THE CONTRIBUTION OF E-GOVERNMENT TO TRUST IN THE GOVERNMENT:

Correlating trust in the government with satisfaction with e-service by using transparency, responsiveness, accessibility, and security as determinants

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S1457705

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Preface

Never been a thought that I would write a thesis with the subject that I barely passed in my master program. Aspects of trust are undoubtable wide and intangible; no wonder I could not memorize everything from the articles about trust during exams. Yet trust is not something unfamiliar in daily life and that is why topic about trust has its own appeals to me.

Working as a public servant in ministry that handles information and communication technology (ICT) matters, I cannot neglect the thrust to find remedy for the declining trust in government through ICT. Even Pink Floyd wrote a song asking should they trust the government, together with many other bands who question and criticize their government. Indonesia nowadays, especially since the reformation era, expresses the cry for transparency from and closer interaction with its government in delivering public service.

The hardest part during the quest is when everything depends on the generosity of people who have experienced e-service to volunteer as participants in this study. Only few of people in my direct network have used e-service lately. Many of friends and colleagues even failed to recall if they had used e-service before. Either the e-service is a fancy thing or perhaps not a necessary at all; it struck me.

Thankfully, I have a husband, family, and friends who enthusiastically helped me forcing people they know to fill in the questionnaires so I can get back home sooner (that's what they said). I also thank Indonesian Student Association for being a second family here for me, International Christian Fellowship community, and my awesome classmates. I am so glad to have you, dear friends, and share every moment together with you all.

Last but not least, I would also like to express gratitude for my inspiring supervisors, Dr. A.D. Beldad and Dr. A.J.A.M van Deursen for encouraging me to do more than what I thought I could not do. I learned a lot from your critics and happily celebrated every feedback that supported me to finish this thesis.

Enschede, January 2015

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Abstract

Governance, or specifically in the form of e-government, and trust are related. Many literatures emphasize on trust variable moderating the citizen's willingness to use or accept e-government. Trust is considered as a factor whether people choose to rely on the applications of e-services or preferably making a direct contact to get a service. This can be considered as the early stage since it occurs at the e-government acceptance. The next step is examining whether the e-services build the citizen's trust in government stronger or vice versa.

There are respective literatures which have extended the study of trust and e-government by reversing the scheme into how e-government convinces the citizen to trust in the government. Previous studies conducted in various countries, mostly are in developed countries, show different results. This study is therefore challenged to examine the contribution of e-government to build trust in government in a developing country, Indonesia. By using transparency, responsiveness, accessibility, and security as determinants of satisfaction in using e-service, the empirical result shows that satisfaction in e-service affects citizens' trust in the government agency and in general. It also enlightens us that trust in the agency correlates significantly to trust in government at large.

Keywords: e-government, e-service, satisfaction, trust in government, trust in government agency, transparency, responsiveness, accessibility, security, Indonesia

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1. Introduction

A world-wide survey of trust conducted to 33,000 respondents in 27 countries, 2014 Edelman Trust Barometer, reported in general decreasing trust in government and media while trust in business and non-governmental organizations remains stable (Edelman Trust Barometer, 2014). Interestingly, Indonesia is one of four countries which reported increasing level of trust in government while there is a decline of trust in government globally.

Tjiptoherijanto (2010) noted several socio-political changes in Indonesia as important sources to improve trust in the government, i.e. anti-corruption initiatives, increased social transparency and democratization, and room for participatory government. In accordance with the five principles of good public governance guidelines in Indonesia which was initiated in 1998, the aforementioned changes convey the values of democracy, transparency, accountability, law enforcement, and equity and inclusive (National Committee on Governance, 2008).

In 2005, Haryono and Widiwardono introduced e-government as a manifestation of the good public governance principles in Indonesia. They argue that e-government is needed to bolster the governance transformation towards democratic governance practices; to enhance the balance of authority between different levels of government; to facilitate communication between central and local governments; to provide openness in sharing information; and to reinforce the transformation towards information society era. Corresponding to the aforementioned principles, e-government has become part of the agenda in Indonesia as a step in reforming the quality of public service.

Roughly, e-government in Indonesia has undergone complex bureaucracy initiatives to be fully implemented in all state-level ministries and agencies since it was first initiated in 2000. Though it is relatively slowly developed compared to other South-Eastern Asia countries, e-services provided by Indonesian government nowadays play an important role in core public services such as taxation matters, immigration documents, public servant recruitment, and information services. Now, a hunch that e-government and trust in government are correlated but there is no previous study that measure whether the advancement of e-service correlates with the increasing level of trust in government in Indonesia to be found might have aroused. This study addresses this challenge by focusing on investigation of how the current e-government contributes to the trust in government.

1.1 Research purpose

Linking back to the aforementioned survey report, Morgeson, VanAmburg, and Mithas (2011 p.258) posit an interesting argument that e-government can be considered as "a transformational technological innovation, a mode of citizen-government contact that could improve the services delivered to citizens, boost citizen satisfaction with government, and possibly even help reverse the long-running decline in citizen trust in government". The concept offered by Morgeson et al., that e-government may influence the citizen trust in government, has been examined only by a handful studies which attempted to seek whether the intensive use of e-government service significantly leads to trust in government or not.

Although there are several studies that evaluated citizen's satisfaction in e-government service performance, only a few have positioned trust as a result of satisfaction. On the contrary, within the last decade, scholars have been overwhelmed by studies that use trust in government variable as a determinant or predictor for using or adopting e-government services. Considering

that these studies have brought us to a firm comprehension about the correlation of trust in government with the e-government adoption, another challenge to reveal what is on the other side after adopting e-government needs to be faced. If the position of trust is reversed, placing it after the e-government adoption, can the e-government services build citizen trust in government? Specifically, can the proliferation of e-government as a mode of citizen contact and interaction with government help to improve citizen trust and confidence in government? This study examines the correlation between e-government adoption and trust in government in Indonesia, with a particular emphasis on linking the e-government user satisfaction with trust in government agency and in general. Since e-government comprises particular electronic service applications, further, the term of e-government and e-service will be used interchangeably.

2. Theoretical Framework

2.1 E-government definition and advantages

E-government has been defined in various ways depending on the contexts in which it is applied. Essentially, e-government can be seen as simply the web-based application to provide interactive exchanges between public institutions and citizens, business partners, and other government agencies by transforming the conventional public services to improve the access and delivery of the service (Alsaghier, Ford, Nguyen, & Hexel, 2009; Tan & Benbasat, 2009). It highlights the usage of internet in facilitating government services to its stakeholders. In a broader perspective, World Bank (2006) defines e-government as "the use of information and communications technologies to improve the efficiency, effectiveness, transparency and accountability of government".

Aligned with the definition, Northrup and Thorson (2003) summarize three advantages that have been used to support e-government initiatives: increased efficiency, increased transparency, and transformation. Both aforementioned e-government definition and advantages hint the internal and external purposes of e-government. On the one hand, e-government is expected to be able to trim costs, enhance productivity in government, improve service delivery and public administration, and facilitate the advancement of an information society. On the other hand, as the external purpose, e-government is delineated as a powerful tool for promoting public participation (Parent, Vandebeek, & Gemino, 2005) because it entitles the citizen to have more access to and interaction with the government (Safeena & Kammani, 2013). Ultimately, e-government is expected to able to increase citizen satisfaction with government, and ultimately to help reverse the weakening in citizen trust in government (Morgeson et al., 2011).

2.2 Trust in government and trust in e-government

Trust in general, as defined by Mayer, Davis, and Schoorman (1995, p.712), means "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party". Thus, it can be concluded that trust in government is a confidence in citizen's perceptions of the government agencies' integrity and ability of providing the service (Beccerra & Gupta 1999; Job 2005). When it comes to the e-government context, trust in e-government implies believing that e-government can be used to get the desired task accomplished satisfactorily.

Trust in e-government has been extensively studied as a determinant in e-government adoption or acceptance. In e-government environment, trust in e-government consists of trust in the government as an entity and trust in the internet as reliable in enabling technology (Belanger & Carter, 2008). Trust in the internet, in accordance with Shapiro's (1987) statement, is essentially the institution-based trust: trust in the security measures, safety nets, and performance structures of this electronic channel. Trust in government as an entity can be seen from an individual's perceptions of the institutional environment which is supported by the structural conditions (e.g. legal protections) to create trustworthiness (McKnight, Choudhury, & Kacmar, 2002). Aside from that, trust in government can derive from the belief that the government acquires the astuteness and technical requirements to implement and secure the systems (Belanger & Carter, 2008).

The 'kind' of trust in the government, which is examined in this study, as Miller and Listhaug (1990) define, is an evaluation of "whether or not political authorities and institutions are performing in accordance with normative expectations held by the public". Public's expectations toward their government might be subjective as it depends on the needs of the public itself but, essentially, the matters now are more down to earth such as the reliability of delivery service or creating policies that correspond to public's wishes (Bouckaert & van de Walle, 2003).

Uslaner (2003) claims that there are three ways a state can build trust: honesty, democracy, and strong government performance. He correlates honesty with "kleptocracies" avoidance or anti-corruption behavior and summarizes it by stating that the most corrupt countries have the least trusting citizen. Secondly, democracy promotes trust because it empowers people, who do not control many resources, by relying upon the mass citizenry for political support. Lastly, citing Brehm and Rahn (1997) and Misztal (1996), he argues that strong government performance makes people feel better about government—and ultimately more willing to cooperate with each other. These three points will be translated into the research model which is used to gauge how they correlate with the trust in government. This article concentrates on addressing the association between citizen experience of and satisfaction with public services and trust in government.

2.3 Linking e-government and citizen trust in government

Trust in government and e-government seems to be interrelated. Former studies find that higher levels of trust in government is positively related with more intensive e-government service use and in other way around that those satisfied with the electronic services provided are more trusting of government (Belanger & Carter 2008; Beldad, van der Geest, de Jong, & Steehouder 2012; Furlong, 2005; Parent et al. 2005; Tolbert, & Mossberger 2006; Welch, Hinnant, & Moon 2005; West 2004). Although the studies that attempt to focus on the latter are sparse, they took arguably various corridors to connect these two variables. Table 1 presents the comparison of determinants used in these studies with results which are not necessarily the same.

Table 1

Summary of Comparison of Studies in Linking E-government with Trust in Government

Research	Determinants of trust in government	Findings
Tolbert and Mossberger (2006)	• transparency and effectiveness • accessibility • responsiveness	The use of e-services is statistically related to citizen perceptions of transparency of government, accessibility of government information, and increased responsiveness of the federal government.
Morgeson et al. (2011)	• demographic variables • e-government services used • expectations • overall satisfaction • confidence in government agency	Citizen expectations, confidence in a government agency, and the total effect of satisfaction are significant determinants in predicting trust in federal government.

Horsburgh, Goldfinch, and Gauld' (2011)	• trust and comfort when using e-services (e.g. information provided, website security, privacy security, and financial transaction)	The respondents showed their trust in using offered e-services functions, but no correlations between respondents' trust in the provisions of e-government and their trust in government itself.
Parent et al. (2005)	• internal political efficacy (perceived involvement in political developments) • external political efficacy (perceived government responsiveness) • quality of e-government experience (perceived ease of use and the perceived usefulness)	E-government intensifies the existing levels of trust if these are positive. There is no positive effect on those whose existing trust in government is either neutral or negative.
Welch et al. (2005)	• the extent of e-government usage • satisfaction with government (involvement, security, efficiency, information provision) • e-government satisfaction (interactivity, transparency, and transactions) • demographic variables	Trust in government is strongly associated with e-government satisfaction and that e-government satisfaction is associated with citizens' perceptions about online service convenience (transactions), information reliability (transparency), and engaged electronic communication (interactivity).
West (2004)	• demography variables • e-government usage	Federal e-government usage did not have any discernible impact on public trust in government except people who are participate in a certain political party.
Furlong (2005)	• Citizen satisfaction (measured by: transparency, quality of effort, value of money, and responsiveness factors)	Since GOL (Government On-Line) improves service delivery, it improves citizen confidence in government and strengthens government institutions.

Referring to the aforementioned statement by Uslaner (2003) that honesty, democracy, and strong government performance are prescribed to build trust, an outline of measurement can be drawn from the comparison in Table 1. First, though it may not be explicitly stated, it can be inferred that citizen satisfaction is a check-point of the trust in government because the extent of e-service can influence citizens' trust in government is hypothetically based on the e-service performance; therefore it is based on citizen's good or bad experience in using e-services. Second, to measure the e-service performance, despite the varied determinants, several categories appear frequently in the aforementioned studies in measuring the citizen satisfaction: transparency, accessibility, responsiveness, and security (Furlong, 2005; Horsburgh et al., 2011; Morgeson et al., 2011; Parent et al., 2005; Tolbert & Mossberger, 2006; Welch et al., 2005).

2.3.1   Citizen satisfaction, trust in government agency, and trust in government

Satisfied and trusting citizens are supposed to be good indicators of good governance (Bouckaert & van de Walle, 2003). The basic idea is plainly that enhanced quality of public service delivery will boost satisfaction with the public sector, which in turn, will ultimately

prompt increased trust in government. If good governance is considered as the process of decision-making, reflected in network-based and strong involvement of civil society, then whether trust is necessary for good governance to occur or not seems to be obviously needed.

Trust in government is usually assessed in terms of citizens' experience-based subjective evaluation, assuming that competent, reliable, and honest government or its public service while fulfilling citizens' needs will prompt citizens' trust (Park & Blenkinsopp, 2011). At first glance, this correlation may seem to be a straightforward one. Citizens are satisfied, presumably, due to the well performance of government and are dissatisfied when it is poor. However, from an empirical research perspective, the question of how citizens respond to government performance is more complicated than this assumption of a simple correspondence. In many cases, government performance—particularly the actual outcomes or accomplishments of providing e-services—are often not well measured or not measured at all. Therefore, certain criteria are used to measure the performance of e-services provided by Indonesia government which related to citizen satisfaction which will be discussed in the next section.

Many studies provide empirical evidence for the positive correlation between satisfaction and trust. Van Ryzin (2007) shows a significant association between satisfaction with public service delivery and trust and confidence in local government and also furthermore both in local and central government (Kim 2010; Christensen and Lægreid 2005). Morgeson et al.'s study found satisfaction is significant and a positive predictor of confidence in the agency. Hence, these findings affirm what Luhmann (1995) said that trust is not only shaped by the trustworthiness of the services involved, it is also influenced by the experiences of citizen's relationships with their government that take place when citizens interact with the agencies or services involved.

Inferring from those studies, to distinguish the level of government (e.g. local government, central government, government agency, or government in general) is crucial for this study can be specific in measuring the extent of satisfaction influences trust in government. In the research model proposed in this study, as shown in Figure 1, two distinct perspectives on trust are included: trust in the government in general and trust in government agency to distinguish generalized and particular notions of trust. Trust in government is the perceived trustworthiness of the government as an entity, whereas trust in government agency is the perceived confidence that the particular federal agency will do providing services satisfactorily in the future (Morgeson et al., 2011). Thus, the correlation of satisfaction to the trust in government agency and in general will be examined.

Citing Hetherington (1998), Morgeson et al. also argue that "institutions are also components of the government, so feelings about them should help explain political trust [in the government overall] as well" (p.264). Therefore, it is theorized that the perceived trustworthiness of agency in fulfilling citizens' needs induces the trust in the government in general. Based on this, this study hypothesizes that:

H1a: Citizens' satisfaction with the e-government is positively related with trust in government agency.

H1b: Citizens' satisfaction with the e-government is positively related with trust in government.

H1c: Trust in government agency is positively related with trust in government.

2.4 Citizen satisfaction determinants

As has been described earlier, four determinants for citizen satisfaction discussed here are: transparency, accessibility, responsiveness, and security. These determinants are mostly used as predictors for citizen satisfaction and trust in government agency as shown in Table 1. Each component is elaborated by literature review which supporting the following hypotheses proposed in this study.

2.4.1 Transparency

Basically, the degree of transparency in an organization deals with its intention to allow citizens in monitoring its performance and participating in its policy processes. Transparency can be manifested through information provision about what the government is doing, which promotes increased accountability (Chun, Shulman, Sandoval, and Hovy, 2010). The more transparent an organization's website is, the more the organization is opened to let citizens to monitor its performance. Concluding from pertaining studies, Bertot, Jaeger, and Grimes (2010, p.264), state that transparency and the right to access government information are regarded as "essential to democratic participation, trust in government, prevention of corruption, informed decision-making, accuracy of government information, and provision of information to the public, companies, and journalists, among other essential functions in society."

There are long list of studies that give evidences in which transparency and trust in government intertwine. An example, Welch and Hinnant's (2002) findings indicate that internet use in government environment is positively associated with transparency and furthermore positively associated with citizen trust in government. Another supporting study, by analyzing changes in corruption data through e-government initiatives, Andersen (2009) concluded that "implementing e-government significantly reduces corruption, even after controlling for any propensity for corrupt governments to be more or less aggressive in adopting e-government initiatives" (p. 210). Later, Grimmelikhuijsen (2012) confirms that transparency contributed to public's knowledge which leads them to perceive the government organization as being more competent and benevolent.

There are three different points of government transparency proposed by Heald (2006) that can be contained in a government website or e-service portals: (1) transparency of decision-making processes, (2) transparency of policy content, and (3) transparency of policy outcomes or effects (cited by Grimmelikhuijsen & Welch, 2012). Decision-making transparency depicts the government openness in disclosing the steps taken to reach a decision and the rationale responsible for that decision. Policy transparency refers to the information presented about how the implementation of these policies in solving citizenry problems. Policy outcome transparency primarily features the effect of the policy that has been undergone. Thus, transparency will be measured by focusing on disclosed information about the on-going process of a ministry's or agency's programs, the policies applied, and the effects or outcomes from the policy in e-service website or portals.

H2a: Transparency is positively related to citizens' satisfaction.
H2b: Transparency is positively related to trust in government agency.

2.4.2 Accessibility

Accessibility allows people to do more with a technology in response to new services, conditions, and needs, or what Pina, Torres, and Royo (2010) coined as usability—the ease of use and navigability. Not only flexibility, carrying the nature of information technology, e-government also promotes the advantages of online application such as convenience. Convenience can be described as the citizen' perception of user interface quality for conducting government transactions from any location, at any time of the day (Alawneh, Al-refai, & Batiha, 2013); while flexibility is "the extent to which an e-government technology is able to adapt to the changing demands of citizens" (Chan et al., 2010, p.528). To sum up, accessibility can be characterized by less or zero downtime, complete feature, searchable databases, and user-friendly layout.

Past work of Chan et al.'s (2010) found that flexibility influences performance expectancy which breeds satisfaction. Later, a study by Alawneh et al. (2013) found accessibility as a significant contributor to satisfaction of the e-service. In e-commerce studies, the quality of the user interface affects the customer satisfaction directly for its evidence on the service provider's competence in facilitating effortless use of the service (Park & Kim, 2003). These studies convincingly suggest that accessibility is involved with satisfaction in e-service usage.

In an e-commerce study, usability also has strong impact on perceived benevolence and ability of the service provider (Roy, Dewit, & Aubert, 2001). Hence, not only predicting satisfaction, accessibility is theorized as a predictor of trust in government. Tolbert and Mossberger (2006) argue that accessibility can impact perceived familiarity with government through more frequent usage, and thereby increasing process-based trust. This is consistent with Nye's statement that "the information technology revolution may also help government get closer to people, and when people feel a closer connection to government, confidence tends to be higher" (1997, p.18).

H3a: Accessibility is positively related to citizens' satisfaction.
H3b: Accessibility is positively related to trust in government agency.

2.4.3 Responsiveness

Some scholars use the term of responsiveness as interactivity (Welch, 2005) or political efficacy (Parent et al., 2005) to describe service capability to respond to users' needs and expectations. Responsiveness in this study is defined as a part of facilitating citizens' right to know or to express their opinion by giving feedback to requests and responding complaints addressed by the citizen. This feature is prominent for the government to come closer to the citizens and to satisfy their requirements. In order to achieve this, they must be in close touch with the citizens in order to receive their complaints, questions, and or suggestions and thus to improve the sites and the offered services.

As a form of government-citizen communication, e-government urges the citizen participation or involvement in delivering the public service. Aside to service convenience and transparency, citizen satisfaction with e-government services is related with citizen's perception about the engaged electronic communication (interactivity) (Welch et al., 2004). In a study that measured e-service quality and its interaction with

satisfaction, responsiveness is one of factors of e-service quality that significantly related to citizen satisfaction (Saha, Nath, & Salehi-Sangari, 2010). Later, Kim and Lee's (2012) study found that satisfaction with government responsiveness promotes the perceived government transparency and positively associated with citizens' trust in the government who provides the e-participation program.

The involvement of the citizens in e-government is a step towards a more democratic process, which makes government more transparent, more accountable, and more trustworthy (Chun, Shulman, Sandoval, & Hovy, 2010). Welch and Hinnant's study (2003) reported that higher levels of satisfaction interactivity contribute to higher levels of trust in government. The underlying idea is that the response given by the agency increases the process-based trust that occurred to citizens who have their requests or complaints responded successfully and therefore citizen would perceive that government cares about citizens like oneself (Tolbert and Mossberger, 2006; Welch et al., 2005). Furthermore, others who do not experience it directly but succeed to observe this will have their institutional-based trust increased (Tolbert and Mossberger, 2006). Relying on Thomas's (1998) concept of mutual trust, Welch et al. (2005) posit that the government officials who interact with the public have the opportunity to develop mutual trust, which can then support the trust that the individual has for the agency.

H4a: Responsiveness is positively related to citizen's satisfaction.
H4b: Responsiveness is positively related to trust in government agency.

2.4.4 Security

Government agencies may collect and maintain different kinds of data concerning the citizen in many e-services which put privacy and security at great risk, especially the personally identifiable information. Privacy and security in e-services can be demonstrated through statements and policies for handling personal information submitted online. Here is the unique relationship that the trust in government, regarding government's responsibility for database system and citizen's personal data protection, assures the citizen to use e-services then hypothetically leads to another trust in government. Chiang, Huang and Yang (2011, p.140) posit that "the key factor affected user satisfaction of government website is considered as web application security because of the nature of online activities: information exchange, payments, and individual privacy". Using Technology Acceptance Model, they argue that website security is eminent consideration in affecting satisfaction and eventually the intention towards e-service continuance.

Not merely a determinant on satisfaction, security continues its effect on trust in government. Wang's (2014) study provides an evidence of how perceived e-service security can affect satisfaction and subsequently trust in government. The study found that perceived security strongly affects the perceived value of the e-service which then influences satisfaction and trust in government agency and in general moderately. The basic idea is, by guaranteeing the privacy and security, citizens are encouraged to see government as fair and ethical and thus affecting institutional-based trust (Tolbert and Mossberger, 2006). Institutional trust may be garnered when the citizens notice the privacy disclaimer or the secure connection indicated by "https://" in the address bar. Furthermore, Welch et al. (2005) proposed that increased efforts by government to

establish a secure exchange mechanism with citizens may help enhance citizen trust of government.

H5a: Security is positively related to citizen's satisfaction.
H5b: Security is positively related to trust in government agency.

Figure 1
Proposed Model for Measuring Trust in Government Agency and Trust in Government Using Citizen Satisfaction Determinants
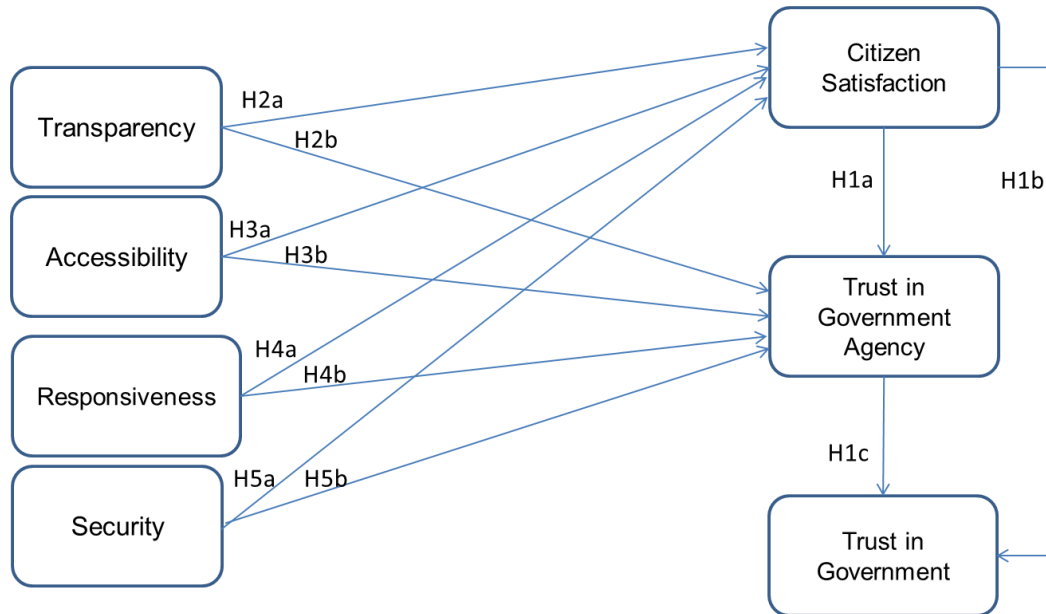
Note.
1. Each link is proposed to be positive.

3. Methodology

3.1 Research approach and procedure

The research approach is determined by the study purposes. As mentioned before, the purpose of this study is to contribute further to the investigation of linking citizens' satisfaction with service delivery and trust in government as the provider of the service in Indonesia. As the study derived from hypotheses of causal relationship between variables to be empirically tested to a collection of sample in a population, the nature of this study is congruent with positivist/quantitative approach (Tavakol & Sandars, 2014).

Quantitative approach is characterized by empirical research—viewing phenomena through empirical indicators which represent the truth (Sale, Lohfeld, & Brazil, 2002). This characteristic also serves as an advantage of quantitative study: generalizability. Generalizability in this study can be ensured through techniques that included randomization, structured protocols, and written or administered questionnaires with a limited range of predetermined responses. Moreover, as noted by Sale et al., the goal of this approach is to measure and analyze causal relationships between variables within a value-free framework (Denzin & Lincoln, 1994). This approach, therefore, enabled the researcher to achieve the goal of this study, which is to investigate trust in government as an effect of e-government utilization, by conducting a survey to avoid researcher's interference in the data gathering and moreover accommodate the distance gap between researcher's location and the main country of the population (Indonesia).

To gather study participants, a survey was administered in two different settings: online and offline questionnaires. For online survey, the link of questionnaire was distributed to initial participants through researcher's direct network in social media, educational discussion forums, and personal contacts. Further, the link was randomly distributed to several participants' groups in social media. To reach participants who are relatively inactive in social media, 170 printed questionnaires were distributed in Indonesia. Both online and offline surveys were conducted for three weeks in November 2014.

The questionnaire was introduced as a survey for examining the role of e-services in enhancing citizens' trust in government. Anonymity and participant's privacy were stated to be guaranteed in this study. In the beginning of the questionnaire, participants were asked to indicate the product of e-service they have experienced and use it as the reference in answering all questions.

3.2 Participants

The participants of the study were citizens of Indonesia who have experience in using e-services provided by Indonesian government, specifically by national level institutions such as ministries and agencies. By using snowball sampling technique, the questionnaire has reached 570 participants through online and offline questionnaires. Answers from offline questionnaire then were manually inputted to the online survey application. However, there were only 407 participants finished the questionnaire (non-response or drop-out rate of 28.77%). Incomplete answers (partially finished or having more than two blank answers) were then removed, leaving responses from 342 participants to be analyzed.

The gender composition is balanced between female (50.3%) and male participants (49.7%). Participants' age ranged between 18 to more than 50 year old with the average age is 29.7 year old ($SD = 6.80$). Most participants (87.72%) were from Java, island with the highest population density in Indonesia. More than half of the respondents of this study live in the

province of Jakarta (54.68%), the capital city of Indonesia, and one third of the respondents (33.3%) live in the neighboring provinces of Jakarta: Banten and West Java. The rest of the respondents were spread in fourteen other provinces throughout Indonesia.

Three e-services mostly used by the participants are tax reporting and registering (26.90%), public servant recruitment website, and e-passport application (22.51% and 17.25% respectively). Those three e-services are provided by three different agencies.

Since trust in government is the subject in this study, bias from an occupational group (participants who worked in government agencies) and political affiliation was potentially a threat. Therefore, to increase generalizability, researcher tried to diversify the participants from other occupational groups to balance the participant composition. As a result, less than half of the participants are people who work in government institutions (45.6%) and the rest are non-governmental employees, entrepreneurs, students, and unemployed participants. Four participants did not answer this question.

The difference of amount between participants with and without political affiliation here is wide. There are only a few respondents (1.5%) admitted that they are involved in a particular political party. More detailed information of the participants' demographic characteristics is presented in the Appendix.

3.3 Instrument

The design of the survey questionnaire was patterned after the model offered in the theoretical part. The components of the questionnaire were one control question, 35 items grouped in seven scales representing each constructs, and five demographic information questions. Self-report items of each scale were compiled from validated instruments with good reliability score (Cronbach's alpha ranging from 0.82 to 0.91) in the literature to represent each construct, and wording was modified to fit the e-government context. Each item is rated on a Likert scale of 1–5 (Strongly Disagree to Neutral to Strongly Agree or Very Dissatisfied to Neutral to Very Satisfied).

Control question was required to ensure that the participant has experience in using one of the e-services provided by ministries or national-level government agencies. Participants were asked to indicate one product from the e-service listed, that they have used, and further to refer to that experience in answering all the questions. The list functioned not only to 'remind' the participants regarding products of e-service provided by the government, but also to define types of e-services which are within the research scope.

On the last part of the questionnaire, demographic information consisted of gender, age, domicile, occupation, and political affiliation, were asked. The final items are provided in Table 2. Items in the Indonesian language version can be seen in Appendix.

Table 2
Scales Used in Data Collecting Instrument

Constructs	Items	Code
Transparency (TRA)	The ministry/agency's programs are implemented more transparently in the website.	TRA1
(Park & Blenkinsopp, 2011)	The process of the ministry/agency's decision making is transparently disclosed in the website.	TRA2
	The citizen can clearly see the progress and situation of the decision making through the website.	TRA3

Table 2

Scales Used in Data Collecting Instrument (continued)

Constructs	Items	Code
	The policies are transparently disclosed in the website.	TRA4
	The ministry/agency's website discloses sufficient and reliable information to the citizen on its policies	TRA5
Accessibility (ACC)	On this website, it is simple to accomplish the task I want to accomplish.	ACC1
(Wang & Senecal, 2007; Gilbert, Balestrini, & Littleboy, 2004)	I find the website is easy to use.	ACC2
	It is easy to find the information I need.	ACC3
	It was easy to learn to use the website.	ACC4
	The e-service enables me to access government services anytime.	ACC5
	The e-service enables me to access government services from anywhere I am located.	ACC6
	It is convenient for me to access government services by using this e-service.	ACC7
Responsiveness (RES) (Kim & Lee, 2012)	The e-service has provided answers and feedback to my request in a sincere manner.	RES1
	I found the e-service process to be very responsive to my needs.	RES2
	I am sure that my complaint was delivered accurately.	RES3
	I am sure that my complaint was delivered securely.	RES4
	The request was considered seriously through the e-services process.	RES5
Security (SEC) (Belanger & Carter, 2008; Papadomichelaki & Mentzas, 2012)	The e-service has enough safeguards to make me feel comfortable using it to transact personal business with the ministry/agency.	SEC1
	I feel assured that legal and technological structures adequately protect me from privacy problems on the e-service.	SEC2
	The e-service is a robust and safe environment in which to transact with the ministry/agency.	SEC3
	My personal data provided in this e-government site are archived securely.	SEC4
Satisfaction (SAT) (Colesca & Dobrica, 2008)	Are you satisfied using the e-service?	SAT1
	Are you satisfied with the content of the e-service?	SAT2
	Are you satisfied with the interface of the e-service?	SAT3
	Are you satisfied with the speed of the e-service?	SAT4
	Are you satisfied with the quality of the e-service?	SAT5
	Are you satisfied with the security of the e-service?	SAT6
Trust in Government Agency (TIA)	I think I can trust state government agencies.	TIA1
	State government agencies can be trusted to carry out online transactions faithfully	TIA2
(Belanger & Carter, 2008)	I trust state government agencies keep my best interests in mind	TIA3
	In my opinion, state government agencies are trustworthy.	TIA4
Trust in Government (TIG) (Grimmelikhuijsen, 2012)	In general, the government cares about the well-being of citizens.	TIG1
	In general, the government keeps its promises.	TIG2
	In general, the government carries out its duties effectively.	TIG3
	In general, the government carries out its duties efficiently.	TIG4

The survey was designed to be addressed to Indonesian citizens, hence the items needed to be translated to Indonesian language. After being translated to Indonesian language, researcher asked a colleague who had not seen the original questionnaire before to translate it back to the English version. This step is necessary to establish the meaning equivalence. As a result, the original and the retranslated questionnaire were similar.

A pilot test then administered to ten master students in Universiteit Twente for identifying ambiguous or poorly worded questions and calculating the completion time before launching the survey. Constructs in the pilot test showed acceptable to good internal consistency levels (Wrench, Thomas-Maddox, Richmond, & McCroskey, 2013), ranging from 0.69 to 0.89 which mostly exceeds the 0.70 alpha value suggested by Nunnally (1978). Several wording adjustments were required to make the items easier to comprehend.

3.4 Validity and reliability tests

For measuring construct validity of each variable, a factor analysis was performed. Prior to the factor analysis, several tests were required to ensure whether the Principal Component Analysis (PCA) is feasible or not in this study. The Kaiser-Meyer-Olkin's measure of sampling adequacy (KMO) was .92, which is considered superb for a sample size (Field, 2009); and all KMO values for individual items were >.82, which is well above the acceptable limit of .5 (Field, 2009). Variance Inflation Factor (VIF) values of all independent variables are well below 10 (in average 1.58) and the tolerance statistics all well above 0.2; therefore it can be concluded there is no collinearity among the different independent variables. Bartlett's test of sphericity showed significant level (p<.0001), thus ascertained the viability of PCA for the study.

An initial analysis was run to obtain eigenvalues for each factor in the data. Seven factors had eigenvalues over Kaiser's criterion of 1 and in combination explained 69.13% of the variance. Table 3 shows the factor loadings of 35 items (variables) after orthogonal rotation (varimax). Every item loaded onto one of the seven factors except three items which had additional loadings on other factors: SAT1, SAT2, and SAT6 (details of items are provided in Table 2). These cross-loading items then were dropped from the analysis since there are three other items which are considered as 'adequate to strong' loaders (.50 or higher) on Satisfaction factor (Costello & Osborne, 2005). Aside from the three cross-loaded items, a total of seven other loadings were eliminated first because they failed to meet the minimum criteria of having a primary factor loading of .4 or above.

To test whether the items used in this study were reliable or not, a reliability test using SPSS was conducted. The type of scalar reliability which is most commonly used in social research is the Cronbach Alpha Reliability test (Wrench et al., 2013). The result of reliability test is also presented in Table 3. Based on Wrench et al.'s interpretation of the alpha scores, Table 3 shows that each scale has 'respectable' to 'excellent' (α = .74 to >.90) reliability. The scores presented below the factors label (alpha score) for each scale means that the measure is accurate in producing stable and consistent measurement, which implies that the items used in this study are relevant with the constructs.

Table 3

Factor loading, eigenvalues, variance coverage percentage, and reliability (Cronbach's α) score based on a principal components analysis with orthogonal rotation (N = 342)

Item (α)	ACC (.87)	SEC (.91)	RES (.89)	TIA (.91)	TRA (.83)	TIG (.87)	SAT (.74)
	Rotated Factor Loadings						
ACC5	.772						
ACC6	.715						
ACC4	.691						
ACC2	.686						
ACC1	.637						
ACC7	.634						
ACC3	.627						
SEC4		.836					
SEC3		.823					
SEC2		.799					
SEC1		.746					
SAT6		.600					.441
RES5			.775				
RES3			.756				
RES1			.728				
RES4			.721				
RES2			.696				
TIA4				.806			
TIA1				.802			
TIA2				.788			
TIA3				.674			
TRA2					.827		
TRA3					.775		
TRA5					.683		
TRA1					.656		
TRA4					.623		
TIG3						.859	
TIG4						.854	
TIG2						.809	
TIG1						.736	
SAT3							.678
SAT5							.642
SAT4							.625
SAT2				.417			.535
SAT1	.414						.519
Eigenvalues	4.34	3.80	3.61	3.52	3.24	3.10	2.84
% of Variance	12.40	10.86	10.32	10.05	9.26	8.85	8.13

3.5 Descriptive Statistics

To get a clear image of the responses of the participants, Table 4 presents descriptive statistics for all constructs in the research model. In general, as can be seen in Table 4, the participants tend to agree in perceiving that the e-services are accessible (M = 3.86), secured (M = 3.55), and transparent (M = 3.63). Slightly different, the e-services' responsiveness perceived by the participants is rather average (M = 3.31), similar with the user satisfaction (M = 3.30). The level of trust in the e-service provider (the agency) is above the average (M = 3.66) though the trust in government in general is not that high (M = 3.14). The variance of the data is relatively small (SD = 0.69 to 0.74).

Table 4

Descriptive Statistics for All Model Variables

Variables	Descriptive Statistics				
	N	Minimum	Maximum	Mean	SD
Accessibility*	342	2	5	3.86	0.69
Security*	342	1	5	3.55	0.73
Responsiveness*	342	1	5	3.31	0.74
Transparency*	342	1	5	3.63	0.70
Satisfaction**	342	1	5	3.30	0.74
Trust in Gov't Agency*	342	1	5	3.66	0.69
Trust in Government*	342	1	5	3.14	0.71

*scales are measured on 5-point Likert's scale (strongly disagree = 1/strongly agree = 5)

**scales are measured on 5-point Likert's scale (strongly dissatisfied = 1/strongly satisfied = 5)

4. Data Analysis and Results

Referring to the model used in this study, there are stages of multiple regression test required to analyze the significance of the relationship between constructs. First step is for analyzing the relationship between Trust in Government with Satisfaction and Trust in Government Agency, hierarchical regression is used by inserting Satisfaction in the first block. By using hierarchical regression method, the extent of determinants fit in the model can be observed. Model 1 in Table 5 shows us that when only Satisfaction (β = .39, $p < .001$) is used as a predictor, this is the simple model fit of Trust in Government and its determinant. Satisfaction only accounts for 15% of the variation in achieving Trust in Government. With a more complex condition, Model 2 shows us that combined together, Satisfaction (β = .24, $p < .001$) and Trust in Government Agency (β = .27, $p < .001$) are significant predictors of Trust in Government which explain bigger amount (20%) of the variability in Trust in Government (R^2 = 0.20). From the same table, it can be readily inferred that Satisfaction and Trust in Government Agency are significant predictors of Trust in Government. Therefore, hypothesis 1b and 1c are supported.

Table 5

Hierarchical Regression of Trust in Government on Satisfaction and Trust in Government Agency

		Regression Coefficients					
		B	SE B	β	R^2	Adj. R^2	ΔR^2
Model 1:					0.15	0.15	
	Constant	1.92	0.16				
	Satisfaction	0.37	0.05	.39*			
Model 2:					0.20	0.20	0.05
	Constant	1.37	0.20				
	Satisfaction	0.23	0.05	.24*			
	Trust in Government Agency	0.27	0.06	.27*			

Note: * $p < .001$

On the second step, a multiple regression is used to analyze the relationship between Satisfaction and its determinants: Accessibility, Security, Responsiveness, and Transparency. For analyzing the relationship, standard multiple regression is used to evaluate the relationships between the four independent variables and Satisfaction. Table 6 shows that Responsiveness (β = .57, $p < .001$), Accessibility (β = .24, $p < .001$), and Security (β = .17, $p < .01$) are positively related with and are significant predictors of Satisfaction. The inclusion of these predictors explains 39% of the variation in Satisfaction. Concluding from this, it can be stated that hypothesis 3a, 4a and 5a are supported.

Table 6

Multiple Regression of Satisfaction on Transparency, Security, Accessibility, and Responsiveness

		B	SE B	β	R²	Adj. R²
		Regression Coefficients				
Model:					0.39	0.38
	Constant	0.43	0.23			
	Transparency	0.00	0.05	0.00		
	Responsiveness	0.37	0.06	.37*		
	Accessibility	0.26	0.07	.20*		
	Security	0.17	0.05	.17**		

Note: * $p < .001$, ** $p < .01$

On the last step, the relationship between Satisfaction, Accessibility, Security, Responsiveness, and Transparency with Trust in Government Agency is measured. The model hypothesizes that each determinant is positively related to Trust in Government Agency. Table 7 displays that the results are positive and shows us that combined Satisfaction (β = .31, $p < .001$), Security (β = .37, $p < .001$), and Responsiveness (β = .12, $p < .05$) are significant predictors of Trust in Government Agency which explain 45% of the variability in Trust in Government Agency (R^2 = 0.45). Referring to these findings, only hypothesis 1a, 4b and 5b are supported.

Table 7

Hierarchical Regression of Trust in Government Agency on Satisfaction, Transparency, Security, Accessibility, and Responsiveness

		B	SE B	β	R²	Adj. R²
		Regression Coefficients				
Model 1:					0.30	0.30
	Constant	1.97	0.14			
	Satisfaction	0.51	0.04	.55*		
Model 2:					0.45	0.44
	Constant	1.08	0.20			
	Satisfaction	0.29	0.05	.31*		
	Security	0.35	0.05	.37*		
	Responsiveness	0.11	0.05	.12***		
	Transparency	0.02	0.05	.02		
	Accessibility	-0.01	0.06	-.01		

Note: * $p < .001$ *** $p < .05$

To make a clear summary of the results of the regression analyses, Figure 2 depicts the result of relationship coefficients in the model from multiple regression analysis. Supported hypotheses are in bold.

Figure 2

Summary of Hypotheses of the Model Using Multiple Regression Analysis
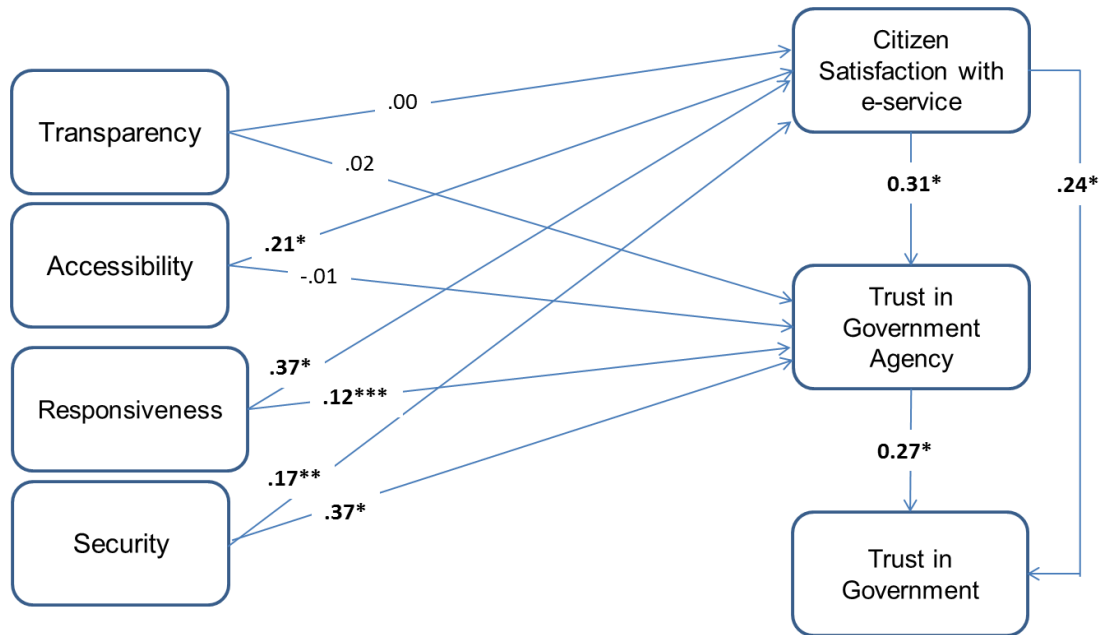
5. Discussion, Limitation, and Future Research

This article sought to explore the relationship among citizen use of government electronic services, their satisfaction with those services, and their trust in government. Transparency, accessibility, responsiveness, and security are expected to emanate satisfaction and trust in the government agency. Satisfaction itself is expected to have positive relationship with trust in agency which engenders the trust in government generally. Trust in the agency is also theorized as predictor of the trust in government in general.

5.1 Main findings

5.1.1 Transparency, accessibility, responsiveness, and security as satisfaction determinants

As proposed in this study, citizen satisfaction with e-government results from the perceived level of competence and effort of the government in providing information (transparency), ease of access (accessibility), interactive communication (responsiveness), and guarantee for the security of citizens' data (security) altogether. Among these four constructs, transparency is the only unpromising factor of satisfaction.

The descriptive statistics result shows that besides accessibility, also transparency appears to be important for satisfying citizens. Despite that fact, transparency becomes less favorable than the other three variables when predicting satisfaction. The insignificant and zero correlation with satisfaction might suggest that the combination of accessibility, responsiveness, and security seems adequate to satisfy the citizens regardless the level of the e-service transparency.

The first possible explanation that can be inferred from the result is that transparency is not the top priority that the citizens require in accessing e-services. In fact, based on the analysis result as displayed in Figure 2, responsiveness is the requirement that citizens mostly treasure from the e-services to be satisfied. This confirms Welch et al.'s (2005) study findings that citizens may get satisfied with the information provision—arguably an indicator of transparency—but dissatisfied with less interactivity with the government. In other words, a two-way interaction between government and its public is central in delivering public service.

Second, when transparency turned up as an insignificant factor of satisfaction, there's a probability that the flow of information does not necessarily mean that useful information is being released (Florini, 1999). This tentatively refers to government websites that likely displays a 'cosmetic appearance' of transparency through sophisticated approaches to e-service, for example, arrays of program information are displayed in government website without further explanation of the impact of the program implementation. As transparency contributes to the government's perceived competency and benevolence (Grimmelikhuijsen, 2012), less-identified transparency possibly refrain the satisfaction and moreover the trust in the government agency. West (2004) also found that exposure to information strongly convinces the citizen that the government is solving problems effectively, but does not necessarily generate trust in government. Admittedly, the second explanation is likely to explain the situation that Indonesia is facing at the moment than the first possibility.

Responsiveness appears as the strongest factor of satisfaction. Has been alluded previously, responsiveness is prominent for the government to come closer to the citizens and to satisfy their requirements. The availability of the e-service to make safe

transactions with the government is perhaps not adequate for satisfying the citizens without giving feedback that their complaints and requests have been handled. A citizen who files a complaint about potholes in a street, for instance, would like to receive an instant feedback that their complaint has been dispatched to the related department in the agency. This finding conforms to the conclusion of Saha et al.'s study in 2010 that responsiveness is a significant factor in e-service quality to citizen satisfaction.

Not only satisfaction earned, the feedback given by the agency suggests that the government cares about citizens like oneself and therefore hypothetically increases the process-based trust (Tolbert and Mossberger, 2006; Welch et al., 2005). Responsiveness may also reflect government's transparency (Kim & Lee, 2012; Roberts 2002) that leads to higher perceived trustworthy (Chun et al., 2010); thus affects citizens' trust in the government. Similarly, this finding relatively lends support to the proposition posited by Welch and Hinnant (2002) that two-way information based strategies are considered as important contributors to trust in government.

Accessibility unquestionably influences satisfaction which possibly suggests that the higher attention and interest to the accessibility features of the e-services, the more satisfaction will be accrued to the citizens due to conducting governmental transactions via a user-friendly platform. It is either possible to infer that e-services' ease of use can accommodate citizens' needs and therefore effective in replacing physical visit to the government offices. This finding is relevant with the concept offered by Chan et al.'s (2010), Alawneh et al. (2013), and Park and Kim (2003).

Surprisingly, however, accessibility fails to denote its impact on trust in government agency. This counterintuitive result may indicate that though the service is easy to access, it does not necessarily reflect that the agency is perceived as trustworthy by the citizens. Accessibility could be perceived as merely the advantage of the internet rather than the special feature of the e-service. It might be understandable that, regardless of the outstanding ease of use and convenience of the e-service, citizens may have doubts about the sufficiency of the content of the e-service (transparency). For example, zero downtime or user-friendly interface of the e-service can be disregarded when the content is not updated. When this happens, accessibility cannot hint the government's trustworthiness.

Security also plays a significant role in determining satisfaction. This confirms the study done by Chiang et al. (2011). E-service that demonstrates privacy protection or adequate safeguards for data submitted by its users perhaps would reduce users' uncertainty about the security of the e-service interconnection or privacy management; therefore leaves a good online transaction experience.

Although security is the least factor of satisfaction, it is an inevitable element for building trust in government agency. Complementing Wang's (2014) study, this finding confirms an earlier expectation that citizens, who perceive that the e-service guarantees their data and privacy security, are also more likely to report higher satisfaction. While e-service security clearly influences citizens' satisfaction, it also prompts citizens' trust in the agency imminently. Perceived security in the e-services used by the citizens affecting the institutional-based trust (Tolbert and Mossberger, 2006) that the agency could have a worthwhile system and data-privacy-maintenance competence to be relied upon, yet abides the work ethics as well (Chiang et al., 2011). Therefore, it is obvious how citizens' satisfaction in the security encourages them to trust more in the agency.

5.1.2 Satisfaction, trust in agency, and trust in government

As expected, citizen satisfaction is positively related with trust in government agency and in general, and so is the trust in agency with trust in government at large. This is the tenet of the study that answers this study's research question: can e-government, as a mode of citizen contact and interaction with government, contribute to improve citizen trust in government through citizen satisfaction in e-government?

Citizen satisfaction necessarily determines the trust in government agency and also in general. This is coherent with Morgeson et al.'s (2011) statement that the positive direct effect of the e-government on trust is not as powerful as it would be if e-government resulted in overall satisfaction. This finding might also suggest that the effects of transparency, responsiveness, accessibility, and security on trust in the agency are mediated by satisfaction.

Satisfaction has more robust effect on trust in agency than on trust in government in general. This can be understood that e-government may lead to improved citizen confidence in the performance of the particular agencies with which they interact. Since satisfaction is a subjective evaluation (based on personal experience), it is possible that the trust in agency is strongly influenced by the performance in providing e-service; whilst trust in government is more as an impact of trust in the agency or as a long-term effect of satisfied citizens.

Another important link resulted from the analysis is that the trust in agency is strongly related with the trust in government generally. This finding articulates two important aspects of trust in government. Firstly, as previous research has consistently suggested, the data indicate that feelings about the component parts of an entity should, in general, inform feelings about the entity itself (Hetherington, 1998). This resonates with Job's (2005) study that social trust does generalize from local service institutions to remote government and its organizations. For that reason, it can be assumed that people who trust the institution that perform well in fulfilling their needs will generalize this experience and develop social trust in government in larger scale. Secondly, compared to the satisfaction, trust in agency has slightly stronger impact on trust in government. It may imply that satisfaction in e-service does create effects on trust in government but in shorter time or weaker than the effects of trust in agency on that. That is because satisfaction results from experiencing e-services provided by the agencies, thus trust in the government in general is likely to be a side effect after trust in the agency.

5.2 Research Implications

The overall findings highlight that the use of e-service for the function of good governance is currently in the early stages of development, considering the 'normative' responses in evaluating e-service. The empirical result shows that satisfaction in e-service affects citizens' trust in the government agency and government in general. It also exemplifies the significant correlation between trust in the agency and in government at large.

5.2.1 Theoretical Implication

Theoretically, this study contributes to the short list literature regarding e-government and trust in government by offering different theoretical framework with former studies. Highlighting the significance relationship between satisfaction and trust in government, this study offers accessibility, responsiveness, and security as the

determinants of e-service satisfaction. Surely, satisfaction is not limited to these factors only but these are prominent for evaluating the usability of an e-service. Since the total variance explained covers only around 40% of satisfaction, it also hints the urge to explore other factors which could predict satisfaction and trust in government to be further examined.

Moreover, this study provides a stepping stone for both communication and public administration scholars to rethink of the adjacent function of communication and information tools that are capable of connecting citizens and government institutions. Information and communication technologies have become an extraordinary means to improve the quality of the interaction and the accountability of the services provided to citizens.

5.2.2 Practical Implication

Practically, there are four steps recommended here to be done in order to have a well-established e-government. First, this study concludes that e-government contributes to improve trust in the government. Therefore, Indonesian government should consider the significance of e-service fortification if it is meant to gain trust from its citizens. A systematic development of infrastructure and investment in e-government services should be devoted to prove government's consistency with the good governance principles proclaimed since 1999. This is to overcome the digital divide in Indonesia which is still a classic issue in a developing country and also other matters pertaining to accessibility because the government has to serve large number of citizen in a wide-spread territory.

Second, features in the e-services should be enriched by providing more interaction with the citizen. The result of this study is likely to support the assumption that citizens recognize that government is doing a relatively good performance with e-service transaction and expect to have interactivity integrated with the service. Two-way interaction through dialogue has been theorized to be important for demonstrating government's accountability and transparency which drives the trust eventually; and it is supported in this study.

Third, the data indicate that the participants feel dissatisfied with the transparency of e-service provided by government. This is a big homework for Indonesian government since the country is still struggling to enforce the values of democracy and good governance. Leaders should communicate policies and process in creating them well with its public and e-government can fulfill it, keeping in mind that this is the era of information and communication technology.

Lastly, communication practitioners, namely public relations officers, in public sector should be equipped with skills to optimize the use of e-government as another mode to interact with public. Not only as a medium for information dissemination or what is likely as one-way communication, e-government can function as means to facilitate citizens' involvement in governance.

5.3   Shortcomings and future research

There are several notable limitations that should be considered when interpreting the result of this study. First, there are no data regarding the population of e-service users throughout Indonesia. The amount of samples in this study might be not

sufficient to represent the population which could produce a bias in generalizing the result. Second, this study ignores the types of e-service used by the participants which are linked to different government agencies. The analysis did not distinguish the agency by specifically measuring the trust in agency one by one. Therefore, the trust in agency here is valid as an accumulation of trust in several agencies. This is also affected by the scale used in the survey that general terms were used in the items to make it applicable to every e-service. Third, there is a chance that the participants did not use their recent experience in referring their answers in the survey. There are supposed to be changes occurred to e-service performance after years.

Finding out that transparency is not a significant predictor of satisfaction and trust in government does seem implausible. E-government is expected to facilitate the need for information, to embody the transparency. Hence, this failure can be addressed in a future research to examine the transparency in e-services by using a more applicable and context-related scale for e-service in Indonesia.

The idea to use this study as a preliminary study for measuring e-government effectiveness in improving citizens' trust in the government is offered. Similar studies to be conducted in the future is recommended along with the development of the e-service in Indonesia by using more applicable scales to e-government in Indonesia and more comprehensive method in data for analyzing the possibility of moderating or mediating variable such as satisfaction in this case.

In addition to the wide aspects of trust, countless factors may affect one's perspectives of government's ability, benevolence, and integrity. Several studies have indicated that demographical characteristics play a role in shaping one's trust in the government i.e. occupation, political affiliation, education level, and social status. Therefore, by compiling all these factors in research model, a clearer insight whether the proliferation of e-service effectively boosts the citizens' trust in government or not can be obtained.

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Appendix A

Translated items used in Indonesian language

Transparansi	
	1. Program kerja kementerian/lembaga tersebut dilaksanakan secara lebih transparan melalui website layanan elektronik ini
	2. Proses pengambilan keputusan oleh kementerian/lembaga tersebut ditampilkan secara transparan pada website layanan elektronik ini.
	3. Masyarakat dapat dengan jelas melihat proses dan situasi dalam pengambilan keputusan melalui website layanan elektronik ini.
	4. Kebijakan-kebijakan kementerian/lembaga tersebut ditampilkan dalam website layanan elektronik ini
	5. Website layanan kementerian/lembaga tersebut memberikan informasi yang cukup dan terpercaya kepada masyarakat mengenai kebijakan-kebijakannya.
Aksesibilitas	6. Dengan menggunakan layanan elektronik ini, saya dapat dengan mudah menyelesaikan apa yang ingin saya kerjakan.
	7. Menurut saya, layanan elektronik ini mudah digunakan.
	8. Saya dapat menemukan informasi yang diperlukan dengan mudah.
	9. Saya dapat mempelajari cara menggunakan website layanan elektronik ini dengan mudah.
	10. Layanan elektronik ini memfasilitasi saya untuk mengakses layanan pemerintah kapan saja.
	11. Layanan elektronik ini memfasilitasi saya untuk mengakses layanan pemerintah dari lokasi mana saja saya berada.
	12. Saya merasa nyaman menggunakan layanan elektronik ini untuk mendapatkan pelayanan pemerintah.
Responsivitas	13. Layanan elektronik ini memberikan respon atau jawaban terhadap permohonan/keluhan saya dengan baik.
	14. Menurut saya, layanan elektronik ini sangat 29responsif terhadap apa yang saya perlukan dari layanan ini.
	15. Saya yakin bahwa, melalui layanan elektronik ini, keluhan yang saya sampaikan ditindaklanjuti dengan akurat.
	16. Saya yakin bahwa, melalui layanan elektronik ini, keluhan yang saya sampaikan ditindaklanjuti secara aman.
	17. Permohonan yang saya sampaikan dipertimbangkan secara serius melalui proses layanan elektronik ini.
Keamanan	18. Layanan elektronik ini memiliki pengamanan yang cukup untuk membuat saya nyaman mengurus keperluan saya dengan kementerian/lembaga tersebut.
	19. Saya merasa yakin, secara 29hukum dan struktur teknologi, bahwa saya cukup terlindungi dari permasalahan privasi pada layanan elektronik ini.
	20. Layanan elektronik ini kokoh dan aman untuk saya melakukan transaksi apa saja dengan kementerian/lembaga tersebut.
	21. Data pribadi yang saya berikan pada layanan elektronik ini tersimpan secara aman.

Translated items used in Indonesian language (continued)

Kepuasan terhadap layanan elektronik	22. Apakah Anda merasa puas dengan fasilitas yang diberikan oleh layanan elektronik kementerian/lembaga tersebut?
	23. Apakah Anda merasa puas dengan konten layanan elektronik yang diberikan kementerian/lembaga tersebut?
	24. Apakah Anda puas dengan kualitas antarmuka (interface) layanan elektronik yang diberikan kementerian/lembaga tersebut?
	25. Apakah Anda puas dengan kecepatan (speed) layanan elektronik yang diberikan kementerian/lembaga tersebut?
	26. Apakah Anda puas dengan kualitas layanan elektronik yang diberikan kementerian/lembaga tersebut?
	27. Apakah Anda puas dengan keamanan layanan elektronik yang diberikan kementerian/lembaga tersebut?
Kepercayaan terhadap lembaga pemerintah terkait	28. Saya pikir, saya dapat mempercayai kementerian/lembaga tersebut.
	29. Kementerian/lembaga tersebut dapat dipercaya untuk melakukan layanan elektronik ini dengan integritas.
	30. Saya percaya kementerian/lembaga tersebut mengutamakan kepentingan saya/masyarakat.
	31. Saya berpendapat bahwa kementerian/lembaga tersebut terpercaya.
Kepercayaan terhadap pemerintah secara umum	32. Secara umum, pemerintah memperhatikan kesejahteraan masyarakatnya.
	33. Secara umum, pemerintah menepati janji-janjinya.
	34. Secara umum, pemerintah menjalankan tugas-tugasnya dengan efektif.
	35. Secara umum, pemerintah menjalankan tugas-tugasnya dengan efisien.

Demographic characteristics of participants

Demographic Characteristics		n	%
Gender:			
	Male	170	49.71%
	Female	172	50.29%
Age:			
	17 - 26	143	41.81%
	27 - 36	154	45.03%
	37 - 50	40	11.70%
	>50	5	1.46%
Occupation:			
	Student	55	16.08%
	Non-government employee	89	26.02%
	Government employee	156	45.61%
	Entrepreneur	28	8.19%
	Unemployed	14	4.09%
Domicile:			
	Aceh	1	0.29%
	Bali	1	0.29%
	Banten	24	7.02%
	Jakarta	187	54.68%
	Jambi	1	0.29%
	Jawa Barat	90	26.32%
	Jawa Tengah	7	2.05%
	Jawa Timur	12	3.51%
	Kalimantan Tengah	3	0.88%
	Kepulauan Riau	1	0.29%
	Lampung	3	0.88%
	Sulawesi Selatan	3	0.88%
	Sulawesi Tengah	1	0.29%
	Sumatera Barat	1	0.29%
	Sumatera Selatan	2	0.58%
	Sumatera Utara	1	0.29%
	Yogyakarta	4	1.17%
Political Affiliation:			
	Not affiliated to any political parties	337	98.54%
	Official member of a political party	1	0.29%
	Unofficial member of a political party	4	1.17%