Does transparency improve citizens’ perceptions of government performance?
Evidence from Seoul, South Korea

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Abstract

Despite a great deal of research that examines consequences of transparency policies, there have been few empirical assessments of the relationship between transparency and citizens’ perceptions of public sector performance. This paper addresses this void in the extant literature by examining how greater use of government websites for information by citizens influences their perceptions of public sector performance in the city of Seoul, South Korea. We hypothesize that more frequent use of government websites by citizens leads to more positive generalized perceptions of public sector performance, with this positive influence mediated by citizens’ satisfaction with public service provision. Results suggest increased frequency of use of government websites positively influences perceptions of public sector performance but negatively influences citizens’ satisfaction with public service provision. Moreover, the positive influence of citizens’ use of government websites on perceptions of public sector performance increases when controlling for public service satisfaction, indicating the presence of inconsistent mediation (suppression effect).
1. Introduction

Citizens’ perceptions of public sector performance play a critical role in determining citizens’ levels of trust in government, voluntary policy compliance and public sector performance more generally (Rothstein 2005, Yang and Holzer 2006, Grimes 2006, Im et al. 2012). As such, a great deal of public management research has attempted to improve our understanding of the antecedents of citizens’ perceptions of government performance. The findings of such research often suggest that a disconnect exists between actual levels of public sector performance and citizens’ perceptions of public sector performance (Kelly and Swindell 2002, Goodsell 2004, Van de Walle 2004, Heintzman and Marson 2005). A variety of reasons for this disconnect have been proposed, which range from citizens’ attitudes toward particular public services (for example the performance of tax agencies (Kampen et al. 2006)), to citizens’ expectations of public sector performance (Bouckaert and Van de Walle 2003, Van Ryzin 2004), to the information citizens have about the performance of their public sector (Swindell 2002). Due to the rapid expansion in the use of information and communications technology (ICT) that has taken place over the course of the past twenty years, the role of information in general, and transparency in particular in shaping citizens’ general perceptions of government performance and attitudes toward government has increasingly attracted attention from scholars of public management (Hood 2007, Welch et al. 2005, Cook et al. 2010).

It is argued that in many cases poor perceptions of public sector performance can be attributed to the presence of some form of information asymmetry between citizens and their government (Kelly 2003). By correcting for these information asymmetries via means such as transparency policies and open government initiatives, some have reasoned that citizens’ perceptions of government performance can be improved (Im et al. 2013). This logic has provided the rationale behind countless ICT oriented administrative reforms in recent years that have attempted to enhance the transparency of the public sector and subsequently increase citizens’ access to information regarding various facets of their government’s performance (Worthy 2010). Yet, while there is a wealth of research that attempts to understand how citizens’
use of technologies, such as the Internet, for information about their government impacts their attitudes toward government, such as trust (Tolbert and Mossberger 2006, Grimmelikhuijsen and Meijer 2012) and satisfaction with particular services (Welch et al. 2005, Park and Blenkinsopp 2011), or their use of different providers of public services (Magee et al. 2003), there have been few empirical assessments of how this transparency driven reform trend has actually influenced citizens’ general perceptions of public sector performance. To this end, the central research question that is addressed in this study is,

‘to what extent does citizens’ use of government websites for information influence their general perceptions of public sector performance?’

This research question is examined within the context of Seoul, South Korea. Seoul is particularly relevant for the purposes of this research for the reason that it is consistently considered to be a world leader in terms of its adoption and application of e-government websites (Rutgers Global e-Governance Survey 2010)\(^1\). Moreover, the city of Seoul was also selected as home to the World e-Government Organization’s secretariat implying that not only is Seoul a current leader in its use of the Internet to connect with citizens, but the city is also highly influential in determining future applications of the Internet to administrative processes.

2. The impact of information on perceptions of public sector performance

2.1 Dimensions of perceptions of public sector performance

Perceptions of public sector performance can be assessed at three levels (Bouckaert and Halligan 2011). Perceptions of performance at the first ‘micro’ level of the public sector can be thought of as citizens’ perceptions of the performance of individuals responsible for the delivery of public services to citizens such as ‘street level bureaucrats’, policemen, or teachers for example. Perceptions of performance at the second ‘meso’ level of the public sector relate to institutions responsible for the provision of a particular service such as the Internal Revenue Service. At these first two levels of the public sector citizens’ perceptions may differ substantially across different services and areas of government. Therefore, perceptions of performance at these levels

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\(^1\) As Seoul is generally viewed to have the most sophisticated city government websites in the world, this study limits its analysis to citizens’ use of websites and does not take into consideration citizens’ use of government sponsored RSS feeds or social media, for example.
of the public sector can be considered as more particularized (Easton 1975, Christensen and Laegreid 2005). In contrast to the first two levels of the public sector, perceptions of public sector performance at the third ‘macro’ level can be considered as a more generalized assessment of how the public sector, in its entirety is performing. Bouckaert et al. (2002: 47) suggest that performance at this level of government relate to factors such as inflation, unemployment, security and healthcare; factors that are the result of a concerted effort of a variety of actors and institutions in the public sector. Additional research has suggested that perceptions of performance at this level are largely influenced by citizens’ evaluation of the general direction in which they believe their public sector is leading them (Bouckaert and Van de Walle 2003). When taken together these points suggest that perceptions of performance at the macro level are not so much a function of citizens perceiving their government as “doing things well”, but instead of citizens’ perceiving their government as “doing good things” (Bouckaert et al. 2002:48). In other words, perceptions of performance at this macro level of the public sector are closely tied to citizens’ perception that the public sector is performing in a way that matches their best interests².

This research will address the macro level of the public sector. This level of the public sector is targeted for two reasons. First, research investigating perceptions of performance at this level is particularly sparse in the extant body of public administration and management literature (Van de Walle 2004, Porumbescu 2013). Second, perceptions of performance at the micro and meso levels of the public sector are commonly said to be heavily influenced by citizens’ personal experiences, citizens’ sympathy with the mission of a particular public institution, feelings about the particular individual charged with the delivery of a service or a host of additional, primarily individual level factors (Easton 1975, Lipsky 1971, Bouckaert et al. 2002, Kampen et al. 2006). These factors are likely to confound the relationship of interest to this study, which is between transparency and citizens’ perceptions of public sector performance. In contrast to the micro and meso levels, citizens’ perceptions of performance at the macro level are better suited for the

² We may also add here that the performance of the public sector at the macro level is also likely to be affected by citizens’ perceptions of politicians and the legislative branch of government. For example, if citizens perceive politicians as making poor decisions, the public is also likely to perceive the public sector as executing said bad decisions. In the literature that discusses citizens’ perceptions of the macro level of the public sector this issue is not thoroughly discussed, therefore making it difficult to conceptualize clear boundaries with respect to citizens’ perceptions of the macro level of the public sector and citizens’ feelings about politicians. Nevertheless, some degree of empirical distinction can be made by controlling for political variables, such as citizens’ satisfaction with the mayor or political affiliation, as is done in this study. This point will be discussed more in section 3.2.
purposes of this research because they are commonly said to be less influenced by factors such as experience with or attitudes toward a particular service and more heavily influenced by information coming from the mass media, politicians and the public sector (Easton 1975, Nye 1997: vi). Consequently, the macro level of the public sector permits this research to obtain a clearer understanding of the role of transparency in determining citizens’ generalized perceptions of public sector performance.

2.2 Defining transparency

The topic of transparency has attracted a great deal of attention from academics and practitioners alike. This increase in attention has, in turn, led to some variety in terms of definitions of transparency as well as the possible consequences that result from policies intending to enhance the transparency of government. Yet, in spite of the diversity, Grimmelikhuijsen and colleagues (forthcoming) observe that most definitions of transparency tend to place a particular emphasis upon “the availability of information about the internal workings or performance of an organization” which in turn serves to enhance the “inward observability” of an organization by external actors, such as citizens (p.4). Following such logic, the extent to which the public sector is transparent, in principle, speaks to citizens’ capacity to access information about the activities of their public sector (Etzioni 2010). Bearing in mind this explanation of transparency it is now useful to consider in greater detail the information afforded to citizens via transparency policies, as well as the object such information discusses (Heald 2006).

Grimmelikhuijsen sets out three dimensions that can be used to clarify the object of the information provided to citizens regarding the activities of their public sector. The first dimension is transparency of decision making processes. This dimension concerns the extent to which citizens are provided with information that explains the steps that were taken when arriving at a certain decision as well as the reasons why one course of action was adopted as opposed to an alternative. The second dimension is the transparency of policies. This dimension concerns information related to what the policy actually is, what issues it intends to address and the implications of this policy for citizens and others who stand to be affected by the policy. The third dimension is the outcomes or results of a particular policy. This dimension deals with the timely release of data or summaries of data that stem from particular policies. While this study cannot specifically identify which types of information are being used by citizens who visit
government websites to obtain information about their government, previous research related to South Korea suggests that in the past, citizens’ perceptions of government performance were likely to have been heavily influenced by their perceptions of a given policy’s results (third dimension), whereas the other two dimensions outlined above are considered to have less of an impact upon citizens’ perceptions of government performance (Im 2003). However, more recent research suggests that, due to the consolidation of democracy and the entrenchment of democratic values in South Korean society the first and second dimensions have assumed a much more influential role in shaping citizens’ perceptions of government performance in recent years (Kim 2010, Kim and Lee 2012).

2.3 The Internet and transparency

While transparency has attracted a great deal of attention in recent years, the concept itself is very old. In ancient Athens, all court trials, no matter who was on trial (even well-known figures such as Socrates) were open to the public as were the proceedings of its assembly (Ober 2006). In the 18th century English philosopher Jeremy Bentham argued that governments, by virtue of the work they perform, have a moral obligation to be transparent: “the doors of all public establishments … [must] be, thrown wide open to the body of the curious at large” (Bentham, cited in Bowrey and Smark 2010:1). Yet, despite the various normative arguments that emphasize the importance of transparency, governments have historically lacked the technological capacity to make government information available to the masses (Masuda 1980).

By contrast, today, given the sophistication of ICTs, governments throughout the world are now rushing to adopt various transparency oriented reforms (Bannister and Connolly 2011) as such technological advances have led to the lowering of many of the barriers that once limited government’s ability to pursue such policies in a way that bolsters citizens’ actual use of the information made available to them via transparency policies (Chadwick and May 2003). Meijer (2009) has argued that the use of ICTs by government to afford citizens greater and easier access to such information has in turn led to a particular form of transparency referred to as ‘computer mediated transparency’ which refers to government’s use of the Internet to make information available to the public. Government websites and portals are the principal channels of computer mediated transparency for the reason that governments frequently make use of websites to
provide citizens access to a wealth of information. Bearing in mind the points above, this paper focuses in particular upon computer mediated transparency.

### 2.4 The relationship between transparency and citizens’ perceptions of government performance

An important factor in determining citizens’ perceptions of their government’s performance at the macro level is claimed to be citizens’ use of different information sources (Nye 1997, cf. Woodly 2009), such as government websites or mass media (Petrova 2009). Indeed, this argument is central to many of the transparency initiatives that have been launched in recent years, initiatives that are premised on the notion that citizens are simply not well aware of what their government is doing and how those things are likely to be in their best interest; in other words, that the government is ‘doing the right things’. Without such initiatives, citizens are often forced to rely on private sources of media for information about their government, which in many cases tends to engage in sensationalist and negatively biased news coverage (Gordon 2000). Therefore, for the public sector enhancing transparency can serve as a means of better informing citizens and managing their perceptions of the public sector in general so as to improve their understanding of why their government has chosen the course of action that it did (Im et al. 2012). In turn, this better knowledge and understanding will, it is argued, translate into more positive perceptions of government performance at the macro level (Ho 2002, Kelly 2003).

**H1: Increased use of government websites by citizens for information will be positively associated with their perceptions of public sector performance at the macro level**

Yet, many would argue that the relationship between computer mediated transparency and perceptions of macro public sector performance is not a direct one, but is instead mediated by citizens’ satisfaction with the provision of public services (cf. Easton 1975, Van de Walle and Bouckaert 2003, Van Ryzin 2004, Christensen and Laegreid 2005) which primarily relates to the meso level of the public sector (Bouckaert et al. 2002, Grimmelikhuijsen 2012). Put differently, citizen satisfaction with public service provision at the meso level has been suggested to influence their generalized perceptions of performance at the macro level of the public sector (Easton 1975, Bouckaert et al. 2002, Van de Walle 2004).
Citizen satisfaction is often explained as the difference between citizens’ perceptions of public service provision and their previous expectations of public service provision (Van Ryzin 2004, Kampen et al. 2006, Van James 2009, Im and Lee 2012). Higher levels of satisfaction are said to result from citizens’ perceptions of public services exceeding their expectations. Citizens’ perceptions of public services may result from actual experience with a particular public service, but as Van Ryzin notes (2007: 528), most citizens’ perceptions of the way public services function are not the result of direct experience, but rather are derived from factors such as the media. Similarly, Janet Kelly (2003:858), acknowledging the disparity between actual government performance and citizens’ levels of satisfaction wrote, “if citizens’ only understood how well their government was performing they would (or should) be satisfied”. Implied here is that low levels of citizens’ satisfaction with public services are derived from citizens’ failure or inability to accurately perceive the performance of public services. Alternatively, others have suggested that citizens’ expectations of public service provision may be unrealistically high, thereby potentially contributing to low levels of citizen satisfaction with public services (Bouckaert and Van de Walle 2003). In this scenario, citizens overestimate the capacity and/or resources of their public sector to provide public services and therefore evaluate public services as falling short of their potential.

Bearing these points in mind, computer mediated transparency initiatives, which are often proposed as a means of improving citizens’ levels of satisfaction with public services may serve as a powerful means of doing so due to their influence upon citizens’ perceptions of public service provision, as well as their expectations. Ho and Coates (2004) reason that from greater exposure to government websites providing citizens with information about the performance of their public sector services citizens are able to become better aware of the public sector’s policies, actual performance levels of public services, and capacity to deliver said services. In turn, this knowledge afforded to citizens who access the information provided to them via computer mediated transparency will lead to higher levels of citizen satisfaction with public service provision, which in turn will carry over into more positive generalized perceptions of public sector performance at the macro level.
**H2: Increased frequency of use of government websites by citizens for information about public services will serve to positively influence their satisfaction with public service provision**

**H3: Citizens’ levels of satisfaction are positively associated with their perceptions of macro public sector performance**

Despite the positive potential of transparency to be used as a means of positively influencing citizens’ perceptions of government performance, a growing vein of research challenges such arguments. Grimmelikhuijsen (2012), synthesizing previous work, provides three concise criticisms regarding possible link between transparency and improved perceptions of government performance. The first criticism suggests that the massive influx of information attributed to various transparency policies can result in “information overload” (p. 37), and subsequently “provides little but confusion unless it [information] can be sorted and assessed” (O’Neil 2002). O’Neil has argued that increases of transparency can lead to subtle attempts at deception. The second criticism suggests that, in gaining access to information regarding the inner workings of the public sector, citizens become disenchanted, and come to view their public administration as less competent than they would have otherwise. The third criticism is that it may contribute toward people placing more blame upon the public sector. As Grimmelikhuijsen argues, “a fault of the government can always be construed, and if citizens, media and politicians use transparency for their own gain with no restraints, this could result in the politics of scandal” (2012: 37).

**2.5 The context of Seoul**

Seoul, by many accounts, is an interesting case to assess relationships between citizens’ use of government websites and perceptions of public sector performance. First, South Korean citizens, whose experiences with democracy are relatively short, and citizens of Seoul in particular have been argued by previous research to hold increasingly critical attitudes toward their government (Park and Shin 2004)\(^3\). Park (2009) has argued that this trend suggests the emergence of ‘critical citizens’ in South Korea. Broadly, critical citizens are a common feature of developed

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\(^3\) South Korea began its democratic transition in 1987 and has only recently been widely acknowledged as a fully functional democracy (EIC 2008).
democracies and generally support the ideas that lay the foundation for democracy, yet at the same time are less deferential to the authority of their government and often critical of the way their political system and public sector institutions operate (Norris 1999). However, the emergence of critical citizens in South Korea (and Seoul), which up until 1987 was led by an oppressive military regime, does not necessarily imply that central, regional, or local governments in South Korea (or anywhere else) are faced with increasingly negative citizens, but instead may suggest that citizens’ criteria for assessing the performance of their government is in the process of shifting away from materialist (results oriented) to post materialist (process oriented) value orientations (Inglehart 1997, Clark et al. 1998, Norris 2011). To this end, research by Kim, attempting to elucidate the relationship between the rise of critical citizens in South Korea and the implications for trust in government, found that an important factor positively influencing citizens’ attitudes toward their government was citizens’ perception that the government has transparent and open practices (2010:807). Following the arguments laid out here, it would serve to reason that citizens of Seoul are likely to react positively to attempts made by government to enhance transparency.

It is also important to note that previous research has suggested that much of the proliferation of computer mediated transparency initiatives pursued by the city of Seoul have largely been instrumental in the sense that they were pursued to enhance citizens’ perceptions of certain actors within the government. For example, research by Ahn and Brettschneider has found that, within the Gangnam administrative district of Seoul, local officials made used government websites mediated transparency initiatives in a way that permitted them to enhance their reputation with citizens, and garner their support.

Data, Methods, and Measurements

2.1 Data

The data set used in this study comes from a 2012 online survey of Seoul citizens. For older respondents (60+ years of age), who were considered less likely to have access to the Internet or a computer, interviewers visited the respondents’ homes and conducted structured interviews. The survey was administered between May 25th 2012, and June 21st 2012.
A sampling frame of 1,100 was created to reflect the population on parameters of location, gender, and age. Based on these parameters, stratified random sampling was used: first, their Seoul administrative district, then each district population was partitioned into six groups, according to age, 20-29, 30-39, 40-49, 50-59, 60-69, 70+, and finally, within each age group, respondents were selected according to gender. The respondents were selected from a preexisting panel of possible respondents representative of the population of Seoul at large. This panel consists of a total of 21,419 possible respondents: emails were sent to recruit possible survey respondents on the preexisting panel of possible respondents, and 4,163 responded to the email and attempted to complete the online survey. Of the surveys filled-out online, a total of 1,332 were usable: they were complete and matched the sampling frame and the rest were discarded. The usable 1,332 surveys were then assessed to ensure that responses were sincere\(^4\). As a result, the number of remaining usable surveys administered online was 898. We then addressed the population over 60, where face to face interviews were conducted: 202 face to face interviews were conducted, which now brought the total sample size for this study to 1,100. The resulting sample is representative of the population on parameters of age, location, and gender.

From the sample of 1,100 respondents, surveys were checked again to make sure that there were no further errors in the surveys. Online surveys as well as those administered face to face were checked for patterns in responses. Among the online surveys, of the 898 usable surveys, 94 were discarded as patterns were found, leaving a total of 804 surveys. Among the face to face surveys, of the 202, 99 were discarded due to patterns, leaving 103 usable surveys. Thus, from a total of 1,100 possibly usable surveys, we obtained a sample of 907 that met all criteria. No systematic bias regarding socio-economic features was found in the discarded surveys.

### 3.2 Models

The hypotheses that are examined by this research attempt to shed light on the relationship that is present between citizens’ use of government websites for information about their government afforded to them via transparency and their perceptions of public sector performance at the macro level. Based on the arguments laid out by previous literature, (i.e. Bouckaert et al. 2002,

\(^{4}\) Here, time spent to fill out the survey was used to gauge sincerity. Respondents who completed the survey in a matter of minutes were deemed to have not answered the survey questions sincerely.
or Van de Walle 2004) this relationship is thought to be mediated by citizens’ satisfaction with public services⁵. These relationships are illustrated in the path diagram found in figure one.

Figure 1

In the social sciences, one of the most common methods of estimating a mediated relationship is the three step (equation) approach, outlined by Baron and Kenny (1986)⁶. In the first equation, the dependent variable (Y), perceptions of government performance at the macro level is regressed on the independent variable (X), citizens’ use of government websites for information. In the second equation, the mediating variable (M), satisfaction with public service provision, is regressed upon the independent variable, citizens’ use of government websites for information.

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⁵In the relationship between citizens’ use of e-government for information, expectations of government performance, and perceptions of government performance, endogeneity may be present. In an effort to reduce the likelihood of endogeneity due to omitted variables, several control variables were used in this study (Wooldridge 2003:794).

⁶This approach uses OLS estimates.
In the third equation, the dependent variable is regressed on both the mediating and independent variables.

(eq1) \( Y = \beta_{10} + \beta_{11}(X) + \beta_{12}(\text{control variables}) \)

(eq2) \( M = \beta_{20} + \beta_{21}(X) + \beta_{22}(\text{control variables}) \)

(eq3) \( Y = \beta_{30} + \beta_{31}(X) + \beta_{32}(\text{control variables}) + \beta_{33}(M) \)

For mediation to be present Baron and Kenny outline four criteria: (1) the independent variable must possess a significant relationship with the dependent variable in the absence of the mediator, (2) the independent variable must possess a significant relationship with the mediating variable, and (3) the mediating variable possesses a significant relationship with the dependent variable, and (4) the strength of the relationship between the independent variable and dependent variable shrinks, when controlling for the mediator.

2.2 Measurement of Main Variables

The dependent variable: perceptions of public sector performance at the macro level

In creating the measure of citizens’ perceptions of public sector performance at the macro level, this study looks to theoretical discussions of the concept outlined by previous research. In this research, public sector performance at the macro level is said to reflect the extent to which government performance in its entirety benefits citizens, and consists of the dimensions related to citizens’ security, health, wealth, and overall happiness (Bouckaert et al. 2002). These factors cannot solely be attributed to a single actor in the public sector, but rather reflect the aggregate performance of different actors throughout the government (Grimmelikhuijsen 2012). As such, administrative performance at the macro level is a concept that intends to assess how citizens perceive the work of the public sector in aggregate as influencing their wellbeing.

There is a variety of ways in which one might attempt to measure the extent to which citizens view the performance of their government as making them more secure, healthier, wealthier and happier which range from those which are specific in nature to those which are more general: currently, despite various theoretical discussions of administrative performance at

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7 All of the measures used in this study were pilot tested twice in order to discover and eliminate any problems present in the survey instrument, such as difficult to understand or ambiguous questions.
the macro level (i.e. Bouckaert et al. 2002, Bouckaert and Halligan 2008, Halligan et al. 2010) a validated and agreed upon method of measuring citizens’ perceptions of public sector performance at the macro level has not been established. Therefore, this study uses a more general assessment method for administrative performance at the macro level, which is based on four dimensions of security, health, wealth and happiness.

Based on the four dimensions of macro public sector performance used in this study, citizens’ perceptions of government macro performance were measured using a total of six items. Each of the six items were related to the four dimensions of macro public sector performance and asked respondents to rate the performance of the Seoul Metropolitan public sector according to a five point Likert scale, where a mark of one corresponded to extremely poor, and a score of 5 corresponded to excellent. The Cronbach’s alpha for these six items was 0.902. The items that were used to measure the perceptions of macro performance can be found in the appendix.

The independent variable: computer mediated transparency

This study assesses the impact of computer mediated transparency on citizens’ perceptions of public sector performance. In order for computer mediated government transparency to have an impact upon citizens’ perceptions of government performance at any level, citizens would have to make use of the information transparency policies afford them. Therefore, this study assesses how citizens’ use of government websites for information about their government influences their levels of satisfaction with public service provision and perceptions of public sector macro performance. Citizens’ use of government websites is measured according to frequency of use of two particular online government sources; the city of Seoul web portal and websites affiliated with various public services provided online by the city of Seoul. Respondents were asked “to what extent do you make use of the different online government sources listed here to obtain information about services provided by the Seoul Metropolitan government”. Following this they were asked to rate their use on a scale of 0 (do not use at all) to 6 (several times a day). This measure is similar to those used by Tolbert and Mossberger (2006) or Welch et al. (2005) to measure e-government use.

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8 An exploratory factor analysis was conducted including all of the items used to measure the constructs in this study. The exploratory factor analysis revealed that all of the 6 items used to measure perceptions of macro performance loaded onto a distinct factor.
Citizens’ satisfaction with public services is primarily related to the meso level of the public sector. An expectation disconfirmation approach was taken to measure citizens’ satisfaction with public services provided by the Seoul Metropolitan government (cf. van Ryzin 2007). Survey respondents were asked “To what extent have the following public services fallen short of or exceeded your expectations.” Respondents were then able to rate twenty four specific public services that ranged from public transportation to city cleanliness, on a scale of 1 (significantly below their expectations and very dissatisfied) to 7 (significantly above their expectations and very satisfied).

**Control Variables**

The control variables for the models above were selected based upon previous empirical and theoretical studies, and include variables such as trust in government, income and education (i.e. Van de Walle 2004, Van Ryzin 2004, Kampen et al. 2006, Im et al. 2013, Grimmelikhuijsen 2011). Additionally, a variable was included to assess how citizens’ felt about the city of Seoul in general (relationship with the city), as feelings about the city of Seoul in general may anchor their perceptions of public sector performance. This study also controls for the influence of citizens’ use of online news websites (online media), as well as offline sources of information about government (traditional media) so as to better isolate the impact of citizens’ use of government websites. Finally, as mentioned in footnote 1, political factors may also influence citizens’ perceptions of public sector performance at the macro level (Almond and Verba 1965). Therefore, this study controls for citizens’ satisfaction with the mayor, political ideology, and political party affiliation.
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<td>.071</td>
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<td>-.072</td>
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<td>-.140</td>
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<td>-.045</td>
<td>.110</td>
<td>-.067</td>
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<td>.077</td>
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<td>.068</td>
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<td>.010</td>
<td>.067</td>
<td>.073</td>
<td>.117</td>
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<tr>
<td>Call public offices for information</td>
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<td>.006</td>
<td>.026</td>
<td>-.036</td>
<td>.051</td>
<td>.093</td>
<td>-.032</td>
<td>-.030</td>
<td>.114</td>
<td>-.040</td>
<td>-.007</td>
<td>-.001</td>
<td>-.017</td>
<td>-.056</td>
<td>.097</td>
<td>.006</td>
<td>.015</td>
<td>.076</td>
<td>.112</td>
<td>1</td>
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<tr>
<td>Attend town hall meetings</td>
<td>.063</td>
<td>.191</td>
<td>.111</td>
<td>.008</td>
<td>.156</td>
<td>.063</td>
<td>.002</td>
<td>-.097</td>
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<td>.021</td>
<td>.007</td>
<td>.050</td>
<td>.053</td>
<td>.584</td>
<td>-.024</td>
<td>.016</td>
<td>.185</td>
<td>.081</td>
<td>.107</td>
</tr>
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</table>
3. Findings and Discussion

Descriptive statistics are presented in table 2. Among the main variables that are assessed by this research, the mean for citizens’ perceptions of public sector performance at the macro level was 2.813, which suggests that citizens are not very positive in their perception that the public sector’s performance is contributing toward a better society. However, the mean value of 4.14 for citizens’ satisfaction with public service provision is very high, which suggests that most of the survey respondents were very satisfied with the public services provided by the Seoul Metropolitan Government. It is also interesting to note that the standard deviation of citizens’ satisfaction is much higher than that of citizens’ perceptions of government performance at the macro level, implying that there are more individual differences in terms of citizen’s satisfaction when compared to their perceptions of public sector performance at the macro level. Finally, the mean value of 2.956 for citizens frequency of use of government websites, suggests that Seoul citizens, on average access city websites for information about their government fairly often.

<table>
<thead>
<tr>
<th>Table 2: Descriptive Statistics</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
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<td>Perceptions public sector performance (macro)</td>
<td>2.81</td>
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<td>907</td>
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<tr>
<td>Satisfaction with public service provision (meso)</td>
<td>4.14</td>
<td>1.32</td>
<td>907</td>
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<tr>
<td>Frequency of use of government websites</td>
<td>2.96</td>
<td>0.87</td>
<td>907</td>
</tr>
<tr>
<td>Gender (dummy)</td>
<td>1.52</td>
<td>0.50</td>
<td>907</td>
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<tr>
<td>Age</td>
<td>42.01</td>
<td>13.81</td>
<td>907</td>
</tr>
<tr>
<td>Income level</td>
<td>8.06</td>
<td>3.68</td>
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<tr>
<td>Education level</td>
<td>4.92</td>
<td>1.38</td>
<td>907</td>
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<tr>
<td>Satisfaction with mayor</td>
<td>3.10</td>
<td>1.05</td>
<td>907</td>
</tr>
<tr>
<td>Member of progressive party</td>
<td>0.23</td>
<td>0.42</td>
<td>907</td>
</tr>
</tbody>
</table>
Table 3 shows that results of the three regression models that are used for the mediation analysis. In all three models, $F$ values are all highly significant ($p<0.001$), while the adjusted $r$ squared values range from 0.108 to 0.674. All of these values suggest that the models used in this study are significant and therefore explain the data well.

The first model, equation 1, suggests that citizens’ increased use of government websites for information afforded to the via computer mediated transparency policies serves to positively influence their perceptions of government performance at the macro level (path c: total effects); the mediating variable -satisfaction with public service provision- is not present in this regression. This result provides initial support for the argument that more frequent use of information afforded to citizens via computer mediated transparency positively influences their perception that their public sector is generally doing the right things. However, it is interesting to note the low level of significance. This will be discussed at greater length in the discussion and conclusion section. Referring to Baron and Kenny’s criteria for the presence of mediation, the
first criterion, a significant relationship \((p<0.1)\) between the independent variable and dependent variable, is satisfied.

### Table 3: Regression Results

<table>
<thead>
<tr>
<th></th>
<th>Perceptions of macro Performance (path C: eq 1)</th>
<th>Satisfaction with public service provision (path A: eq 2)</th>
<th>Perceptions of macro Performance (path B &amp; C': eq 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency of use of government websites for information (independent variable)</td>
<td>0.036* (0.017)</td>
<td>-0.061** (0.053)</td>
<td>0.041* (0.017)</td>
</tr>
<tr>
<td>Satisfaction with public service provision (mediating variable)</td>
<td></td>
<td></td>
<td>0.073*** (0.017)</td>
</tr>
<tr>
<td>Control Variables</td>
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<tr>
<td>Gender</td>
<td>-0.011 (0.028)</td>
<td>-0.046 (0.086)</td>
<td>-0.008 (0.027)</td>
</tr>
<tr>
<td>Age</td>
<td>-0.005 (0.002)</td>
<td>0.037 (0.005)</td>
<td>-0.008 (0.002)</td>
</tr>
<tr>
<td>Income level</td>
<td>0.047*** (0.004)</td>
<td>0.037 (0.013)</td>
<td>0.044** (0.004)</td>
</tr>
<tr>
<td>Education level</td>
<td>-0.018 0.012)</td>
<td>-0.032 (0.039)</td>
<td>-0.016 (0.012)</td>
</tr>
<tr>
<td>Satisfaction with mayor</td>
<td>0.085*** (0.017)</td>
<td>-0.180** (0.054)</td>
<td>0.098*** (0.017)</td>
</tr>
<tr>
<td>Member of progressive party</td>
<td>0.084*** (0.034)</td>
<td>0.055 (0.107)</td>
<td>0.080*** (0.034)</td>
</tr>
<tr>
<td>Trust in government</td>
<td>0.716*** (0.024)</td>
<td>0.057 (0.074)</td>
<td>0.711*** (0.024)</td>
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<tr>
<td>Relationship with city</td>
<td>-0.040** (0.017)</td>
<td>0.002 (0.053)</td>
<td>-0.040** (0.017)</td>
</tr>
<tr>
<td>Ideology</td>
<td>-0.005 (0.061)</td>
<td>-0.065* (0.190)</td>
<td>-0.001 (0.061)</td>
</tr>
</tbody>
</table>
The second model, equation 2, shows that citizens’ satisfaction with public service provision is negatively influenced by their use of government websites to access information provided to them by computer mediated transparency (path A). This result suggests that, while citizens’ perceptions of public sector performance at the macro level may be positively influenced by transparency, their satisfaction with public sector service provision, which relates to the meso level of the public sector, is negatively influenced. The significant relationship (p<0.1) between the independent variable and mediating variable found in equation two satisfies the second criterion for mediation outlined by Baron and Kenny.
Taken together, the findings of models 1 and 2 are interesting as they suggest that, while transparency may lead citizens to believe that their public sector is performing in a way that positively affects the society they live in, their use of government websites for information afforded to them via computer mediated transparency also serves to cast their perceptions of public service provision in a negative light. As such, models 1 and 2 suggest that the consequences of transparency may vary according to the level of government they are assessed at, with transparency having a more positive influence upon citizens’ perceptions of public sector performance at the macro level of government, and a negative influence upon citizens’ attitudes toward public service provision at the meso levels of the public sector.

Model 3 reveals two findings of interest. First, model 3 shows that citizens’ satisfaction with public service provision serves to positively influence their perceptions of government performance at the macro level of the public sector ($p < 0.001$); in figure 1, this is path B. To this end, the greater the satisfaction with public service provision the more positive citizens’ perceptions of public sector performance macro level were found to be. These results are in line with theoretical arguments laid out by previous research regarding the relationship between citizens’ satisfaction with public services and perceptions of performance (i.e. Bouckaert and Van de Walle 2003), as well as the findings of empirical research that has assessed this relationship (i.e. Van Ryzin 2004). However, recalling the negative relationship between frequency of government website use and satisfaction found in model 2, the indirect effect of citizens’ frequency of use of government website use for information on their perceptions of government macro performance was found to be trivial (−0.004, SE 0.004, $p < 0.257$).9

Perhaps a more interesting result from model 3 is the second finding of note, which reveals that, when controlling for citizens’ satisfaction with public service provision, the direct effect of frequency of use of government websites for information and perceptions of government performance at the macro level (path c) actually increases ($p < 0.1$). In mediation analysis, this type of relationship is referred to as a suppression effect or inconsistent mediation. A suppressor variable is understood as ‘a variable which increases the predictive validity of

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9 Standard error and p-value for the indirect effect were obtained using the Sobel test (Sobel 1982). This test is acceptable for the purposes of this study due to the large sample size.
another variable (or set of variables) by its inclusion in a regression equation’ where predictive validity is assessed by the magnitude of the regression coefficient” (MacKinnon et al. 2000:174: citing Tzelgov and Henik 1991, Strout and Bolger 2002), implying that the magnitude of the independent variable’s coefficient in path C is small than that from path C’. In keeping with this explanation, in model 1, the magnitude of the coefficient for path C (total effect) was 0.36, whereas for path C’ (direct effect), which controls for satisfaction with public service provision, the magnitude of the relationship actually increases to 0.41. This evidence of a suppression effect, or inconsistent mediation, is interesting as it implies that, while the information afforded to citizens via transparency policies may negatively influence citizens’ satisfaction with public service provision, the willingness of the government to make public information that is (potentially) self critical, or is at least perceived as unbiased, also signals to citizens that their government is functioning in a way that ultimately promotes the best interests of citizens and the society they live in.

4. Discussion and Conclusion

While there has been a great deal of research that deals with the antecedents and consequences of transparency policies (i.e. Etzioni 2010, Bannister and Connolly 2011, Grimmelikhuijsen 2012), there have been few empirical attempts to assess how transparency influences citizens’ perceptions of public sector performance. This void in the literature is odd when considering that much of the research related to transparency has suggested citizens’ poor perceptions of public sector performance may be due to a lack of information (Swindell and Kelly 2002, Cook et al. 2010) and has subsequently implied that transparency policies possess the potential to positively influence citizens’ perceptions of the public sector’s actions (Welch et al. 2005, Porumbescu 2013). The results of this study provide initial empirical evidence that suggests citizens’ perceptions of public sector performance at the macro level of the public sector may be positively affected by enhanced transparency, while citizens’ perceptions of service provision at the meso level of government are negatively affected by citizens’ access to the information afforded to them via transparency. Moreover, the findings of this study also show that the positive influence of transparency on perceptions of public sector performance increases, when controlling for satisfaction with public service provision (path C< path C’). These findings are discussed in greater detail in the following paragraphs.
In a broad sense, the findings of this research can be interpreted to suggest that the utility of transparency as a means of improving relationships between citizens and their government will vary according to different areas of government (i.e. micro or meso levels). To some extent, the idea that the effects of transparency policy will vary is not new. For example, research by Cook and colleagues (2010) suggested that individual level attributes such as cognitive capacity or motivation to acquire new information, as well as various socio-economic traits will serve to differentiate the consequences of transparency initiatives. Similar, sentiments are also expressed by Etzioni (2010). With respect to computer mediated transparency, a rich vein of literature has argued that ‘digital divides’ must be accounted for when assessing the utility of government websites and computer mediated transparency initiatives as a means of improving citizens’ perceptions of government and the public sector, as use of this information will vary according to factors such as age, income, or education (Reddick 2005, Helbig et al. 2009). This study adds an additional dynamic to such discussions by suggesting the need to further explore the ways in which the effects of transparency will vary, not only according to features of the user, but also according to the area of government. Many have argued that attempts to bolster transparency are far from living up to their transformative potential (Worthy 2010), and often times, argue that the reason for this due to rent seeking administrators and politicians (O’Neil 2002, Chadwick and May 2003, Kumar and Best 2006). The findings of this study reveal the need to consider that, at least in some areas of government, transparency policies may be living up to their potential, whereas at other areas of government, they may be falling far short of their mark. Previous research related to the context of Seoul has suggested that this varying effect of transparency and ICT applications by the public sector may be due to their politicized applications, as suggested by Ahn and Bretschneider (2011) as well as Im and colleagues (2013). Subsequently, future research, in addition to making greater efforts to understand how the effects of transparency differ according to area of government, must also attempt to understand why (Meijer 2012).

A second major point to be considered at greater length is the suppressor effect (path C ≤ path C’) of citizens’ satisfaction with public service provision on the direct effect of citizens’ use of government websites for information on their perceptions of government performance at the macro level. The suppression effect points to a paradox with respect to the consequences of
transparency policy. On the one hand, in making more information available to citizens, transparency policies may lead citizens to view the way their government carries out various functions, such as the delivery of public services, in a critical light. On the other hand, by making such information available to the public, transparency policies may also signal to citizens that their public sector, while imperfect, is making earnest attempts to perform in a way that advances the best interests of citizens. To this end, while transparency policies may lead citizens to doubt their public sector is ‘doing things well’, at the same time the information afforded to citizens by such policies may also enhance citizens’ perception that their public sector is, nevertheless, ‘doing the right things’.

A third major point to consider is the magnitudes of the coefficients of this study, as well as their levels of significance. While the findings of this study revealed a significant relationship between citizens’ use of government websites for information afforded to them via computer mediated transparency, their levels of satisfaction with public service provision and perceptions of public sector performance at the macro level, the magnitude and level of significance of these relationships are not very high. This suggests that the relationship citizens’ use of government websites for information (transparency) and their perceptions of public sector performance at the macro level is rather weak, particularly when compared to other variables included in this study such as trust in government, satisfaction with public service provision, or satisfaction with the Seoul Metropolitan government’s Mayor. This weak relationship between the independent and dependent variables of this study can be taken to imply one of two things. First, it may cast doubt upon arguments suggesting that citizens’ negative perceptions of public sector performance stem from information asymmetries between citizens and their public sector. While previous research has suggested that one method of improving citizens’ perceptions of public sector performance relate to reducing information asymmetries (Kelly 2002, Goodsell 2004, Yang and Holzer 2006), the findings of this study, while demonstrating support for this argument, also suggest that there are several other factors that play a larger role in determining citizens’ perceptions of public sector performance. A second possible explanation for this weak relationship between citizens’ use of government websites and perceptions of macro public sector performance relates to the type of information citizens access on government websites. Perhaps the information afforded to them by government websites does not play much of a role in their evaluations of performance. This may be because citizens view the content as irrelevant, or because they experience
information overload and are simply not able to process all of the information they are exposed to online (cf. O’Neil 2002, Etzioni 2010). This point speaks to broader discussions in the transparency literature with respect to whether there is such a thing as being ‘too transparent’.

Finally, like all research, this paper possesses some limitations that may be overcome by future research. First, the analytical methods employed by this study do not take into consideration the possibility of endogeneity in the relationships between citizens’ frequency of use of government websites, satisfaction with public service performance and perceptions of macro public sector performance. Due to a lack of instrumental variables this study was unable to employ analytical methods that could be used to overcome possible biased parameter estimates that result from the endogeneity (Wooldridge 2003). Second, the characteristics of the information accessed by citizens online are not accounted for by this research. Previous research has suggested that positive or negative bias of information afforded to citizens via transparency policies as well as the type of information provided to citizens may serve to influence their perceptions and attitudes toward the public sector differently (Grimmelikhuijsen et al. forthcoming). Therefore, future research that makes use of experimental methodology or content analysis is necessary in order to probe deeper and gain further insight into the ways in which transparency policies may influence citizens’ perceptions of public sector performance.
Appendix 1

Measures of citizens perceptions of public sector performance at the macro level

<table>
<thead>
<tr>
<th>Item</th>
<th>Measures</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Seoul Metropolitan Government’s work benefits the citizens of Seoul.</td>
</tr>
<tr>
<td>2</td>
<td>Seoul Metropolitan Government’s work benefits me, personally.</td>
</tr>
<tr>
<td>3</td>
<td>Seoul Metropolitan Government’s work makes citizens happier.</td>
</tr>
<tr>
<td>4</td>
<td>Seoul Metropolitan Government’s work makes citizens wealthier.</td>
</tr>
<tr>
<td>5</td>
<td>Seoul Metropolitan Government’s work makes citizens safer.</td>
</tr>
<tr>
<td>6</td>
<td>Seoul Metropolitan Government’s work permits us to live in a healthier environment.</td>
</tr>
</tbody>
</table>
References


