital technology.

The low availability of jobs due to human resources (HR) has been replaced by digital technology.

The emergence of digital information that does not match the facts (Fake News).

Fig. 2. Problems of the post-Covid-19 digitalization era in Indonesia

(Source: Processed from various sources, 2023)

Furthermore, the Covid-19 pandemic has made people dependent on social media in their daily lives. Because people can no longer be separated from the use of social media. In other words, Indonesian society is already in the era of Society 5.0 (Satria, A. B. A., 2021; Kusumawardani, A. S., & Basir, Y. G.). Thus, digital culture is also created as a result of the widespread use of social media, in line with the increasingly widespread penetration of internet networks to various outer regions of Indonesia. With this, the role of social media has a major influence on the institutionalization of digital culture. That way, it can be said that the Covid-19 Pandemic is one of the stimuli for fundamental changes in social life from a cultural aspect. Nevertheless, the cultural changes that occurred during the Covid-19 pandemic have carried over to the post-pandemic era which has made it difficult for people to separate themselves from digital culture.

Even so, these various adverse impacts are more due to the lack of understanding of digital literacy by the public. This means that in facing the rapid changes in digital culture, various programs to strengthen digital culture are still needed. One of them is through digital literacy. This is intended so that the public can immediately adapt to digital culture so that they can map the positive and negative sides of everyday life. Thus, it is currently necessary to strengthen digital literacy knowledge more comprehensively. Starting from a culture of reading and critical thinking from various perspectives to digital security.

Several phenomena that occurred in society during the Covid-19 pandemic seemed to have determined the occurrence of a cultural revolution that had changed the shape of local society into a global society. This is illustrated in several previous studies which

have elaborated that technological advances have an effect on human life patterns from a socio-cultural perspective (Ngafifi, 2014). However, the impact of the Covid-19 pandemic has also widened the digital divide, social stigma, and information crisis in Bangladesh. However, not all observers agree that the Covid-19 pandemic has accelerated digital transformation. Because there are those who consider that the Covid-19 pandemic is only seen as encouraging remote work systems, using video conferencing, and increasing network capacity. Therefore, it is not yet categorized as a digital transformation process.

3.2   Inclusive Digital Transformation in Indonesia: Policy and Governance Perspectives

It should be noted that at first, the term digitization was developed as a numerical system that continued to become a computer electromechanical system. In the development process, computer technology emerged which was introduced by John Atanasoff in 1939. Meanwhile, in 1950, computer technology emerged which pushed the digitization process even faster. One example of the development of digitization is marked by the emergence of computers, known as World Wide Web (www) technology. The borderless network provided by the World Wide Web has penetrated the boundaries of the scope, dimensions, scale, speed, and effects of digitalization in the world. This has also resulted in a rapid increase in the process of social transformation.

In addition, the Covid-19 pandemic in Indonesia has encouraged technology penetration which does not stop at social media but also penetrates various other daily activities. This includes the education sector which is experiencing the transition to a digital learning model. Meanwhile, in the political field, digital transformation has increased public participation in politics. In governance, the Covid-19 pandemic has created changes in the bureaucratic system in various central to regional government institutions. So that many government agencies have then switched to the digital bureaucratic model to improve public services. Here are seven (7) goals of digital transformation in Indonesia as shown in Figure 3.
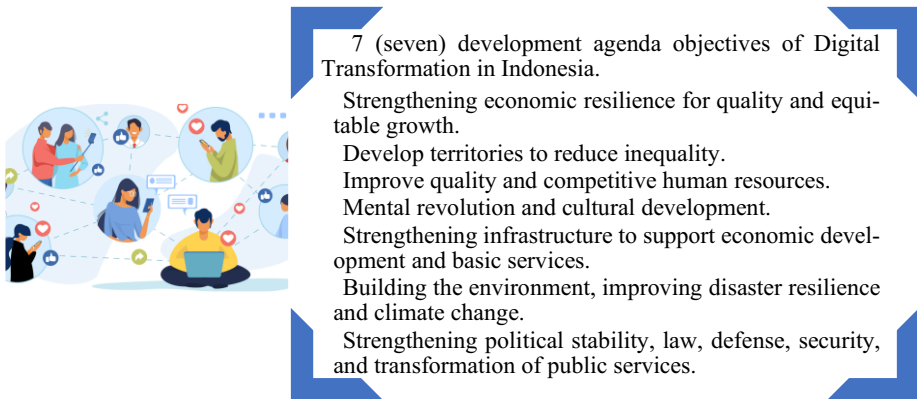
7 (seven) development agenda objectives of Digital Transformation in Indonesia.

Strengthening economic resilience for quality and equitable growth.

Develop territories to reduce inequality.

Improve quality and competitive human resources.

Mental revolution and cultural development.

Strengthening infrastructure to support economic development and basic services.

Building the environment, improving disaster resilience and climate change.

Strengthening political stability, law, defense, security, and transformation of public services.

Fig. 3. Seven (7) Development Agenda Goals in Digital Transformation in Indonesia

(Source: Processed from various sources, processed from various sources, 2023)

Of course, the goal is to increase development and adaptive capabilities to threats in the development of technology & information in the world (Noble, G., 2023). Indonesia has potential and can be a good model for inclusive digital transformation. The reason is, in 2019, the population with access to the internet has reached 180 million people (67%), active internet users are 150 million people (56%), online service users are 105 million people (39%), and 32% of the population are Gen Y (20-39 years), who are the fastest to adopt new technology. Then for cellular signal coverage (in residential areas), it can be broken down as follows 2G at 99.16%; 3G at 96.34%; and 4G at 97.51%. "For 4G alone, 87.4% have entered villages, then sub-districts 86.7%, and districts/cities 94.1%" (Kominfo, 2020). Currently, the internet has a real contribution to politics, policy, and government, such as contributing to the development of social networks and how to bind people to understand political and governmental issues. Including by protesting digitally. Changes in public lifestyle can also be seen in matters of religious studies which are starting to be mostly digital based. The public can take advantage of digital-based recitation models through the social media platforms YouTube and Zoom (Arianto, B., 2021; Bangsawan, G., 2023).

In fact, what's interesting is that on the Facebook homepage, there are many epistemological study groups that are held that aim to elaborate on contemporary phenomena. With this, the presence of this online discussion space can encourage netizens to be able to more actively participate in expressing their opinions scientifically (Arianto, B., 2021; Bangsawan, G., 2023). Even so, the drawback of the online discussion ecosystem is that there are still frequent discussion threads that prioritize debate and bullying between netizens, not contesting ideas. Even in the contestation of ideas, it is not uncommon for netizens to be reactive, by commenting and expressing opinions based only on

article titles or online media news (Arianto, B., 2021; Bangsawan, G., 2023). Nevertheless, this reactive attitude arises because the majority of the public is still quicker to believe information originating from sites that do not heed the rules of journalism. The challenges of the digitalization era in Indonesia with the rise of various digital fraud modes, such as in the name of surveys to obtain personal data, and selling products at discounted prices through unofficial e-commerce websites are important in designing inclusive digital transformation in Indonesia (Prianto, A. L. et al., 2021; Prianto. A. L. et al., 2022; Malik, I. et al., 2023). Following are some of the policy directions and strategies of the Indonesian government to encourage digital transformation in Indonesia as shown in Table 1.

Table 1. Policy and Strategic Direction in Digital Transformation in Indonesia

No	Policy Direction	Strategy
1	Completing the Provision of Fast and Good Quality Internet in Unserved Villages Including Public Service Locations.	1. Accelerate the completion of the provision of fast and good quality internet in areas that are economically unfit for operators, including in public services; 2. Accelerate the digitalization of broadcasting (analog switch off), to reduce the digital divide; and 3. Frequency refarming to meet the needs of the next broadband (5G) implementation.
2	Encouraging the Application of Forward-Oriented Technology.	1. Arrange frequency allocation to meet the needs of the next broadband (5G) implementation; 2. Develop and implement national 5G technology; and 3. Provision of content control technology on the internet for a clean and secure internet.
3	Develop Digital Talent HR and Digital Economy Ecosystem.	1. Accelerating digital talent HR competencies and increasing digital literacy in society; and 2. Accelerating digital transformation in economic and business sectors.
4	National Data Center Integration and Government Digital Transformation.	1. Accelerating the construction and utilization of National Data Centers into One Data Indonesia; and 2. Support the acceleration of the implementation of the Electronic-Based Government System (SPBE).
5	Accelerating the Completion of Primary Legislation.	Encourage the completion of ICT-related policies and regulations, whether laws, presidential decrees, or ministerial regulations, and improve coordination with relevant stakeholders.
6	Orchestrating Public Communication Involving Central and Regional Governments.	1. Build effective and organized public communication management; and 2. Build a solid and responsive team in countering hoaxes and disseminating government policies.
7	Improving the Quality of Internal Management Services	Encouraging innovation in internal management, including the application of smart services, and budget planning innovations.

Source: Processed Strategic Plan of the Ministry of Communication & Informatics 2020-2024

The policy directions and strategies regarding the implementation of digital transformation in Indonesia are directed at recovering the national economy affected by the Cocid-19 pandemic. The things that are most highlighted are encouraging community participation, preparing digital ecosystems to accelerate digital talent HR competencies as well as preparing work programs that support Indonesia's digital transformation (Kominfo, 2021). According to Johnny G. Plate (Kominfo, 2021), the main principles of digital development are connecting the unconnected, independence, and digital sovereignty. This means that the principle of inclusiveness is encouraged in the development of digital ecosystems in Indonesia.

Digital Transformation so that it is more inclusive was compiled by the government against the backdrop of the Covid-19 pandemic situation which gave birth to a new "contactless" habit during Large-Scale Social Restrictions (PSBB) (Kominfo, 2020; Prianto, A. L. et al., 2021). Contactless behavior, which is expected to continue to increase after the PSBB, is certainly an additional momentum and capital for accelerating Digital Transformation in Indonesia (Kominfo, 2020). This was done because in the era of Society 5.0 digital utilization has become a necessity (Kominfo, 2020). During the Covid-19 Pandemic in Indonesia, digital infrastructure and services are expected to encourage inclusivity and have become the backbone for various productive activities carried out by the community, the business world, and the Government, such as working or studying from home. The digital sector, especially e-commerce, has been one of the economic drivers during the Covid-19 Pandemic to the post-pandemic era, which has driven the growth of MSMEs in Indonesia. For example, by facilitating the absorption of products from the most affected sectors, such as agriculture and MSMEs, as well as encouraging the logistics sector. Data analysis or Big Data also helps the Government to understand the spread of Covid-19, community behavior/response, and the effectiveness of the implementation of PSBB policies which are used as a basis for preparing more appropriate and faster interventions (Kominfo, 2020; Prianto. A. L. et al., 2022).

Therefore, it needs to be underlined that the inclusive digital ecosystem in Indonesia today, until after the Covid-19 pandemic, is still growing and requires the support of digital talent/digital-skilled workers and the government. Opportunities for developing local applications are still widely open considering that currently the most widely used applications come from abroad. Then, data security and personal data protection is a must. In the midst of the rapid flow of information, the ability to select and sort information is also important to improve people's digital literacy skills (Prianto. A. L. et al., 2022; Malik, I. et al., 2023). In addition, collaboration between the government, the business world, and the community is the key to managing impacts and accelerating the handling of the Covid-19 pandemic (Prianto. A. L. et al., 2022; Malik, I. et al., 2023). Digital Transformation is not just moving offline to online or paper-based to computer-based. For this reason, it is necessary to adjust the mindset and strategy as well as the consistency of implementation from various stakeholders.

3.3   Urgency and Research Implications

Digital transformation during the Covid-19 pandemic is getting stronger along with the important role of information technology in strengthening all the daily activities of people in Indonesia. Digital transformation is a change related to the application of digital technology in all aspects of people's lives. Digital transformation includes use and capabilities in terms of informing digital awareness to the public. The stages in digital transformation are the stages of using digital processes that enable innovation and creativity in one particular digital product. Even so, digital transformation is not only part of the process of change that has occurred, but digital transformation also supports traditional methods that have existed so far. In other words, digital transformation has produced concepts and influenced effectiveness which is certainly useful in all aspects of people's lives.

Therefore, the urgency in inclusive digital transformation needs to be strengthened as a whole by the effects of digitalization in an important part of life. Digitalization has enabled processes that encourage stronger opportunities to transform and change and create many new models, be it from social, economic, legal, policy-making structures, organizational patterns, or culture. Digital transformation effect accelerates global changes in society. So that the implications for inclusive digital transformation in Indonesia have given rise to many new challenges and opportunities. That is, an organization and business unit must be able to compete quickly against competitors who take advantage of low barriers to provide new technology.

During the Covid-19 pandemic, the digitalization process was increasingly visible from the increasingly widespread and increasing use of the Internet both by government institutions and the public. This increase continues to increase, especially in the business sector, governance, policy, and development in Indonesia. The public has started to understand that the use of the Internet is very important. Meanwhile, in the economic context, the use of information technology is increasingly felt by business actors as a form of effort to increase economic opportunities. With the use of information technology, many people create innovations that can contribute to the future. That way, it becomes easier for people to get business information services. Thus, creating a culture that is more modern and structured. Thus, in general, digital transformation has been able to increase the acceleration of community development opportunities, business development, activity efficiency, and various social issues.

4   Conclusion

The Covid-19 pandemic in Indonesia helped strengthen cultural change at the community level which then created an inclusive digital transformation in Indonesia, although this change was also followed by various adverse impacts. However, this change is a necessity in the era of Society 5.0, which means that now the world community, including Indonesia, is living in a digital world. In this context, digital life as a phenomenon in the Society 5.0 era is the result of digital-based human thought and creations. Nevertheless, the emergence of digital culture has had positive impacts such as the development of digital economic ecosystems and the strengthening of digital citizenship

communications. Meanwhile, the negative impact can be seen from lifestyle changes due to high dependence on social media. Based on this phenomenon, the urgency of the inclusive digital transformation development agenda in Indonesia needs to be strengthened as a whole as part of the effects of digitalization as an important part of life. Digitalization has enabled processes that encourage stronger opportunities to transform and change, as well as create many new models, be it social, economic, legal, policymaking, organizational patterns, or culture. Digital transformation effects accelerate global changes in society. Thus, the implications for inclusive digital transformation in Indonesia have given rise to many new challenges and opportunities. That is, an organization and business unit must be able to compete quickly against competitors who take advantage of low barriers to provide new technology.

The limitation of this research is that it only uses a literature study approach in elaborating research topics. Thus, future researchers are advised to study the topic of inclusive digital transformation in Indonesia with more comprehensive sources so they can get deeper updates.

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