Social Media in Support of Indonesia's One Data Interoperability Process for Implementing Data Governance Policies

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Abstract. This study aims to determine whether Twitter is a social media platform that supports the One Data Indonesia Interoperability process to implement data regulations by producing accurate, integrated and accountable data. Use of Social media in Participation, Transparency, Discussion, involvement, and Communication Strategy. This descriptive research uses NVivo 12 Plus with data sources from Twitter @diklat BIG, @datagoid, @bappenasRI, and @Jokowi via NCapture. NCapture data and use the automatically configured crosstab feature. This study shows that social media significantly drives data interoperability strategies in Indonesia. Communication indicators from Participation in previous attempts were 22.00% and 3236 referrals. The 21.00% transparency category includes clear objectives, processes and program support. They completed 20.00% of the various stages of data collection, verification, and data priority release. To socialize the implementation of One Data Indonesia and the action to accelerate the provision of the One Data Portal, tweets were used with an involvement proportion of 18.00%. Communication Strategy realizes the importance of data and the existence of One Data Indonesia by using the Conversation Indicator, which has a Participation proportion of 17.00%. This study is essential for analyzing social media assistance using Twitter-based activity support and providing new, up-to-date data with NVivo 12 Plus analysis.

Keywords: (Support, Social media, One Data, Interoperability, Data governance)

1 Introduction

All facets of electronic governance have been impacted by information and communication technology improvements in delivering public services [1]. Governments may gather and analyze a lot of data from the general use of technology to measure, evaluate, and enhance service interoperability [2]. The capacity for software to cooperate is known as interoperability [3].

Interoperability is an important factor in public sector digital services by facilitating digital services to become more transparent and domain agnostic in helping process interactions

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efficiently across borders by using common frameworks, standards, and processes to share information, data, and processes [4]. Interoperability allows companies to exchange information and use it to achieve common goals [5]. The main challenge in implementing interoperability is building interoperability on each device, mainly related to the lack of standardization available [6].

Effective communication and error-prone data sharing between devices, sensors, actuators, users, systems, and platforms result from successfully implementing interoperability in intelligent manufacturing [2]. Social media technology that can share and access information can affect performance [7]. Due to the rapid information distribution among vast audiences, social media facilitates the application of interoperability in global communications. [8].

One Data Indonesia (SDI) manifests the Indonesian government's efforts to provide quality data, namely credible, accountable, and up-to-date data, by building a database used as a reference for every public policy-making and implementation [9]. Obstacles occur in all stages of implementing One Data Indonesia, including planning, collecting, checking, and disseminating data [10]. Lack of regulation, difficulty integrating data, inadequate human resource capacity, and lack of digital infrastructure readiness [11].

Interoperability support in social media allows users to communicate with contacts on multiple platforms simultaneously, meaning platforms providing different services can work together to achieve functionality [12]. This research focuses on the Utilization of Social Media in Supporting the One Data Interoperability Process in Indonesia to realize data governance policies by analyzing data via Twitter accounts @datagoid, Bappenas @bappenasRI, Central Statistics Agency (BPS) @bps_statistics, and Geospatial Information Agency (BIG) @diklat_BIG through NCapture with Chrome Web and assisted by the NVivo 12 Plus software so that it produces updated scientific data. Social media supports Indonesia's One Data Interoperability Process by measuring the use of social media in Participation, transparency, conversation, engagement, and communication strategies [13].

2 Method

The research employs a descriptive qualitative approach to meticulously depict and analyze the findings [14]. Social media supports the interoperability of data in Indonesia to realize data governance policies by analyzing data via the Twitter account @datagoid, Bappenas @bappenasRI, Central Statistics Agency (BPS) @bps_statistics, and Geospatial Information Agency (BIG) @diklat_BIG via NCapture with Web Chrome and assisted by the NVivo 12 Plus software. Social media supports One Data Indonesia's interoperability process by measuring the use of social media in Participation, transparency, conversation, engagement, and communication strategies [13]. The features and data used are the Twitter Timeline based on Moon data from July 2019 when Presidential Regulation Number 39 of 2019 concerning One Indonesian Data (Perpres SDI) was enacted on June 12, 2019. The initial action involves inputting extensive Twitter data through NCapture, along with the specific indicators to be examined. Subsequently, the second phase entails categorizing and encoding the data based on the research indicators, utilizing the cross-tab feature to compute essential statistics automatically [15]. The functionality of the Crosstab Query feature involves inputting code (either manually or generated), text data, and numeric data into variables and pattern data. During this phase, an automated calculation is performed on all data associated with social media, supporting the process of achieving interoperability in One Data Indonesia. These findings are reinforced by previous studies' literature, thereby bolstering the research outcomes regarding implementing data governance policies for achieving interoperability in Indonesia.The findings of this study analyze and document how social media, especially Twitter, provides significant support in implementing one-data

interoperability in Indonesia by describing the role and positive impact of social media in strengthening data management.

3 Basic Theory

The digital era continues to grow and makes social media one of the dominant means of communication worldwide [16] These developments are affecting how we interact and impacting various sectors, including the government data sector[17]. Social media offers participatory and collaborative structures and collective knowledge-building capacities for public information [18]. The rise of social media causes changes in terms of carrying out daily activities that go beyond marketing and information seeking [19].

Social media has had a major impact on the modern world, dramatically changing how people get information [20]. Social media facilitates interactions between citizens and better public administration in encouraging citizens to interact online [16]. Social media can provide information as news media and various services [21]. Social media plays a role in assisting the government in developing and improving government performance by sharing information and developing strategies [22].

Numerous countries' governments are trying to enhance public engagement by harnessing the capabilities and extensive reach of the Internet. [23]. The application of single data interoperability is a crucial concern to increase the efficiency and effectiveness of government data management [24]. Twitter enables the active participation of various stakeholders in strengthening single-data interoperability [25]. Implementing single-data interoperability requires technical effort and the participation and support of various stakeholders [16].

The integration of interoperability is emerging as a critical aspect in developing novel digital public services. The European Commission is actively working on establishing a unified digital public service interoperability framework throughout the European Union. This initiative involves reinforcing the governance of interoperability initiatives and promoting the adoption of defined interoperability requirements [16]. Development of Interoperability is a necessity for organizations to achieve goals [5]. Efficient communication and accurate data exchange among machines, sensors, actuators, users, systems, and platforms will be achieved through the successful implementation of interoperability in intelligent manufacturing [2].

Social media platforms aim to represent and celebrate various communities' cultural heritage, traditions and perspectives [26]. Smart people tend to see rapid technological progress, which will impact media consumption patterns [27]. Media facilitates cultural exchange and global connectivity; through digital platforms and technological advances, people from different cultures can connect, share ideas and collaborate globally [28]. This cultural knowledge exchange and experiences contribute to a more interconnected society [29]. Media and culture are intertwined in a complex and mutually influencing relationship[30]. Media serve as cultural reflection and influence, encouraging diversity, critical thinking, and global connectivity [31]. Through responsible and inclusive media practices, intelligent societies can harness the power of the media to shape dynamic, informed and culturally rich societies [32].

4 Findings and Discussion

Media platforms tend to be diverse and accessible, ranging from traditional forms such as television, radio and newspapers to digital platforms, social media and virtual reality [33]. This diversity allows for a rich exchange of ideas and cultural expression, encouraging creativity and innovation [34]. An intelligent society recognizes the importance of cultural diversity and strives for inclusive media representation [35].

One data interoperability aims to ensure that data produced by various government entities can be interconnected and integrated and share information harmoniously [6]. The support provided through social media in implementing One Data Indonesia interoperability is essential in supporting this process [36]. Social media supports the interoperability of data in Indonesia by analyzing data via the Twitter account @datagoid, Bappenas @bappenasRI, Central Statistics Agency (BPS) @bps_statistics, and Geospatial Information Agency (BIG) @diklat_BIG through NCapture with Chrome Web and assisted by NVivo 12 software Plus the percentage results show that the percentages in the highest order are: Communication with a percentage of 22.00%, Transparency 21.00%, Involvement, 20.00%, Conversation with 18.00%, and Participation with a result of 17.00%. Figure 1 below illustrates the findings from the percentage analysis conducted using NVivo 12 Plus.

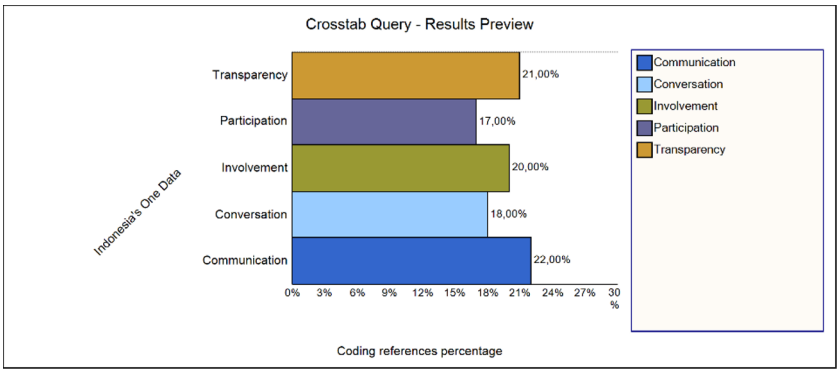

Fig. 1. Processed Crosstab Query by researchers using NVivo 12 Plus (2023).

Participation

Twitter has a significant role in supporting data interoperability in Indonesia [37]. Twitter provides a broad platform for users to share information, updates and discussions related to government data [13]. Participation is running a program in activities to achieve a goal [38]. The participation results based on the NVivo 12 Plus analysis show a percentage of 17.00%. The implementation of the socialization of One Data Indonesia (SDI) organized by the National Development Planning Agency was attended by Bappeda throughout Indonesia and 88 Data Guardians at the Central level, which aims to increase insight to equalize the level of understanding of One Data Indonesia [39]. Tweet and Hashtag activity in Figure 2 shows support for implementing one Indonesian data, namely as follows.

"https://t.co/Bv00MDALQh, JAKARTA - Central Level Indonesia One Data Secretariat, Ministry of National Development Planning/Bappenas is holding a One Data Indonesia Webinar with the theme Talent Management Strategy in Supporting Digital Transformation. https://t.co/kf0b25Airw via the @datagoid account on November 11, 2022".

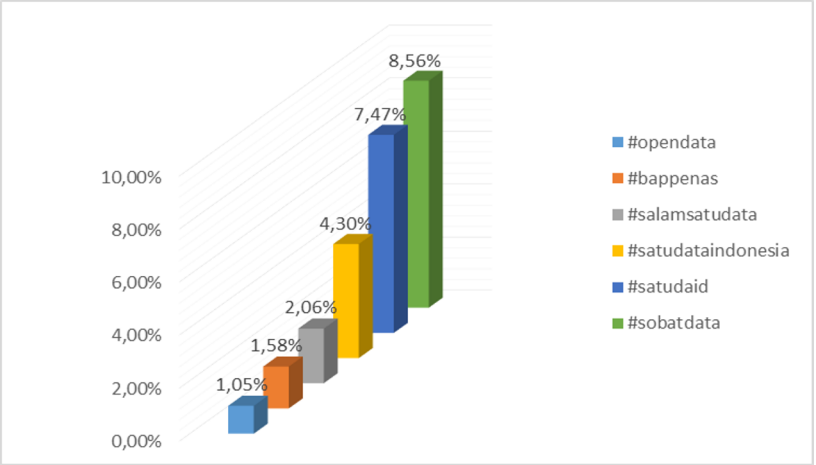

Fig. 2. Hashtag Activity by @datagoid Account Source: Account activity by Hashtag researchers using NVivo 12 Plus (2023).

Based on Hashtag activity contained in Figure 2 shows participation in supporting the implementation of one Indonesian data through the six highest Hashtags, namely: #sobatdata with a percentage of 8.56%, #satudataid 7.47%, #satudataindonesia 4.30%, #salamsatudata 2, 06%, #bappenas 1.58%, and hashtag #opendata 1.05%. The hashtag shows support and openness so that during 2021-2022 there have been more than 800 SDI socialization and assistance sessions at the central and regional levels. The openness of the SDI portal with ministries/agencies was recorded at 58 percent, or as many as 48 ministries/agencies from 83 ministries/agencies [40]. Through Twitter, government entities, research institutions, civil society and the general public can communicate with each other, share knowledge and provide feedback on issues related to one data interoperability [41].

Transparency

Transparency refers to the government's commitment to openly providing information regarding the management of public resources to individuals or entities seeking such information [42]. Social media data sources describe the source and process of deriving digital content, which helps determine information's reliability, authenticity, and trustworthiness [8]. With broad reach and the ability to instantly share information, Twitter enables various stakeholders' active participation in strengthening the interoperability of one data [43]. The results of the transparency analysis by processing with NVivo 12 Plus obtained a score of 21.00%. Activities show that there is social media support for implementing One Data Indonesia, which can be seen from the following Tweet activity.

“Hi #SobatData, on October 18, 2022, the Series 3 Data Mutual Cooperation Workshop held: 2023 Priority Data Proposals and SDI Portal Data Sharing attended by 16 Ministries/Institutions: https://t.co/IqYVvNc2JO via account @datagoid on November 21, 2022”.

Supportive social media activities result in SDI connectedness with the province, which reaches 68 percent of SDI connected with data from 26 out of 38 provinces in Indonesia [44]. Connectivity with districts and cities is still relatively low. Namely, only 18 percent or 95 districts and cities are connected to SDI out of 514 districts or cities in Indonesia (Nidia Zuraya, 2022) [44]. Stage one data for Indonesia starts from the Government providing information; then the data is inputted on the Data. Go. Id portal. Finally, data.go.id is

published for utilization products, including journalists, academics, the IT community, the general public, and the private sector [45].

Conversation

A conversation involves language between two or more participants. At the same time, dialogue serves as a platform where the principles of cooperation and politeness manifest within linguistic exchanges [46]. Conversation analysis results were processed with NVivo 12 Plus, yielding 18.00%. The conversation shows that there is an explanation that the launch of the One Data Indonesia Portal is a manifestation and recognition by the government of the importance of data [47]. The One Data Indonesia Portal is a service component within the data governance framework of Indonesia. It is designed to facilitate inter-agency data requests, enable the implementation of the One Data Indonesia forum, and manage access and security measures [44]. Social media support for implementing One Data Indonesia can be seen from the following Tweet activity.

"Hey Data Friends, here are the developments in the implementation of One Data Indonesia on the reference code/master data. https://t.co/cl078LBheV via the @datagoid account on January 26, 2023".

"The 2022 Priority Data Collection Socialization and the Acceleration of SDI Portal Data Provision have been held as the opening activities of the 2022 Data Mutual Cooperation Workshop which was attended by Representatives from 66 Ministries/Institutions, on October 6, 2022 offline. https://t.co/khFdDkEOgi via account @datagoid September 28 2022".

Support activities provided via Tweets show that social media helps disseminate information on the importance of implementing one data Indonesia and steps in accelerating the provision of one data portal attended by representatives from 66 Ministries who support achieving goals. The main goal is to prevent data overlap, making policy-making more effective [48]. Twitter promotes government policies and initiatives related to single-data interoperability [2]. In particular, social campaigns, online discussions, and hashtags (hashtags) can help increase public awareness and understanding of the importance of one-data interoperability and encourage active participation in achieving this goal [49].

Involvement

Involvement is an active engagement where the community participates in exploring alternative solutions for a prevailing issue and offers evaluations or assessments of governmental performance. This engagement aims to bring about a positive shift in the direction of government practices for improved outcomes [50]**.** According to research results from the Scopus database, which were analyzed using Vosviewers data from 2015 to 2023, as shown in Figure 3 below, it can be seen that social media plays an essential role in supporting the interoperability process.

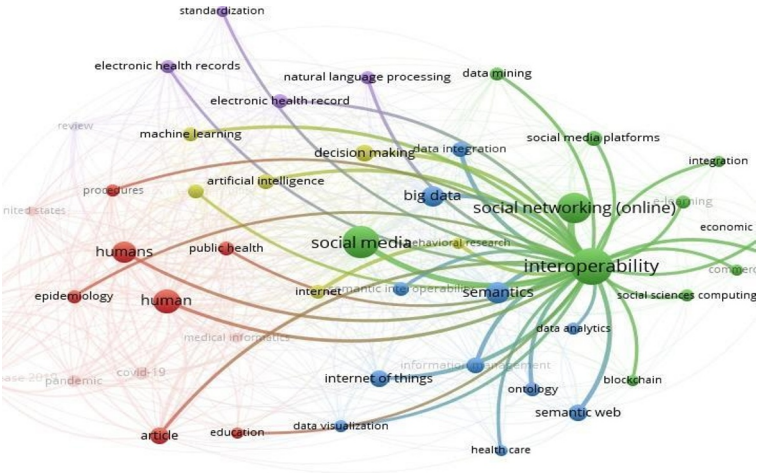

Fig. 3. VOSviewer analysis of social media in support of data interoperability.

The results of previous study studies taken from the Scopus database found 500 documents related to social media and interoperability that were processed using VOSviewer by displaying results and scientific developments. The Vosviewer results display several clusters: media informatics, integration, interoperability, open data, data interoperability, internet, standardization, and social media platforms. Based on these clusters, it shows that social media supports the implementation of data interoperability through various information conveyed by being able to download photo albums, messages, or their status from specific platforms and move the content to other platforms[51].
Implementation of Indonesian Data with social media support with engagement analyzed with NVivo 12 Plus with a result of 20.00%. The Twitter media spread information that in collaboration with ministries/agencies, the Ministry of National Development Planning/Bappenas held the Grand Launching of the Indonesian One Data Portal (SDI), which acts as a medium for using data nationally through the use of information and communication technology [40]. The National Cyber and Crypto Agency (BSSN), on December 23, 2022, expressed a commitment to oversee data security held by all government agencies, both central and regional [52]. Conversations delivered via Twitter media that support One Data Indonesia's interoperability process are as follows.

"Hi #SobatData, on October 7 2022 the Plan for Collection, Examination and Dissemination of 2022 Priority Data and SDI Portal Content was held. https://t.co/3g7qgnkAsQ via account @datagoid October 8 2022".

Tweet activity shows that Twitter supports social media in conveying information and understanding to institutions. There are stages of data collection, data checking, and dissemination of Priority data which can be used as references in understanding a policy. Based on the information provided, it is evident that SDI has undertaken an inventory of over 136.5 thousand data sets and plans to expand this collection further with the dedicated commitment and support of data supervisors, namely the Central Bureau of Statistics, the Geospatial Information Agency, and the Ministry of Finance [44]. Through social media, information can be disseminated quickly, community and agency involvement can be increased, and awareness about the importance of interoperability with one data can be increased [53].

Communication

Communication is implemented within the scope of government, public opinion communication managers, and the entire communication process in government to achieve a goal [54]. Communication via Tweet media based on the results of the NVivo 12 Plus analysis with a percentage of 22.00%. Communication that shows the direction of the President of the Republic of Indonesia, Joko Widodo, through Presidential Regulation Number 39 of 2019 concerning HR, which is a manifestation and our acknowledgment of the importance of data and whatever our efforts are in organizing data, everything will lead to the function and face of the One Data Indonesia portal [40]. Figure 4 below presents an activity that demonstrates the presence of communication in facilitating the interoperability process of Indonesia's One Data.

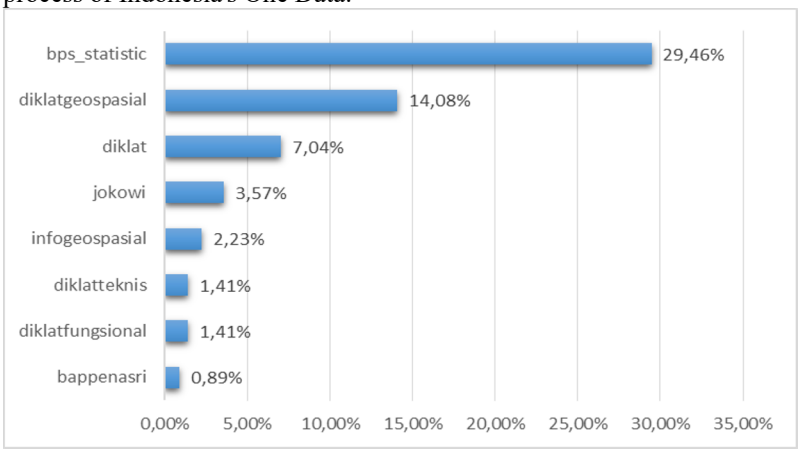

Fig. 4. Mention Activity by @bps_statistic Account Source: Account activity by mention researchers using NVivo 12 Plus (2023).

Figure 3 shows the high level of communication carried out through mentions, namely: bps_statistics with a percentage of 29.46%, geospatial education, and training 14.08%, education and training 7.04%, and jokowi 3.57%. Providing information on implementing one Indonesian data in achieving quality data standardization can prevent data overlap because all producers produce data with good metadata [48]. Figure 5 below depicts how Twitter, as a social media platform, facilitates the interoperability of Indonesia's One Data by enabling the sharing of a substantial volume of information data.

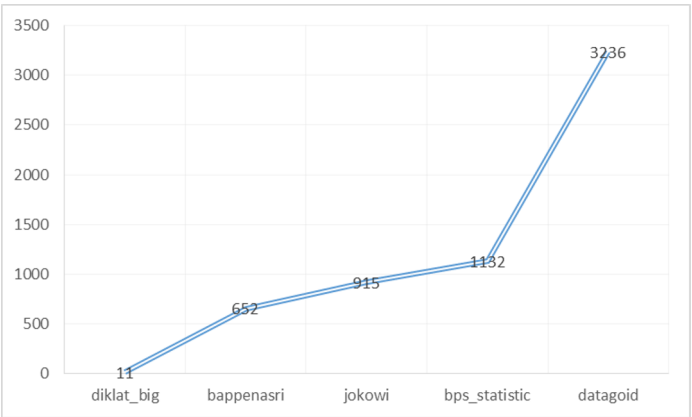

Fig. 5. Account base on account twitter using NVivo 12 Plus (2023).

Figure 5 shows the number of supporting activities from the Twitter accounts @datagoid, @bps-statistic, @jokowi, @bappenasri, @diklat_big with the number of references, namely: 3236 references, 1132 references, 915 references, 662 references, and 11 references. The quantity of references signifies the extent of support and information available in achieving data interoperability in Indonesia. Various information is contributed to produce accurate, up-to-date, integrated, and accountable data. This facilitates easy access and sharing of data between Central Agencies and Regional Agencies, extending beyond internal agency usage to fulfill the public's data requirements for the benefit of the community [45]. One Data adopts the principle of open data to release easily reusable data, aiming to enhance government transparency and accountability. Furthermore, it promotes community involvement in monitoring and overseeing development initiatives [45].

5 Conclusion

Interoperability support in social media allows users to communicate with contacts on multiple platforms simultaneously, meaning that platforms providing different services can work together to achieve functionality. Social media through Twitter, with various mention and hashtag activities, provide support for Indonesia's one data interoperability process by measuring the use of social media in the strategy of participation, transparency, conversation, involvement, and communication in Indonesia's one data interoperability process. Of the five indicators, it can be concluded that the Communication indicator, with a percentage of 22.00%, was obtained from the mentioned activities, and the number of references reached 3236. The transparency indicator with a percentage of 21.00% is the openness of objectives, processes, and support through Twitter for program implementation. The involvement indicator of 20.00% in conveying information and providing an understanding to the institution is that there are stages of data collection, data checking, and dissemination of Priority data. The conversation indicator, with a percentage of 18.00%, is shown via Tweets which helps in disseminating information on the importance of implementing one data Indonesia and steps in accelerating the provision of one data portal attended by representatives from 66 Ministries who support the achievement of goals. The participation indicator, with a percentage of 17.00%, shows an explanation that the launch of the One Data Indonesia Portal is a manifestation and acknowledgment by the government of the importance of data. A feature within the Indonesian one data governance service will support inter-agency data requests, facilitate the implementation of the One Data Indonesia forum, and manage access and security measures.
This research has limited research on Twitter social media in supporting the interoperability of Indonesian data to provide a value of openness. Future research is expected to examine the factors that influence the interoperability of Indonesian data.

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