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OPEN DATA USAGE AND DIGITAL LITERACY LEVEL OF PEOPLES IN TANGERANG REGENCY

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ABSTRACT:

The era of digitalization requires an innovative and accountable government. Tangerang Regency has a variety of applications that are realized to accelerate services and good governance as a whole. One of them is through open government data, which is easily accessible by any party to achieve a goal, namely transparency and disclosure of information. The purpose of this study is to determine the level of digital literacy of the community and the extent of their use of the open data portal. This research uses a mixed method with quantitative analysis using a Likert scale. The population and sample of the study were the people of Tangerang district aged between 18 and 60 years old, domiciled in Tangerang, and had used the district's open data portal. The results of this study indicate that although most people in Tangerang district have relatively high digital literacy skills, they still do not fully utilize this tool in the context of using the open data portal. This is due to several factors such as lack of public awareness, socialization from the government, and features that are not fully optimized.

Keywords: Digital Literacy, Digitization, Information Disclosure, Innovation, Open Government Data

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1. INTRODUCTION

In the current digital transformation era, it has encouraged governments in various countries to adopt digital technology into their government systems. For example, Open Government Data (OGD) is one of the things that has begun to be actively implemented in several countries in the world and Indonesia is no exception (Aprilia & Suryaningrum, 2024). The importance for countries to adopt OGD is to realize their commitment to transparent and accountable government. By utilizing digital technology, OGD allows the public to access public information openly, provides space to participate in monitoring government performance, and encourages collaborative efforts in the decision-making process (Wirtz & Birkmeyer, 2015).

Current conditions in Indonesia, such as rampant cases of corruption and misuse of regulations, make the need for OGD even more urgent (Soegiono, 2017). As one example, the National Public Procurement Agency (LKPP) noted that the expenditure on public procurement reached Rp1,214 trillion or about 52.1% of the total State Budget (APBN). However, the large budget allocation also increases the potential for corruption that occurs during the procurement process. One of the concrete steps that the government can take to prevent and minimize the potential for corruption is to open access to information related to the use of the budget and the performance of the government transparently through the OGD platform, so that the public has the opportunity to participate in monitoring the process (Sumantri et al., 2023).

However, the adoption of OGD itself also has its own challenges, especially problems that generally occur in Indonesia such as limited infrastructure and human resource skills (Rachmatullah & Purwani, 2022). As seen in the Komdigi survey (2024) in 2022, the digital literacy index of people in Indonesia was at 3.54, which only experienced a very small increase from the previous year of 3.49. Besides that the ability of Indonesian people to utilize digital technology is also still relatively low, which is only about 62% of the Indonesian

population have adequate digital literacy skills, far below the global average of 70%, even far behind countries like South Korea whose digital literacy level has reached 97% (Anam, 2023). Therefore, the government should first consider the digital literacy skills of the community before adopting digital-based innovations, especially in this case the adoption of OGD. Given that the successful implementation of digitalization in government also needs to be supported by qualified human resources, especially those skilled in using digital devices (Indrajit, 2016).

The adoption of OGD at the regional level has also begun, as in the case of Tangerang Regency where the open data portal can be accessed through https://opendata.tangerangkab.go.id/ which is a means of information about government data with 821 datasets that can be used to increase the knowledge and horizons of the community in understanding Tangerang Regency governance. The consequences of OGD operationalization also support the success of Tangerang district, where based on the decree of the head of the central statistics agency number 741 of 2023, Tangerang district is in the top 5 nationally in the evaluation of the implementation of sectoral statistics with a score of 3.27 good predicate. Although the district has achieved significant success, the reality in the field also has its problems, as in the survey released by the Tangerang district communication and informatics office in 2022 regarding public perceptions of the digital services of the Tangerang district government which shows that there are only 18.51 percent of all respondents who know about the digital services that the government provides, meaning that the majority of people do not know about the existence of government digital services. As for the main source of information obtained, it comes from the opinions of other people, namely 38.07 percent and only 21.88 percent answered that it came from government agencies. In addition, there are also other obstacles experienced by the community such as less responsive services, lack of socialization and information, and finally inadequate facilities (Sudarno, 2022). This indicates that the perspective of the community as users who utilize government digital services sometimes escapes the assessment of local governments.

To better understand the digital literacy skills of the community and the utilization of OGD, this research uses two main theoretical frameworks: Digital literacy theory, as expressed by Gilster (1997) that there are four competencies in digital literacy including the first ability to search for information on the internet to find information using search engines, second hypertext navigation skills to move easily on web pages and understand the structure and how it works, third evaluation of content, namely the ability to assess the truth of information on the internet, and the last process of building new knowledge by connecting information obtained from various sources (Gilster, 1997). In addition, Belshaw (2011) in his thesis "What is 'Digital Literacy'?", establishes a more in-depth framework for understanding digital literacy. Where digital literacy is not just a technical ability to use digital devices, but a complex construction that involves various dimensions such as cultural, cognitive, constructive, communicative, confidence, creativity, critical, and responsibility. On the other hand, the concept of OGD according to the Organisation for Economic Co-operation and Development (OECD) in Wirtz & Birkmeyer (2015) is a way for governments to promote open and responsive government by prioritizing transparency of government, accessibility to services and information, and responsiveness to new ideas, demands, and needs that arise from existing aspirations. By integrating these two theories, this research seeks to explain how digital literacy can support the optimal utilization of OGD by the community.

Previous studies on OGD also reveal the same thing, where the implementation of OGD has several obstacles such as the minimum number of available datasets, lack of participation from the community, and individual limitations in accessing digital services (Soegiono, 2018; Yudan & Arief Virgy, 2021). The success of OGD implementation does not only involve the role of the government but involves all sectors, especially the community who acts as a beneficiary of government openness (Purwanto et al., 2020). In addition, the government is also expected to be able to manage the ecosystem and ensure the release of existing data (Conradie & Choenni, 2014; Matheus & Janssen, 2020). One of the important things in OGD Implementation is that OGD Implementation must be followed in the usability aspect. Namely, how to create OGD that is able to boost the value of community participation in its use, and the extent to which OGD is able to improve the performance of local governments. Of course, the presence of OGD in people's lives also encourages access to digital devices. For this reason, the development of the OGD platform is also an important factor that raises community involvement, in this case the government carefully understands the usability aspects received by the community as users of these facilities (Lee-Geiller & Lee, 2019; Matheus et al., 2020; Wang et al., 2024).

Although many studies on OGD have explained the implementation from a government perspective, studies that discuss the ability of the community to utilize OGD, especially those that discuss digital literacy, are still very limited. As explained earlier, digital literacy is one of the important factors that determine engagement in OGD implementation. Therefore, this study tries to cover the shortcomings of previous studies by explaining the digital literacy skills of the community in utilizing OGD. Based on the main problem, this study formulates How people utilize the OGD portal in Tangerang district? And to what extent is the community's digital literacy level? This study aims to determine the extent of the community's digital literacy skills in utilizing OGD, especially in Tangerang district, identify obstacles experienced by the community in

using the OGD Portal, and formulate strategies that the government can do to increase community participation in using OGD.

2. METHOD

This research uses quantitative research. This type of research was chosen to gain an in-depth understanding of the extent of digital literacy skills and the public's perception of its utilization on the open data portal of the Tangerang district.

As explained in the introduction, this area was chosen because it has adopted OGD. In addition, Tangerang district is also a suburban area that reflects the dynamics of digitization in Indonesia.

The data source used is primary data, with data collection techniques using a questionnaire in the form of open and closed questions involving the community in the Tangerang district. The sample selection uses a non-probability sampling method of purposive sampling type. Non-probability sampling is generally chosen when researchers face obstacles in accessing the entire population, have limited resources, or want to conduct descriptive research (Sukwika, T, 2023). The criteria for respondents are: Aged between 18-60 years old, domiciled in Tangerang, and have used the Tangerang district open data portal.

In accordance with the research objectives, data collection related to the digital literacy skills of the community was carried out with the approach of Gilster's four digital literacy competencies (1997) which include:

1. ability to use internet search engines
2. hypertext navigation capabilities
3. content evaluation ability
4. the ability to organize knowledge.

As for the utilization of the open data portal, the OGD concept used according to the OECD which theologically consists of aspects of transparency and accessibility (Wirtz & Birkmeyer, 2015). The focus raised regarding:

1. user knowledge (understanding of the benefits of the OGD Portal)
2. frequency of use (frequency of use of the OGD Portal)
3. user experience (Difficulties experienced by users)

The data analysis is by descriptive quantitative analysis using a Likert scale which is carried out by recapitulating respondents with a percentage of 100%, the provisions of the scale are:

Table 1. Respondents' Opinion Scores

Rating Scale	Question Score (+)	Question Score (-)
Strongly Agree	5	2
Agree	4	3
Disagree	3	4
Disagree	2	5

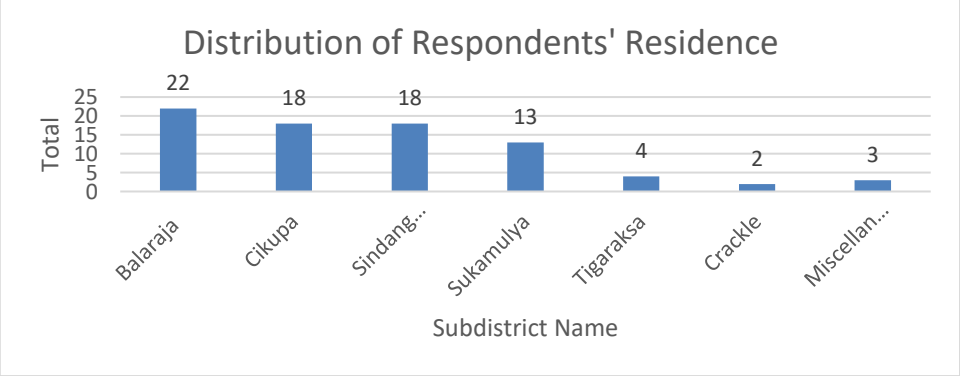
Data Source: Field Results

3. RESULTS AND DISCUSSION

3.1 Overview of Respondents

Characteristics based on the distribution of Goggle Form there are 7 sub-districts in Tangerang Regency. There were 80 respondents who actively participated in this research.

Figure 1: Distribution of Respondents' Residence

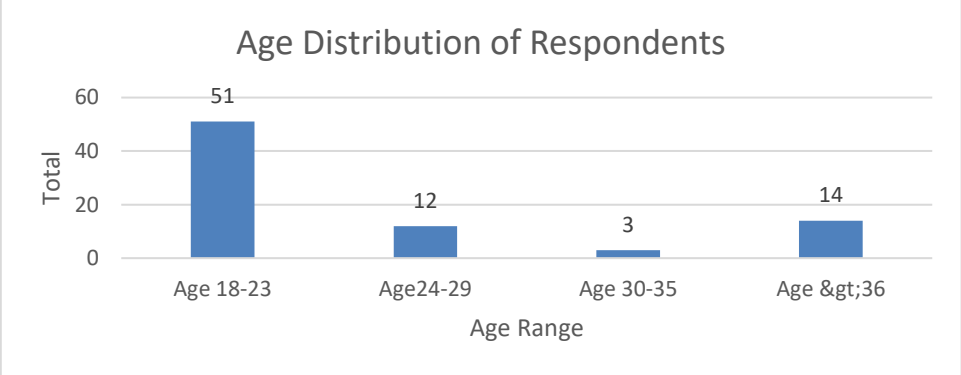


Data Source: Field data processing results

The distribution of data shows that the respondents came from Balaraja sub-district, namely 22 people or 27.5%, 18 people or 22.5% came from 2 sub-districts, namely Cikupa and Sindang Jaya, 13 people or 16.25%

of respondents came from Sukamulya sub-district, 4 people or 5% came from Tigaraksa sub-district, 2 people or 2.5% of respondents came from Kresek sub-district, and as many as 3 people or 1.25% came from 3 different sub-districts. From these results, it shows that the place of residence of most respondents comes from the Balaraja sub-district. Balaraja sub-district as the majority of respondents are in industrial and residential areas, which in mindset leads to a society that accepts change, as seen from the alertness and knowledge possessed by respondents in interpreting science and technology.

Figure 2: Age Distribution of Respondents



Data Source: Field data processing results

Based on Figure 3, respondents with an age range of 18-23 years totaled 51 people or 63.75%, an age range of 24-29 years totaled 12 people or 15%, an age range of 30-35 years totaled 3 people or 3.75%, and an age range above 36 years as many as 14 people or 17.5%. From these results, it shows that respondents with an age range of 18-23 are dominant as participants in this survey and have a profession as a student.

3.2 Community Digital Literacy Level

Digital literacy skills are a process where individuals are able to examine and digest information obtained by first checking the validity of the data and to find references or analyze documents sourced from the internet. As previously discussed, this ability is an important requirement to support the openness of information that has been needed by the community.

Table 2. Descriptive of Digital Literacy Skills

Items	N	Minimum	Maximum	Mean	Std. Deviation
1. Search Engine Proficiency	80	10	15	13.15	1.379
2. Ability to Understand Hypertext	80	7	15	11.99	1.673
3. Content Evaluation Ability	80	9	15	12.17	1.300
4. Knowledge Compilation Ability	80	6	15	11.80	1.878
Valid N (listwise)	80				

Data Source: Field data processing results

Based on the calculations in Table 2, the results show that the digital literacy ability variable is measured by 4 category groups with 3 questions each. The data distribution shows the ability to use search engines with a minimum value of 10, a maximum value of 15, while the average value is at 13.5 and the standard deviation is 1.379. Then the ability to understand hypertext has a minimum value of 7, a maximum value of 15, an average value of 11.99 and a standard deviation of 1.673. Furthermore, the ability to evaluate content has a minimum value of 9, a maximum value of 15, an average value of 12.7 and a standard deviation of 1.300. And

finally the ability to compile knowledge the minimum value is 6, the maximum value is 15, the average value is at 11.80 and the standard deviation is at 1.878. These results shows that the average digital literacy ability of the community is relatively high seen from the proximity of the average value and the maximum value. However, the ability to understand hypertext and compile knowledge is slightly lower than the other two skills. Where really master qualified digital literacy skills requires an approach from the government, because literacy is not only being able to use digital devices, but also thinking skills using good knowledge sources in other digital forms (Amara et al., 2021.).

Digital literacy skills as a communication tool between society and technological change. The goal is that people can use technology wisely and be able to use the media to support their profession. After knowing the results of the data, the next step is to make a percentage of the data results to determine the overall digital literacy score presented in Table 3.

Table 3. Level of Digital Literacy Skills

NO	SCORE	CATEGORIES	FREQUENCY	PRESENTATION
1	48-60	HIGH	50	62,5%
2	36-47	MEDIUM	30	37,5%
3	24-35	LOW	0	0%
	TOTAL		80	100%

Data Source: Field data processing results

Based on the calculation results, it is found that the number of people who have a high level of digital literacy is 62.5% or 50 respondents, where this category is the most dominant result. Meanwhile, the level of digital literacy in the medium category is 37.5% or 30 respondents. This result can occur due to the distribution of respondents who are dominated by the younger generation who are more digitally literate (Eshet-Alkali & Amichai-Hamburger, 2004).

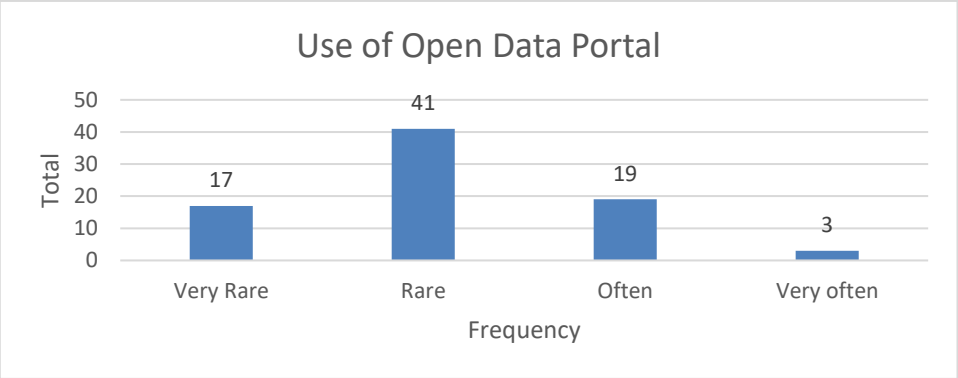
The needs of respondents in this high category can be seen in their daily lives in interacting with the internet network as a necessity that must be done, considering that online activities and transactions will rely heavily on network strength as a connecting medium. However, in general, community digital literacy is still in the basic category, namely computer literacy and internet literacy. In general, digital literacy is someone who has knowledge and skills about digital tools and digital technology. Digital literacy can be classified as follows: (i) Computer Literacy; (ii) Network Literacy; (iii) Web Literacy; (iv) Internet Literacy; (v) Media Literacy; (vi) Multimedia Literacy. The development of a digital society requires support from physical infrastructure to inclusive social policies. Previous studies found various barriers such as: The lack of proper planning of the use of digital products and their application to the general public is a serious challenge, as it can lead to a digital divide. The digital society also faces challenges in the unavailability of human resources and various information technology infrastructures. For this reason, the formation of a digital society requires adequate facilities and budget from the government (Mafi, 2012; Mathur & Ambani, 2005; Obi & Iwasaki, 2010; Paul et al., 2017)

3.3 Utilizing the OGD Portal

OGD utilization is still a dilemma when people understand the use of OGD and the needs related to data processing, where the hope is that people will use it according to their needs. Digital society is a society structure with electronic micro-network elements based on digital information and communication technology. The habits of this society are certainly thirsty for novelty and constantly experiment with the development of existing technology. The Digital Society will be highly dependent on various types of stakeholders, including society, technology, and content. Some things that are closely correlated with Digital Society include the Internet of Things (IoT), 5G, Cloud Computing, Big Data, Human Computer Interaction and so on. Of course, this development encourages the emergence of digital-based governance concepts, such as: Smart Cities, Smart Villages, and various other smart services (Paul et al., 2018).

To better understand how people utilize the OGD portal, the first step is to measure how often people use the tool.

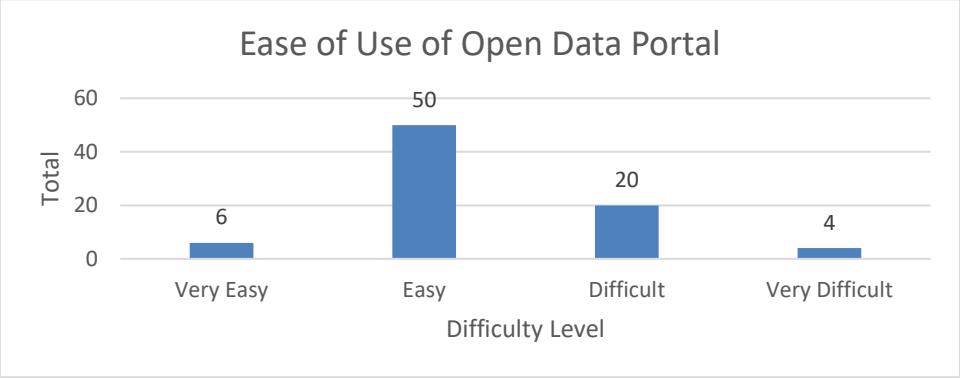
Figure 3: Frequency of use of the Open Data Portal



Data Source: Field data processing results

The recapitulation of respondents who answered very rarely was 17 people or 21.25%, respondents who answered rarely used 41 people or 51.25%, respondents who answered often 19 or 23.75%, and respondents who answered very often 3 or 3.75%. This means that there are relatively fewer respondents who actively use the open data portal of Tangerang district, judging by the frequency of answers given. Seeing this, of course, the objectives of the OGD implementation have not been fully achieved, because as a form of social and political responsibility the community also participates and plays a role in the process of monitoring the performance of the government (Abu-Shanab, 2015).

Figure 4. Ease of Use of Open data portal



Data Source: Field data processing results

Respondents who answered very easy were 6 people or 7.5%, respondents who answered easy were 50 people or 62.5%, respondents who answered difficult were 20 people or 25%, and respondents who answered very difficult were 4 people or 5%. It can be concluded that respondents found it relatively easy the first time they used the Tangerang district open data portal based on the frequency of answers given. The ease of operationalizing the system is based on the fact that the system displays easy access without prior registration and the public can browse as they wish and assess the performance of OPDs based on the data that can be accessed on the dashboard.

There were 46 respondents who answered that they did not fully understand the benefits of the Tangerang district open data portal, as well as 21 respondents who understood but could not provide a clear picture of how they could use the data for their daily lives, and there were only 13 respondents who really understood the use of the open data portal to be used as material for formulating policies on population data, the economy, and others related to government programs. As previously explained, OGD is an application for Tangerang district government reports, which concentrates on the development of social, economic, infrastructure and financial realization accuracy data.

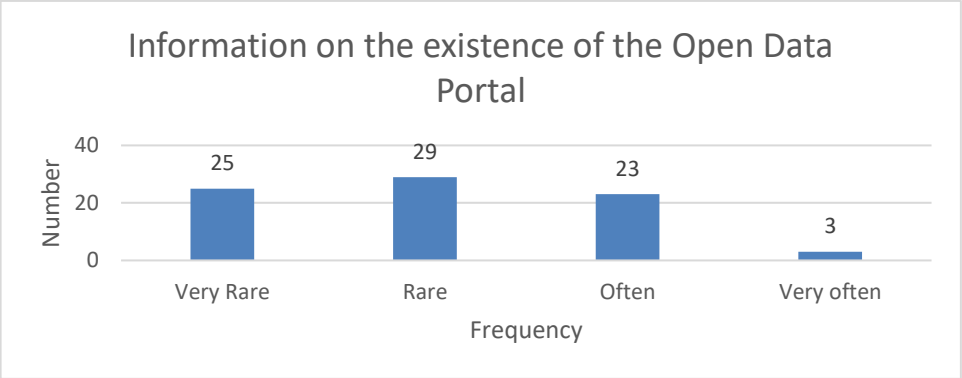
However, seeing that the majority of respondents have not fully utilized the portal is a sign that there is a lack of creativity in seeing the potential usefulness of the data available on the portal. Whereas in the previous analysis the ability to navigate hypertext and compile knowledge is relatively low compared to other abilities, which is closely related to the creative aspects of digital literacy. According to Belshaw (2011) the creative aspect emphasizes the ability to fully utilize the capacity of digital technology to discover and develop something from the process. In line with what was expressed by Park & Oh (2020) citing Ding et al., it was

stated that people not only play a role as recipients of information, but furthermore people are also required to take an active part in the use of existing data such as analyzing, comparing, and drawing conclusions.

3.4 Barriers to OGD Utilization

The advancement of digitalization is a consideration to be able to move the joints of excellent and responsive public services. For this reason, OGD accompanies the community in answering the need for information and education for the community to be digitally literate and adaptive to change. Respondents truthfully stated that they rarely heard about OGD, or that it was very rare for the public to hear about it. Even when this research took place, they only understood the essence of OGD and the local government's concern in creating OGD as a form of open government implementation.

Figure 5. Providing information on the Open Data Portal

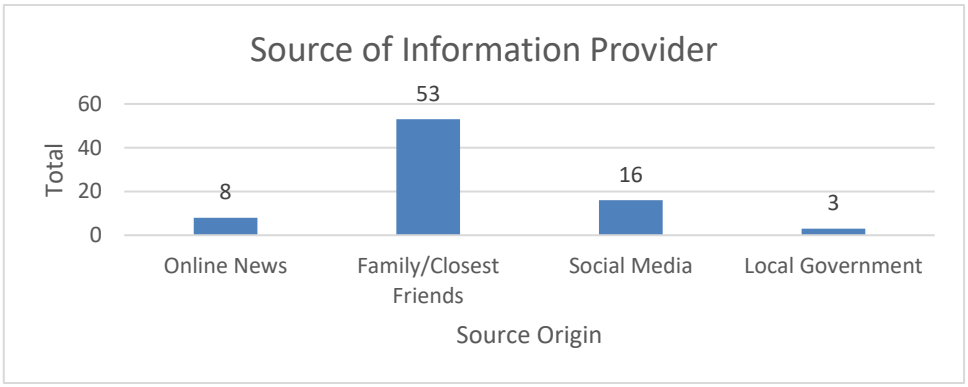


Data Source: Field data processing results

Based on the distribution of the goggle form, respondents who answered very rarely were 25 people or 31.25%, respondents who answered rarely were 29 people or 36.25%, respondents who answered often were 23 people or 28.75%, and respondents who answered very often were 3 or 3.75%. It can be concluded that the public hears relatively less regarding the open data portal of the Tangerang Regency conveyed by the local government, it can be seen from the frequency of answers given.

OGD is also the subject of conversation among family/close friends because OGD is positioned as accurate information sourced from other technical local government organizations. Respondents also expressed that there is a distance that is difficult to connect with the role of the local government so far, such as accepting OGD without sourcing it from the main OGD actor, the local government, which can be seen in the figure below:

Figure 6: Sources of information obtained by respondents



Data Source: Field data processing results

Based on Figure 7, respondents who answered the source of information from online news were 8 people or 1%, respondents who answered from their closest family/friends were 53 people or 66.25%, respondents who answered from social media were 19 people or 23.75%, and respondents who answered from the local government were 3 people or 3.75%. It can be concluded that most of the information obtained about the existence of the open data portal comes from family/close friends. The dissemination of information to the community will certainly determine their involvement as evaluators. Of course, this is a big concern for the government, where achieving the main objectives of OGD also needs to involve participation from the

community. This means that the availability of supporting institutions and the ease with which the community can be directly involved will lead to community involvement in OGD (Purwanto et al., 2020).

Regarding the obstacles faced in the open data portal of Tangerang district, we found three main problems: the lack of data that is relevant to the needs of the community and the very limited choice of formats provided, then the appearance of the portal that is not friendly to ordinary users, and the lack of initial guidance on how to use the website. Respondents stated that the portal's interface was not understandable, arguing that the data was not provided with conclusions, summaries or abstracts, only attached documents. This means that the OGD portal talks a lot about secondary data that needs to be narrated and translated to avoid biased interpretations (Boychuk et al., 2016). By design, it needs features that are easy to operate and an attractive appearance so that people feel comfortable interacting with the portal (Matheus et al., 2020). Critics and suggestions from the dominant community answered to do in-depth socialization by the government and optimization of the features on the portal by conducting socialization or visits to each village or sub-district so that residents of Tangerang district know about the open data portal, benefits, and others. This is also in line with Zulfa & Afandi (2023) who state that the government needs to provide maximum assistance regarding existing digital facilities, considering that there are still ordinary people who do not know how to use them.

3.5 Implications of Research Findings

OGD is an instrument of the Tangerang District government in reporting its work in a data layout that can be accessed by all. The strengthening of the OGD is on a platform that can be used for various purposes and can be utilized for the needs of the community. In addition to providing information, OGD can influence the statistical development index. The initial data submitted in OGD is a reference for updating data submitted by technical DPOs. This application is also a form of data harmonization between walidata and data producers that can meet the needs of the community with the principle of open management.

The concept of open management is more focused on the availability of factual data and various elements can explore and grow interest in correcting these data achievements by providing public communication space. Based on the results of the data processing that has been carried out, several findings can be inventoried as follows: First, the utilization of OGD is still not optimal, where there is a lot of public ignorance about this platform. The OGD platform is seen as a public media that will bring changes to the government management of Tangerang Regency, starting from its usefulness to treating data for positive activities. Secondly, this platform tells a story about data, statistical data can be a reference in making policies, but in reality much of the available data is still not updated, there is data that should be enriched and upgraded.

Ideally, periodic data in OGD is very important to be able to justify and evaluate the validity of the data. Especially when talking about population, of course, the dynamic and informative nature is the most important part. The latest data is the right data for decision making. Of course, the actor that will handle data updates is the local government of Kabupaten Tangerang. Strategies that can be developed include a holistic approach to the community as a source of data, integrated data that can be used by other OPDs, and the use of technology.

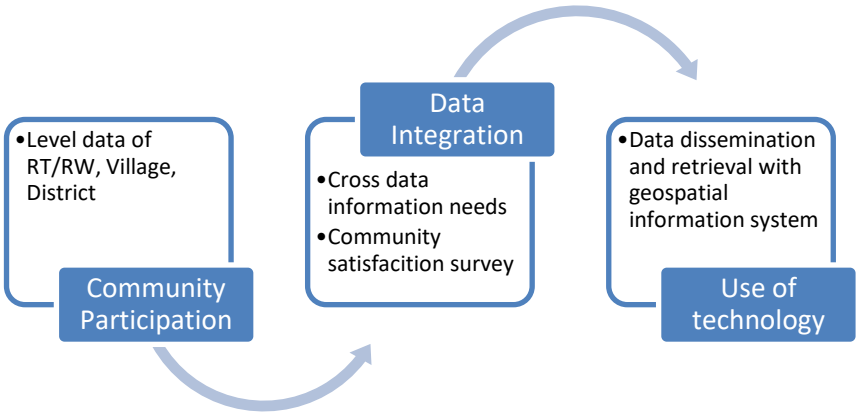


Figure 7: Data update strategy

In addition, there are several policy recommendations that the Tangerang district government can do as follows:

1. Starting to conduct regular socialization programs in several sub-districts by inviting most residents to be given guidance on how to use the OGD portal, in addition to providing training to students at

school can also be a concrete step in shaping public awareness and training their abilities to be able to maximize the use of open data.

2. Build strong cooperation between the government and the public as well as the private sector in the formation of datasets, so that problems related to the relevance and amount of data needed by the public will be resolved.
3. Optimizing the features and appearance of the website by collaborating with third parties, in this case related to data processing and interpretation so that it can be more easily read and understood, can certainly overcome the problems experienced by the public regarding their understanding of using datasets.

4. CONCLUSION

Based on the research that has been conducted, it can be concluded that although the digital literacy skills of the people of Tangerang district are relatively high, the utilization of the open data portal is still relatively low. This research shows a gap between technical skills in terms of operation and a deep understanding of the true value of the open data portal. This indicates that the government needs to carefully conduct digital literacy training for the community so that they can use digital tools, especially the OGD portal, make collaborative efforts with various stakeholders to achieve the successful implementation of OGD, and conduct continuous socialization to increase community participation and understanding of the importance of OGD.

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