Conundrums in Benchmarking eGovernment Capabilities? Perspectives on Evaluating European Usage and Transparency

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Abstract: This study examines three popular instruments used to assess good governance in response to initiatives promoting digitally-provided public services. It provides a comparative analysis of e-capabilities and trustworthiness in EU member states from benchmarks established by the European Commission, Transparency International and the United Nations in order to answer three questions: How do EU members stand when eGovernment capabilities are measured by multiple instruments? Does citizen online use and government website usability reflect user perceptions about transparency? And finally, is an overall ranking of eGovernment development associated with different measures of usage, transparency and public corruption? Comparing average scores between East and West EU member states, and conducting bivariate correlations of these various features, demonstrate that the demands placed upon member states to meet goals of the EU 2020 Digital Initiative are met to varying degree. This paper thus offers a unique perspective of eGovernment trends in Europe by integrating public and expert opinions on citizen interaction with government officials and completion of forms online, user centricity of national government websites, perceived levels of transparency in eGovernment and political corruption, and overall status of eGovernment development.

Keywords: benchmarking; user-citizen perceptions; transparency; corruption; eGovernment capabilities

1 Introduction

Comparing eGovernment capabilities in one country to best practices in others provides a tool for policymakers to note trends and to improve performance in the digital delivery of public services. A multitude of various benchmarking methodologies exist, with new ones emerging regularly, and so it is fair to say that there is no universal or standard process to assess eGovernment initiatives and outcomes. There is widespread usage, however, of a few current approaches which to varying degree have overlapping conceptual frameworks, indicators and measures. Despite European Commission initiatives to stimulate a new generation of eGovernment capabilities among its members as a means to transform public administration, to date there has been little scholarly attention focused on the progress, or lack of progress, made by Eastern EU members particularly. Recent comparative analyses demonstrate that variation in the complexity of information, communication and transaction features present on national government websites alone is dramatic between Western and Eastern EU members (Cox 2014a). A challenge to any assessment of eGovernment development, of course, is the appropriate selection of standards by which to gauge similarities, differences and change. The proliferation of diverse benchmarks for evaluating eGovernment performance points to a quandary. On one hand, researchers and practitioners recognize the need for flexibility in assessing particular needs, establishing goals, and monitoring progress in the public administration of unique environments. On the other, lack of consistent and holistic frameworks of analysis obstructs agreement on best practices and models that reflect common guiding principles and democratic values. How might we, then, draw upon multiple instruments to assess usage, perceptions of transparency and corruption, and overall eGovernment development?

2 Context for Transformation of Public Administration

The significance of benchmarking is widely recognized by a multitude of academic disciplines and in nearly every arena of public and private sectors for its promise to improve eGovernment. It is a virtual cliché to tout the perceived benefits of eGovernment today. The potential for information and communications technology (ICT) to transform public administration in a myriad of constructive ways is widely acknowledged in much of the literature and among legions of practitioners and users. By the end of the 1990s, governments around the world had established portal sites for their citizens with immense confidence. On the whole, digital government still continues to promise more effective delivery of information and programs and at lower operational costs (Garson 2004). Monitoring the progress made to date, however, in increasing digital interactions between government and citizens (G2C), its employees (G2E, its agencies (G2G), and commerce (G2B) is still a lively enterprise. A growing number of studies benchmark national and municipal government websites in respect to delivering services and information, fostering public trust, and bringing citizens closer to government (Rorissa and Tambouris 2002). Assessment is even now transnational in scope. Some

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intergovernmental organizations have crafted standards or targets for eGovernment performance and regularly assess progress made in areas such as broadband coverage, online public services, security, ICT research and development, and impact. The models, methods and perspectives of assessment vary considerably. Addressing the complexity of eGovernment assessment and the lack of systematic modes of analysis, some observers note that the value of such evaluations is diluted. For instance, a comparison of different eGovernment benchmarks adopted by the World Bank, the United Nations, and the Information Society DG (the European Commission body responsible for managing the EU Digital Agenda and now renamed DG Connect) points to the lack of consistent and holistic frameworks of analysis (Fitsilis, Anthopoulos, and Gerogiannis 2009). Nevertheless, such evaluations unfailingly produce one point of agreement; they point to considerable variation in the extent to which national governments optimize information and communication technologies as a means to improve e-governance. EU initiatives to advance eGovernment readiness in all its member states rely heavily on feedback from an array of public opinion and expert assessment instruments at the national, regional and international levels.

2.1 An EU Digital Agenda for Transparency, Accountability, and e-Participation

The hallmark of EU digital objectives is a citizen-centric model of e-governance. Public administration reform initiatives underscore the importance of single-entry government portals (SEPs) for comprehensive inter-agency integration and ease of public access, and personalized attention to users through interactivity features. This model is founded upon the assumption that a one-stop electronic delivery method of government information and services will increase public trust and confidence by increasing transparency, effectiveness, and efficiency. Developing adequate eGovernment capability is even seen as an essential component of anti-corruption strategies. Observers caution, however, that the current trend toward citizen-centric governance and the one-stop shop model is hampered by the inability or the cost for some governments to develop fully functional SEPs (Wimmer and Tambouris 2002; World Bank 2007; Doland 2014). Pressure upon central governments nevertheless to become more responsive continues to mount, and so digital solutions continue to offer much promise.

Active support by the European Commission for digital reform at the local, national, and regional levels includes a host of initiatives, such as Access e-Gov to increase the interoperability of governmental services, but the flagship of its initiatives is the eGovernment Action Plan 2011-2015. The plan aims to support the transition of current programs into a "new generation" of eGovernment services by focusing on political priorities such as empowering citizens and businesses, and enabling efficiency and effectiveness (European Commission 2013a).The plan's Digital Agenda focuses on thirteen specific goals to achieve by 2015, such as use of eGovernment by half the population, with more than half of those returning completed forms, and halving the proportion of citizens (currently 30 percent) that have never used the internet (European Commission 2013b). Among other things, the Commission finds that regular internet usage, especially among disadvantaged groups, has been rising steadily over the past several years but that there is tremendous variability of eGovernment use among citizens in specific countries. Although the Digital Agenda reports do not compare eGovernment performance at the regional level, divergent country-level performances such as this suggest distinct eGovernment trends in developing and developed economies; in short, between East European and West European member states. This paper utilizes three of the most common assessment tools to determine what differences in eGovernment capability exist among EU members, including usage and perceptions of transparency.

2.2 Breaches in Public Trust

Considerable research indicates that trust in government, such as integrity of officials or confidence that personal data will be protected, can be as important as the quality of public services delivered electronically. Some observers find that perceived risks to engaging in online government transactions, for example, are minimized if citizens trust eGovernment (Alsaghier, Ford, Nguyen and Rene Hexel 2009). Others also suggest that citizen trust in ICTs is necessary for efficacious eGovernment initiatives (Avgerou, Ciborra, Cordella, Kallimikos and Smith 2006). Arguably, however, the sources of trust may be institutional. Scrupulous officials and a government perceived as serving the public interest may promote interpersonal trust (Blind 2006). The relationship thus between citizen trust and eGovernment initiatives to establish and maintain good governance may be reciprocal. Regardless of causal connections, breaches in public trust, such as political corruption, inevitably enter conversations about eGovernment development. As the European Union promotes greater transparency and accountability in electronic delivery of public services, it does so in the

face of mounting political corruption. The European Commission recently described the extent of corruption among EU states as "breathtaking," and amounting to a total cost equivalent to the annual budget of the Union (BBC 2014). The EU study was based on Eurobarometer opinion polls. The import of corruption on both developed and developing economies, and on state capacity to maintain the rule of law, points to a staggering cost to political and social development overall (Cox 2014b). Broadly speaking, many influences have a bearing on corrupt activity, but scholars come to some consensus regarding the most significant drivers of corrupt activities, at least at the aggregate-level (Serra 2006, Treisman 2007). For instance, it is now widely recognized that as democratic nations attain greater economic prosperity, politically corrupt activity goes down. We would expect, then, that as EU member states in the East reach comparable levels of economic development as their counterparts in the West, gaps between eGovernment capability between the two regions would close, as well as notable differences in levels of transparency and public corruption. Specific strategies for successful controlling corruption are plentiful but generally require tailored reform, public and private sector commitment, and limited opportunities and incentives for wrongdoers. It has been suggested that e-government can facilitate these changes.

3 Measures of eGovernment Capability

Dimensions of usage and transparency, as important measures of eGovernment capability, are reported below. Those facets are measured by the proportion of user-citizens and their perceptions of transparency in eGovernment; an assessment of country-level corruption by experts and public opinion; and expert assessment of overall levels of eGovernment development. Table 1 provides scores assigned to 28 European states by a regional political-economic union (European Union), an international nonprofit organization (Transparency International), and an international intergovernmental organization (United Nations). Turning to these three distinct sources of benchmarking practices can inform us as to any value of assessing e-capabilities from multidimensional perspectives.

Keeping Score of User-Citizen Perceptions: One manner of evaluating government website development in EU member states is an annual report called State of Play or Digital Agenda Scoreboard which is produced by the European Commission (European Commission 2013). Unlike other eGovernment performance indices, the Digital Agenda Scoreboard directly measures progress of member states in meeting particular features outlined in the EU eGovernment Action Plan 2011-2015. Data collection efforts to monitor the Action Plan include community surveys, questionnaires, self-reporting by national government agencies and ICT itself, which offers a means to measure trends through the digital footprints left by users. The Scoreboard examines around 100 dimensions that address product, service and process, as well as takes into consideration demographic and economic indicators. These indicators are organized into ten broad categories: telecom sector, broadband, mobile, internet usage, internet services, eGovernment, eCommerce, eBusiness, ICT skills, and research and development (European Commission 2014d). The Scoreboard can allow us to detect trends in the EU including comparisons of development levels between east and west member states. We are interested here in examining three dimensions of eGovernment development to explore transparency and accountability in eGovernment services. The Scoreboard reports the percentage of citizens who interacted with public authorities online over the past two years, such as by browsing websites for information and downloading official forms. It also reports the percentage of citizens who sent completed forms over the internet in the past two years to public authorities. Further, the Scoreboard provides a user centricity score that reflects the scale of information about public service provided online, any support and feedback, and the ease and speed of using eGovernment services. In Table 1, we can also consider the transparency score provided by the EU. This score reflects perceived transparency about the tasks and performance of public authorities; how service delivery is provided; and perceptions about the use of personal information required in delivery of a public service. Do citizen online use and government website usability reflect user perceptions about transparency?

A Poll of Polls to Gauge Public Corruption: A second method of assessing eGovernment capability is to consider expert opinion about the relative degree of political malfeasance in countries offering public services via ICTs. Transparency and accountability are aspects intimately related to corruption. It has long been noted that because of its secretive nature, obtaining reliable measures of corruption evades us. Inconsistent methodologies and unreliable empirical evidence do not help, either. The prevalent view that there is pervasive and persistent growth of domestic and transnational public corruption, also known as political corruption, is fueled by sensational media reports and increasing conviction rates, among other things. A lack

of transparency in public administration, including services provided to citizens through eGovernment, is reflected in the above-mentioned Scoreboard, but is also gauged in annual country-level rankings of political corruption. Transparency International provides one of the most commonly used measures of corruption. Thirteen data sources provide the basis of country rankings, and include expert opinions from organizations such as the Economist Intelligence Unit, Freedom House and the World Bank, and from surveys of domestic and foreign business people, journalists and others. The Corruption Perceptions Index (CPI) is frequently described then as a poll of polls. Countries are ranked on a scale from 0 (highly corrupt) to 100 (very clean). Because a lower score counterintuitively signals a sense that greater corruption should be accorded a greater number, the table reverses the CPI scoring method so that scores approaching 100 reflect perceptions of greater corruption and lack of transparency than in countries with lower scores. This ranking does not provide absolute degrees of malfeasance, but reflects differences seen among countries, and regions. Do user-citizen perceptions about transparency in eGovernment correlate with expert perceptions of country-level public corruption?

Ranking eGovernment Development: A third approach to weighing progress and relative standing among countries in respect to digital interactions between government and citizens is to employ another ranking device. A division of the United Nations Department of Economic and Social Affairs, the UN Public Administration Network publishes an assessment every two years of information and communication technology capabilities in all UN member states. One of the primary purposes of its assessment is to help transform public administration in positive and holistic ways through sharing best practices in a host of areas such as use and access to public services, transparency and accountability. The UN EGovernment Development Index (EGDI) emerging from this endeavor is a ranking of all countries based on composite scores of multiple indicators. The scores do not reflect absolute values of national government performance, but the relative standing of one government to another. Country scores reflect three dimensions: provision of online public services; available telecommunications infrastructure; and human capacity (United Nations 2012). The first dimension is a composite of values derived from examining government agency websites for content accessibility and the like, and the second an assessment of features such as number of personal computers, internet users and telephone lines per 100 persons. The third dimension, that of human capacity, is measured as adult literacy rates and primary, secondary and tertiary enrollment ratios. According to the most recent UN E-Government Survey, there is considerable variation globally among countries and regions but UNEG indices reflect progress being made by most countries in providing greater access to citizens. For instance, dedicated data portals are boasted by all but 46 national governments, and all now have national government websites (United Nations 2014). Is a country's relative ranking in eGovernment development associated with other measures of usage, transparency, and public corruption?

4 Discussion and Conclusion

To illustrate the force of various benchmarking methods, we can determine the degree to which three broad measures of government capabilities appear to be compatible with or to differ with one another. We examine scores or rankings reported by the EU Scoreboard, Transparency International, and the UN EGD. We do this for all EU member states and compare averages between regions. Next, we perform a series of bivariate correlations to determine the nature of relationships between sets of two measures. These assessments allow us to address the questions posed in this study:

- How do EU members fare when eGovernment capabilities are measured by multiple instruments?
- Does citizen online use and government website usability reflect user perceptions about transparency?
- Is the overall eGovernment development rank of a member state associated with other measures of usage, transparency, and public corruption?

	EU Scoreboard				TI Ranking	UN EGDI
	% Interaction	% Filled Forms	% User Centricity	% Transparency	Corruption	eGovt Development
BG	23	8	60	38	59	0.5421
HR	25	10	54	40	52	0.6282
CZ	29	7	57	29	52	0.607
EE	48	30	84	75	32	0.818
HU	37	17	45	23	46	0.6637
LV	35	13	73	61	47	0.7178
LT	34	28	73	67	43	0.7271
PL	23	11	72	37	40	0.6482
RO	5	2	45	17	57	0.5632
SK	33	16	44	17	53	0.6148
SL	52	21	70	53	43	0.6505
AT	54	28	82	68	31	0.7912
BE	50	32	72	51	25	0.7564
CY	30	10	60	36	37	0.5958
DK	85	66	80	59	9	0.8162
FI	69	45	83	63	11	0.8449
FR	60	32	75	64	29	0.8938
DE	49	14	65	30	22	0.7864
GB	41	22	70	38	24	0.8695
GR	36	20	50	23	60	0.7118
IE	45	36	84	48	28	0.781
IT	21	10	75	49	57	0.7593
LU	56	25	62	36	20	0.7591
MT	32	13	94	96	44	0.6518
NL	79	57	81	51	17	0.8897
PT	38	27	90	71	38	0.690
ES	44	23	87	66	41	0.841
SE	78	46	81	59	11	0.8225
ALL	43.3	23.9	70.3	48.8	36.7	0.700
EAST	31.3	14.8	61.5	41.5	47.6	0.650
WEST	51	29.8	75.9	53.4	29.6	0.780

Table 1: Scoring and Ranking EU eGovernment Capabilities in 2013

4.1 Scores and Rankings

Indicators reported by the EU Scoreboard show considerable variation among regional member states. As is expected, use of electronically provided services is higher in the West than in the East. Altogether, fewer than half of all EU citizens on average interacted with public officials through national government websites over the last two years. Just over half of citizens in the West interacted, however, and about a third of users in the East. This is nearly a 48% difference between the two regions. The share of all user-citizens who filed forms online is particularly low at less than one quarter, with about twice as many users in the West outpacing their neighbors to the East. About 70% of all EU citizens on average report adequate support, ease and speed of using eGovernment, with the EU score for user centricity higher in the West, too. Finally, nearly half of all EU citizens found eGovernment to be transparent, with moderate differences between the two regions. There are

notable exceptions to these regional disparities, of course. When averaging percentages for all four EU Scoreboard indicators, we see that the poorest performers in the West are Cyprus and Greece, with average scores of 34% and 32% respectively. The best performers in the East are Estonia with an average of 59% and Lithuania at 50%. Those two countries rival, if not surpass, the likes of Austria, Belgium and Great Britain. With an average score of 17%, Romania is by far struggling the most with eGovernment capability. Denmark comes out on top with an average of more than 72% user-citizens reporting positive e-capabilities, with the Netherlands following close behind at 66%.

In respect to perceived levels of political corruption, there also is a remarkable difference between regions. The TI corruption ranking for EU member states in the East is nearly 47% higher than in the West. We clearly see that Bulgaria and Romania are regarded as the more corrupt EU members in the East, although Greece and Italy in the West share similar rankings. No neighbor to the East comes close to matching the probity discerned in Denmark, Finland or Sweden. Overall eGovernment development scores reported by the EGDI provide a ranking of EU states based on scope and quality of online public services, telecommunications connectivity and human capacity. The world average score in 2014 is .4712. South Korea, with a score of .9462, is ranked first in e-readiness. Again, as expected, members in the East are ranked on average of nearly 20% lower than those in the West. The lowest ranked states are Bulgaria and Romania, and the highest are the Netherlands and France. Nevertheless, no EU member state falls below 0.50 and thus into the UN's middle or low EGDI categories.

4.2 Correlations

Correlation coefficients are conducted among the four dimensions of the EU Scoreboard, perceptions of political corruption, and overall eGovernment development. At the risk of oversimplifying matters for the reader, bivariate correlation coefficients (Pearson's r) can determine if any observed relationship between two variables could have happened by chance. Coefficients can indicate the magnitude as well as the direction of the association, but cannot imply a causal link between the two variables. We must be sensitive to the possibility of hidden or intervening variables that explain causality. The value of performing preliminary correlations here is to indicate potential for additional statistical approaches which can take into account a multitude of possible influences on e-Government readiness. Interpretations of statistical significance in Table 2 are borrowed from Evans (1996). Moderate significance (*) is noted for absolute values of r between .40-.59; strong significance (**) is indicated if between .60-.79; and very strong statistical significance (***) is marked if the value of r is between .80-1.0. Thus, the closer the statistical value is to 1 or -1, the stronger the linear correlation. If there is no statistically significant correlation, the value is not included in the table.

		Transparency	Corruption	Development
All	Interaction		-0.8661 ***	
	Filled Forms	0.4031 *	-0.8053 ***	
	User Centricity	0.8972 ***	-0.5236 *	0.5904 **
	Transparency			
	Corruption			-0.7374 **
East	Interaction	0.6003 **	-0.6748 **	
	Filled Forms	0.7265 **	-0.7877 ***	
	User Centricity	0.9208 ***	-0.7540 **	0.7216 **
	Transparency		-0.6929 **	
	Corruption			-0.8889 ***
West	Interaction		-0.8486 **	
	Filled Forms		-0.7271 **	
	User Centricity	0.8910 ***		
	Transparency			
	Corruption			-0.5207 *

Table 2: Correlations in eGovernment Capabilities

Supporters of eGovernment argue that greater government-to-citizen (G2E) capabilities should facilitate democratic values such transparency in government, equal and more readily accessible public services, and enhanced citizen participation. They anticipate that greater transparency and responsiveness in government will transform public administration in ways that include lower political corruption rates. There may be some support here for that claim. The intermediary is likely trust. Citizens who interact with public officials online and who submit completed forms on line must trust appropriate ICT use by their governments. Online participation thus reflects greater confidence in government, and a greater share of user-citizens who observe transparency in eGovernment. In EU member states overall, we find this expected direction in those who fill out forms. That relationship between interaction and filling out of forms with transparency in eGovernment is apparent among East European user-citizens, though is not statistically significant among citizens in the West. However, user centricity in both regions, that is, support and feedback, ease and speed of using online government services is nearly perfectly correlated with user perceptions of transparency in both East and West. We find similar associations between user perceptions of transparency in eGovernment and perceived levels of political corruption in the country. Overall, the greater proportion of EU citizens that interact, fill out forms, and report user centricity on their home government websites is linked to lower perceptions of corruption. This confirms common wisdom. If citizens feel their politicians and political systems are honest, they are more likely to engage in riskier contact such as sharing private data online and are simply more likely to engage with government. Also statistically significant in both East and West is the relationship between perceived corruption and overall levels of eGovernment development.

The picture that emerges from taking a bird's eye view of the scoring and ranking of dimensions of eGovernment, and correlations between these features, illustrate a persistent challenge in holistically benchmarking capabilities of public administration. Evaluating eGovernment performance and exploring trends in citizen-centered public administration is a growing industry in which there is little conformity in the criteria used, the perspectives taken, and the analysis conducted. How efficacious ICT truly is in meeting citizen expectations is not easily determined or clear-cut. We are reminded that "projects may not always be seen as completely successful or complete failure" (Wateridge 1998: 59). Yet efforts to report progress in black and white terms persist. When assessing eGovernment in West European municipalities, for example, researchers found most of those websites to be "little more than a governmental billboard," primarily non-interactive, and instances in which ICTs have little impact on local government accountability. They are not optimistic that eGovernment will transform public administration any time soon, but acknowledge the difficulties in learning how initiatives are being implemented and evaluating the degree to which government websites improve quality and effectiveness in service delivery (Pina, Torres and Royo 2010). Outcomes of the analyses conducted herein demonstrate that the demands placed upon European member states to meet goals of the EU 2020 Digital Initiative are met to varying degree. The European Commission maintains that progress is steady in regard to most targets and in most member states. As we might expect, the paper herein finds that East European user-citizens reflect a perception that eGovernment is in a preliminary stage of development in this region, while West European user perceptions are more encouraging. Views of public corruption and overall eGovernment progress formed by expert opinion similarly indicate a relative disparity between East and West Europe.

Limitations of this study prevent exploring here probable explanations for the divide. Certainly an in-depth treatment of the matter would be a welcomed supplement to the literature on digital government development in the EU. Beyond noting different levels of eGovernment development—differences we might expect to find due to relatively recent transitions to a market economy, recent EU membership, and the digital age—preliminary observations suggest that the degree of citizen online interaction is intimately intertwined with citizen expectations about government use of information technologies and particularly with perceptions of transparency and probity. Although some research has questioned the role of cultural attitudes about transparency, such as the potential for social media to serve as an anti-corruption tool, observers suggest that it is too soon to conclude that ICTs can sustain a culture of transparency (Bertot, Jaeger, and Grimes 2010). Helpful in understanding public expectations of eGovernment and attitudes toward e-participation, we might look to organizational theories to address contextual factors that shape the ways European citizens perceive public administration. For instance, we might further explore the relationships or distances between user-citizens and their governments in respect to culture, politics, knowledge, intention, resource, and technical availability (Dawes, Gharawi, and Burke 2012). This would provide considerable insight into understanding primary forces in the exchange of knowledge and information, and we might also argue, in concern to power-sharing. Such research projects underscore a need for researchers to engage in vigorous dialogue about

appropriate and holistic approaches to benchmarking, monitoring, and assessing eGovernment performance. To contribute to that discussion, the study herein examines eGovernment capabilities in EU member states by drawing upon three popular assessment vehicles which are based on reports provided by both user-citizens and experts. It indicates future directions that digital government benchmarking may take, and suggests paths that governments in other countries may follow as they encounter growing public demand for greater transparency and accountability. The results of these preliminary analyses indicate several avenues for further exploration. Time-series analyses will be helpful for discerning causal relationships between G2E capabilities, transparency and public corruption. Case studies within Europe or in other regions may also be fruitful to develop a richer understanding of the dynamics at work in public administration.

The degree to which some researchers may perceive conundrums in benchmarking eGovernment may not be onerous, after all. In terms of estimating European e-readiness, we find that the EU Scoreboard, the Transparency International Corruption Index, and the UN's EGDI illustrate considerable overlap among dimensions of use, usability, transparency, corruption and overall development. First, outstanding and poor performers detected in one instrument emerge in another. Second, citizen online use and government website usability reflect user perceptions about transparency and corruption. Finally, evaluations of overall eGovernment capabilities are associated with different measures of usage, transparency, and public corruption.

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