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Facing the Challenges of e-Government in Indonesia: Demographic Inequalities

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Abstract: *E-government readiness in Indonesia showed no improvement from year to year, indicating that the implementation of e-government is encountering serious problems. Despite the lack of empirical evidence, it is stated that one of them is digital inequalities or also known by the term of the digital divide. This research paper aims to investigate the impact of demographic disparities, represented by gender, age, and place of residence, on e-government use in Indonesia. In doing so, a structural equation model was proposed based on literature review and examined through survey research. Data were collected from a survey of 237 e-government users in Indonesia. The study took place in Sleman and Tulungagung regencies. The PLS (Partial Least Square) method was applied by using SmartPLS to estimate the research model. Smith-Satterwait test was employed to examine the moderating effect. The results show that digital inequalities, particularly age and place of residence, are significant problems in Indonesia, which should be resolved to improve the usage of e-government. The research is vital for scholars to give empirical evidence of digital inequalities and its impact on e-government use, especially in Indonesia. For the local governments, this research may contribute to policy-making in improving the e-government readiness.*

Keywords: *Digital Divide, E-government, Demographic, Digital Inequality, Indonesia*

Abstrak*: Kesiapan e-government di Indonesia tidak menunjukkan peningkatan dari tahun ke tahun, menunjukkan bahwa implementasi e-government menghadapi masalah serius. Meskipun kurangnya bukti empiris, itu menunjukkan bahwa salah satunya adalah ketidaksetaraan digital atau juga dikenal dengan istilah kesenjangan digital. Makalah penelitian ini bertujuan untuk menyelidiki dampak ketidaksetaraan demografis, diwakili oleh jenis kelamin, usia dan tempat tinggal, pada penggunaan e-government di Indonesia. Dengan demikian, model persamaan struktural diusulkan berdasarkan tinjauan pustaka dan diperiksa melalui penelitian survei. Data dikumpulkan dari survei terhadap 237 pengguna e-government di Indonesia. Penelitian berlangsung di kabupaten Sleman dan Tulungagung. Metode PLS (Partial Least Square) diterapkan dengan menggunakan SmartPLS untuk memperkirakan model penelitian. Tes Smith-Satterwait digunakan untuk menguji efek moderasi. Hasilnya*

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menunjukkan bahwa kesenjangan digital, khususnya usia dan tempat tinggal, adalah masalah yang signifikan di Indonesia, yang harus diselesaikan untuk meningkatkan penggunaan e-government. Penelitian ini penting bagi para sarjana untuk memberikan bukti empiris ketidaksetaraan digital dan dampaknya pada penggunaan e-government, khususnya di Indonesia. Untuk pemerintah daerah, penelitian ini dapat berkontribusi pada pembuatan kebijakan dalam meningkatkan kesiapan e-government.

***Kata kunci**: Digital Divide, E-government, Demografi, Digital Inequality, Indonesia*

1. Introduction

The e-government initiative can be traced back to the paradigm of New Public Management or Reinventing Government. In the reinventing Government or New Public Management paradigm, Osborne and Gaebler (1992) proposed that citizens should be regarded and treated as customers, suggesting that the delivery of government services should be redesigned with a customer focus. The paradigm also emphasizes the principles of "catalytic government" and "community-ownership." Public officials are challenged to think about how to empower citizens to take ownership of community problems. The approach urges officials to partner with citizen groups and non-profit organizations to identify solutions and deliver public services effectively.

A major obstacle to the reinventing government reform is the burden of transaction costs imposed on public officials and citizens. Government officials may find citizen engagement time consuming and costly. Given the time pressure, they already face in the daily operation of government, networking with citizens and proactively soliciting public input seems an unnecessary and unwanted burden. Citizens also may be reluctant to participate in the decision-making process of the government. Attending meetings, writing formal feedback and responding to surveys about public services may require a time commitment that many citizens are not willing to give regularly.

In addressing those challenges, information and communication technology (ICT) has played an increasingly important role in public administration (Heeks, 1999). The introduction of the Internet and the World Wide Web marked a new stage in information technology usage by shifting the focus of governance to its external relationship with

citizens (Seneviratne, 1999). Technology certainly plays a vital role in fostering the change through what so-called e-government system.

Despite the benefits offered by e-government system, some barriers hurdle the implementation of the system. Applying the e-government system is not merely transferring the system from one country to another-mostly from developed to developing country as additional efforts are needed in implementing e-government system in a developing country (Schuppan, 2009). Specific barriers associated with the e-government initialization process are many, including issues of citizen privacy and security, inadequately skilled citizens and government employees and the tendency for e-government to replicate traditional government (Marche and McNiven, 2003). Finally, there is the issue of digital inequality or the digital divide in society, which is still a huge one, although the empirical evidence on its impact on e-government systems use is currently lacking. As the primary stakeholder in e-government systems, citizens play a substantial role in e-government success (Davison et al., 2005).

E-Government in Indonesia has been established since 2001 through Presidential Directive No. 6/2001 (Harijadi and Satriya, 2000; Haryono and Widiwardono, 2010). The objectives of e-government in Indonesia are to improve the democratic process, enhance accountability and transparency and enable the transformation towards an information society (Furuholt and Wahid, 2008). Currently, there are approximately 450 websites managed by local governments throughout Indonesia (Wahid, 2008). Local government in Indonesia has implemented some forms of e-government systems, most of which are in the form of the electronic systems used for its internal processes (G2G - Government to Government). Moreover, many local governments, departments, and government agencies have produced websites to interact with their stakeholders (G2C - Government to Citizens and G2B - Government to Businesses).

The implementation of e-government in Indonesia is facing some challenges (Harijadi, 2004), which include: lack of financial resources, low quality of human resources, low ICT penetration and lack of regulation and culture. Furthermore, a study by Hwang and Syamsuddin reveals some other main obstacles to the development of e-government in Indonesia, particularly at the local government level, where there exists

technical difficulties, the digital divide and the absence of willingness to use e-government systems by citizens and government employees alike (Hwang and Syamsudin, 2008). According to the survey of e-government readiness by the United Nations, Indonesia's ranks and e-government indices reflect an unsuccessful implementation of e-government in the country in comparison to other countries (illustrated in Table 1).

Norris (2001) believes that the digital divide reflects social inequality. Therefore, to understand the digital disparities, the issue requires contextualizing. In developing countries like Indonesia, where most social and cultural aspects are unequal, the perspective taken on the digital divide requires expansion. In order to obtain a comprehensive understanding of the issue, this research examines the digital inequalities from the perspectives of access to information and communication technology (ICT), capability in using the ICT, personal innovativeness toward ICT and the moderation roles of demographic characteristics, which are represented by gender, age and place of residence.

Hence, this paper aims to answer the main research question, which is: *Do demographic factors moderate the relationship between the digital divide and e-government system use in Indonesian local government?* This paper is divided into six sections, in the following manner: introduction; theoretical framework and hypothesis development; research method; research findings; and finally, implications, which is written in integration with limitations and suggestions for future research directions.

2. Theoretical Framework and Hypothesis Development

Differential behavioral patterns in fields such as sociology, marketing, psychology have been associated with socio-economic inequality. Demographic characteristics instigate a synergy of social and economic forces from infrastructure to individuals and resources in the surrounding environment (Borstein and Bradley, 2003). As a consequence, these inequalities have been interpreted as internal and external resources, or constraints, that together, shape experiences and opportunities, living and working

conditions, place in society and even ways in which the world is viewed (Williams, 1990).

In the field of information systems, the influence of socio-economic inequality on system acceptance has also been explored and investigated. As a matter of fact, research into the digital inequality has been dominated by studies on socio-economic inequalities, such as gender (e.g., Venkatesh and Morris, 2000; Agarwal et al., 2009; Schleife 2010; Wei et al. 2010); age (eg. Agarwal et al., 2009; Hargittai, 2006; Schleife, 2010; Morris and Venkatesh, 2000); residential place (eg. Mossberger et al., 2006; Mariscal, 2005; Kuk, 2002; Stern et al., 2009). In assessing the effect of demographic factors, this research uses the framework of digital divide by Rahman and Quaddus (2012); Rahman et al. (2012).

1. Digital Divide Framework

Initially, digital divide was defined as the inequality between those who had access to ICT and those who had not (De Haan, 2004; DiMaggio et al., 2001) and there is a large body of research in digital divide focuses only in term of access to ICT and demographic factors. As a consequence, this narrow understanding then leads the policymakers to uncomprehensive policy in resolving the issue of the digital divide. To get a better understanding, Dewan and Riggins (2005) and Wei et al. (2010) suggested more comprehensive models.

Based on the extensive literature review and a field study, Rahman and Quaddus (2012) argue that there are three factors of digital divide determining e-government use, namely the access to ICT, ICT self-efficacy and innovativeness toward a new ICT. The framework extends those previous models in digital divide by Dewan and Riggins (2005) and Wei et al. (2010). The framework suggests that access to ICT (ACCE), ICT self-efficacy (CSE) and innovativeness toward new ICT (INNO) influence e-government use (USE) (see Figure 1). Furthermore, the access to ICT determines the ICT self-efficacy and in turn the ICT self-efficacy influences innovativeness in ICT.

Since the framework offers a more comprehensive understanding of the digital divide, this research uses the framework to assess the moderating effect of gender, age and residential place.

2. Gender

Gender is potentially critical to our understanding of user acceptance because it plays a vital role in determining how users make decisions about using new technology (Venkatesh and Morris, 2000). From a psychological stand point, Bem and Allen (1974) found that gender difference influences decision making processes through the differences in schematic processing by men and women. Bem (1981) argues that men and women encode and process information using different socially constructed cognitive structures, which in turn, help determine and direct an individual's perception. As a result, individuals tend to make decisions, which reflect biases inherent in the individual's perceptions.

In the studies on technology adoption, it has been found that women typically show a higher level of computer anxiety (Rosen and Maguire, 1990; Igbaria and Chakrabarti, 1990) and lower computer aptitude (Fetler, 1985). As a consequence, gender difference plays a significant role as a moderating variable in internet use (Agarwal et al., 2009; Schleife, 2010), technology use (Venkatesh and Morris, 2000) and computer self-efficacy (Wei et al., 2010).

3. *Age*

There is a large body of research on socio-cognitive changes among individuals based on age. In the area of psychology, a great deal of research focuses on understanding the differences in abilities, traits, or performance outcomes (e.g., Rhodes, 1983; Czaja and Sharit, 1993; Sharit and Czaja, 1994; Myers and Conner, 1992). Age affects influencing attitudes caused by some factors, including social role (psychosocial) changes and biological changes (Rhodes, 1983). Furthermore, Rhodes (1983p. 329)

explains that psychosocial aging consists of "systematic changes in personality, needs, expectations, and behavior as well as performance in a sequence of socially prescribed roles and accumulation of experiences". Biological aging is characterized by changes in anatomical as well as psychological states that naturally occur with age, such as changes in sensorimotor performance, visual acuity, reaction time and so on.

Confirming the studies in psychology, a study by Czaja and Sharit (1993) shows that age has an impact on the performance of computer-based tasks. By examining the effect of age on the use of technology in the workplace directly and indirectly as a moderator variable, the results indicated that in the short-term, age acts as a moderating role instead of acting as an independent variable. Bucy (2000) suggests that age, together with income, education and family structure are essential determinants of internet use. His research indicated that older respondents are disadvantaged regarding Internet use.

4. *Place of Residence*

A disparity in access to and use of computers and the Internet is based on geographical factors as well. Studies by Newburger (2001) and Mills and Whitacre (2003) concluded that access and use gap existed in the USA between metropolitan and non-metropolitan areas. Similar research into the differences in internet use in rural and urban areas was conducted by Hindman (2000), Nicholas (2003) and Schleife (2010). The existence of the Internet has not yet eliminated the rural geographical disadvantage. Nicholas (2003) and Schleife (2010) concluded that the patterns of development exacerbated rural disadvantage. Unlike the residents in cities or metropolitan areas, residents in rural or non-metropolitan regions do not have the same variety of learning and observation possibilities (e.g., free public internet access and internet cafés). Moreover, rural areas also have lower income levels and less financial resources compared to cities due to higher rural unemployment rates. This further decreases the possibilities of adopting the internet for people living in these regions (Schleife, 2010).

Based on the discussion above, the following hypotheses are posited:

H1. *Gender has a moderating effect on the relationship between the Digital Divide and e-Government Use.*

H2. *Age group has a moderating effect on the relationship between the Digital Divide and e-Government Use.*

H3. *Place of residence has a moderating effect on the relationship between the Digital Divide and e-Government Use.*

3. Research Method

For this study, data of users was obtained from both local governments, Tulungagung and Sleman regencies. Following formal inquiry and procedure in both regencies, the researcher could obtain data of users within the year of 2010 until the mid of 2012 in Sleman regency, while in Tulungagung regency the data was the users within the year of 2011 until midyear of 2012. Based on the lists provided by both regencies, the total e-government users are 668 persons. Considering the number of populations, hence researcher conducted a personally administered survey in the data collection. Personally administered survey refers to face-to-face survey with the respondents (Frazer and Lawley, 2000).

As a result, 354 copies of questionnaires were distributed (Measurement Items in the questionnaire are shown in Table 2), of which 251 were retrieved. A review then was undertaken to seek out errors in the form of invalid data, including missing values or incomplete responses and finally, 237 responses were usable in this research. Therefore, the effective response rate in this study is 35.5%.

To answer the research question, this research applied multi-group analysis by using Smith-Satterthwait (S-S) test with a pooled error term across groups, as the test is the most commonly applied in the multi-group analysis. The analysis was conducted using the Partial Least Square–Structural Equation Modeling (PLS-SEM) using software of SmartPLS version 2.0.M3. PLS-SEM is used based on the consideration of a small sample size in this research and the research design applied in this current study, which is exploratory research (Hair et al., 2012). SEM itself is *"...a method for representing, estimating and testing a theoretical network of mostly linear relations*

between variables…" (Rigdon, 1998). Two-stage procedures were undertaken in the PLS analysis; measurement model assessment and structural model assessment.

4. Results

The analysis involving all of the samples shows that all of the factors: access to ICT, ICT self-efficacy and innovativeness toward new ICT, significantly influence e-government use (see Figure 2). The relationships between access to ICT and ICT self-efficacy as well as the ICT self-efficacy and innovativeness toward new ICT are also significant. The R^2 of the framework is 0.518, means that the model explained 51.8% of the variance in the e-government use.

Before proceeding with the analyses of the moderating effect, the characteristics of the respondents were examined, as shown in Table 3. This describes the characteristics of the respondents based on gender, age group, and place of residence. As shown in the table, the majority of the respondents were males (N = 184), belonging to the age group '40 years old and below' (N = 169) and living in the city area or living within a radius of 10 kms or less from the city centre (N = 168).

Assessment of the measurement model was carried out to ensure the reliability and validity of the measurements. The assessment covered three parts, being (1) item reliability, (2) internal consistency and (3) discriminant validity. In this stage, the assessment was conducted for two categories: the whole sample (N = 237) and groups of the sample based on the groups of gender, age, and place of residence.

Table 4 presents the measurement analysis for the whole sample (N = 237). Item reliability was examined based on the item's loading along with its respective construct. As suggested by Gefen, Straub, and Boudreau (2000), the minimum value for the item loading was 0.7. Hence, all items satisfied the requirements. Regarding internal consistency, all constructs exceed 0.60. Therefore they were sufficient, as suggested by Bagozzi and Yi (1988). The values of average variance extracted (AVE) from the constructs were also above the threshold, which was 0.50 (Fornell and Larcker, 1981). The results demonstrate that the measurement model for all respondents (N = 237) was sufficient.

The assessments of the measurement model for each group sample, namely gender, age and place of residence, are shown in Table 5 and 6. The results also demonstrate that all measurements were valid and reliable regarding the level of the item and the construct. Having achieved effective results, the next stage undertaken was the analysis of the structural model to examine the moderating effect of the socioeconomic factors.

In assessing the structural model, the data was also divided into two categories, which were full-sample and multi-group based on the groups. PLS analysis using the bootstrap procedure was employed to obtain the path coefficients, standard errors and t-values to determine the statistical significance. Figure 2 presents the results of the assessment of the structural model for the full sample of respondents (N = 237). The assessment of the structural model based on the groups was conducted. In addition to the assessment of the models for each group of respondents, this research also employed the Smith-Satterwait test to examine the moderating effect. The Smith-Satterwait test was chosen because the samples are not normally distributed and the variances of the group are not equal (Moores and Chang, 2006; Hsieh et al., 2008). Table 7 presents the results of the t-statistics to determine the significant effects of gender, age and residential place.

5. Conclusion, Implication, and Limitation

Concerning gender, contrary to expectations, the findings of the multi-group PLS analyses failed to support these as moderating variables, since no significant differences were found between the groups regarding the influence of the digital divide on e-government use. Therefore, hypotheses H1 was rejected. Despite the above findings, it is noteworthy that earlier studies presented some contradictory results on the effects of gender on e-government use. Some studies did not find gender differences in the use of and attitudes towards, e-government systems (Reddick, 2005; van Dijk et al., 2008; Colesca and Dobrica, 2008; Belanger and Carter, 2009; Taipale, 2013).

On the other hand, the results confirmed the moderating effects of age and place of residence in the impact of digital inequalities on e-government use. The inequalities were found in developing countries (Mariscal, 2005; Akca et al., 2007) and developed

countries (Mossberger et al., 2006; Schleife, 2010; Hindman, 2000). This situation was related to the issues of ‘‘market efficiency gaps’’ and the ‘‘access gap’’ as suggested by the World Bank (Mariscal, 2005). The market efficiency gap refers to the differences between the levels of ICT infrastructure and service penetration that can be reached under current conditions and the level one would expect under optimal market conditions. Furthermore, the access gap refers to situations where a gap between urban and rural areas continues to exist, even under efficient market conditions, where a proportion of the population cannot afford to pay market prices. Since rural areas tend to lag economically behind urban areas due to industrial and labor markets being concentrated in urban areas (Malecki, 2003), people in rural areas tend to lag in term of access to ICT.

Referring to the multi-group analysis, the results of this study indicate that younger and older age groups have different behavioral patterns. Morris and Venkatesh (2000) argue that those in younger age groups are much more likely to have been exposed to ICT at a relatively early age. In contrast, older individuals are much less likely to have ICT experience due to the completion of their education before the introduction of the personal computer. Hence, opportunities for older people to interact with ICT have been very limited. Younger people, in general, have more experience in making judgments about technology. As a consequence, older people tend to be less confident in their ability to utilize ICT and show less willingness to try new ICT. Similar conclusions were also drawn by Czaja and Sharit (1993) and Hill, Beynon-Davies, and Williams (2008).

The results of the multi-group analysis and the demographic factors of e-government system users (Table 3) imply that gaps undeniably exist. E-government users in Indonesia are dominated by males, young people and city dwellers. The characteristics of users are in line with findings from previous research into ICT users. Studies across the globe on the digital divide have long been documenting the gaps in developing countries (Schuppan, 2009; Akca et al., 2007; Warschauer, 2003; Hwang and Syamsuddin, 2008; Ferro et al., 2011; Gripenberg 2011) and developed countries (Mossberger et al., 2006; Stern et al., 2009; Schleife, 2010; Ono, 2006), with similar

results. Even in the US, one of the most developed countries in the world, NTIA (2000) reported that groups of rural poor, ethnic minorities and female head-of-households are the most disadvantaged groups regarding ICT access.

Scholars in ICT4D (Information and Communication Technology for Development) such as Heeks (2009), Steyn (2011) and Johanson (2011) posit that ICTs nowadays have become more and more important as economic, social and political life becomes increasingly digital. Hence, the issue of the digital divide requires further understanding and ultimate resolution. Otherwise, those who are in disadvantaged groups living without ICTs will be increasingly excluded. Warren (2007) argues that non-ICT-users will suffer many disadvantages when offline services from government, corporations, and individuals are reduced as a result of increasing dependence on the internet. The use of online services is growing rapidly as service providers take advantage of lowering costs and strive to improve the quality of their services (making them quicker, more interactive and more flexible). Social gaps lead to a digital divide, which leads to deeper inequalities and creates a vicious digital cycle (Warren, 2007).

With the implications of the findings on the moderating effects of the socioeconomic factors, the current research suggests that in resolving the digital divide, policy makers must understand the complexity and dynamics of the issue and incorporate the behavioral patterns of different demographic groups (Hsieh et al., 2008; Floropolous et al., 2010), rather than implementing single generic policies that treat every individual as the same. Additional funds could be spent on the group alignment approach to understanding the behavioral patterns of each group. This approach is believed by some to lead to a more effective outcome (Hsieh et al., 2009). Policies such as tax exemption for projects by corporations that bring ICT to low-income people through their CSR (Corporate Social Responsibility) and "E-rates" to subsidize Internet use and ICT for public schools and libraries, might be implemented by Indonesia. These strategies have effectively boosted the connectivity rate in the US (DiMaggio et al., 2001), Free Internet access in public places, which has been provided by some local governments in Indonesia, is a proven strategy in assisting disadvantaged people in accessing the Internet. In addition to access to ICT, the government might increase the

awareness of the existence and moreover the benefits of e-government services for disadvantaged groups.

This research hopes to pioneer an advance in the theoretical account of the digital inequalities. The study goes beyond previous studies on the digital divide and comprehensively describes how the access to ICT influences the ICT self-efficacy, which in turn impacts upon the innovativeness in ICT. This account aims to contribute to the more advanced explanations of the digital inequalities as a socio-economic phenomenon.

The results of this research have important practical implications, particularly concerning improving e-government use or e-government readiness. Lack of use and access to e-government systems can have a flow-on effect, causing wider inequalities in society (Jorgansen and Cable, 2002; Warren, 2007). The e-Government Readiness Survey shows that the development of e-government systems in Indonesia has not only not been progressing, but it may also be regressing. Indonesia needs strategic and integrative policies to improve their e-government systems. This research provides a more comprehensive understanding of the issue of the digital divide as the basis for a new integrative policy to close the gap.

The demographic characteristics of those who used the e-government system in this study were: male, aged 30-40, residing in the city area. Most of the previous research into the digital divide found similar demographic characteristics for Internet users. However, to expand the numbers of e-government users, the government could improve its customer base by paying more attention to other groups of people. By considering such factors as gender, socioeconomic status and place of residence it should be possible to increase the number of e-government users.

The results of multi-group analyses show that the place of residence has the strongest moderating effect, compared to other demographic measures. Hence, special policies are needed to narrow the digital divide between rural and urban residents. Learning from the experiences of other countries, local governments in Indonesia should provide free public Internet and ICT access in rural areas. Also, the government should develop the e-government services based on the needs of its citizens, including

those disadvantaged groups of citizens (those of lower socioeconomic status, older age, female gender and reside in rural areas). A comprehensive analysis of needs assessment is thus needed before planning and developing e-government systems.

However, this research has a limitation concerning the actual use of the e-government system. The sample of users was limited to users of G2C (Government to Citizens) and G2B (Government to Business) e-government systems provided by local governments. Users of other types of e-government systems, as well as those of central government, may have different views on e-government usage and the digital divide. Therefore, there is still a need to investigate and compare the perceptions of users of other e-government systems.

This study collected data from the users of e-government systems provided by local governments. Although the justification for the choice of these particular users is valid, future research might interview and survey other significant respondents. Also, the use of multiple respondents would widen applicability.

Finally, in addition to researching the impact of the digital divide on e-government system success, the core of this model is applicable in other contexts, especially those that are influenced by the digital divide. Beyond the scope of e-government systems, the conceptual model could be applied to other systems such as e-commerce.

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Appendix

Table 1
United Nations survey on e-government readiness
(Selected Countries and Region)

Countries	2005*		2008**		2010***		2012****	
	Rank	Index	Rank	Index	Rank	Index	Rank	Index
Indonesia	**96**	**0.382**	**106**	**0.411**	**109**	**0.403**	**97**	**0.495**
Australia	6	0.868	8	0.811	8	0.786	12	0.839
USA	1	0.906	4	0.864	2	0.851	5	0.869
Malaysia	43	0.571	34	0.606	32	0.610	40	0.670
Thailand	46	0.552	64	0.503	76	0.465	92	0.509
Vietnam	105	0.364	91	0.456	90	0.445	83	0.522
South Eastern Asia Average		0.439		0.429		0.425		0.479
World Average		0.427		0.451		0.441		0.488

Source:
*(UN 2005); **(UN 2008); ***(UN 2010); **** (UN 2012)

Figure 1.

Research Model

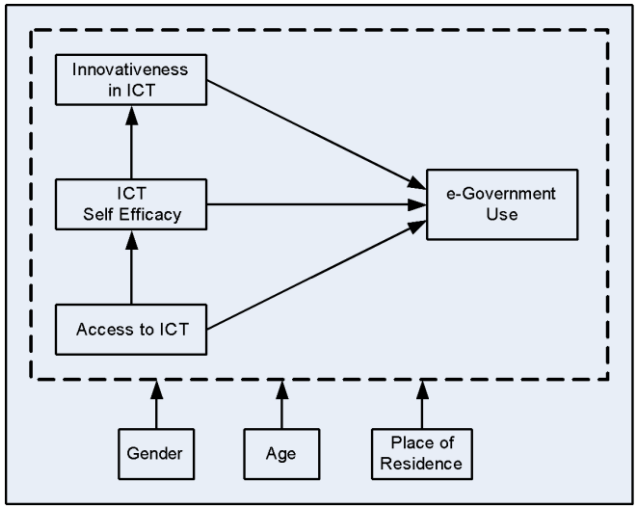

Table 2
Measurement items in the questionnaire

Dimensions	Statements	Reference	Measurement
Gender	Gender	(Hsieh, Rai, and Keil 2009; Agarwal, Animesh, and Prasad 2009; Mossberger, Tolbert, and Gilbert 2006)	Dichotomous Scale: Male and Female
Age group	Age group	(Hsieh, Rai, and Keil 2009; Agarwal, Animesh, and Prasad 2009; Mossberger, Tolbert, and Gilbert 2006)	Categorical: Under 20; 21-30; 31-40; 41-50; and Over 50
Place of residence	How far is your home from the city center?	(Mossberger, Tolbert, and Gilbert 2006), field study	Categorical: Under 5 kms; 5-10 kms; 10-15 kms; 15-20 kms; More than 20 kms
Level of education	What is your highest level of education?	(Hsieh, Rai, and Keil 2009; Agarwal, Animesh, and Prasad 2009; Mossberger, Tolbert, and Gilbert 2006)	Categorical: High School; Diploma; Undergraduate; Master's degree; and Doctoral degree
Monthly income	Approximately, the total monthly income before taxes and other deductions of my immediate family – including my own job income, income from other sources and the income of my spouse – is:	(Mossberger, Tolbert, and Gilbert 2006; Hsieh, Rai, and Keil 2009)	Categorical: Under Rp. 2.5 million; Rp. 2.5-5 million; Rp. 5-7.5 million; Rp. 7.5-10 million; Rp. 1—12.5 million; More than Rp. 12.5 million
E-GOVERNMENT USE			
Number of uses	How many times have you used a One-Stop Service Online System so far?	(DeLone and McLean 2003)	Categorical: Once; 2-3 times; 3-5 times; More than 5 times
Number of transactions completed	Among your total usages of One-Stop Service Online System, how many times have you completed your transactions?	(DeLone and McLean 2003)	Categorical: Once; 2-3 times; 3-5 times; More than 5 times

Using the e-government system is a good idea	Using the One-Stop Service Online System is a good idea.	(Taylor and Todd 1995)	Likert scale from 1-6, where 1=strongly disagree and 6=strongly agree
ACCESS DIVIDE			
Computer availability at home	Do you have a computer at home?	(Wei et al. 2010)	Dichotomous: Yes or No
Internet connection at home	Do you have an internet connection at home	(Agarwal, Animesh, and Prasad 2009)	Dichotomous: Yes or No
Easiness to access ICT	I can access information and communication technology easily	(Ynalvez and Shrum 2006)	Likert scale from 1-6, where 1=strongly disagree and 6=strongly agree
Comfortable to access ICT	I feel comfortable in getting access to information and communication technology	(Ynalvez and Shrum 2006)	Likert scale from 1-6, where 1=strongly disagree and 6=strongly agree
CAPABILITY DIVIDE			
Confidence in using ICT	I am confident in using information and communication technology	(Wei et al. 2010; Hsieh, Rai, and Keil 2009)	Likert scale from 1-6, where 1=strongly disagree and 6=strongly agree
Difficulty in using ICT	I do not have any difficulty in using information and communication technology	(Wei et al. 2010)	Likert scale from 1-6, where 1=strongly disagree and 6=strongly agree
Comfortable in using ICT	I feel comfortable in using information and communication technology	(Wei et al. 2010; Hsieh, Rai, and Keil 2009)	Likert scale from 1-6, where 1=strongly disagree and 6=strongly agree
Sure be able to use ICT	I am sure I can use information and communication technology	(Wei et al. 2010)	Likert scale from 1-6, where 1=strongly disagree and 6=strongly agree
Able to operate, even if no one tells	I can operate information and communication technology, even if no one tells me how to do it	(Wei et al. 2010; Hsieh, Rai, and Keil 2009)	Likert scale from 1-6, where 1=strongly disagree and 6=strongly agree
INNOVATIVENESS DIVIDE			
Look for ways to try new ICT	If I hear about new information and communication	(Agarwal and Prasad 1998; Yi, Fiedler, and Park 2006)	Likert scale from 1-6, where 1=strongly disagree and 6=strongly agree

	technology, I will look for ways to try it		
First to try out new ICT	Among my peers, I am the first to try out new information and communication technology	(Agarwal and Prasad 1998; Yi, Fiedler, and Park 2006)	Likert scale from 1-6, where 1=strongly disagree and 6=strongly agree
Hesitant to try out new ICT	I am hesitant to try out new information and communication technology	(Agarwal and Prasad 1998)	Likert scale from 1-6, where 1=strongly disagree and 6=strongly agree
Like to experiment with new ICT	I like to experiment with new information and communication technology	(Agarwal and Prasad 1998; Yi, Fiedler, and Park 2006)	Likert scale from 1-6, where 1=strongly disagree and 6=strongly agree

Table 3

Summary of demographic and economic characteristics of respondents

Characteristics	**Total**	**Percentage**
Gender		
Male	184	78%
Female	53	22%
Age		
Younger (40 years old and below)	169	71%
Older (above 41 years old)	68	29%
Place of residence		
Urban (10 kms and lesser from city centre)	168	71%
Rural (further than 10 kms from the city centre)	69	29%

Table 4
Measurement model analysis (All samples = 237)

Construct	**Item**	**Item Loading**	**Internal Consistency**	**AVE**
Access	ACCE_1	0.752	0.915	0.731
	ACCE_2	0.820		
	ACCE_3	0.907		
	ACCE_4	0.930		
Self-Efficacy	CSE_1	0.886	0.967	0.856
	CSE_2	0.934		
	CSE_3	0.928		
	CSE_4	0.941		
	CSE_5	0.934		
Innovativeness	INNO_1	0.910	0.927	0.761
	INNO_2	0.759		

	INNO_3	0.904		
	INNO_4	0.906		
e-Govt Use	USE_1	0.911		
	USE_2	0.778	0.876	0.703
	USE_3	0.821		

Figure 2.
The structural model of all samples (N = 237)

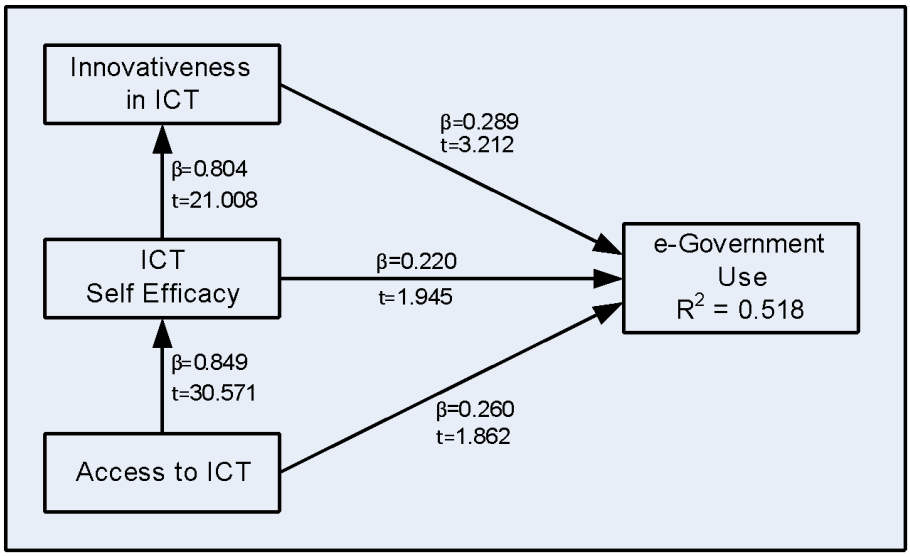

Table 5.

Item loading based on each variable

Item	Gender		Age Group		Residence	
	Male	**Female**	**Younger**	**Older**	**Urban**	**Rural**
ACCE_1	0.755	0.759	0.785	0.675	0.765	0.872
ACCE_2	0.801	0.889	0.785	0.908	0.744	0.961
ACCE_3	0.898	0.945	0.893	0.962	0.933	0.973
ACCE_4	0.919	0.969	0.919	0.964	0.942	0.977
CSE_1	0.881	0.887	0.881	0.900	0.831	0.961
CSE_2	0.918	0.982	0.930	0.948	0.886	0.988
CSE_3	0.935	0.916	0.934	0.941	0.943	0.977
CSE_4	0.944	0.965	0.943	0.964	0.923	0.982
CSE_5	0.922	0.960	0.925	0.959	0.900	0.982
INNO_1	0.891	0.932	0.907	0.933	0.921	0.932
INNO_2	0.654	0.879	0.742	0.929	0.723	0.961

INNO_3	0.884	0.930	0.899	0.924	0.861	0.977
INNO_4	0.907	0.857	0.915	0.890	0.879	0.975
USE_1	0.898	0.918	0.912	0.912	0.927	0.882
USE_2	0.792	0.867	0.795	0.712	0.808	0.847
USE_3	0.791	0.825	0.816	0.835	0.768	0.864

Table 6
Internal consistency and AVE based on each variable

Construct	Gender				Age Group				Residence			
	Male		Female		Younger		Older		Urban		Rural	
	IC	AVE	IC	AVE	IC	AVE	IC	AVE	IC	AVE	IC	AVE
ACCE	0.909	0.716	0.941	0.800	0.910	0.718	0.934	0.784	0.709	0.563	0.972	0.896
CSE	0.965	0.847	0.976	0.889	0.966	0.851	0.976	0.889	0.954	0.806	0.991	0.957
INNO	0.905	0.707	0.945	0.810	0.910	0.720	0.956	0.845	0.882	0.659	0.980	0.925
USE	0.868	0.687	0.904	0.758	0.880	0.710	0.863	0.679	0.874	0.700	0.899	0.747

Table 7
Results of pooled error term t-test by subgroup

Path Relation	Male		Female		t-value	Younger		Older		t-value	Urban		Rural		t-value
	β	SE	β	SE		β	SE	β	SE		β	SE	β	SE	
ACCE - USE	0.386	0.141	0.123	0.096	1.540	0.400	0.182	-0.041	0.116	2.049	0.844	0.0597	-0.617	0.106	12.001
CSE - USE	0.274	0.114	0.073	0.120	1.213	0.238	0.139	0.281	0.124	0.231	-0.106	0.0834	0.590	0.100	5.348
INNO - USE	0.086	0.101	0.576	0.097	3.506	0.136	0.091	0.546	0.100	3.043	0.093	0.0554	0.848	0.098	6.701
ACCE - CSE	0.842	0.026	0.859	0.065	0.243	0.782	0.037	0.896	0.015	2.874	0.758	0.0456	0.908	0.013	3.158
CSE - INNO	0.805	0.036	0.785	0.018	0.495	0.749	0.057	0.832	0.027	1.313	0.654	0.0528	0.918	0.015	4.805

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