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Determinants of Intention to Use Open Data Website: An Insight from Indonesia

Completed Research Paper

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Abstract

Open data is a flagship initiative in open government program to increase transparency, social and commercial value, and participatory governance. Open data is a relatively new field and the factors affecting its adoption by citizen has not been widely studied. A better understanding of these factors can help government to formulate policies and strategies that can improve the acceptance and use of open data website. The research model is based on the Theory of Planned Behavior and integrated with the technology quality and trust factors. Data collection was conducted using questionnaire. Structural Equation Modeling (SEM) was used to test the research model. The results show that attitude, subjective norm, perceived behavioral control and trust directly affect intention to use open data website. Systems quality affects perceived usefulness, while information quality positively affects perceived usefulness, perceived ease of use, and trust. Both perceived usefulness and perceived ease of use affect user's attitude. The analysis of this study suggests that each influencing factor provide implications for government to stimulate the use of open data website.

Keywords: intention to use, use, open data, open government data, open data website, Theory of Planned Behavior

Introduction

In recent years, the idea of open government has emerged in many countries around the world. Since President Obama announced a Memorandum of Transparency and Open Government in 2009, open government has been one of the most important public policy. Open government initiative has brought a revolutionary change to the traditional model of e-government. It forces the transition from a service-oriented to a data-oriented government. However, it does not discard e-services but expands the traditional concept of e-government with open data (Bogdanovic-Dinic, Veljkovic, & Stoimenov, 2014).

According to United Nations' survey in 2016, 128 countries provided government spending related data in an open format (United Nations, 2016). This indicates that open data initiative has been widely adopted around the world, including Indonesia. In Indonesia, open data initiative is supported by the Information Disclosure Law (Law No. 14 of 2008). Although the law does not specifically regulate the provision of data on online portals, various open data initiatives have appeared, both from government and citizen side. The Indonesian Government established the Open Government Indonesia to accommodate various open data initiatives, such as citizen online grievances, one map policy and open data portal. Up to December 2016, open data portal has provided 1,242 datasets from

32 organizations. On the other hand, open data initiatives also come from the citizens, in the form of e.g. election databases, data-driven application, data-driven journalism, and other initiatives from the open data organizations and communities. According to the Open Data Barometer, Indonesia is ranked 40th in 2015 among the 92 countries surveyed. The result stated that the readiness and implementation of open data initiative in Indonesia scores 46 and 36, while the impact of open data only scores 14 out of 100. Public engagement to open data initiative is still low and the impact of open data to political, social and economic is not significant.

Encouraging the government agencies to publish their data is important in open data initiative, but encouraging the data use is a key for open data. Therefore, the acceptance and use of open data technologies need to be further investigated (Zuiderwijk, Janssen, & Dwivedi, 2015). Open data is a relatively new field. Factors affecting user's intention to use open data has not been widely studied. Therefore, to provide a broader understanding from various dimensions of determinants to use open data technology, this study adopted several theories. The Theory of Planned Behavior (TPB), which is widely recognized in predicting behavioral intention, will be used as the basis to develop the research model. In TPB, behavioral intention is influenced by attitude, subjective norm, and perceived behavioral control. Attitude is influenced by external factors. Based on the Technology Acceptance Model (TAM), attitude in using technology is influenced by perceived usefulness and perceived ease of use. Therefore, these two factors are proposed to be determinants of attitude in the research model. As a technology, the quality of an open data website can be assessed by the quality of the system, information and services, which is in accordance with DeLone & McLean IS Success Model (DeLone & Mclean, 2003). Furthermore, the use of an e-government system is closely related to the trust factor. Thus, the trust factor will also be considered as a predictor in the research model.

An understanding of factors that influence user's intention to use the open data website can help various parties to exploit the full potential of open data. For data provider, understanding these factors can encourage them to build an open data website with better quality. Furthermore, these factors can also help the government to formulate policies that can improve the acceptance and use of open data website. This paper is organized as follows: Section 2 provides a literature reviews, section 3 discusses the research model and hypotheses, and section 4 explains the research methodology. In section 5, we report the findings of the study. Based on the findings, some recommendations for the policy-makers are proposed to increase the use of the open data website in section 6. Finally, the conclusions of this study are provided in section 7.

Literature Review

Open Government and Open Data

Open government is defined as the provision of public information in an interoperable and standard format to improve data access by the public (Abu-Shanab, 2014). In an open government, citizens can monitor and influence the processes of government through access to government information and access to decision-making arena (Meijer, Curtin, & Hillebrandt, 2012). According to Obama administration, open government is a three-dimensional concept, which covers transparency, participation, and collaboration (Obama, 2009). In line with Obama's open government, open government conceptual model states five elements of open government, namely open data, data transparency, government transparency, participation and collaboration (Veljković, Bogdanović-Dinić, & Stoimenov, 2014).

Open data is data that open to the public (Attard, Orlandi, Scerri, & Auer, 2015). It is created or commissioned by the government or an entity controlled by a government to be freely used, reused and redistributed by anyone. According to Open Government Working Group (2007), government data shall be considered open if it is made public in a way that complies with 8 principles, including complete, primary, timely, accessible, machine-processable, non-discriminatory, non-proprietary and license-free. In a democratic environment, all the information related to the public interest can be classified as open data because it allows the public to know what is being done by the government (Ohemeng & Ofosu-Adarkwa, 2015).

Collectively, there are three main reasons of why the government needs to open their data. The first reason is transparency, where citizens and stakeholders can monitor the initiative and the legitimacy of the government through the access, use, reuse and dissemination of data. Second, open data can open the social and commercial value. By opening public data, governments can encourage the creation of businesses and creative services that provide greater social and commercial value. Third,

open data stimulates participatory governance, where people get a chance to participate actively in the decision-making process of government.

Acceptance Theory

In e-government field, several theories are commonly used to predict user acceptance of e-government system. TAM (Davis, 1989) explains that technology usage behavior can be predicted from individual intention to use the technology, while the intention can be assessed from the attitude in using the technology. TAM has been widely used and considered as one of the best frameworks to understand the adoption of e-government (Belanche, Casalo, & Flavian, 2012). Previous studies employed TAM in various aspects of e-government, including e-government service, e-tax, e-filing, EDMS, and open government (Belanche et al., 2012; Lin, Fofanah, & Liang, 2011; Ozkan & Kanat, 2011; Susanto & Aljoza, 2015). The main goal of TAM is to predict IT adoption from an IT perspective because it focuses on system design characteristics and does not involve the human and social factors (Al-Hujran, Al-Debei, Chatfield, & Migdadi, 2015).

In TPB, individual intention to use technology is determined not only by attitude but also by the subjective norm and perceived behavioral control (Ajzen, 1991). Attitude is an individual evaluation of the use of a technology. Subjective norm is a person's perception that most people who are important to him think he should or should not perform a behavior (Susanto & Goodwin, 2013). Perceived behavior control is the extent to which a person feels that the opportunities and resources necessary to use a technology available to him/her (Susanto & Goodwin, 2013). TPB has been widely applied in a variety of research, including in evaluating public acceptance of e-government (Ozkan & Kanat, 2011; Shareef, Kumar, Kumar, & Dwivedi, 2011; Susanto & Goodwin, 2013).

Another theory to assess the usage of technology is DeLone & McLean IS Success Model that consists of seven dimensions, namely information quality, system quality, service quality, intention to use, use, user satisfaction and net benefits. System quality represents the technical quality of information system in data processing, including ease of use, functionality, reliability, quality of data, flexibility, and integration (DeLone & Mclean, 2003; Gorla, Somers, & Wong, 2010). Information quality refers to the quality of output produced, including accuracy, completeness, consistency, and currency (DeLone & Mclean, 2003; Gorla et al., 2010). On the other hand, the service quality refers to the extent of differences between consumers' expectations of a service and their perceptions of the actual performance of the service (DeLone & Mclean, 2003; Gorla et al., 2010).

In the dynamic online environment, filled with uncertainties, risks, lack of users' sophistication and lack of face to face interaction, trust is considered as an important factor that determines the behavioral intentions (Al-Hujran et al., 2015; Belanche et al., 2012). Some studies used initial trust as a predictor of behavior (Al-Hujran et al., 2015; Belanger & Carter, 2008; Lean, Zailani, Ramayah, & Fernando, 2009). Initial trust is needed in a relationship where people do not have a reliable and meaningful information related to the service provider. At the beginning of a relationship, people will use any information that he has, for example, the perception of the website or government agency, to assess the trust of the service provider (Belanger & Carter, 2008). Traditionally, the trust can be grouped into two categories, namely the belief in entities that provide services (party trust) and trust in the technology used to provide services (institutional-based trust) (Al-Hujran et al., 2015; Belanger & Carter, 2008; Lean et al., 2009). Both types of trust are necessary to encourage citizens to participate in e-government services.

Research Model and Hypotheses Development

The research model is developed by using the TPB as a basic framework, integrated with factors from TAM, DeLone & McLean IS Success Model and trust. The hypotheses development for each construct is explained in detail in the following subsections.

Relationship between System Quality, Information Quality, Service Quality and Perceived Usefulness

System quality, information quality, and service quality have been consistently found to be the important factors affecting the perceived usefulness of e-government system (Lin et al., 2011; Sang & Lee, 2009). In open data context, users use an internet-based application to search and access public data or information. Website with good system quality (free of errors, fast response and user-friendly) can improve the users' performance in finding and accessing data. Open data website with good

information quality (accurate, complete, consistent, and present) will help the user in finding correct and accurate information. Furthermore, system quality can be assessed from the reliability and responsiveness in providing data requested by the user. In this case, the government needs to provide various service includes updating information, answer questions, respond to the aspiration/criticisms/suggestions/complaints, or provide feedback (Teo, Srivastava, & Jiang, 2009). If the service quality is good then the level of the perceived usefulness will be higher. Taking all these into account, the following hypotheses are proposed:

H1: System Quality positively affects Perceived Usefulness

H2: Information Quality positively affects Perceived Usefulness

H3: Service Quality positively affects Perceived Usefulness

Relationship between System Quality, Information Quality, Service Quality and Perceived Ease of Use

Perceived ease of use is the rate at which users expect the system free of effort (Davis, 1989). Open data website is an e-government service that aims to provide free access to public data. If the open data website has a good system quality, users will be easier to learn and use the system. If the open data website provides valuable information, the effort required by the users to search and obtain information will be reduced. In addition, if an open data website provides good services, users will be easier to interact and get help when facing difficulties in the use of the website. Based on these explanations, the following hypotheses can be formulated.

H4: System quality positively affects perceived ease of use

H5: Information quality positively affects perceived ease of use

H6: Service quality positively affects perceived ease of use

Relationship between Perceived Usefulness, Perceived Ease of Use and Attitude

Attitude is an individual evaluation towards the usage of technology. According to TAM, attitude is influenced by perceived usefulness and perceived ease of use (Davis, 1989). In open data context, if users find open data website beneficial to them and easy to use, they will be pleased and comfortable in using the website. In other words, they will have a positive attitude towards the use of open data website. Based on these explanations, we formulated the following hypotheses.

H7: Perceived usefulness positively affects attitude

H8: Perceived ease of use positively affects attitude

Relationship between Trust to Government, Trust to Technology and Trust to Open Data Website

Trust can be classified into two categories: trust to entities that provide services (party trust) and trust to technology used to provide services (institutional-based trust). Both types of trust are necessary to encourage citizens to participate in e-government services. In open data context, users' trust to open data website can be affected by the trust to the government as a data provider and trust to internet technology as the medium. If users believe that government can perform its obligations and commit to providing open data, the user will likely trust the government's open data website. Moreover, if the user believes that internet technology is a safe and reliable medium to access the data, then users will also trust the reliability of open data website. Based on these explanations, we formulated the following hypotheses.

H9: Trust to government positively affects trust to open data website

H10: Trust to technology positively affects trust to open data website

Relationship between Trust, Subjective Norm, Perceived Behavioral Control, Attitude and Intention to Use Open Data Website

Trust allows an individual to create a positive atmosphere that stimulates the use of technology (Belanche et al., 2012). The relationship between trust and intention to perform a behavior has been

supported by many studies in e-government field (Abu-Shanab, 2014; Belanger & Carter, 2008; Sang & Lee, 2009; Susanto & Aljoza, 2015). According to TPB, subjective norm, perceived behavioral control, and attitude are factors that stimulate individual intention to perform a behavior. Social factors are influential in encouraging the use of open data website. If social environment (eg. Colleague, friends, supervisor) encourages users to use open data website, then users will likely have the intention to use open data website. Users will also have the intention to use open data website if they have the opportunity and resources (e.g. skill, computer, and network) to access the website. Moreover, users who have positive evaluation towards the use of open data website will likely have the intention to use the website. Taking all these into account, the following hypotheses are proposed:

H11: Trust to open data website positively affects the intention to use open data website

H12: Subjective norm positively affects the intention to use open data website

H13: Perceived behavioral control positively affects the intention to use open data website

H14: Attitude positively affects the intention to use open data website.

Methodology

Data Collection and Sample

This study adopted a quantitative research approach, using a questionnaire as the primary means of data collection. The population is all users who have been using government’s open data websites, including search, download or request public data through the open data websites. We employed a purposive-random sampling method to determine samples for this study. This method is a type of non-probability sampling technique which researcher relies on specific consideration when choosing members of the population to participate in the study. To obtain the relevant respondents, the questionnaires were distributed to followers or subscriber of any open data-associated accounts in a variety of social media, including Twitter, Facebook, and Line.

The data collection process lasted for approximately two months, starting on September 15th, 2016 until November 14th, 2016. 531 respondents filled out the questionnaires, but only 513 (96.6%) valid respondents who become samples and basis for analysis. The demographics of respondents are presented in Table 1.

Demographic	Category	Frequency	Percentage
Age	<21	223	44%
	21-30	258	50%
	31-40	25	5%
	>40	7	1%
Gender	Male	248	48.5%
	Female	265	51.5%
Occupation	Student	341	66%
	Civil worker	29	6%
	Private worker	97	19%
	Other	46	9%
Education	High School	238	47%
	Three-year college	26	5%
	Bachelor	179	35%
	Postgraduate	70	13%

Table 1. Demographics of Respondents

Instrument Development

Items in the questionnaire were adapted from pre-validated studies in e-government field. We did some adjustments in the questions to be able to describe open data individual characteristics.

Question items sought to identify the relative contribution of all factors in the research model towards behavioral intention to use open data website. The final questionnaire consisted of total 47 questions on twelve difference constructs of the proposed research model, including system quality (3 items), information quality (4 item), service quality (3 items), trust to technology (4 items), trust to government (6 items), trust to open data website (6 items), perceived usefulness (4 items), perceived ease of use (5 items), attitude (3 items), subjective norm (3 items), perceived behavioral control (3 items) and intention to use open data website (3 items).

Validation and readability test of the questionnaire were conducted among researchers and experts. All items in the questionnaire were measured using a 5-point Likert-type scale ranged from 1=strongly disagree to 5=strongly agree. Likert scale is a psychometric scale commonly used in the questionnaire and is the most widely used scale in the form of a survey research. The questionnaire was developed using Google Forms (online questionnaire Services provided by Google), so the distribution of questionnaires was conducted online. The online survey is efficient in terms of time, effort, and cost. The questionnaire link was distributed through social media, including Twitter, Facebook, and Line.

Data Analysis

Covariance-based structural equation model (CB-SEM) was used for data analysis to examine the relationship between variables in a model, both among indicators to construct as well as the relationship between the constructs. CB-SEM requires 5-10 samples for each indicator. This study has 47 indicators, hence the ideal number of samples needed to test the research model is 235-470 samples. There are 513 valid samples in this study that complies with the recommended amounts. SEM also requires normally-distributed data, so it is necessary to assess the normality of data and to check the existence of outliers (Hair, Gabriel, & Patel, 2014). The result showed that there were 54 outliers. After deletion of outlier data, the data is still not normally distributed. Hence we employed bootstrapping process by resampling the data to 1,000 data with confidence level of 95%.

IBM SPSS AMOS 24 was used to perform the data analysis. There are two main parts of the SEM analysis: testing measurement model and testing structural model. The measurement model testing was done using confirmatory factor analysis (CFA) to check how well the variables representing the constructs that have been determined based on a particular theory (Hair, Black, Babin, & Anderson, 2010). If the measurement model was valid, then the test was continued to the structural model.

Result

Assessment of Measurement Model

This process consists of determining convergent validity and determinant validity. Assessment of convergent validity aimed to determine whether an indicator describes a construct. It is measured by calculating loading factor and average variance extracted (AVE). Loading factor should be greater than 0.5 (Bagozzi & Yi, 1988; Hair et al., 2010) or greater than 0.6 to ensure significant level (Kline, 2005). AVE is used to measure the amount of variance in a latent variable as contributed by its indicators. Convergent validity is acceptable if the AVE for the latent variables is greater than 0.5 (Chin, 2010). Another indicator to assess the convergent validity is construct reliability that measured using two coefficients, Composite Reliability (CR) and Cronbach's Alpha. The construct is reliable if it has CR value greater than 0.6 (Bagozzi & Yi, 1988) and Cronbach's alpha greater than 0.7 (Hair et al., 2010). Table 2 shows all revised indicators. Indicator PU4 and SvQ3 were deleted due to low factor loading. All constructs have met the minimum threshold of AVE, CR, and Cronbach's Alpha. Therefore, the measurement model has passed the convergent validity assessment.

Discriminant validity describes whether each construct can be differentiated from other constructs in the model (Chin, 2010). There are two measures that must be assessed to ensure discriminant validity. In AMOS, discriminant validity can be assessed from cross loading values between a construct and its indicators, where the value of indicator loading must be higher than the value of its cross loading. The result showed that each indicator had a higher correlation with its related construct compared to the other constructs. Therefore, the discriminant validity of the measurement model was acceptable.

Variables	Indicators	Factor Loadings	AVE	CA	CR
System Quality (SQ)	SQ1	0.762	0.596	0.806	0.725
	SQ2	0.839			
	SQ3	0.709			
Information Quality (IQ)	IQ1	0.749	0.516	0.794	0.687
	IQ2	0.81			
	IQ3	0.606			
	IQ4	0.692			
Service Quality (SvQ)	SvQ1	0.732	0.556	0.710	0.606
	SvQ2	0.759			
Perceived Usefulness (PU)	PU1	0.757	0.569	0.802	0.692
	PU2	0.687			
	PU3	0.813			
Perceived Ease of Use (PEOU)	PEOU1	0.726	0.651	0.901	0.859
	PEOU2	0.782			
	PEOU3	0.842			
	PEOU4	0.814			
	PEOU5	0.863			
Trust to Government (TG)	TG1	0.769	0.583	0.893	0.830
	TG2	0.781			
	TG3	0.757			
	TG4	0.713			
	TG5	0.736			
	TG6	0.822			
Trust to Technology (TT)	TT1	0.702	0.552	0.830	0.731
	TT2	0.732			
	TT3	0.776			
	TT4	0.759			
Trust to Open Data Website (TR)	TR1	0.824	0.615	0.902	0.855
	TR2	0.781			
	TR3	0.683			
	TR4	0.707			
	TR5	0.871			
	TR6	0.822			
Attitude (ATT)	ATT1	0.848	0.624	0.831	0.757
	ATT2	0.7			
	ATT3	0.815			
Subjective Norm (SN)	SN1	0.724	0.514	0.761	0.619
	SN2	0.711			
	SN3	0.715			
Perceived Behavioral Control (PBC)	PBC1	0.708	0.509	0.768	0.613
	PBC2	0.741			
	PBC3	0.692			
Intention to Use Open Data Website (ITU)	ITU1	0.827	0.759	0.903	0.878
	ITU2	0.889			
	ITU3	0.896			

Table 2. Value of Factor Loadings, AVE, CR, and Cronbach's Alpha

Assessment of Structural Model

This process begins with checking goodness of fit (GOF). The initial result showed that some GOF indicators still have poor values. To obtain good fit values, we performed a modification of the structural model by checking the output of modification indices (Hair et al., 2010). The modification indices suggested adding connection from IQ to TR. Besides recommended from the modification indices, previous studies also supported the correlation between IQ and TR (Abu-Shanab, 2014; Lee & Kwak, 2011). In open data context, if open data website provides good quality information (accurate,

complete, consistent, and present), users will likely trust the website. In other words, information quality will positively affect users' trust to open data website. Accordingly, we proposed another hypothesis, H15: information quality positively affects trust to open data website.

After the modification, all GOF indicators showed marginal and good fit values. Several commonly used GOF indices that were employed in this study are the goodness of fit index ($GFI > 0.80$), root mean square error of approximation ($RMSEA < 0.08$), comparative fit index ($CFI > 0.90$), normed fit index ($NFI > 0.80$), and adjusted goodness of fit index ($AGFI > 0.80$).

The next steps are testing the hypothesis, significance level, and coefficient of determination (R^2). In the hypothesis testing, $p < 0.05$ (t value 1.66) was used as a threshold value. Accordingly, if a hypothesis had $p < 0.05$, then the hypothesis is accepted, otherwise, the hypothesis is rejected if $p > 0.05$. In the significance level testing, the relationship between two variables can be measured from the correlation value. If the correlation value > 0.5 , the two variables have a strong relationship, otherwise if the correlation value < 0.5 , then both variables have a weak relationship. Table 3 depicted the summary of hypothesis and significance level testing.

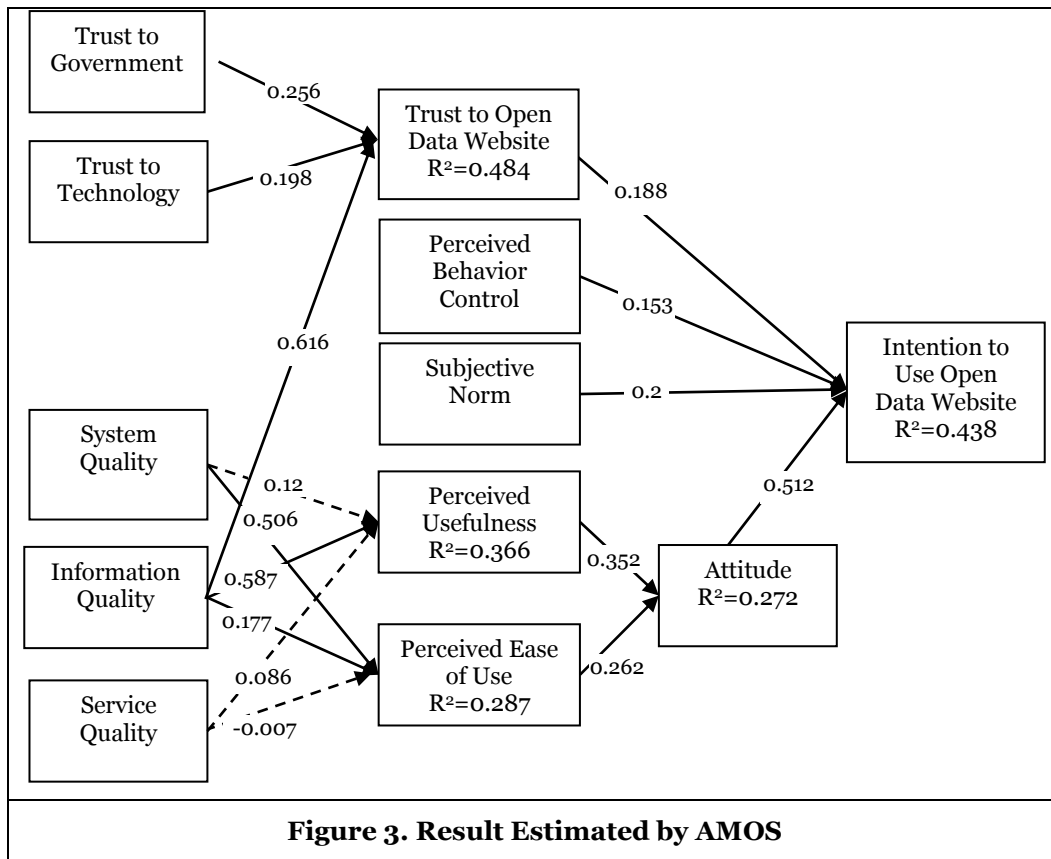
Hypothesis	Parameter	P Value	Decision	Correlation Value	Significance Level
H1	SQ \rightarrow PU	0.082	Not supported	0.118	Not significant
H2	IQ \rightarrow PU	0.002	Supported	0.587	Strong
H3	SvQ \rightarrow PU	0.06	Not supported	0.086	Not significant
H4	SQ \rightarrow PEOU	0.001	Supported	0.506	Strong
H5	IQ \rightarrow PEOU	0.005	Supported	0.177	Weak
H6	SvQ \rightarrow PEOU	0.826	Not supported	-0.007	Not significant
H7	PU \rightarrow ATT	0.001	Supported	0.352	Weak
H8	PEOU \rightarrow ATT	0.002	Supported	0.262	Weak
H9	TG \rightarrow TR	0.002	Supported	0.256	Weak
H10	TT \rightarrow TR	0.002	Supported	0.198	Weak
H11	TR \rightarrow ITU	0.002	Supported	0.188	Weak
H12	SN \rightarrow ITU	0.006	Supported	0.153	Weak
H13	PBC \rightarrow ITU	0.003	Supported	0.2	Weak
H14	ATT \rightarrow ITU	0.002	Supported	0.512	Strong
H15	IQ \rightarrow TR	0.002	Supported	0.616	Strong

Table 3. Hypothesis and Significance Level Testing

Based on Table 3, among 15 hypotheses proposed in this study, 12 hypotheses were supported and 3 hypotheses (H1, H3, and H6) were not supported. Moreover, among 12 hypotheses that were supported, 4 hypotheses had strong relationships and 8 hypotheses had weak relationships. Furthermore, the R^2 value was used to assess the coefficient of determination (Figure 2). R^2 for constructs perceived usefulness, perceived ease of use, attitude, trust to open data website and intention to use open data website are, respectively, 0.366, 0.287, 0.272, 0.484 and 0.438. R^2 value for intention to use open data website is 0.438 suggesting that 43.8% of the variance in intention to use open data website can be explained by factors in the research model.

Discussion and Implication

This study has identified determinants of user intention to use open data websites in Indonesia. The result shows that the intention to use the open data website is influenced by attitude, subjective norms, behavioral control, and trust. User's trust to open data website is significantly affected by user's trust to government and user's trust to technology. Moreover, the attitude factor is influenced by perceived usefulness and perceived ease of use which is in accordance with the TAM model (Davis, 1989). The perceived usefulness and perceived ease of use are linked to system quality, information quality, and service quality. However, the result shows that system quality only affects perceived ease of use, information quality positively affects both perceived usefulness and perceived ease of use, while service quality does not have a significant effect both to perceived usefulness and perceived ease of use. Among these factors, there are four relationships that have strong significance level, specifically user's attitude on intention to use open data website, information quality on trust to open data website, information quality on perceived usefulness, and system quality on perceived ease of use. The following sections will discuss the finding and implication of the study.



In this study, we find that users' attitude had the highest influence on the intention to use open data website. This indicates that expectation and evaluation of users towards the use of open data website strongly determine their intention to use open data website. Therefore, factors affecting the user's attitude need to be optimized. In this study, we found that attitude is affected by perceived usefulness and perceived ease of use. The positive relationships between these three factors are consistent with TAM (Davis, 1989). In Indonesia, open data is not widely known and used. Therefore, the results of this study indicate that governments should raise citizen awareness of the benefit of open data and what can be done with open data website. The citizens need to be properly informed that open data website is beneficial for them in providing easy and free access to the government data without having to visit government office for hardcopy documents. The government shall inform what can be done with open data, e.g. through a workshop, training, advertisement or any form of education programs.

Another finding is the positive relationship between system quality and perceived ease of use which is consistent with Sang & Lee (2009). This indicates that if open data website has a good system quality, the user will feel ease to learn and use the website. However, the system quality aspects of open data websites in Indonesia still have many shortcomings, which are related to reliability and usability of the websites. The reliability of the website is related to the provision of adequate network and infrastructure. Based on the assessment of Networked Readiness Index (NRI) 2014, Indonesia ranked 65th in the world and ranked 4th in ASEAN (Nababan & Darwanto, 2015). Moreover, the digital divide is still occurring, causing rural areas to have poor access to internet technology. Related to the usability aspect, open data in Indonesia is mostly provided in government agencies' official website. Sometimes, it is difficult to find the menu to access the data. It gives the impression that government is not highlighting the provision of data. In terms of feature availability, standard features to search and download data are available although their reliability and ease of use still need to be improved. The results of this study indicate that governments should provide excellent quality open data websites that facilitate user to search and access the data easily. It can be done by providing complete features to search and analyze the data, user-friendly interface and simple website navigation. System quality also associated with website reliability. Therefore, the government needs to improve and distribute infrastructure development in all regions to improve the accessibility of open data website.

In this study, information quality has positive relationships with perceived usefulness, perceived ease of use, and trust. This result is consistent with Lin et al. (2011) and Sang & Lee (2009). The information quality refers to the accuracy, completeness, consistency, and timely of data and

information provided. In open data context, the information quality is also associated with the data openness level that is assessed by eight indicators, including complete, primary, timely, accessible, machine-processable, non-discriminatory, non-proprietary and license-free. These indicators show the extent to which data can be reused, processed and distributed freely by anyone.

In Indonesia, the completeness and public data presence have been addressed in the Information Disclosure Law (Law No. 14 of 2008). Evaluation of the implementation of the law has also been conducted annually. Unfortunately, there is no clear mechanism of sanctions if institutions do not provide complete and updated data. Moreover, the law does not specifically regulates the provision of data on online portals, such as data type, format, licensing or other requirements related to open data (Nugroho, 2013). Currently, the available data are still largely in PDF format and have a very limited metadata. The above assessment applies to the data provided in government official website. For Indonesia's open data portal (data.go.id) the assessment of system quality and information quality has better results because the portal has been using CKAN platform. Information quality is a crucial factor that strongly significant to encourage the use of open data website. Therefore, the government needs to ensure the provision of quality data on their websites. Specifically, in Indonesia, the government need to establish policies related to open data by creating a legal framework to regulate the open data quality and to ensure the continuous data release process.

Subjective norm is also found to be the determinant of user behavioral intention which is consistent with Emad (2014) and Ajzen (1991). This indicates that the influence of other people that are considered important (friends, co-workers, supervisor, etc.) plays a role in encouraging the use of open data website. In an academic environment, where open data website has been widely known and used, the social community served as a medium to introduce the website, exchange information and discuss the published data. In the non-academic environment, the government needs to build the communities. The government does not necessarily have to build a physical community but it may provide a virtual community on their official website or social media. Such communities can stimulate the use of open data website by providing data visualization, discussion, and knowledge sharing about open data implementation.

Perceived behavioral control explains that user's skill and the availability of supporting facilities (computers and networks) are important factors that encourage a behavior (Ozkan & Kanat, 2011). This study also finds that perceived behavioral control positively affects intention to use open data website. Accessing and using the website requires the user to understand computer literacy. Moreover, the user also needs an adequate equipment and reliable network to be able to use the website. According to a survey conducted by Indonesia Ministry of Communications and Information in 2015, the number of individuals using the internet in urban areas (40.9%) is two times more than individuals in rural areas (20.3%). It shows that supporting facilities need to be improved, especially in rural area. Related to perceived behavioral control factor, it is important to minimize the barrier of open data website use. It can be done by providing easy to use website, performing socialization and training on how to use the website, and most importantly providing a reliable network for everyone in all regions. The last part requires the government to accelerate access to the internet continuously, especially in rural areas that have limited internet access.

The next factor that directly and positively encourages the intention to use open data website is trust. Open data initiative is a relatively new field and not widely known by the public, so this study used the concept of initial trust. The initial trust consists of two categories, namely trust to the government as the data provider and trust to technology (Al-Hujran et al., 2015; Belanger & Carter, 2008; Lean et al., 2009). Consistent with the previous studies, the two categories of trust are significant to encourage user's trust to open data website. These findings can give new insight to the government to enhance the public trust to open data services. For example, the government should provide information about data providers, data collection methods and guarantees of the data accuracy in the open data website. Moreover, increasing the completeness, relevance, and present of the data also necessary to improve user's trust to open data website.

Conclusion

As a new initiative in e-government field, the acceptance and adoption of open data website need to be evaluated. This study aims to identify determinants of user intentions to use open data website. The research model is adopted from the Theory of Planned Behavior and integrated with the technology quality and trust factors. The direct predictors of the research model account for 43,8% of the variability of the intention to use open data website. The results of the analysis showed that the intention to use open data website is directly influenced by four factors, namely the attitude,

subjective norm, perceived behavior control and trust. The attitude is indirectly affected by system quality and information quality through moderator factors of perceived usefulness and perceived ease of use. Trust to open data website is influenced by the trust to government, trust to technology, and information quality. We found that one variable in our model did not significantly influence the intention to use open data website, namely the service quality.

The contributions of this study are both practical and theoretical. The practical contributions of this study lie in the analysis of predictors of the intention use of open data website. The results imply that to enhance user's intention to use open data website, the government needs to consider strategies to optimize each of the affecting factors. Moreover, this study contributed to a broader knowledge about determinants of open data website use from multiple dimensions, including technology quality, individual perception and trust factor. The finding of this study extended the finding from previous research by Zuiderwijk et al. (2015) by adding trust and technology quality factors as significant determinants to use open data website.

This study also has some limitations. The model only describes 43.8% variance explained on behavioral intention, so the future research can explore other factors on user intention to use open data website. Moreover, the future research can enhance the analysis of specific demographics characteristic on behavioral intention.

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