AAPA-EROPA-AGPA-IAPA International Conference 2024
Towards World Class Bureaucracy
ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1228

Trajectory of Digital Transformation Policy in Indonesia from 2003 to 2024: Analysis of Trends and Policy Contents

Laura Angelica[1], Nayla Andiny Soenarto[2], Nabila Salsabila[3]

[1, 2, 3]Faculty of Social and Political Sciences, Universitas Padjadjaran, Indonesia.
(email: laura22002@mail.unpad.ac.id)

Abstract

Digital transformation is a necessity that requires all sectors, including the bureaucracy, to develop systems and service models that have an impact on society. In fact, the application of information technology, which is the seed of e-government, is not new in Indonesia, Presidential Instruction Number 3 of 2003 being the first step in the application of digital technology in a government system that continues to evolve. This study aims to identify the development of digital transformation policy trends over the past two decades (2003 to 2024) and analyze policy content to map topics to see the extent to which government policies on digitalization have supported digital transformation. The research method used is qualitative by analyzing policy content. The dataset obtained for this research analysis was 93 policies from four Legal Documentation and Information Network (JDIH) sites with the final result of filtering 38 policy documents which were then analyzed using QSR Nvivo 12 Pro software. The findings explain that digital transformation policies in Indonesia have experienced fluctuating developments. Although fluctuating, the development of the policies set reflects the government's efforts to play an adaptive role in responding to demands in the digital era. Then, the results of the policy content analysis show diverse, but interrelated policy topics in creating a digital ecosystem towards digital transformation efforts.

Keywords:

digital transformation; policy development; content analysis; QSR Nvivo

Introduction

Digital technology continues to transform without being noticed, these changes occur very quickly and are difficult to avoid or even stop (Andita & Rafaela, 2023). These days, digital technology has been used in various sectors of society, not only in fields related to Information Technology or Information Systems, but also slowly entering the field of government (Sulistya et al., 2019). Digital transformation moved to create a cleaner, more effective and accountable government in line with the vision, mission, and direction of the president to realize a world-class bureaucracy contained in the Ministry of Administrative Reform and Bureaucratic Reform Road Map 2020-2024.

Digital transformation in the government sector changes processes that were previously analog to be integrated with information and communication technology (ICT) through e-Government policies. The initiation of the use of e-Government was initiated through Presidential

ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1228

Instruction Number 3 of 2003 concerning National Policy and Strategy for e-Government Development which was the first milestone in the use of digital transformation in the government sector in Indonesia. Until now, Indonesia has used Electronic-Based Government Systems (EBS) in operational activities in various government agencies to improve efficiency, effectiveness, and transparency.

Information and communication technology then changes the face of government through four main paradigms, namely analog government, e-Government, Digital Government, and GovTech. Analogue government is characterized by the government acting as a single service provider with one-way communication. The procedures applied are manual and tend to be closed. With the development of e- Government, the use of technology in government operations began to be implemented, but the e-Government approach still tends to be passive and focused on providing services deemed appropriate by the government, not based on the specific needs of the community. In its development, e-Government went through several stages starting from e-Government 1.0 to e-Government 4.0. e-government 1.0 occurred in the late 1990s to early 2000s, which was marked by the initial application of World Wide Web technology in the public sector which aimed to create effective and efficient government operations (Liva & Codagnone, 2020). In e-government 2.0, the government utilizes Web 2.0 collaborative technologies to create an open-source platform where the government conducts two-way interactions between the government and the public such as providing open data, web services, and platforms as infrastructure to increase participation, collaboration, and transparency (Shulman et al., 2010). e-government 3.0 is characterized by the use of open data innovation, big data, administrative and business process management, Internet Of Things (IoT) and blockchain. In this phase, services can be accessed using mobile internet smartphones (Cho, 2017). In the e- government 4.0 stage, government is fully transformed and people-centered and creates personalized, interactive, and easily accessible relationships and exchanges (Liva & Codagnone, 2020).

Over time, Digital Government emerged with a more interactive and data-driven approach. With government procedures designed in digital form from the beginning, it increases the possibility for collaboration between the public and the government through the concept of Government as a Platform. The development of Digital Government moves into GovTech, where the government fully focuses on public services to meet the needs of the community with a system that is more effective, efficient, transparent, and provides easy access for all levels of society.

Based on the above, a digital transformation policy trajectory analysis study of national policies is needed, which can allow us to identify policy trends over the past two decades (2003-2024) and understand the Indonesian government's policy strategies issued in supporting digital

ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1228

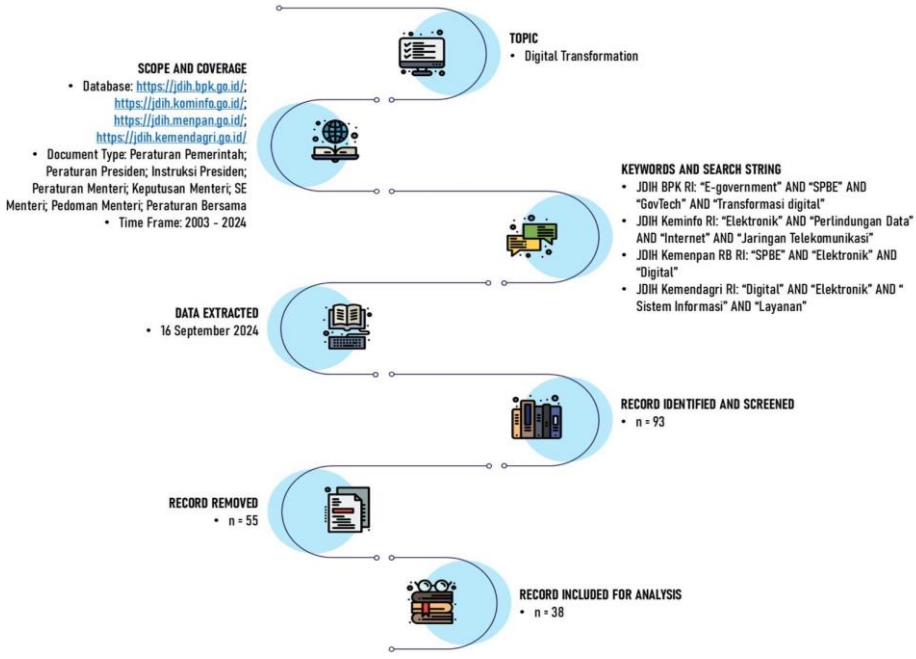
transformation. This study aims to look at the policy trends of digital transformation in Indonesia over the past 20 years and analyze the extent to which the policies issued by the government over the past 20 years have supported digital transformation in Indonesia. This research consists of four parts. The first section contains an introduction that explains the conceptual and contextual phenomena discussed. The second section describes the methods and other information used in obtaining the data. The third section presents the research findings. The fourth section contains discussions, implications, limitations, and future research directions based on the findings.

Methods

To understand more deeply the development of regulations and policies governing digital transformation in Indonesia, this research uses a national policy trajectory analysis approach. Trajectory analysis helps in understanding patterns of policy change, studying how policies develop vertically and horizontally, focusing on the direction and path of policy change so as to provide an understanding of how policies change over time and their impact on existing government structures (Helland & Hampson, 2009). The choice of analysis on policy is because policy is a series of cycles in a process that reflects past, present and future situations. Therefore, analysis of policy documents can be seen as an attempt to capture important moments in the policy process with the aim of identifying changes or the influence of power (Barlette, 2020).

Figure 1.

Data Collection Process



ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1228

The policy documents analyzed in this study were sourced from government websites, namely the National Legal Documentation and Information Network (JDIH) through https://jdih.bpk.go.id/, the Legal Documentation and Information Network (JDIH) of the Ministry of Communication and Information https://jdih.kominfo.go.id/, the Legal Documentation and Information Network (JDIH) of the Ministry of PANRB https://jdih.menpan.go.id/, and the Legal Documentation and Information Network (JDIH) of the Ministry of Home Affairs https://jdih.kemendagri.go.id/. The selection of JDIH BPK RI because it contains digital transformation policies issued by the central government, as well as JDIH Kominfo, JDIH Ministry of PANRB, and Kemendagri because the three ministries regulate digital transformation policies in the realm of the public sector and bureaucracy. Then, the author creates keywords as a search tool to identify policies related to digital transformation.

The search resulted in 93 policy documents spanning the years 2003 to 2024. Then, relevant documents were filtered by reading the contents, resulting in 38 policy documents. Furthermore, policy documents were analyzed based on the time span and type or form of policy documents. By looking at policy trends in terms of time span, researchers can see the frequency of policies within a certain period of time. Then, content analysis is a method used to understand and interpret content by identifying emerging themes or patterns (Hsieh & Shannon, 2005). Content analysis was chosen because it can help researchers to systematically manage and classify large amounts of unstructured data (Nelson & Woods, 2013). Content analysis was conducted by mapping the policy topics using QSR Nvivo 12 software. Coding was done by assigning 'codes' and 'nodes,' which allowed the policy topics to be read automatically by the software. Finally, the coding results were visualized and a presentation of the findings was made.

Result and Discussion

Policy Trends and Policy Forms of Digital Transformation in Indonesia

Over the past two decades, from 2003 to 2024, Indonesia has had 38 digital transformation policies. Policy data was collected starting in 2003 because in this year the government issued Presidential Instruction Number 3 of 2003 which regulates the National Policy and Strategy for E-Government Development. This Presidential Instruction marked the first step in an effort to implement digital technology in the government system in order to improve the quality of public services more effectively and efficiently. Based on **Figure 1**, it can be seen that the digital transformation policy issued by the government has fluctuated. In fact, in the range of 2004 to 2006 and 2008, and 2012 there was no digital transformation policy issued

ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1228

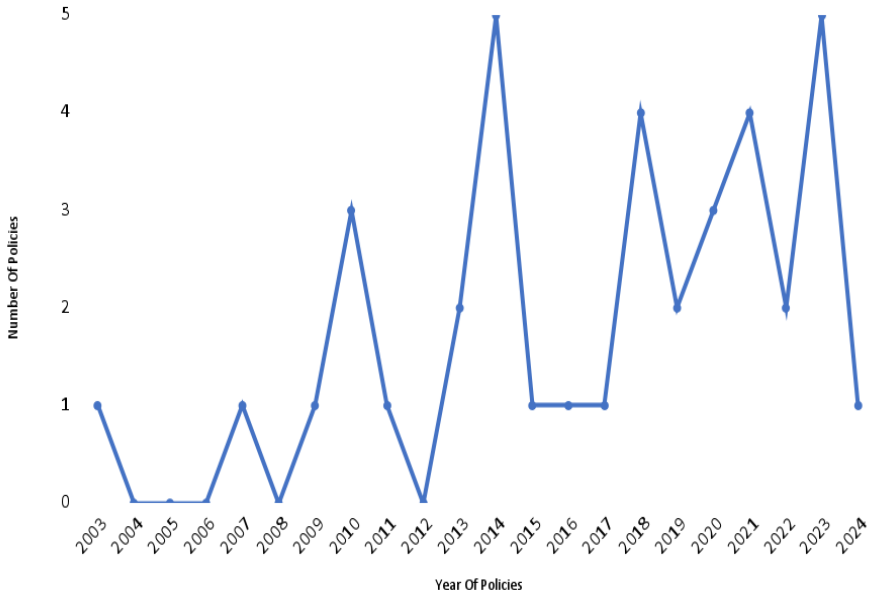
by the government. This was due to the leadership transition that occurred in 2004. The transition of leadership from President Megawati Soekarno Putri to Susilo Bambang Yudhoyono affected policy priorities, including digital transformation policies. During the reign. Susilo Bambang Yudhoyono's policy priority agenda includes realizing a safe and peaceful Indonesia, and realizing a just and democratic Indonesia, as well as improving people's welfare. In addition, the readiness of digital infrastructure also affected the policy vacuum issued by the government. In those years, the development of Indonesia's technology and informatics infrastructure was still at an early stage, so the government faced obstacles in implementing digital policies as a whole because the digital infrastructure was still inadequate (Kominfo, 2020).

From 2003 to 2024, the highest policy trends occurred in 2014 and 2023 with 5 policies produced in those years. The increase in the trend was partly due to the leadership transition that occurred in 2014. At that time, Jokowi had a vision of "Nawacita" which included the priority of infrastructure development (Soleman and

Noer, 2017), followed by 2010, 2018 and 2021 with 4 policies; 2020 with 3 policies; and 2013 and 2019 with 2 policies. Meanwhile, in 2003, 2007, 2009, 2011, 2015, 2016, 2017 and 2023 the digital transformation policy produced only 1 policy and the rest of the period 2004 to 2006, 2008 and 2012 no digital transformation policy was produced.

Figure 2.

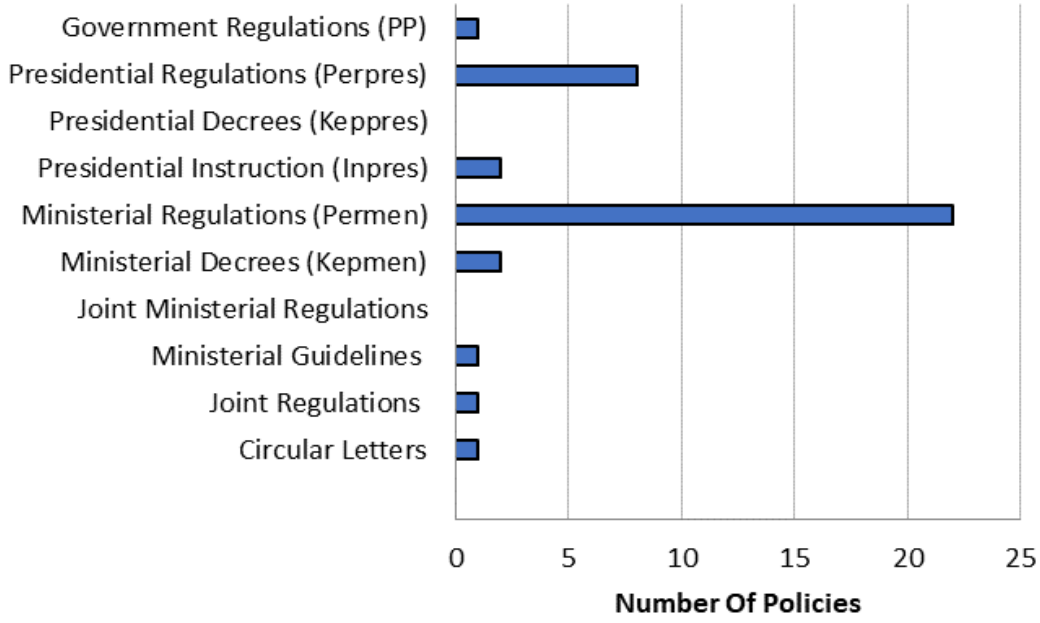
Trends in Digital Transformation Policy in Indonesia



ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1228

Figure 3.

Forms of Digital Transformation Policy in Indonesia



Between 2003 and 2024, there are various forms of policies issued by the government, ranging from Government Regulations (PP), Presidential Regulations (Perpres), Presidential Decrees (Keppres), Presidential Instruction (Inpres), Ministerial Regulations (Permen), Ministerial Decrees (Kepmen), Joint Ministerial Regulations, Ministerial Guidelines, Joint Regulations, to Circular Letters (See **Figure 2**). Of the many forms of policy, Ministerial Regulations are the most frequently seen form of policy, namely 22 policies. The Ministerial Regulations are issued by the ministers responsible for domestic affairs, state apparatus and bureaucratic reform, and communication and information. Then followed by Perpres with 8 policies; Kepmen with 2 policies; Inpres has 2 policies; PP, Ministerial Guidelines, and Joint Regulations and Circular Letters with 1 policy; Kepmen and Joint Ministerial Regulations do not produce policies.

Content Analysis of Digital Transformation Policy in Indonesia

1. Central Level Digital Transformation Policy in Indonesia Through JDIH BPK RI

JDIH BPK is one part of the National Legal Documentation and Information Network (National JDIH) that provides complete, accurate, easy, and fast legal information within the BPK and can be accessed by internal BPK users and the public.

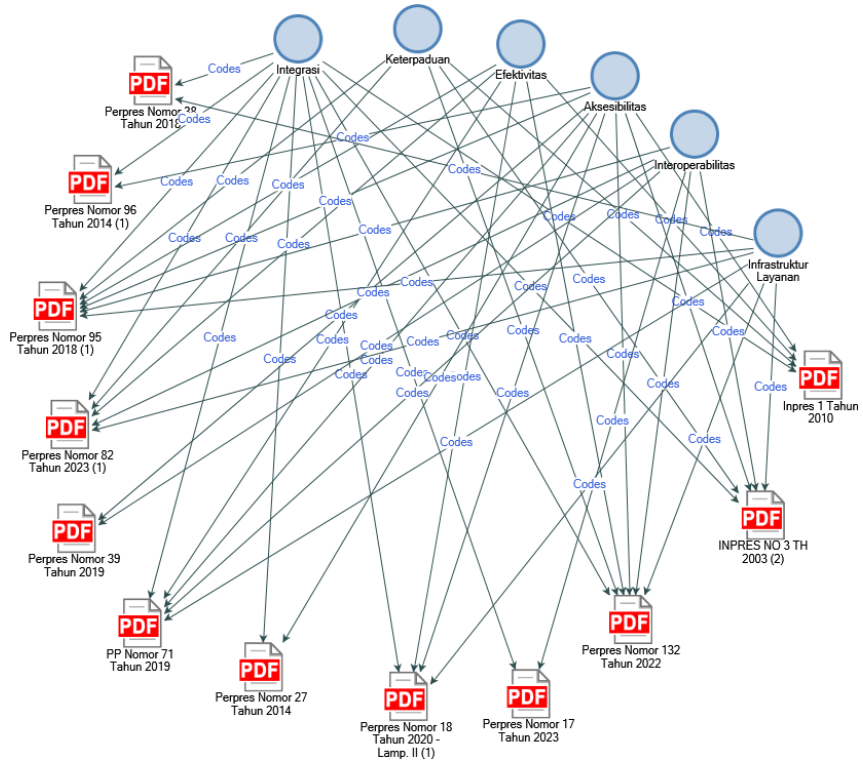
Various topics were found in 12 policies from the Legal Documentation and Information Network (JDIH) of BPK RI regarding digital transformation in Indonesia. This can be seen in

ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1228

Figure 4. through topic mapping processed using QSR NVivo 12. First, the topic of Integrity is listed in 5 policies, namely Presidential Regulation Number 82 of 2023, Presidential Regulation Number 95 of 2018, Presidential Instruction Number 3 of 2003, Presidential Instruction Number 132 of 2022, and Presidential Instruction Number 1 of 2010.

Figure 4.

Topic Mapping of JDIH BPK RI



Based on policy findings, in order to accelerate digital transformation efforts, the government needs to integrate national digital services. This integration is a target at the end of 2025 to accelerate integrated SPBE both within and between Central Agencies and Local Governments. The second topic is Effectiveness, contained in 6 policies, namely Presidential Instruction 1 Year 2010, Presidential Regulation Number 95 Year 2018, Government Regulation Number 71 Year 2019, Presidential Regulation Number 18 Year 2020, Presidential Regulation Number 132 Year 2022, and Presidential Regulation 82 Year 2023. Effectiveness here is the optimization of resource utilization and effectiveness in governance, both central and regional agencies. Third, the topic of Service Infrastructure is contained in 7 policies. The policies are Presidential Regulation Number 82 of 2023, Presidential Regulation Number 95 of 2018, Presidential Regulation Number 17 of 2019, Presidential Regulation Number 132 of 2022, Presidential Regulation Number 18 of 2020, Presidential Regulation Number 38 of 2018, and Presidential Instruction Number 3 of 2003. Service infrastructure concerns all components,

ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1228

including hardware, software, and key supporting facilities needed to run systems, applications, data communications, data processing and storage, integration devices, and electronic devices to support digital transformation.

Digital transformation in the public sector also needs to pay attention to aspects of integration, interoperability, and accessibility in providing services (Barbu & Barbu, 2024). Interoperability is one aspect of the success of public organizations in achieving digital transformation (Margariti et al., 2022). The topic of integration is the most common topic found in 11 policies. Presidential Instruction 1 Year 2010 contains system integration. Presidential Instruction Number 3 of 2003 contains the integration of management systems and work processes in agencies. Presidential Regulation Number 18 of 2020 explains that integrated technology can analyze Big Data from various available data sources. Presidential Regulation Number 27 of 2014 explains the National Geospatial Information Network (IGN) as an integrated management implementation system. Presidential Regulation Number 96 of 2014 discusses the development of integrated national broadband needs synchronization, synergy, and coordination across sectors. Government Regulation No. 71/2019 explains the form of Integrated Business licensing through *Online Single Submission.* Presidential Regulation Number 132 of 2022 discusses integrating government services and integrating business processes, data and information. Presidential Regulation Number 17 of 2023 regarding the integration of electronic procurement systems and their supporting systems. Finally, Perpres Number 82 of 2023 clearly regulates that the implementation of Priority SPBE Applications prioritizes integration.

The topic of interoperability is found in 7 policies, namely Presidential Instruction Number 3 of 2003, Government Regulation Number 71 of 2019, Presidential Regulation Number 95 of 2018, Presidential Regulation Number 39 of 2019, Presidential Regulation Number 132 of 2022, Presidential Regulation Number 17 of 2023, and Presidential Regulation Number 82 of 2023.Interoperability is needed for data sharing between electronic systems that interact and work in an integrated manner. The framework of the Electronic-Based Government System (SPBE) must have interoperability, so Priority SPBE Applications need to prioritize data and information interoperability. Then, providing quality access to government services throughout the region is an aspect that also needs to be considered. The topic of accessibility is contained in 9 policies, namely Presidential Instruction Number 3 of 2003, Presidential Instruction Number 1 of 2010, Government Regulation Number 71 of 2019, Presidential Regulation Number 27 of 2014, Presidential Regulation Number 96 of 2014, Presidential Regulation Number 39 of 2019, Presidential Regulation Number 95 of 2018, Presidential Regulation Number 18 of 2020,

ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1228

Presidential Regulation Number 132 of 2022. In digital transformation efforts, the government needs to ensure the availability of telecommunications, internet networks, and other communication media that can be utilized by the public to access public service portals, thus facilitating access to all public information and services.

2. Digital Transformation Policy by the Ministry of Communication and Information Technology (Kominfo)

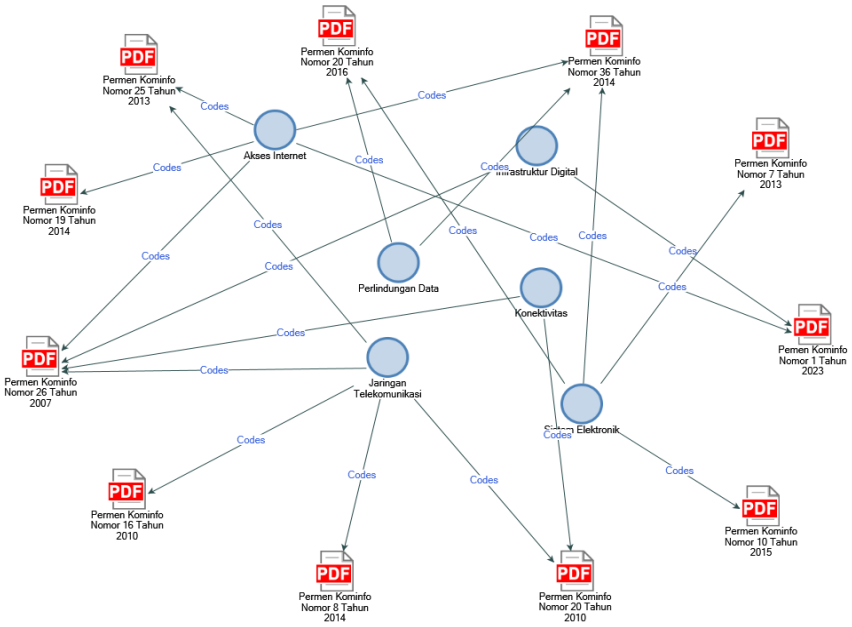
The Ministry of Communication and Informatics is a ministry that has duties and main functions in organizing government affairs in the field of communication and informatics. To ensure the effectiveness and security of digital infrastructure in Indonesia, Kominfo has issued several regulations and accelerated digital transformation to create a productive digital ecosystem (Kominfo, 2020). Therefore, it is important to include the policies issued by Kominfo, which are the foundation for digital initiatives.

From the results of content analysis sourced from the Kominfo Legal Documentation and Information Network (JDIH), various topics regarding digital transformation in Indonesia were found as many as 13 policies which can be seen in **Figure 5**. These topics include Digital Infrastructure; Internet Access, Connectivity; Telecommunications Network; Electronic Systems, Data Protection. First, the topic of Digital Infrastructure is contained in 2 policies, namely Permen Kominfo Number 1 of 2023 and Permen Kominfo Number 26 of 2007. The Digital Infrastructure in question is the provision of infrastructure in accordance with the needs and service levels to support digital service delivery. Digital infrastructure is an important factor in accelerating digital transformation, this is in line with research by (Bangsawan, 2023) which states that the lack of adequate digital infrastructure can hinder the digital transformation process in Indonesia. Furthermore, the second topic, namely Internet Access, is listed in 5 policies, namely Permen Kominfo Number 19 of 2014, Permen Kominfo Number 26 of 2007, Permen Kominfo Number 25 of 2013, Permen Kominfo Number 36 of 2014, and Permen Kominfo Number 1 of 2023. Based on the policy findings, the internet is one of the media for the realization of human rights to obtain information, so the government needs to ensure clean and comfortable internet access by providing protection to the community in order to accelerate digital transformation efforts.

ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1228

Figure 5.

Topic Mapping of JDIH Kominfo



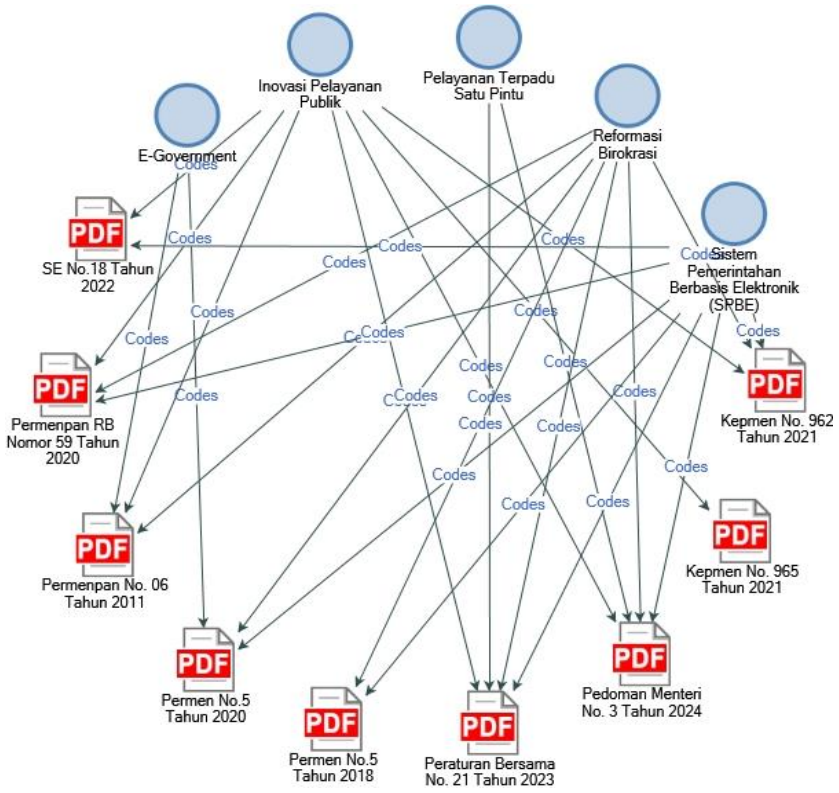
The third topic is Connectivity, which can be found in 2 policies, namely MOCI Regulation No. 20/2010 and MOCI Regulation No. 26/2007. The connectivity discussed in these policies is interconnection between telecommunication networks. Furthermore, the fourth topic, Telecommunication Network, is contained in 5 policies. The policies are Permen Kominfo No. 26 of 2007, Permen Kominfo No. 16 of 2010, Permen Kominfo No. 8 of 2014, Permen Kominfo No. 20 of 2010, Permen Kominfo No. 25 of 2013. The telecommunication network in the policy is explained as a series of devices used for telecommunication and the need to secure the telecommunication network in order to create a secure telecommunication network. The fifth topic, Electronic Systems, is contained in 3 policies, namely Permen Kominfo No. 7 of 2013, Permen Kominfo No. 36 of 2014, Permen Kominfo No. 20 of 2016. The electronic system discussed in the policy contains guidelines for registering electronic systems, applying electronic systems in public service offices, and protecting personal data on electronic systems. The last topic, data protection can be found in 2 policies, namely Permen Kominfo Number 36 of 2014 and Permen Kominfo Number 20 of 2016. Permen Kominfo Number 20 of 2016 regulates in detail the protection of personal data and Permen Kominfo Number 36 of 2014 also regulates the procedure for protecting personal data on electronic systems.

ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1228

3. Digital Transformation Policy by the Ministry of Administrative Reform and Bureaucratic Reform (Kemenpan RB)

Figure 6.

Topic Mapping of JDIH Kemenpan RB



Kemenpan-RB has a vital role in Indonesia's bureaucratic reform. Bureaucratic reform is a process of structural change in the fields of institutions, management and human resources (Adlin & Handoko, 2019). This bureaucratic reform is closely related to technology such as the development of technology-based services (Hartanto, 2019). Therefore, bureaucratic reform and digital transformation are interconnected components to realize a responsive, accountable and innovative government.

Based on the results of content analysis from the Legal Documentation and Information Network (JDIH) of Kemenpan RB, various topics related to digital transformation in Indonesia were found in 11 policies as shown in **Figure 6**. Based on this mapping, related topics were found, namely E-Government, Public Service

Innovation, Bureaucratic Reform, Electronic-Based Government System (SPBE), and One-Stop Integrated Services. The first topic, E-Government, is contained in two policies, namely Permen PANRB Number 6 of 2011 and Permen PANRB Number 5 of 2020. E-government in this topic implies the transition of government systems from conventional to digital-based. In simple terms, e-Government is the use of information and communication technology by government

ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1228

institutions, with the hope of increasing community productivity and realizing more efficient governance (Gusman, 2024).

The second topic, Public Service Innovation, is spread into seven policies, namely Ministerial Decree Number 962 of 2021, Ministerial Decree Number 965 of 2021, Ministerial Guideline Number 3 of 2024, Joint Regulation Number 21 of 2023, PANRB Ministerial Regulation Number 59 of 2020, PANRB Ministerial Regulation Number 59 of 2020, and Circular Letter Number 18 of 2022. In realizing digital-based governance, innovation in public services is needed as an effort to improve service quality through digitizing government operational activities. This public service innovation is in line with the third topic, namely Bureaucratic Reform, which is contained in seven policies. These policies include Ministerial Decree Number 962 of 2021, Ministerial Guideline Number 3 of 2024, Joint Regulation Number 21 of 2023, Ministerial Regulation Number 5 of 2018, Ministerial Regulation Number 5 of 2020, Ministerial Regulation Number 06 of 2011, and Ministerial Regulation Number 59 of 2020. In this topic, bureaucratic reform refers to the government's efforts to improve service quality in realizing effective, efficient, accountable, and more responsive governance.

The fourth topic, Electronic-Based Government System (EBS), is contained in seven policies, including Ministerial Decree Number 962 of 2021, Ministerial Guideline Number 3 of 2024, Joint Regulation Number 21 of 2023, Ministerial Regulation Number

5 of 2018, Ministerial Regulation Number 5 of 2020, Ministerial Regulation of PANRB Number 59 of 2020, and Circular Letter Number 18 of 2022. Electronic-Based Government System (SPBE) in this topic refers to further efforts made by the government in realizing digitalization in the government sector. The next topic, One- Stop Integrated Services, is contained in two policies, namely Ministerial Guidelines Number 3 of 2024 and Joint Regulation Number 21 of 2023.

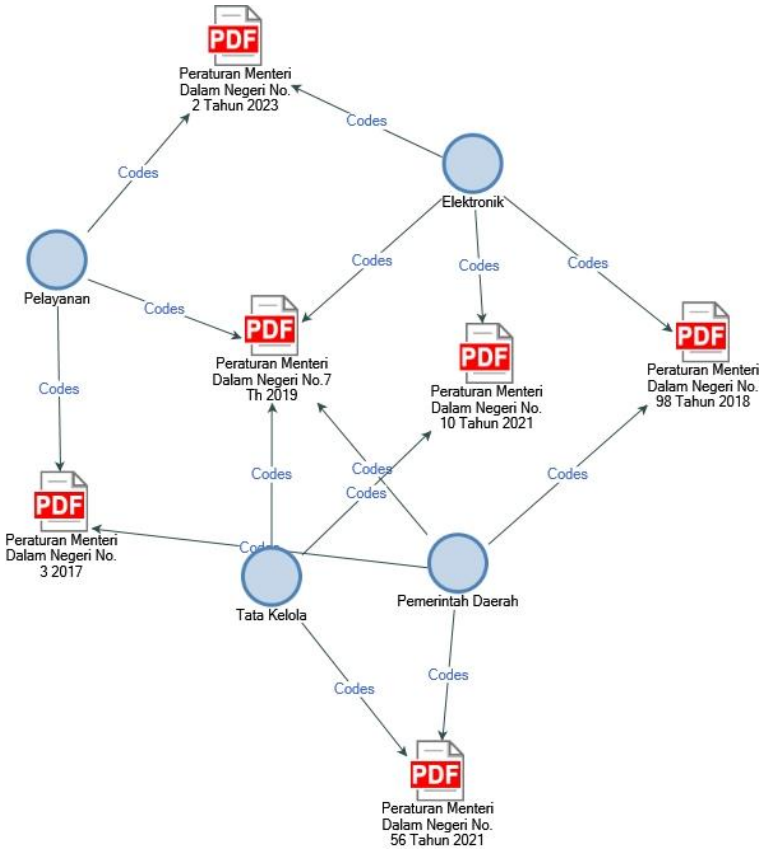
4. Ministry of Home Affairs (MOHA) Digital Transformation Policy (Kemendagri)

Digital transformation is not only limited to the central scope, but must also be implemented consistently to the local scope. Local governments have a strategic role to integrate *e-government* to provide meaningful public services for the community (Nzimakwe, 2021). Through policies established by the Ministry of Home Affairs, it regulates the coordination and implementation of digital transformation in local governments, especially related to technology in digital-based public services. Of the six Minister of Home Affairs Regulations analyzed, there are topics that often appear, namely electronics, services, local government, regional information systems, and governance.

ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1228

Figure 7.

Topic Mapping of JDIH Kemendagri



The first topic, electronics, is found in four policies (Minister of Home Affairs Regulation No. 10 of 2021, Minister of Home Affairs Regulation No. 2 of 2023, Minister of Home Affairs Regulation No. 98 of 2018, and Minister of Home Affairs Regulation No. 7 of 2019). The topic of electronics refers to the implementation of electronic systems to support online-based regional planning, implementation, and evaluation. The second topic, services, is in 3 policies (Permendagri No. 2 of 2023, Permendagri No. 3 of 2017, and Permendagri No. 7 of 2019). The services in question are services that utilize digital technology from verification, administrative processes, data management, and public service provision. The third topic, governance, is found in three policies (Permendagri No. 10 of 2021, Permendagri No. 56 of 2021, and Permendagri No. 7 of 2019). This topic highlights efforts to implement electronic-based government systems

effectively and efficiently towards good governance. The next topic is local government found in 4 policies (Permendagri No. 3 of 2017, Permendagri No. 56 of 2021, Permendagri No. 98 of 2018, and Permendagri No. 7 of 2019). As the executor of government affairs at the regional level that has autonomy, the Regional Government is expected to be able to run an integrated

ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1228

information system to facilitate data exchange between regional agencies in supporting the acceleration of digital transformation.

Digital Transformation Policy Linkage

The content analysis of digital transformation policies in Indonesia conducted through the four Legal Documentation and Information Networks (JDIH), namely BPK RI, Kominfo, Kemenpan RB, and Kemendagri produced important findings regarding the direction and focus of the policies set. Policies at the central level through JDIH BPK RI found six topics, namely integration, cohesiveness, effectiveness, accessibility, interoperability, and service infrastructure. These topics show that the central government focuses on system integration and interoperability, data integration between institutions. The government also continues to ensure that digital services can be accessed by all levels of society, one of which is with service infrastructure in supporting the implementation of digital transformation, which will have an impact on the effectiveness of public services. The Ministry of Communication and Information contains policies related to internet access, data protection, telecommunications networks, connectivity, electronic systems, and digital infrastructure. The regulated policies focus on devices and infrastructure so that people can inclusively access technology. In addition, data protection, ensuring public information security. The Kemenpan RB policy covers the topics of e-government, public service innovation, one- door integrated services, bureaucratic reform, and the Electronic-Based Government System (SPBE). This policy is aimed at creating an efficient bureaucracy and improving the quality of public services by utilizing digital technology. Furthermore, the Ministry

Home Affairs regulates local governments in terms of implementing digital systems, four topics were found in the analyzed policy documents, namely governance, local government, services, and electronics. Overall, the content analysis of digital transformation policies in Indonesia shows that the central government, Kominfo, Kemenpan RB, and Kemendagri have different policy focuses and topics, but are interrelated and build a digital ecosystem towards accelerating digital transformation, both at the central and regional levels.

Development of Digital Transformation Policy in Indonesia

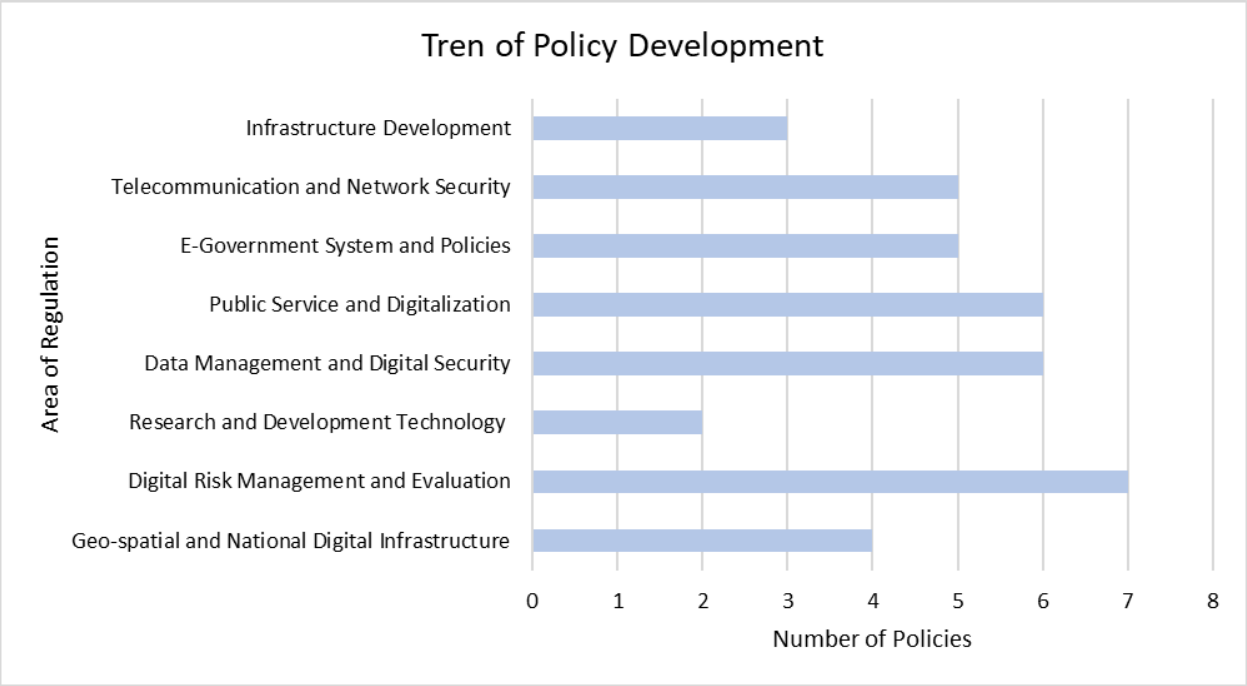
Policies governing digital transformation continue to evolve. Based on the trend of policy development presented in **Figure 8**, it can be concluded that the distribution of policies on digital transformation in Indonesia reflects different attention from the government. Digital risk management and evaluation is the regulatory area with the highest number of policies, indicating the government's attention to risk management and preventive efforts in dealing with cyber threats in the era of digital transformation. In addition, data management and digital security are

ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1228

also top priorities with five policies in line with the increasing needs of the public for personal data protection and digital system security amid the development of transformation technology.

Figure 8.

Trend in Policy Development through Regulatory Areas



Digitalization also plays a big role in efforts to improve services to the community, this is reflected in five policies related to public services and digitalization. This development shows the government's efforts to expand access and improve the efficiency of digital-based public services. In addition, there are four policies that focus on telecommunications and network security, as well as on e-Government policies. This shows the importance of maintaining secure connectivity and strengthening e- Government to improve transparency and efficiency.

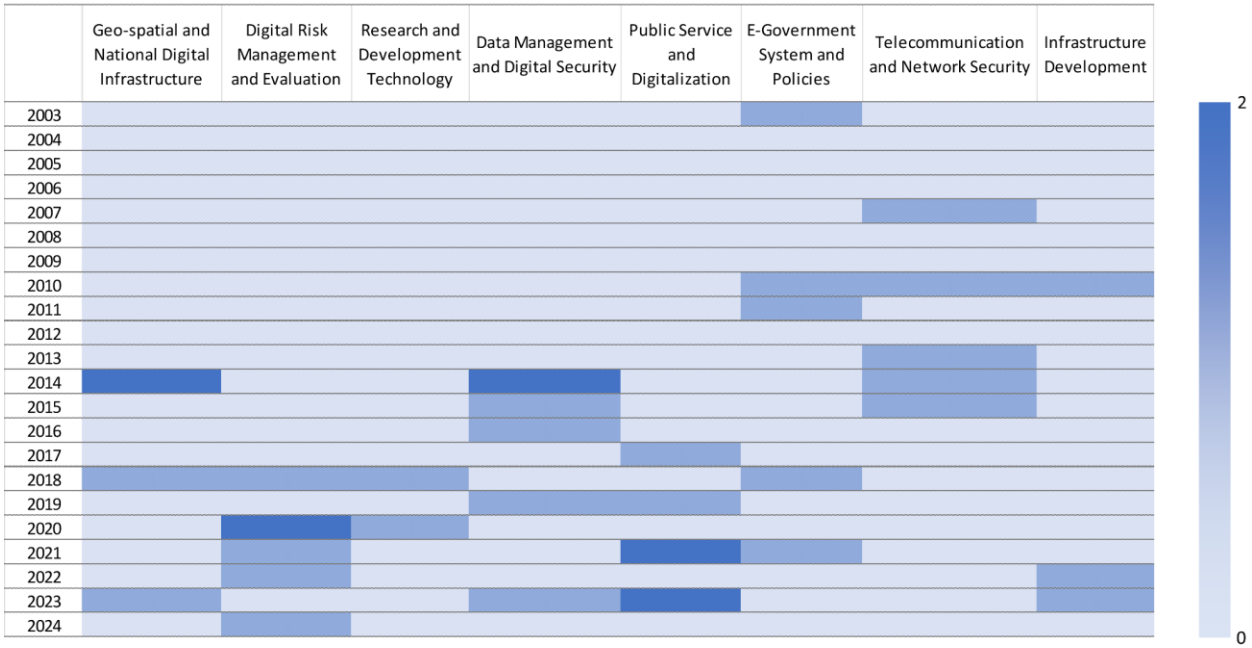
Meanwhile, infrastructure development reflected in three policies shows that digital infrastructure development remains a concern, although it is more focused on the long term and strategic aspects. Furthermore, research and development of technology and geo-spatial and national digital infrastructure are each spread over two policies. This reflects efforts to encourage technological innovation and the utilization of spatial data in various sectors. Overall, the trend of policy development through the regulatory area shows that the Indonesian government is focusing on managing digital risks, data security, and developing the quality of public services while strengthening the foundation of digital-based government infrastructure and governance.

ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1228

Based on the visualization of trends using heatmap-style, we can identify the pattern of policy development in the digital field in Indonesia between 2003 and 2024, which shows a significant shift and adaptation in responding to the development of digital technology. Policies governing e-Government began in 2003, which shows the government's efforts to digitize government activities to improve efficiency in public services that continue to be consistent in the following years.

Figure 9.

Policy Intensity in Various Areas



From 2013 to 2014, there was a practice of diversification in strategic focus, indicated by the emerging emphasis on National Digital Infrastructure and Geo-spatial and Digital Risk Management and Evaluation. This shift indicates an awareness of the need for more adequate infrastructure in support of responding to the rapid development of information technology. The years 2018 and 2020 saw a significant expansion in the Research and Development Technology sector. This indicates a shift in strategy towards policies that are more focused on encouraging technological advancement.

In the same time period, since 2020, there has been an increased priority on Data Management and Digital Security, Digitalization and Public Services, and Network and Telecommunications Security. This reflects the high level of public concern over the protection of digital assets and the security of communication networks, which is also driven by the increase in cyber threats and data breaches. Thus, in 2024, there is an expansion to include Infrastructure Development. This suggests a more holistic approach to digital transformation as it includes not only technological advancements, but also the digital infrastructure that drives development.

ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1228

Overall, the data trends presented in **Figure 9** suggest a more integrated and multifaceted approach to digital policy. Policies in the digital field are evolving from initial efforts to digitize to comprehensive strategies that cover innovation, security, and infrastructure development. This development confirms the adaptive nature of policies in responding to the changes and security challenges that develop in the digital technology sphere.

Conclusions

Over the past 20 years, the development of Indonesia's digital transformation policy has continued to change. The number of policies produced during this period has fluctuated. Each ministry has a different focus in efforts to accelerate digital transformation. In this case, the digital transformation policy at the Ministry of Communication and Information Technology, digital infrastructure is the main focus of the policies issued. In Kemenpan-RB, the main focus of its policy is bureaucratic reform. While at the Ministry of Home Affairs, the main focus of the policy is on local government. Nevertheless, there is a close relationship between the policies issued by the central government through JDIH BPK RI, Kominfo, Kemendagri, and Kemenpan- RB. This connection can be seen from the similarity of topics discussed in each policy. These topics include infrastructure development; telecommunications and network security; E-Government systems and policies; public services and digitalization; data management and digital security; research and development technology, digital risk management and evaluation; geo-spatial and national digital infrastructure.

Limitations and Future Research Opportunities

This research only collects data available from the Legal Documentation and Information Network sources of BPK RI, Kominfo, Kemendagri, and Kemenpan RB and only focuses on certain legal sources with a time span of the last 20 years, namely 2003 to 2024. This paper also focuses on mapping topics related to digital transformation in each existing JDIH. The limited temporal focus on the 20-year period is also an obstacle for researchers, as digital policy is often a continuous process and rapid technological changes can make policies outdated. The methodology used in this study may not fully accommodate the complexity of the policies, and external factors, such as economic, political, and social conditions, may also affect the results.

On the other hand, there are a number of opportunities that can be utilized in this research. Increased awareness from the public can provide opportunities for the government to formulate policies that are more responsive to the needs of the community. The collaboration of various stakeholders, including the government, private sector, and civil society, offers an

ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1228

opportunity to analyze collaboration in policy development and implementation. In addition, research can identify innovative policies that have successfully improved the efficiency and effectiveness of public services. Finally, there is an opportunity to analyze the impact of policies on the level of digitization in public services and the resulting efficiency and transparency. By understanding these limitations and opportunities, researchers can formulate better approaches to answer the research questions and explore potential new areas for further development.

References

Adlin, T. H. (2019). Penguatan Perilaku Anti Korupsi di Lingkungan Birokrasi Pemerintah Provinsi Riau. Nakhoda: Jurnal Ilmu Pemerintahan, 17(29), 46–55. https://doi.org/10.35967/jipn.v17i29.7058

Andita, V., & Rafaela, D. (2023). Akselerasi Transformasi Digital Untuk Pendidikan Berkualitas. *JOURNAL OF INFORMATION SYSTEMS AND MANAGEMENT*, *02*(05), 90--93. https://jisma.org/index.php/jisma/article/view/948/179

Bangsawan, G. (2023). *Kebijakan Akselerasi Transformasi Digital di Indonesia: Peluang dan Tantangan untuk Pengembangan Ekonomi Kreatif Policy for Accelerating Digital Transformation*. *2*, 27–40.

Barbu, M., Vevera, A. V., & Barbu, D. C. (2024). Standardization and Interoperability—Key Elements of Digital Transformation. In *Digital Transformation: Technology, Tools, and Studies* (pp. 87-94). Cham: Springer Nature Switzerland.

Barlete, A. L. (2020). The policy trajectory of the EU–Latin America and Caribbean inter-regional project in higher education (1999–2018). *Policy Reviews in Higher Education*, *4*(1), 45-67.

Cho, J. (2017). *Evolution of e-government: Transparency, competency, and service- oriented government with Korean government 3. 0*. *12*(1), 62–68. *GovTech : The New Frontier in Digital Government Transformation (English).* Equitable

Growth, Finance and Institutions Note Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/898571612344883836/GovTech-The-New-Frontier-in-Digital-Government-Transformation

Gusman, S. W. (2024). Development of the Indonesian Government's Digital Transformation. *Dinasti International Journal of Education Management and Social Science*, *5*(5), 1128-1141. https://doi.org/10.38035/dijemss.v5i5

Hartanto, D. (2019). Kajian Wilayah Birokrasi Bersih dan Melayani Kepolisian Resort Kota Medan. Publikauma: Jurnal Ilmu Administrasi Publik, 7(2), 71–87. http://dx.doi.org/10.31289/publika.v7i2.2805

ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1228

Helland-Hansen, W., & Hampson, G. J. (2009). Trajectory analysis: concepts and applications. *Basin Research*, *21*(5), 454-483.

Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. Qualitative Health Research, 15(9), 1277–1288. https://doi.org/10.1177/1049732305276687

Kominfo. (2020). In *Buku Visi Indonesia Digital 2045*. Kominfo.

Liva, G., & Codagnone, C. (2020). *Exploring digital government transformation: a literature review Exploring digital government transformation: a literature review*. *September*. https://doi.org/10.1145/3428502.3428578

Margariti, V., Stamati, T., Anagnostopoulos, D., Nikolaidou, M., & Papastilianou, A. (2022). A holistic model for assessing organizational interoperability in public administration. *Government Information Quarterly*, *39*(3), 101712.

Nzimakwe, T. I. (2021). Leading Digital Transformation and Innovation in Local Government Institutions in South Africa. *Administratio Publica*, *29*(2), 1-23.

Nelson, C., & Woods Jr, R. H. (2013). 1 CONTENT ANALYSIS. In *The Routledge handbook of research methods in the study of religion* (pp. 131-143). Routledge.

Shulman, S. W., Almazan, R. S., & Hovy, E. (2010). *Government 2.0: Making connections between citizens , data and government*. *April*, 0–9. https://doi.org/10.3233/IP-2010-0205

Sulistya, A. Q. W., Aritonang, I. D., Ranti, B., Sulistiyo, B. B., Simangunsong, S. A., Aditya, F., & Shihab, M. R. (2019). A Case Study of Indonesian Government Digital Transformation: Improving Public Service Quality through E-government Implementation. *Proceedings - 2019 5th International Conference on Science and Technology, ICST 2019*. 10.1109/ICST47872.2019.9166234