

Does The Government Effectively in Optimizing Open Data? Analysis "Jago Data" in Yogyakarta Municipality

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Received: November 29 2019; Revised: December 08 2019; Accepted: December 09 2019

Abstract: *Open Government Data (OGD) is a database produced by the government that can be freely accessed, used or modified, therefore, this is a support to increase transparency and public participation. This article aims to analyze the effectively optimizing Open Government Data on the Jogja Go Open Data "JAGO DATA" in Yogyakarta Municipality. Furthermore, the methodology of this article uses qualitative research with in-depth interviews and literature, moreover, the variables of this research are focused on legal guidelines and frameworks (crosstab query is 47.5%), the ability of web portal system (crosstab query is 27.5%), and human resource in government and its attitude (crosstab query is 25%), therefore, its data findings were analyzed with NVivo 12 plus software. The result of this article shows that the Yogyakarta city government successfully implemented JAGO DATA to support transparency, accountability, and encourage public participation, moreover, it is has implemented directives regarding Open Data regulation and its innovation designed with a collaborative among regional-level work units (SKPD). Therefore, the JAGO DATA portal is rated as user-friendly with the model used at the information stage and its maturity of a web portal is still in the pre-adoption level.*

Keywords: *OGD, e-government, effectively, jogja go Open Data, yogyakarta municipality*

Introduction

In recent years, studies on Open Government Data (OGD) have been found in several kinds of literature (Corrêa, Corrêa, & Da Silva, 2014; Soegiono, 2018; Xiao, He, Chi, Jeng, & Tomer, 2019). Almost all countries recognize and realize the importance of Open Government Data (Retnowati, Manongga, & Sunarto, 2018). Therefore, the presence of OGD is seen as

a step by the government to increase the transparency, participation, collaboration (Wirtz, Weyerer, & Rösch, 2018), as well as accountability in public organization (Yavuz & Welch, 2014).

However, empirically, it turns out that OGD is often found in several public sectors, but there are still governments that have not optimized its innovation (Aritonang, 2017; Jayanti, 2018; Pin-Yu &

availability of Open Government Data must be adjusted to the needs of adequate and consistent funding and allocation of community capacity. Therefore, to further understand integrated databases (Mejabi et al., 2017), and various issues regarding discrepancies between data caused by the absence of a single classification of data and information model (Martín et al., 2015).

The Use of Open Government Data

Nowadays, Open Government Data abbreviated is seen as the government's effort in showing data and information disclosure to the public (Yavuz & Welch, 2014), furthermore, (Retnowati, Manongga, 2018) argues that implementation of Open Government Data is considered to have a range of understanding such as the institutional, technological and regulatory, however, the most government agencies in several countries have realized the importance of data disclosure.

In addition, according to (Anshari, Almunawar, & Lim, 2018; Aritonang, 2017) view that the presence of Open Data in the sphere of the government is believed to have the potential to produce better government performance which is effectively and efficiently, and (Hanbal & Prakash, 2019) argues that OGD must be able to enable everyone to participate in disseminating and producing data both online and offline, as well as (Sirait, 2016) the OGD movement voiced by the public information sector is able to be applied effectively and right to reach the target.

OGD in Empirical Case

Currently, the government needs a framework for classifying data that is

displayed (Prieto, Mazon, & Lozano-Tello, 2019). This is seen as good for assisting the public in accessing and understanding data grouping (Xiao et al., 2019).

It seems that the presence of a framework in OGD results in a higher level of involvement due to the design guidelines (McBride, Toots, Tarmo Kalvet, 2019). In developing the framework, the government needs support from non-government sectors in producing data guideline (Johnson, 2016). The design uses the prototype as one of guidelines deemed capable of managing the data integrally easily and efficiently (Nurnawati & Ermawati, 2018).

However, apparently the use of large amounts of data does not guarantee the achievement of development goals (Sushardjanti Felasari, 2017), in addition, the government attitudes regarding the application of Open Data is needed to produce a good framework (Misuraca & Viscusi, 2014). Furthermore, the ability of the OGD website portal, (Chatfield & Reddick, 2017) are assessed to measure by the intensity of a policy, the provision, variations of data formats, services and data modeling as well as the competition of ideas generated.

Effectiveness OGD in Indonesia and Other Countries

Empirically, practices of Open Government Data in Indonesia and several countries outside there are still found many that are not optimal such as; the lack of involvement of government human resources in the implementation of Open Data (Tryanti, 2019), the speed of adoption of Open Data is still relatively slow (Folmer et al., 2019), the timeliness

and quality of published data is very low (Oliveira et al., 2016), there is a gap between portal transparency and OGD implementation (Corrêa et al., 2014).

Moreover, uncertainty of Open Data frameworks within the government (Soegiono, 2018), the lack of Open Government Data harmonization and far from quality standards (Martín et al., 2015), there are several government web portal that only reaches a low level of maturity (Rizana et al., 2019), lack of optimal administration systems and lack of staff expertise in OGD implementation (Zhao & Fan, 2018), the government participation and support which are still relatively small (Soegiono, 2018), and there is no single model for responding to the way to classify information (Sáez Martín et al., 2015), however, as a matter of fact, it can be drawn a whole line that no government has implemented an OGD that can really contribute directly (Pin-Yu & Hsien-Lee, 2018).

According to (Safaria et al., 2019) stated that there are obstacles in the implementation of Open Government Data such as: preparation of immature

HR, low government commitment, lack of adequate budget support, and not yet integrated organizational structure in the implementation of Open Data. Despite it, the important role of government and non-government is needed (Maail, 2018), as well as management support and administrative capacity to be able to assist the implementation of OGD (Meijer, Lips, & Chen, 2019).

In addition, the government must be able to create a web portal to be able to serve the community, government business, transparency of planning and also budget transparency (Prahono & Elidjen, 2015), which follows the rules and legal regulations outlined by government (Manongga, 2018).

Therefore, the government is able to determine the Open Data model and the level of transparency is very important (Alzamil & Vasarhelyi, 2019), and promote the validity of published data and the active participation of all interested parties in building a comprehensive Open Data portal, public user friendly and safe (Maizunati, 2018).

Table 1.

Research Model of Literature Review

No	Variables	Indicators	Sources
1	Legal Guidelines & Frameworks	Able to classify/understand/ respond/ determine/ manage data and information models integrally easily and efficiently	(Alzamil & Vasarhelyi, 2019; Nurnawati & Ermawati, 2018; Prieto et al., 2019; Sáez Martín et al., 2015; Soegiono, 2018; Xiao et al., 2019)

	Support from non-governmental organizations in producing data guidelines results in increasingly high levels of engagement	(Johnson, 2016; Keegan McBride, Maarja Toots, Tarmo Kalvet, 2019; Misuraca & Viscusi, 2014)
	Following the rules and public law outlined by the government	(Retnowati et al., 2018)
2	The Ability of the Web Portal System	Measured by the intensity of a policy, the provision, variations of data formats, services and data modeling and competition of ideas generated
	Portal transparency and OGD harmonization and quality standards	(Corrêa et al., 2014; Sáez Martín et al., 2015)
	Speed of adoption of Open Data implementers	(Folmer et al., 2019)
	Maturity level and can serve the community, government business services, planning transparency, and budget transparency	(Prahono & Elidjen, 2015; Rizana et al., 2019)
	Community participation and government support in the implementation of OGD i.e. budget	(Maizunati, 2018; Safaria et al., 2019; Soegiono, 2018)
3	Government Human Resources Capabilities and Its Attitude	Involvement of government human resources in implementation
	Administrative system capacity and staff expertise in OGD implementation	(Safaria et al., 2019; Witya Tryanti, 2019)
	Guarantee the achievement of development goals	(Meijer et al., 2019; Zhao & Fan, 2018)
		(Sushardjanti Felasari, 2017)

Direct contribution and commitment in the implementation and role of government	(Maail, 2018; Pin-Yu & Hsien-Lee, 2018; Safaria et al., 2019)
Timeline and quality of published data	(Oliveira et al., 2016)
Integrated organizational structure in the implementation of Open Data	(Safaria et al., 2019)

Source: Author Analysis Result, 2019

In the end, based on the research described above, many previous studies have revealed Open Government Data conceptually and in an overview of technology and system design, but empirical research is still considered small and limitations of the study are still rarely found in various aspects, both institutional, system, behavior, resources and others.

Moreover, we consider the need for further review and in-depth empirical analysis related to the effectiveness of the implement of Open Government Data at local government level, so this research focuses on assessing the effectiveness of OGD implementation at local government level.

The case selected at the local government level is believed to have high strategic issue to analyze and important to identify the frameworks each region that have differences in implementing of Open Government Data, furthermore, the local government level also has intensive interaction with the community rather than the central government, it related by provided of the technology-based service that integrates Open Government Data.

Furthermore, the integrated Open Government Data efforts are still ongoing by the government and are always optimistic about various initiatives to develop Open Data such as the presence of Jogja Go Open Data "JAGO DATA" as a form of providing data on the Yogyakarta city government.

The case chosen in the Yogyakarta city is seen related as having the purposes of developing a smart city movement, this is one of the efforts to increase the openness of data and information to the public through JAGO DATA, moreover, its public response to ensure the availability of data and information that can increase community confidence in providing the transparency to Yogyakarta city, besides, it is important in supporting the smooth running of Yogyakarta city government to implement the Open Government Data. It is said on its website that JAGO DATA is an integrated Open Data (OD) innovation concept that makes one of the efforts of Yogyakarta city government to support transparency and accountability, as well as encourage community participation.

Various Open Data displayed in JAGO DATA are inseparable from the collaboration between the stakeholders of

regional-level work units (SKPD) in the Yogyakarta city government with the hope that it can be used as fully as possible and utilize data as innovative as possible by all elements of community.

Therefore, this article considers our needed for a more in-depth interview of the effectively to optimize implement of Open Government Data integrated and to emphasize that previous research that still limited to Open Government Data literature studies at the local government level, however, our formulate on this research is namely has the Yogyakarta city government effectively in optimizing Jogja Go Open Data “JAGO DATA” in Yogyakarta municipality?

Method

This article tries to use qualitative research that emphasizes interpretation of results of regression analysis (Aspers & Corte, 2019), furthermore, using the in-depth interview method, where both parties are internally involved and it is physical meetings are important contexts for flexible, interactive and generative interviews (Ritchie, 2003), in which the meaning of language is explored in depth interviews on a topic under study (Jimenez, Hudson, Lima, & Crabtree, 2019). As well as the support of a variety of literature that is proven true through objective confirmation to the resource persons. In addition, qualitative data analysis uses the NVivo 12 Plus software as an easy-to-use application, making it possible to import documents directly from the word processor on the screen. Despite it, coding stripes can be made and visible in the margins of the document so

that this study can see at a glance which code has been used (Welsh, 2002).

This research was conducted in the Department of Communication, Informatics and Encoding Service (Diskominfo) in Yogyakarta city government which is believed to be a co-project and the responsibility for implementing JAGO DATA in Yogyakarta municipality, the selected informants of this research were chosen as many as three interviewers, it is believed that they have related with the tasks and they functions, especially as an expert staff in Information and Communication Technology (ICT) Division which is understand about the JAGO DATA.

In addition, we also try to research in various online media to further analyze Open Government Data (OGD) which includes the types of government staffing (civil servant) data, human population data, regional tax data, and retribution data, moreover, in the end, this research is able to provide input for stakeholders related with several regional-level work units (SKPD) involved in JAGO DATA for the success of the Yogyakarta city government, it efforts to realize and create a clean, transparent, accountable and participatory of the government for data and information disclosure.

Furthermore, the operations in this study use variables the effectiveness of the implementation of Open Data that has been determined in [table 1] include: legal guidelines and frameworks, the ability of web portal system, and capability of government human resources and its attitude in optimizing the provision of Open Data through Jogja Go Open Data in the Yogyakarta city.

Results and Discussion

Before describing the effectiveness of OGD implementation through Jogja Go Open Data in Yogyakarta City, we tried to classify the types of data displayed

through the web portal of JAGO DATA. From Jogja Go Open Data, we can see data directly and can compare data conditions from year to year, as for the data displayed as follows.

Table 2.
Data Classification on Jogja Go Open Data in Yogyakarta Municipality

No	Data Type	Sub Data
1	Regional Tax	Realization of annual and monthly regional taxes as seen from the development and comparison each year
2	Market Retribution	Vehicle test and QR retribution realization
3	Human Population	Based on religion, age, marital status, deed, physical disability, family card, citizenship, education, and blood type
4	Government Staffing	Based on religion, MK Rank, Work Unit, Education, and Position

Source: <https://opendata.jogjakota.go.id/data/>

Based on the classification of data [table 2], it is believed that Yogyakarta city government is currently trying to realize Open Data service innovations that are displayed free-access to the public, it is seen from the existence of several types of data such as taxes, user charges, population, and employment, However, health and education data are still in the process of being coordinated with another regional-level work units (SKPD) of the Yogyakarta municipality.

Furthermore, the results of our review regarding the number of access

data on November 24, 2019 through the Jogja Go Open Data "JAGO DATA" portal 'opendata.jogjakota.go.id', which is for Human Population data accessed as many as 1,899 times, Local Tax data accessed as many as 1,215 times, Government Staffing data accessed as many as 711 times, and the Market Retribution data accessed as many as 575 times. As the findings, we first tried to look at the calculation of the sum of records from in-depth interviews of three informants and literature review through online media using Crosstab Query on the NVivo 12 Plus, as follows:

Table 3.
Crosstab Query-Rate (%)

Variable	Interview	News Media (Online)	Total
Legal Guidelines & Frameworks	57.14%	36.84%	47.5%
Ability of the Web Portal System	19.05%	36.84%	27.5%
Government Human Resources Capabilities and Its Attitude	23.81%	26.32%	25%
Total	100%	100%	100%

Source: Coding Analysis through NVivo 12 plus Software

Legal Guidelines & Frameworks on JAGO DATA Implemented

Referring to Law Number 14 the Year 2008 regarding Openness of Public Information, it is seen as the basis of legal guideline which requires that every central and local government implement Open Data. The application of Open Data in Yogyakarta municipality through Jogja Go Open Data (JAGO DATA) is believed to be in accordance with applicable legal norms, through Indonesia Law Number 14 of 2008, that this the Yogyakarta city government has followed the rules that require public bodies to implement the provisions of data disclosure to the public.

This is seen in harmony with other research has been stated by (Retnowati, Manongga, 2018) that the application of Open Data must follow the rules and legal guideline that has been outlined by the government to carry out task of managing data and information disclosure.

The above is believed to be the background for the birth of the Jogja Go Open Data innovation or in brief JAGO DATA. Based on the Crosstab Query-Rate 47.5% explains that Jogja Go Open Data is part of the Jogja Smart Service (JSS) owned by the Yogyakarta Municipality Government, this one-door data service can be accessed using the Jogja Smart Service application (mobile phone) or through the portal web 'opendata.jogjakota.go.id'.

These findings are closely related to the results of the study (Soegiono, 2018) which says that the single data service development model (one data service) can strengthen government management for Open Data in the provision of information. Therefore, it is assessed to facilitate users in finding information and understanding data and information presented by the Yogyakarta city government, this view is in line with other studies (Nurnawati & Ermawati,

2018; Xiao et al., 2019) that the classification of data is integrally very helpful for users in access and understand data grouping easily and efficiently.

Initially, Open Data was referred to as Data Warehouse, this was considered technical by Yogyakarta city government for majority of the community, so that the unit that became a co-project namely the *Diskominfo* had changed and developed a better Data Warehouse by launching a new naming namely Jogja Go Open Data (JAGO DATA) which has the same aims and objectives as before. This is seen as having conformity expressed in the results of research (Retnowati, Manongga, 2018) which states that the application of Open Government Data (OGD) must be fully supported by regulations and a strong manufacturing basis as determined by the government.

In addition, the framework on Jogja Go Open Data is implemented collaboratively by each *SPKD's* within the Yogyakarta city government, according to (Meijer et al., 2019) collaboration as a new dynamic between parties involved in producing a performance of the program. Furthermore, the collaboration that exists between *SKPD's* in Jogja Go Open Data namely; Regional Taxation Data from Department Regional Tax, the Market Retribution Data from Department of Industry and Trade, Human Population Data from Department of Population and Civil Servants, and Government Staffing Data from Personnel, Education and Training Agency. In addition, the data is updated every day for market retribution and regional taxes. Furthermore, human population and government staffing are

updated at the end of each month, all done in real-time.

The above was assessed that stakeholder involvement in supporting the integral data model and producing data guidelines was seen to originate only from regional-level work units (*SKPD*), however, the implementation of Jogja Go Open Data had no interference from the private sectors. It contradicted what was stated by (Johnson, 2016; McBride, Toots, Kalvet, 2019; Misuraca & Viscusi, 2014) which revealed that there was support from non-governmental organizations sectors in producing data guidelines that resulted in an increasingly high level involvement, in this case no involvement was found non-government parties, private parties only as taxpayers and not as execution actor involved in the Jogja Go Open Data system and regulators, therefore, the Yogyakarta city government still uses government human resources through *Diskominfo* as executors in implemented.

Nevertheless, from findings, in the application of JAGO DATA apparently there is no human involvement in entering data, the data present in the portal is the result of a system by process, for example market retribution data where the market manager provides a means of payment to traders to do the scanning, then, the results of the scanning are then processed and entered automatically in the Jogja Go Open Data a system, so, in the application of Jogja Go Open Data that there is no manipulation of data by certain parties in the data entry process.

Moreover, at the timeline of data entry, the obstacles often experienced by

Diskominfo in implementing Jogja Go Open Data are only experiencing delays caused by network disruptions, however, it is has been running smoothly. This fact is considered relevant to the results of research from (Yamin, 2018) which states that the availability of adequate internet network access is considered important in supporting the quality of appropriate information management, and (Anshari et al., 2018) have the potential to improve effective and efficient the government performance to achieve better public service goals.

The Ability of the Web Portal System on Jogja Go Open Data

Based on the Crosstab Query-Rate 27.5%, it explains that the data inputted on Jogja Go Open Data is automatically by integrated system. This portal is able to provide comparative data up to 5 years ago and also monthly data comparison, then the data displayed in the form of graphs and tables. The info-graphic format is believed to be a consideration to facilitate the public in comparing information data. If related to the results of research (Chatfield & Reddick, 2017) which reveal that the intensity of an information provision can be measured by a variety of data formats and data modeling services, thus the competition for ideas generated is able to provide quality standards in the data and information services provided.

Furthermore, in this case there is a conformity with this research that the *Diskominfo* is good at providing data services in the form of info-graphic format on the Jogja Go Open Data display which is considered capable of providing

eligibility standards and can be used as a reference for those who want it.

In addition, referring to the maturity level of adoption of a web portal, the 'opendata.jogjakota.go.id' web portal is at level 1, at this stage, the Jogja Go Open Data (JAGO DATA) portal only provides information in the form of data series to the public in real-time especially for market retribution data, besides human population data, regional taxes data, and government staffing data are updated at the end of each month, based on the maturity level of the model, if reported with the results of research (Prahono & Elidjen, 2015; Rizana et al., 2019) stated that the level of maturity of a portal web is very important in serving the community, government business services, transparency of planning and budget transparency. However, the Jogja Go Open Data website portal only displays data without two-way communication services, in other words that this portal only provides data and information transparently to the public without question-and-answer columns.

Referring to research (Sirait, 2016) which states that the level of maturity of a web portal can be seen from the stages, namely; nascent, pre-adoption, early-adoption, corporate adoption, and mature or visionary, then the level of maturity in the Jogja Go Open Data portal is at the maturity of pre-adoption, where the Yogyakarta city government starts preparing steps related to Big Data analytics and starts learning about Open Data is part of Big Data which has invested tools through 'opendata.jogjakota.go.id' and the Jogja Smart Service, but the scope is still partial.

the 25% Crosstab Query-Rate, stating that to regulate JAGO DATA, the role of government in data entry is important in producing accurate data on the types of staffing, population and local tax, but this is different from the type of market levy data that takes place in real-time, which cannot intervene in the data processed by the system.

This type of retribution data is automatically entered into the web portal, however, the position and involvement of government human resources in this application are also still needed to monitor the running of the system and communication with SKPD's incorporated in a single data and relations with market traders at the time of retribution in the Yogyakarta city.

The above is seen to be in harmony with the results of research by (Safaria et al., 2019; Witya Tryanti, 2019) which the involvement of government human resources is very important and significantly influences implementation of Open Government Data, in addition, the capacity of the administrative system and the expertise of staff in implementing OGD in view need to be a concern for the government in improving the ability of government human resources. Moreover, this *Diskominfo* always strives to display the best data and information so that it can affect the improvement of the quality of service innovation as it applies to Jogja Go Open Data, as (Sushardjanti Felasari, 2017) that able to guarantee achievement of development goals, namely efforts to implement Smart City in Yogyakarta city.

In addition, so far the application of JAGO DATA has several constraints such as problems with internet signals,

with poor network quality, so often the data input/ in the data entry process is loading. However, the strong commitment from the *Diskominfo* trying to improve network quality and strengthen strategic role of each government stakeholder involved in Open Data, however, the time of data entry is able to display properly and the quality of data published properly.

This is considered to have a harmony with what is conveyed by (Maaail, 2018; Pin-Yu & Hsien-Lee, 2018; Safaria et al., 2019) which says that the contribution and strategic role of the government must be supported by the appropriate duties and responsibilities in the disclosure of data, and (Oliveira et al., 2016) the time and quality of data and information affect Open Government Data service portal.

Clearly, *Diskominfo* of Yogyakarta City as the initiator and main actor in the implementation of Jogja Go Open Data which is seriously in its application, this then becomes the responsibility among stakeholders in it, as a support for the development of Smart City which has the main benefit of increasing transparency through data openness. This is seen as having relevance to results of research by (Zuiderwijk, Shinde, & Janssen, 2018) that OGD is considered as support for the government's efforts to create Smart City, so that the community is able to use the data and information for their respective needs.

Structurally, the application of Jogja Go Open Data does not have a specific organizational structure, so this is inversely proportional to the results of research by (Safaria et al., 2019) that the

furthermore, web portal of opendata.jogjakota.go.id also still in the maturity of pre-adoption level, where the Yogyakarta city government is still at the stage of preparing steps related to Big Data in Jogja Go Open Data which invests tools through 'opendata.jogjakota-go.id'.

Finally, the government's HR and attitude with Crosstab Query-Rate is 25% show that in implemented Jogja Go Open Data, the effectiveness of government's HR is very low, because it is only needed as an operator and monitoring data entry, several types of data require the presence of government human resources such as data staffing and human population data when entering data at the end of each month.

Furthermore, this research has answered some limitation of the several previous studies which have not looked further related to empirical research case on the effectiveness in optimizing OGD implemented at local government level. Specifically, the effort of Open Data movement in the Yogyakarta municipality does not escape related support of clear legal guidelines and framework as well as various aspect of system on the ability of web-portal that continued to increase toward a higher level in provision of data, therefore, OGD optimized that carried out in JAGO DATA can have significant impact on the ability to provide data. Moreover, the Yogyakarta city government also needs HR capabilities that can guarantee the continuity of the implementation of Open Government Data in the future, so that the good government behavior can create wider open data movement and can control the problems that occur in the implementation of open government data

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Acknowledgements

Thank you to Prof. Dr. Achmad Nurmandi, M.Si, and Salahudin, M.Si, M.PA, who has taught NVivo 12 software as a data analysis qualitative tool that is useful in supporting this article.

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