

## THE USE OF ARTIFICIAL INTELLIGENCE IN GOVERNANCE THROUGH ONLINE MEDIA EVALUATION

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### ABSTRACT

*As a result of the high value of destructive perceptions of Indonesian government services and the high value of perceptions of corruption in Indonesia, the purpose of this study was to analyse artificial intelligence in Indonesian government governance with the last four-year edition, namely 2018-2022. The research data source reviewed 57 news stories from Indonesian online media. This research data analysis uses the Qualitative Data Software Analysis approach with the NVivo 12 Plus tool and the NCapture feature. The results of the data analysis show that artificial intelligence in Indonesia is seen from four aspects: accountability, transparency, the rule of law, and participation. The results showed that reform and bureaucratic reform from the accountability aspect had the highest percentage, namely 54.55%. Human development and culture from the aspect of participation has a percentage of 33.33%. Ministry of communication and informatics, from law supremacy, has a percentage of 53.85%, and the ministry of health, from the aspect of transparency, has a 21.74%. This study's findings represent that artificial intelligence systems have efficient and environmentally friendly selling points. However, this research sees that the artificial intelligence system is fundamental and has not been optimised by Indonesian government agencies' entire scope of work. Even so, it can be seen that the Indonesian government continues to strive for artificial intelligence in the scope of government work so that it is used continuously until people's satisfaction with the performance of the government system is achieved.*

**Keywords:** Artificial intelligence; Governance; Accountability; Rule of law; Participation; Transparency.

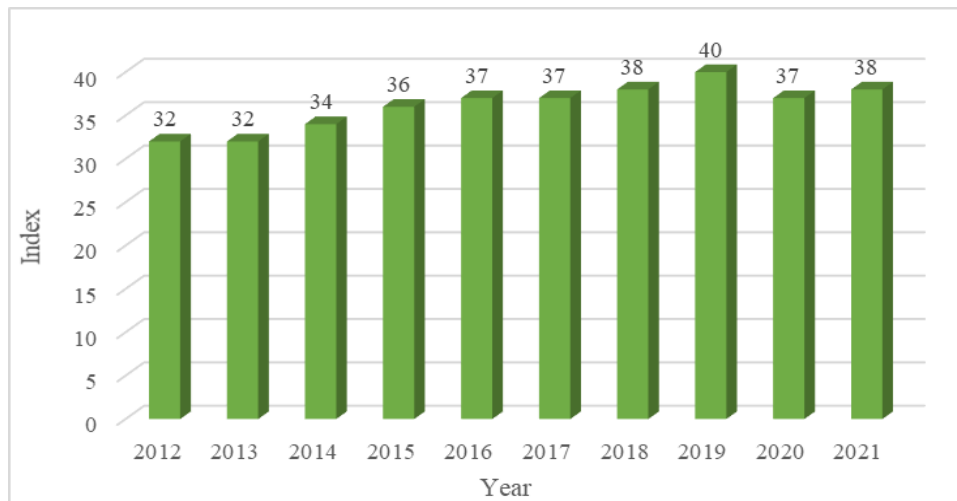
### INTRODUCTION

Media as an approach tool contributes to developing knowledge, understanding technical issues, and developing a critical attitude towards technology and data (Knaus, 2020). The increasing number of people's interactions on social media has changed the role of press freedom in a modern democratic system (Luna-Reyes, 2017). The availability of e-government digital technology has answered current public problems (Filgueiras et al., 2019). A digital transformation approach outside the public sector will change citizens' expectations of the government's ability to provide timely and high-value digital services (Mergel et al., 2019). Due to advances in digital technologies such as artificial intelligence, big data analytics, cloud computing, and the Internet of Things (IoT) (Feroz et al., 2021). It is necessary, considering that environmental conditions make everything more accessible and

accurate (Guo & Xu, 2021). Government information is oxygen that is needed by civil technology (Rumbul, 2016). The government's vision is clear to win the trust of its citizens by increasing transparency through shared information and open data (Alexopoulos et al., 2021). Transparency is a viable strategy to increase media trust in the long run (Prochazka & Obermaier, 2021).

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The attractiveness of several countries, both developed and developing countries, in revolutionising governance through information technology has become vital to encourage and pursue intelligent city systems (Chang et al., 2021). Indeed, the spread of digital systems has facilitated all aspects, including building construction and implementing green space practices in several parts of the world (Chan et al., 2022). However, the need to develop cities that meet the needs of children cannot be overlooked, considering that the environment is an essential aspect of sustainable city goals (Rakhimova et al., 2022). Of course, initially, this requires severe innovation stimulation; this can be achieved through public procurement, leading to increased performance to improve organisational goals and policy making (Lenderink et al., 2022).



**Figure 1.** Indonesia's corruption perception index  
Source: Transparency International (2022)

The data visualisation in figure 1 above is obtained by searching the official website page <https://www.transparency.org/>. The authors obtained the results of the perception index data on Indonesian corruption based on 2012 to 2021. Furthermore, the visualisation of the image data above can explain that from 2012 to 2021, it tends to worsen because the level of negative perceptions of the Indonesian government from 2012 to 2019 has increased yearly. Good information from 2019 to 2020 is that there is a decrease in the number of negative public perceptions of a corrupt government; this decline has reached 37, although, in 2021, it will increase by 1 point; of course, this will be homework for the Indonesian government to transform and restore public confidence in the hope of a positive response to the government. From the explanation above, the research will visualise the perception index data on corruption in Indonesia and the pictures.

### Indonesia e-government index

Governance will produce a reliable and professional bureaucracy, be efficient and productive, and provide excellent service to the community. The performance of the local government apparatus affects the determination of governance, whereby implementing good, conducive, responsive and adaptive government apparatus performance is needed to produce the characteristics of governance (Ruspina, 2013). This study will present table data on the e-government index in Indonesia, which has been mapped into seven classifications, first e-government development index rank, second e-government development index value, third e-participation index rank, then e-participation index value, online service index value,

telecommunication, infrastructure index value, and the last is human capital index value. Complete details can be seen in table 1.

**Table 1.** E-Government index Indonesia

Indonesia	2020	2018	2016	2014	2012	2010
E-Government development index rank	88	107	116	106	97	109
E-Participation index rank	57	92	114	110	66	86
Online service index value	0.68	0.56	0.36	0.36	0.49	0.244
Telecommunication infrastructure index value	2	9	2	2	7	4
Human capital index value	0.56	0.32	0.30	0.30	0.19	0.114
	7	2	2	5		3
	0.73	0.68	0.68	0.67	0.79	0.854
	4	6		9	8	

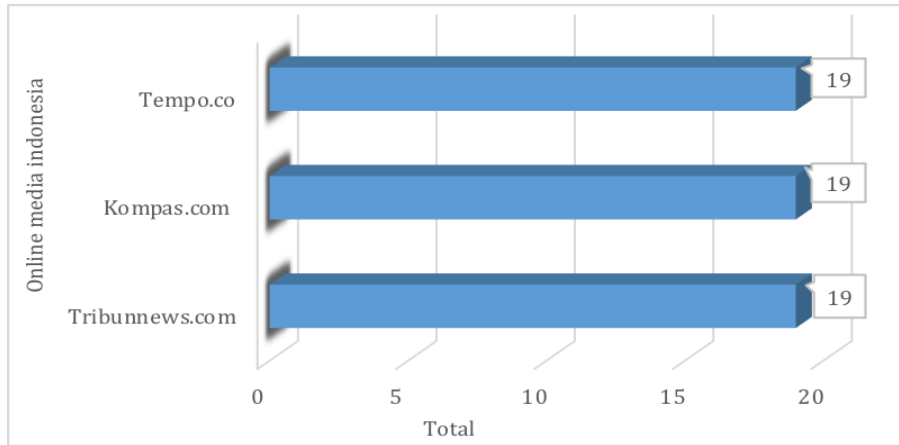
Source: UN E-Government knowledgebase (2022)

The table data above is the author's choice to assess the government's readiness to change globalisation which requires the central government and local governments to transform digital technology-based bureaucracy. The author obtained the table data above through a search on the official website page <https://publicadministration.un.org/egovkb/en-us/Data-Center>. The data is seen from 2010 to 2020; this e-government survey on digital government is presented every two years. Furthermore, the analysis in the table data presentation of the e-government index in Indonesia above can be explained that the previous year Indonesia experienced an increase in the development of e-government. This can be seen in the annual data presentation that Indonesia is ranked 88th in 2020 for the E-Government development index rank category. Changes in digital transformation both in the central and local governments to achieve a community that is defined as a super bright society. This can be fulfilled by having solid technological capabilities and talented human resources in their respective fields to carry out their profession digitally while providing better community services (Faruqi, 2019).

### Indonesia online media

Indonesia has various types of online media; according to the official Kominfo website, there are 43 thousand of online media portals, but the number of online media verified by the press council does not exceed 100 online media portals. The names of the news media selected and shown in Figure 2 are the news media that have the most discussion

related to the topic of this research, the first is news media <https://www.tempo.co/>, the second source is the news media <https://www.kompas.com/>, and the third is the news media <https://www.tribunnews.com/>.



**Figure 2.** News Media  
Source: Processed by the author (2022)

Figure 2 above is online news chosen by the author and most discussed related to using artificial intelligence in realising governance in Indonesia. Relevance related to this research topic. Furthermore, the number of results from the three Indonesian online media above is 19 news articles discussing using AI in governance. Through reviewing the website [www.similarweb.com](http://www.similarweb.com) in 2022, the author looks at Indonesian online media, which has the most visitors and sees online media rankings based on the source [www.similarweb.com](http://www.similarweb.com). Based on the [www.similarweb.com](http://www.similarweb.com) assessment survey, as shown in table 2, three online media have the highest number of visitors and occupy the top rankings of other online media, including [tempo.co](http://tempo.co), [kompas.com](http://kompas.com), and [tribunnews.com](http://tribunnews.com).

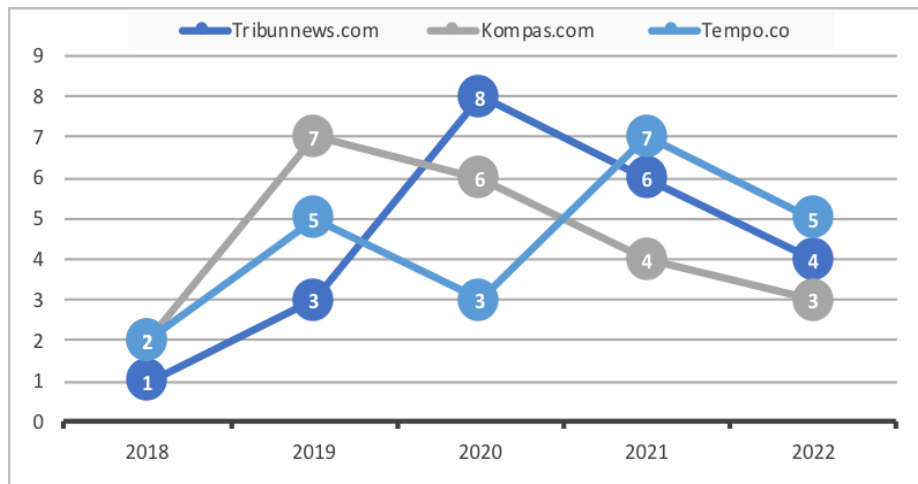
**Table 2.** Online media rank Indonesia

Visits	Global Rank		Country Rank (ID)		Category rank	
	Domain	Rank	Domain	Rank	Domain	Rank
150.0 M	Kompas.com	350	Kompas.com	14	Kompas.Com	2
117.2 M	Tribunnews.com	422	Tribunnews.com	16	Tribunnews.com	3
20.6 M	Tempo.co	3.652	Detik.com	105	Detik.com	19

Source: [www.similarweb.com/2022](http://www.similarweb.com/2022)

The visual tabulation of Indonesia's online media ranking in table 2 has three ranking categories: the most visitor category, the global ranking, the ranking in Indonesia, and the fourth category is a ranking based on the online media category. The three online media visualised in table 2 show that [kompas.com](https://www.kompas.com/) had the most visitors at the end of 2022, namely 150.0 M, and was ranked 350th in the global rank category, ranked 14th in the Indonesian online media category, and ranked 2nd based on category assessment. The second highest number of visitors is [tribunnews.com](https://www.tribunnews.com/), which is 117.2 billion visitors. In the global category, [tribunnews.com](https://www.tribunnews.com/) is ranked 422nd; in the online media category in Indonesia, [tribunnews.com](https://www.tribunnews.com/) is ranked 16th, and based on the assessment of the online media category, [tribunnews.com](https://www.tribunnews.com/) is ranked 3rd. Finally, in third place is online media [tempo.co](https://www.tempo.co/), which has the highest number of visitors. At the end of 2022, there were 20.6 M visitors. Based on the global ranking, it ranks 3,652. Still, in the ranking category based on online media in Indonesia, it ranks 105th and 19th based on an assessment of the online media category. According to the ranking of online media in table 2, online media <https://www.tempo.co/>, media online <https://www.kompas.com/>, and online media <https://www.tribunnews.com/> was chosen because it has relevant data and discusses the research topic the most.

This research is essential because various complex dynamics have occurred in artificial intelligence-based governance in realising governance: increased threats and ethical violations associated with unregulated AI applications (Al Zadjali, 2020). AI provides status information for predictable actions (Binner, 2019). Transparency, governance, and data protection have not been designed to apply to governance (Binner, 2019). Strengthening bureaucratic reform towards the era of society 5.0 in Indonesia has encountered various obstacles related to the still dominant bureaucratic pathology, a culture of corruption, and the unpreparedness of the bureaucracy for the use of technology and information in the orientation of public services to the community (Yasa et al., 2021). Online media tends toward several political parties in Indonesia, including the tendency of political parties toward their presidential candidates (Wiyono, et al, 2023).



**Figure 3.** Online Media Data by Year  
 Source: Processed by the author (2022)

Figure 3 represents the most news documents related to artificial intelligence in realising governance in 2021, with seven news documents from online media tempo.co. In 2018 and 2019, researchers found two news documents from the online media tempo.co. In 2020, 3 news documents were found; in 2022, they were new news documents; researchers found four news documents that discussed this study. Kompas.com online media had the highest number of news documents in 2020, with 6. Whereas in 2018, 2 news documents were found; in 2019, 4 were found; in 2021, 4 were found; and in 2022, 3 were found. The online media tribunnews.com had the highest number of news documents in 2021, with six. Whereas in 2018, 1 news document was found; in 2019, 3 news documents were found; in 2020, 5 news documents were found; and in 2022, 4 news documents were found.

Law No. 25/2009 concerning Public Services contains information technology to facilitate the public accessing information and interacting with electronic service systems. Thus, it is interesting to analyse in more depth so that artificial intelligence-based governance in realising governance can significantly change the government’s success in implementing artificial intelligence in all aspects of government performance. This research projects the role of governance in using artificial intelligence systems. Following some of the problems above, this research uses a qualitative approach with news NCapture in 3 credible online media in Indonesia and data analysis using the NVivo 12 plus feature so that it can be visualised and solve the results found (Jackson & Bazeley, 2019) & (Edwards-Jones, 2014).

New technologies such as artificial intelligence (AI), the Internet of Things (IoT), and blockchain have changed the way the public sector delivers community services (McQuiston

& Manoharan, 2021). Advances in digital technology, such as artificial intelligence, big data analytics, cloud computing, and the Internet of Things (IoT) (Feroz, Zo & Chiravuri, 2021). Today's society is so driven by technology that algorithms will take over functions not only in the private sector but also within public authorities, at the risk of turning the general system of the rule of law into an algorithmic rule (Suksi, 2021). Information Technology is essential in improving business processes in companies and government. Getting the best technology is fast becoming as important as understanding and developing an organisation's business plan (Chakir et al., 2020).

Governments and international organisations are promoting information and communication technology (ICT) to increase the co-production of public services (Clifton et al., 2020). Because public service broadcasting has played an essential role in providing news and information in many countries (Sehl, 2020). Increased participation in social networking sites is changing the nature of social relations and political and public dialogue (Bolívar, 2017). Public services cannot be stopped temporarily but must be carried out online using available digital technology (Agostino et al., 2020). New public services pose a significant challenge to democracy. One is that the new public service is simultaneously more heterogeneous and loosely bound to public service traditions (Perry, 2007). Public service is increasingly influential in public administration and management theory (Osborne et al., 2021). The new public service describes a set of norms and practices emphasising democracy and citizenship as the basis for public administration theory and practice (Denhardt & Denhardt, 2015).

Global trends show that the media directly influences society (Tyali, 2017). Dissemination of information through online media campaigns and social media can quickly change a person's character (Lehrner, 2021). The role of the media at this time is crucial because it is the first and most important information about an event (Oehmer, 2017). So, the role of online media is increasingly important as one factor that can positively affect community participation (Ike Atikah Ratnamulyani & Maksudi, 2018). In setting up a democratic system, the media has a significant role as a medium of information about government agendas and government policy products, both in print, electronic and internet media (Kashyap & Jonjua, 2020). Of course, every technological advance will change ideas, experiences, and feedback about products and services through online or social media sites (Zainol et al., 2021).



Public sector organisations increasingly leverage service design expertise to improve public services and organisations (Park-Lee, 2020). Evaluative evidence suggests that public service providers tend to offer a slightly higher quality of service (Brogaard & Helby Petersen, 2021). Access to public services is an essential determinant of economic opportunity and well-being (Fredriksson, 2017). Public services, such as education and health care, are basic forms of economic activity whose performance attracts the wider community's interest, and their valuation raises interesting issues (Mayston, 2015). Public services are an essential dimension of community quality because they create contextual conditions for people to improve their quality of life (Petrescu & Mihalache, 2020). As public services become digital and online, the need to design digital public services closer to citizens' expectations and provide ways to enhance their participation and engagement increases (De Classe et al., 2021).

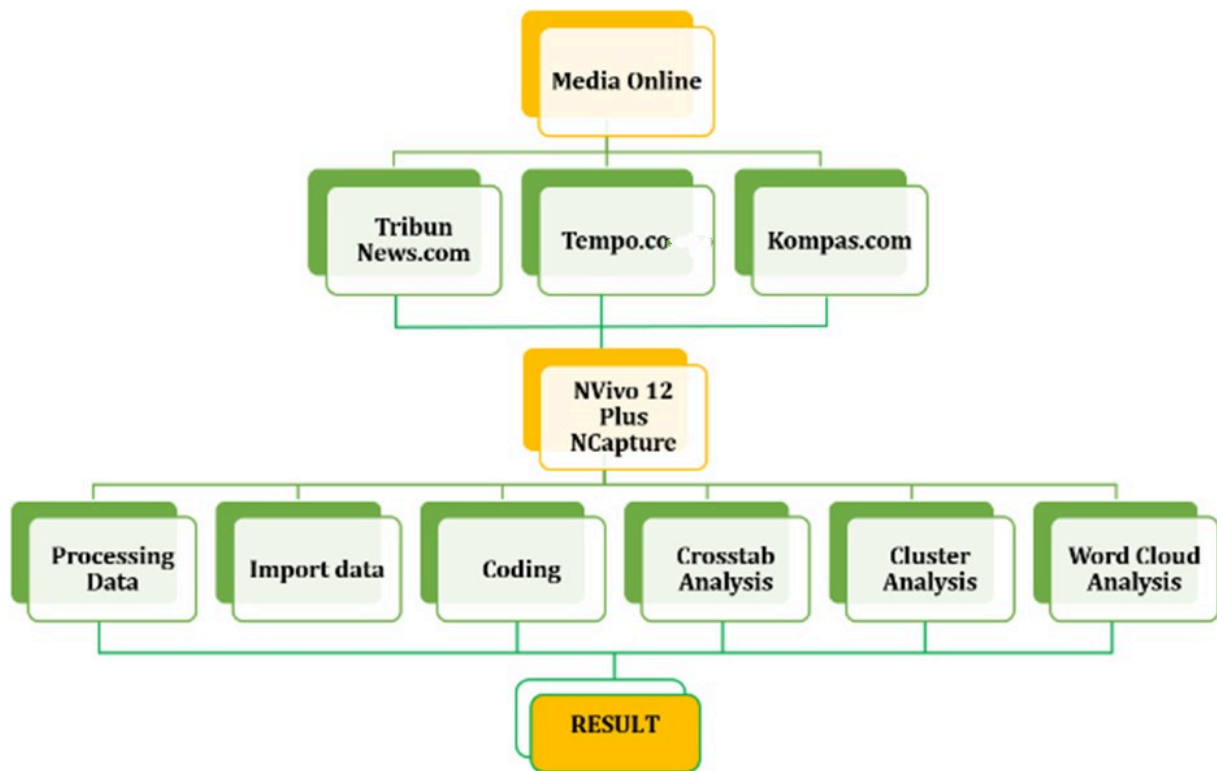
## RESEARCH METHODS

This research uses qualitative methods with literature studies (Aspers & Corte, 2019). Qualitative research prioritises exploring, discovering, reading, explaining, and conveying explicit and real meanings or data symbols from the data collected. Because the purpose of qualitative research is to develop the concept of sensitivity to the problems encountered (Vinet & Zhedanov, 2011), the data in this study were collected using the literature review technique, which is a method of collecting research information from various books and journals that are relevant to the focus of research studies (Farida, 2019) and using the NCapture feature for the research data mining process, NCapture can assist the NVivo 12 plus analysis tool for can read the text and content of qualitative data (Brandão, 2015). The data analysis technique for this study used qualitative data analysis software (QDAS) with the NVivo 12 plus analysis tool. This strategy is used to interpret the data methodically, factually, accurately and consistently according to the facts. In addition, this research data also comes from Scopus and Google Scholar article documents imported from Mendeley or Endnote into NVivo 12 plus.

### Data collection

This research data analysis projection uses NVivo 12 Plus with the NCapture feature tool. The NCapture function is for mining data from website engines that contain news narratives, scientific articles and collections of opinions or those on websites, online media, social media and other website content (Khadafi et al., 2022). NCapture, the primary tool that

has an important role in this research, is mainly used to mine data in Indonesian online media such as tribunnews.com, tempo.co, and kompas.com. Then, when the data has been obtained, the next step is to import the data into NVivo 12 Plus, then the coding step, and the last step is the projection analysis of the coding data findings, which can be in the form of graphic projections, tabulation diagram projections, cloud words. The word cloud is used to view narrative data in the form of words or phrases that often appear or are frequently discussed in the narrative data and have gone through the coding stage.



**Figure 4.** Process of data collection and processing  
Source: Processed by the author (2022)

Public policy products that are easily accessible and easy to obtain information have accurate, factual and timely information, meaning that the government has made efforts to increase transparency. Because of the availability of public policy information, the community has a role in overseeing the course of public policy products, and the community has a role in preventing indications of fraud and manipulation that benefit one of the regulators. In addition, by means of evaluation, audit, and accountability through the distribution of power from various government agencies, it minimises the overlapping of powers while simultaneously creating a conducive situation (Solihin, 2000).



intelligence, artificial, Indonesia, government, industry, systems, society, covid, health, and bureaucracy. The interpretation of Figure 5 is that public services lie in institutions more tied to service processes than depending on available technology (Filgueiras et al., 2019). The use of technology is also disrupting the performance of institutions where big data, blockchain technology, and artificial intelligence technology can be transferred to automation systems such as decision-making and policies that were initially driven by big data (Alexopoulos et al., 2021). In addition, based on information on the characteristics of artificial intelligence on data governance, such as privacy regulations, can be approved (Winter & Davidson, 2019). Another consequence of using artificial intelligence technology is minimising and fighting corruption cases among public officials (Matheus et al., 2021).

### **Categorisation of governance aspects**

Based on 57 news from the online media *tribun.com*, *tempo.co*, and *kompas.com*, there are four highest clusters on this research topic. Of the 4 clusters, the author also presents the four highest metadata related to the research topic. The visualisation of the categorisation of aspects of governance can be seen in the picture above. The automation of cluster division with the NVivo 12 plus analysis tool makes it easy to assess each of the most dominant themes based on weighted percentage (%) coding, as shown in Table 3 below.

**Table 3.** E-Government index Indonesia

Code A	Code B	Jaccard's coefficient
Governance	Accountability	0.301282
Governance	Rule of law	0.289786
Governance	Transparency	0.26204
Governance	Participation	0.170929

Source: Processed by the author with NVivo 12 Plus (2022)

Table 3 above have shown differences in cluster density in each aspect of governance. It can be analysed that accountability has dominated the three aspects of governance, as evidenced by the high value of jaccard's coefficient of 0.301282. The second aspect of the rule of law also seems to dominate the aspect of governance with the value of jaccard's coefficient of 0.289786. The third order is shown in table 3, where transparency has a value of 0.26204. Then it is seen that participation ranks fourth, with a value of 0.170929. The government's success is undoubtedly measured from various internal and external aspects;

this study looks at the success of governance from four aspects of using artificial intelligence, including accountability, participation, the rule of law, and transparency. Based on online media data sources that have gone through the coding stage of the NVivo 12 plus device analysis tool, metadata has been obtained in this study. The metadata in table 4 below is the percentage of the central government with four aspects of the success of governance. Full details can be seen below.

**Table 4.** Coding value governance

Central Government	Accountability	Participation	Rule of law	Transparency	Total
Ministry of Health	34.78%	17.39%	26.09%	21.74%	100%
Ministry of communication and informatics	30.77%	7.69%	53.85%	7.69%	100%
Coordinating ministry for economic affairs	0%	0%	100%	0%	100%
Ministry of administrative reform and bureaucratic reform	54.55%	0%	27.27%	18.18%	100%
Ministry, education, culture, research, and technology	27.03%	18.92%	35.14%	18.92%	100%
Coordinating ministry for human development and culture	50%	33.33%	16.67%	0%	100%

Source: Processed by the author with NVivo 12 Plus (2022)

Table 4 above shows the metadata percentage of 4 aspects of governance's success using artificial intelligence. The metadata in table 4 above is the automation of the percentage value generated by the NVivo 12 plus device analysis tool. Table 4 above shows that the central government with the highest percentage of accountability is reform and bureaucracy, with a percentage value of 54.55%. From the aspect of participation, it can be seen that the highest percentage value is human development and culture, with 33.33%. From the aspect of the rule of law, it can be seen that the one with the highest percentage score is the ministry of communication and informatics, with a percentage value of 53.85%. Furthermore, from the aspect of transparency, which has the highest percentage value, the ministry of health with a percentage of 21.74%. Each of the four aspects above has the highest percentage value. The coding value of 0% on the aspects of accountability, participation and transparency from the coordinating ministry for the economy, the ministry of administrative reform and bureaucratic reform, and the coordinating ministry for human development and culture are

interpreted as not having specific information, not yet accurate, factual and transparent. Citizens' requests to access administrative documents through their website should have been summarised and collected on the online website (Mabillard & Pasquier, 2016). From an open government that is not evenly distributed, citizens' demands certainly reap support and rejection of open government (Fox et al., 2011).

Open government is an essential strategy in terms of administrative reform. In addition, open government information provides guidance and examines every individual dimension of government (Gil-Garcia et al., 2020). Actions "moral and ethical" in the zone of government agencies are expected to be able to restore public trust and create conditions for a social environment that rejects, even opposes, and punishes acts of corruption (Wiyono et al., 2023). Civil society has a vital role in the availability of new technology applications because this technology can facilitate many interactions between regulators and the public (Criado et al., 2018). Even though, in the end, the regulator has the risk of terminating relations with the community (Cingolani, 2021). But the government is trying to achieve a vision where the open, transparent and accountable government is the main transformation agenda in all dimensions of government (Janssen et al., 2017).

Deficiencies or weaknesses in the legal system will significantly affect the performance of the government as a whole. Indeed, governance will not run smoothly over a weak legal system; therefore, strengthening the legal system or legal reform is necessary for realising good governance (Ilham Arisaputra, 2013). This development also proves that government management is insufficient to ensure that the management process runs efficiently (Prasetyo, 2016). The pace of technological development is part of creating innovation; in the process, good governance based on artificial intelligence machines in Indonesia has not been fully adopted in all Indonesian local government work units. Because the AI platform that was prepared towards the era of society has not been fully empowered (Sugiono, 2020). Public services carried out by the government are based on information disclosure because information disclosure is the key to realising good governance. This is because the main principle of good governance is public services based on information disclosure (Susila Wibawa, 2019). AI technology, Big data analytics, and the Internet of Things are the central points that enable technology to help human life. This technological adaptation will make content marketing activities more effective because they can target more appropriate segments (Köse et al., 2016).

This vision is, of course, influenced by the government's performance which continues to carry out socialisation efforts along with training, the use of website-based networks, and the availability of command centre facilities (Baharuddin, 2020). The relationship between the internet and technology has changed how humans interact in economic and social interactions and political interactions (Kusuma, 2010). However, excessive internet use indicates a decrease in psychological well-being in individuals who are less dominant in social skills (Nugraini & Ramdhani, 2017). The low productivity of government civil servants is due to the apparatus's relatively lower level of education, in addition to the limited information and data it has. This indicates that the position of the government's civil apparatus needs to be more empowered. A correct and deep understanding of the strategic environment that surrounds the organisation needs to be built. Efforts to broaden civil servants' horizons and individual capacities are very much needed in the 5.0era (Lestari, 2015).

## **CONCLUSION**

The conclusion of this study shows that the focus of reform and bureaucratic reform is on the aspect of accountability, with the highest percentage of 54.55%. The focus on human development and culture, namely the participation aspect, is seen with a percentage of 33.33%. The ministry of communication and informatics seems to focus on legal supremacy with a percentage of 53.85%. Finally, the focus of the ministry of health can be seen on the aspect of transparency, with a percentage of 21.74%. The pace of technological change in AI-based good governance processes results in the government being required to provide efficient and effective public services. Hence, various technology development processes in the stages of transparent, trusted and accountable government management are the main driving factors in developing digital-based services. Like right now. The availability of digital technology is expected to answer current public problems.

Ministry of communication and informatics, ministry of health, human development and culture, and finally, reform and bureaucratic reform are information machines using AI. The use of AI is a new idea in the use of technology. Because using a digital transformation approach outside the public sector will easily change people's expectations of the government's ability to provide timely and high-value digital services. The current conditions required are a policy environment and innovation to improve operational performance in government management in public services through digital transformation more easily.

Artificial Intelligence is an innovation utilised in good governance's success. The use of AI in the success of good governance in Indonesia is seen from four aspects; the first is accountability, the second aspect is transparency, rule of law, and participation. These four aspects aim to provide institutional changes and new modalities in providing public services to citizens and companies in promoting public policies and services. The intensive development of AI technology dramatically affects the life of society and the state. AI technology is currently affecting many sectors expected to provide good governance. These four aspects are essential in supporting the success of good governance in using AI. This study's findings represent that artificial intelligence systems have efficient and environmentally friendly selling points. However, this research sees that the artificial intelligence system is fundamental and has not yet been optimised by the overall scope of work of the governance of Indonesian government agencies. Even so, it can be seen that the Indonesian government continues to strive for artificial intelligence in the scope of government work so that it is used continuously until people's satisfaction with the performance of the government system is achieved.

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