

Critical Factors in an Electronic Democracy: a Study of Municipal Managers

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Abstract: Amid the growing research of e-Government, prominent e-democracy practices have been regulated to sporadic, largely populated municipalities, throughout the world. This article examines the various factors that support and deter the practices of an electronic democracy. Factors which potentially challenge and support the progress of online democratic practices are explored. These factors include budgetary constraints, form of government, and ideological perspectives of municipal managers. Chief administrative officers were surveyed on their views of e-Government, with specific focus on the function of e-democracy. The data reviews online practices of municipalities in New Jersey, and through ordinal regression it becomes evident what are some critical factors for the future potential of an e-democratic society.

Keywords: e-democracy, e-Government, citizen participation, municipal managers,

1. Introduction

Electronic democracy has been a reoccurring concept often resurfacing with new technological innovations. Since the 1960s technological utopias have been a part of academic and political discussions (Bryan, Tsagarousianou and Tambini 1998). The lack of performance by past technologies can, in part, be attributed to the reemergence of contemporary e-democracy discussions (Shane 2002). More specifically, the Internet and municipal websites represent an e-democracy revival. This research highlights current practices of e-democracy in small populated municipalities. Specifically, the roles of municipal managers serve as the back drop of this study in identifying challenges and opportunities for e-democracy.

There are various factors that potentially influence the performance of e-democracy. Previous research, on the more broad area of e-Government, is used as the bases for developing the factors of influence. These factors include organizational aspects such as budget resources, IT departments, strategic planning, and organizational capacity. In addition, e-Government research has found that municipal managers play a critical role in e-Government development. Additional factors tested in this study include manager's views on e-democracy, privacy/security, as well as manager demographics of age, gender and education. This research departs from previous studies, in that e-democracy is specifically analyzed. e-Democracy has its own specific aspects and ideological considerations that can get lost in the broader concept of e-Government. The following literature review highlights the e-democracy distinctions and the key factors of influence included in this research.

1.1 A function of e-Government

e-Democracy, in this study, is viewed as one of four e-Government functions. As Moon (2002) highlights, e-Government is a concept introduced into public administration in the 1990s, but has yet to be clearly defined and grasped by the field. The Working Group (2002) argues that that a broad e-Government vision derives from society's concerns, and needs to be citizen-centered. Pascual's (2003) definition of e-Government aims emphasizes access to and delivery of government services to benefit citizens, while strengthening government's drive toward effective governance and increased transparency. Meltiski (2004) has broadened the definition by suggesting that, "e-Government consists of Internet-driven innovations that improve citizen access to government information... services, and ultimately equitable participation in government."

In addition to the broad definitions above, there are numerous functions by which e-Government can be partitioned. Graafland-Essers and Etedgui's (2003) perspective of e-Government is divide into three different operating levels: government to citizen (GtC), government to business (GtB), and government to government (GtG). Pascual (2003) outlines four service focuses for e-Government: citizens, the business community, government employees, and government agencies. These are further described as Government-to-Citizen (G2C), Government-to-Business (G2B), Government-to-Employee (G2E), and Government-to-Government (G2G). Moon (2002) highlights four distinct aspects of e-Government: (1) a secure government intranet for more efficient interaction among governmental agencies; (2) Web-based service delivery; (3) e-commerce for more efficient government transaction activities; and (4) digital democracy for more

transparent accountability of government (425). Most importantly, Moon's framework includes a digital democracy component to that of e-Government.

Multiple e-Government functions outlined below: (1) E-Organization: internal government efficiency and effectiveness; (2) E-Services: external efficiency and effectiveness in providing services; (3) E-Partnering: external efficiency and effectiveness in working with public and private organizations; and (4) e-Democracy: citizen participation in government decision-making. Each of these four terms was developed for a research study of e-Government and the perceptions of municipal managers. The fourth function, e-democracy, and the associated findings are explored in this paper.

1.2 e-Democracy

e-Democracy has a prominent place in the e-Government literature. e-Democracy conceptually reflects the utilization of technology to increase participation in government. Some of the earliest discussions of the technology–democracy relationship reflect the potential of telecommunications, with particular emphasis on cable T.V and telephone/conferencing (Arterton, 1987, 1988; Becker 1993; McLean 1989). However, the focus has now significantly shifted to the internet (Bellamy and Taylor 1998; Browning 2002; Kamarck and Nye 1999, 2003; Loader 1997; Gattiker 2001; Wilhelm 1998; Witschge 2002; Westen 1998, 2000).

Weber (2002) suggests that e-democracy has yet to take full advantage of technologies from the internet. Citizens are now able to demand and obtain content when going online unlike any previous methods in history (Browning 2002). ICTs and the internet now open up many possibilities for citizen participation. Korac-Kakabadse and Korac-Kakabadse (1999) define e-democracy as the capacity for ICTs to enhance the degree and quality of public participation in government and highlight the possibility for direct-democracy on a large scale. e-Democracy also allows for greater government transparency and openness, which leads to a better-informed citizenry. The openness of government can lead to increased accountability and reduced government corruption as per the case example of Seoul's Online Procedures Enhancement for Civil Application (OPEN) system. The OPEN system has demonstrated a successful practice of transparency and decreased corruption in government via the use of the Internet (Holzer and Kim 2004).

Online discussions boards are another example of how technology fosters e-democracy. As Malina (1999) points out, online discussion boards allow for political discussions without requiring participants to share space and time, leading to increased access to political debate. An example of online political discussions is regulations.gov, which highlights how the potential for citizen participation in decision and policy-making is growing, albeit slowly (Skrzycki 2003, Holzer et al. 2005).

An additional aspect of e-democracy is e-voting. Grossman (1995) foresaw an "electronic republic" as an opportunity for citizens to elect representatives, while increasingly being able to participate in law making. The potential for online voting leading to increased participation and efficiency is partly supported by findings from online elections of the Arizona democratic primary (Gibson 2001). However, the question of whether the case of Arizona truly reflects an advancement of democratic values is still open to debate (Le Blanc, Wilhelm, and Smith 2000).

Municipalities have already begun to practice early developments of e-democracy, which include information disclosure pertinent to government decision-making as well as two-way communications. Examples of early development in e-democracy include: municipal board meetings being announced and minutes being published online; budget information disclosed online; and downloadable forms of voter registration are made available online. Advanced developments present the more significant challenge in that they require organizational transformation so as to be achieved. Examples of advanced developments in e-democracy include: online discussion boards by a municipal website; public officials participating online in policy forums; and voting on local elections and referendums can be done online.

2. Research framework

Various factors are considered as variables which influence e-democracy based on e-Government literature. Manager Variables represent those factors that are associated with the city manager who were the target audience for the administered survey in this research. The second set of variables is more broadly associated with the municipality. These factors identified as Independent include such variables as population, budget, planning and forms of government, each of which previous research has identified as influential factors.

3. Manager variables

As highlighted through the literature, city managers play a critical role in the development of e-Government initiatives (Heeks 1999; Weare, Musso and Hale 1999; Ho 2002; Melitski 2003; Pascual 2003; and Halachmi 2004). Weare, Musso and Hale (1999) suggest that the adoption of new technologies by organizations usually requires a champion or advocate from within the organization, reflected in the cases of municipal websites studied in California. In order for managers to receive the benefits of IT with the least amount of problems, they must be proactive (Halachmi 2004). Pascual (2003) suggests that strong leadership is critical to the success of e-Government because it “ensures the long-term commitment of financial resources, personnel and technical expertise in the design, development and implementation of e-Government projects” (29). A composite measure is constructed based on the CAOs’ perspectives/responses to the function of e-democracy. As such, the first of ten hypotheses is outlined below.

Hypotheses 1. A city manager who has a positive perspective on the functions of e-democracy will more positively affect his/her municipality’s advanced e-democracy practices than a manager who has a negative perspective.

The second manager variable is based on the chief administrative officers’ perspectives on security and privacy. The majority of American citizens feel that government should proceed cautiously in relying on the Internet for citizen-government communications because of security and privacy (Hart-Teeter 2003). The literature has shown that concerns over privacy and security become an additional barrier to advanced developments of e-democracy. Privacy and security concerns become especially important when attempting more advanced e-Government practices such as online transactions. Those municipalities that have accepted website security and privacy as a critical factor requiring specific policy, or have indicated them as barriers, will in turn be more likely to adapt advanced e-democracy practices.

Hypotheses 2. A city manager with concerns over privacy/security will more negatively affect his/her municipality’s advanced e-democracy practices than a manager who does not have such concerns.

The final three managerial variables focus on the gender, age and education of city managers rather than their views on e-democracy. Technology serves as the means in the working relationship with citizens, but the relationships are driven by ideals rather than by an individual’s characteristics. However, part exploratory, the research included gender as a research variable and there is no expectation of influence as per the following hypothesis.

Hypotheses 3. A city manager’s gender will have no affect on his/her municipality’s e-democracy practices.

On the other hand, a city manager’s age and education do raise the possibilities for serving as influential factors for e-democracy. Municipalities in which the city manager is young or holds a Master of Public Administration should expect that the practice of e-democracy is more advanced. The relationship between age and technology is based on the reality that technology is a continually evolving medium that younger generations are inherently more familiar with than previous generations. Therefore the research hypothesis reflects the positive influence a young city manager will have on e-democracy.

Hypotheses 4. A younger city manager will more positively affect his/her municipality’s e-democracy practices than a public manager who is older.

In addition, a city manager with an MPA is also expected to positively influence performance. This hypothesis is based on the view that MPA programs are increasingly providing courses in e-Government. Managers, who have taken advantage of education programs that have addressed e-Government, can transfer their gained knowledge into more advanced e-democracy practices.

Hypotheses 5. A city manager with a Masters in Public Administration will more positively affect his/her municipality’s e-democracy practices than a public manager without a degree in public administration.

3.1 Independent variables

One key variable derived from the literature is whether a municipality houses a separate IT department. This becomes a critical factor in this study where many of the municipalities are small in population, and may not have the resources to host an IT department. Rather, smaller municipalities only have an IT staff of very few employees. Organizations with IT departments tend to result in more developed e-democracy initiatives, given the focus of time and resources to do so.

Hypotheses 6. A municipality with an IT department will have more advanced e-democracy practices than a municipality without an IT department.

A second organizational independent variable is Strategic Planning. As the OECD (2003) argues, "where possible, e-Government should encompass ... a planning process with specific goals and targets" (68). They go on to argue that a common vision is essential to e-Government. Therefore, it would be expected that strategic planning is a critical factor to consider in e-democracy, as a function of e-Government.

Hypotheses 7. A municipality with a strategic plan which includes a section on e-Government will have more advanced e-democracy practices than a municipality without such a plan.

A third municipal independent variable is the municipal budget. The budget is a significant barrier to e-democracy development. Funding for IT initiatives requires large expenditures. The success of an e-democracy initiative does not necessarily suggest sustainability, as the costs related to benefits may lead to project termination (Watson et al. 1999). To obtain benefits from the use of technology in local government, organizations must be prepared for substantial investments, both tangible and intangible costs (Brown 2001). Per capita city revenue has also been found to be a significant predictor for early technological adoptions (Weare, Musso and Hale 1999). Therefore, those municipalities that devote a larger percentage of their yearly budget to IT development and initiatives will be expected to have more advanced development of e-Government.

Hypotheses 8. A municipality that spends a larger percentage of its budget on IT will have more advanced e-democracy practices than a municipality which spends a lesser percentage of its budget on IT.

A fourth municipal independent variable is municipal population. Little can be said about e-democracy in municipalities with populations under 50,000 residents, as the majority of research has focused on cities, states, or countries, with significantly different resources. When municipalities are surveyed or studied, they tend to be those with significantly larger populations and findings indicate that the larger the population the greater the performance (Kaylor, Deshazo and Van Eck 2001; West and Berman 2001; Ho 2002; Holden, Norris, and Flethcher 2003; Holzer and Melitski 2003; West 2001, and Scott 2005, 2006). Only recently has the Center for Digital Government begun ranking, in their annual Digital Survey Report, cities with populations of 30,000 – 75,000 (CDG 2005). The general expectation would be that the larger the population, the more advanced the municipality's e-Government practices are.

Hypotheses 9. Municipalities with larger populations will have more advanced e-democracy practices than municipalities with smaller populations.

The final independent variable reflects the form of government for each municipality and its influence on the performance of e-democracy. These forms include a council-manager, mayor-council, and a commission. Specifically, the council-manager, as opposed to other forms of government, has been found to be more positively supportive of e-Government development (Moon 2002).

Hypotheses 10. A municipality with a council-manager design of government will have more advanced e-democracy practices than a municipality that does not have a council-manager design of government.

4. Data and methodology

A survey of municipal managers in New Jersey was conducted in the fall of 2005. New Jersey is a state that has a wide range of city populations, with over 550 municipalities. Twenty-one municipalities in New Jersey have populations over 50,000 people. In the United States, New Jersey is one of the more technologically advanced states (Holzer and Melitski 2003). The constructed survey was intended for each municipality's chief administrative officer and administered via mail. A total of 196 survey responses were collected valid and 182 represented municipalities with populations under 50,000 residents. The response rate of municipalities surveyed under 50,000 residents was 50.2%. With 545 municipalities (under 50,000 residents) being the sample population of this research, the 182 responses result in a 33.3% rate.

The chief administrative officer (CAO) of each municipality was given the survey and the following data represents the respondents' descriptive characteristics. The most frequent age range of respondents was 45-54 yrs (36.8%), followed closely by the age range of 35-44 yrs (35.2%). The gender of New Jersey CAOs is predominantly male with over 70 percent of respondents (128) indicating as such. Included in the survey were nine options for education, with a Masters of Public Administration degree being the most frequent at 38.5 percent. In addition to the respondent characteristics, municipal statistics include the average population of municipalities was 15,334 residents. The form of government in New Jersey that is most prominent is the Mayor-Council form represented by over 50 percent of respondents.

The current practice of e-democracy is constructed as the dependent variable based on the survey responses to questions outlining their current municipal practices. The dependent variable is a composite

measure that ranges from a scale of 1 to 6 based on questions of current e-democracy practice via the survey responses. The composite measure was tested for reliability via Cronbach's Alpha. The variables, independent and dependent, were tested for correlation. Only two variables were found to be highly correlated (.807) with one another: security and privacy. Although they can refer to two very different aspects within the e-Government context, they are often interpreted as one and the same, and for purposes of this study they were grouped into one independent variable. The statistical technique performed for analysis of the survey data was Ordinal Regression with SPSS statistical program. The regression models are based on the direct effects of the independent variables on the dependent variable of e-democracy performance as outlined below, where "a" is the Y intercept and b_n represents the various coefficients.

$$e\text{-Democracy} = a + b_1\text{Manager's View on e-Democracy} + b_2 + \text{Privacy/Security} + b_3\text{Gender} + b_4\text{Age} + b_5\text{Education} + b_6\text{IT Department} + b_7\text{Strategic Plan} + b_8\text{Budget} + b_9\text{Population} + b_{10}\text{Form of Government}.$$

5. Findings and discussion

The results of regression analysis for e-democracy performance as the dependent variable indicate three variables as contributing factors towards its development (Table 1). Having a mayor-council form of government is negatively associated with the practice of e-democracy. The second variable to be of significance is the budget. The final variable to be statistically significant is the manager's perspective on e-democracy. Each of these variables will be further discussed below following a review of the variables found to have no impact on e-democracy.

Table 1: Direct effects model of e-Democracy

e-Democracy		
Independent Variables	Coefficient	Sig.
FOG Mayor-Council	-.933	.005***
IT Department	.538	.145
Strategic Plan	-.009	.988
Budget	.223	.060*
Population	-8.03	.950
Manager Variables		
Perspectives of EDEMC	.174	.046**
Security	.044	.581
Gender	.178	.589
Age	-.042	.760
Education (MPA)	.084	.783
Ordinal Regression		
Chi-square (significance)		27.336(.004)
N		182
***p<.01 **p<.05 *p<.10		

Of the five variables associated with city managers, only a manager's view towards e-democracy was found to be significant. A manager's gender was found to be insignificant, supporting the hypothesis that gender does not influence e-democracy performance. Education and age also showed no influence on e-democracy. These two variables should not be discounted in future research though. Because technology is always increasingly changing, it could be expected that education or age may play a role in functions of e-Government such as e-democracy. Finally, in regards to the manager, their view on privacy/security was also found to be insignificant. Literature has shown that privacy and security are critical factors in the development of e-Government functions; however in the case of e-democracy, it may not be as critical. Aspects of e-democracy do not necessarily require as much security and privacy, as other e-Government functions of online transactions such as tax payments or permit applications.

The independent variables associated with the municipality had two aspects that were predicted to be influential, the budget and form of government. The three variables that had no influential significance were the presence of an IT department, a strategic plan and the municipal population. It was hypothesized that the probability of more advanced practices of e-democracy is increased with the presence of an IT department within a municipality. The lack of an IT department was expected to be significant because not all municipalities have the size and resource to host such a department. However the research shows that in the case of e-democracy, it is not a critical factor. Similarly it was hypothesized that those municipalities that

have a presence of a municipal strategic plan will be expected to have higher performing e-democracy practices. It would serve an organization well to develop a plan for e-Government practices, but the research shows that having such a plan is not a critical factor in the area of e-democracy. Finally, the population of a municipality was found to be insignificant in the practice of e-democracy. This finding goes against much of e-Government literature which shows a positive correlation among population and performance. That is why surveying small-populated municipalities is necessary as this study has done, indicating that population becomes less a factor in performance as the size of the municipality decreases.

The overall findings highlight that the use of technology for the function e-democracy is currently in their earliest stages of development. In addition to the findings and reasoning behind the insignificant variables, three variables were identified as significant from the regression analysis. The first variable of significance is the Mayor-Council Form of Government. It is ironic that a form of government with an elected position would not foster increased practices of e-democracy. In order to address such a challenge, one could research the specific resistance towards e-democracy by mayors or lack-of by city managers. As was pointed out above, the council-manager, as opposed to other forms of government, has been found to be more positively supportive of e-Government development (Moon 2002). However, this research has found that the mayor-council form of government also plays a critical role in e-Government, and e-democracy in particular.

The second variable of significance is the Municipal Budget. The percentage of a municipality's budget spent on IT initiatives has undoubtedly increased over the past decade, but as new technological opportunities present themselves, specifically in the area of e-democracy, further funding will be required. The relationship between the budget and e-democracy, as has been highlighted through past research (Watson et al. 1999, Weare, Musso and Hale 1999, and Brown 2001), comes as little surprise, but having an advocate for an increased budget on IT initiatives leads to the third variable of significance.

The final major factor identified for e-democracy performance is the CAO perspective. The view by each municipality's respective chief administrative officer on e-democracy plays a critical role in that municipality's e-democracy performance. The CAO has a strong influential relationship with the municipality's practice of e-democracy and we should continue to expect such a relationship. Therefore, the key toward advanced practice of any of e-Government functions, including e-democracy, should be with continuing education and awareness toward the CAO of the potentials of technology in a municipality.

6. Conclusion

The findings emphasize the role of e-democracy as more of an ideological innovation than as a functional innovation. Many of the predicted variables based on e-Government research were found to be insignificant when it comes to e-democracy. e-Democracy becomes more a function of a manager's view toward the practice of online democracy than as a function of resources, planning, size and having an IT department. This study was limited in scope, and has some generalizing limitations, but the findings are still able to highlight the unique nature of e-democracy in small-populated municipalities. Not all factors previously found significant in the study of e-Government are critical in the study of e-democracy. This finding emphasizes the need for further research specific to the function of e-Government. That is, e-democracy should be independently studied or categorized when doing large e-Government studies so as to best understand the influential aspects. e-Democracy has its specific functions and ideological framework of utilizing technology for democratic purposes.

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Appendix

Definition of Variables:

Dependent Variables	Definition
EDEMC	Composite measure representing the current degree of a municipality's e-democracy practices (Scale of 0-6).
Independent Variables	Definition
FOGMC	1 = Form of government is Mayor-Council 0 = All other forms of government
IT	1 = Municipality has an Information Technology Department 0 = Municipality does not have an IT department
STRGPLAN	1 = Municipality has a strategic plan with a reference to e-Government 0 = No strategic plan or reference to e-Government
BUDGET	Percentage of municipal budget spent on IT initiatives 0 = $\geq 0.05\%$; 1 = 0.06% - 0.5%; 2 = 0.6% - 1%; 3 = 1% - 5%; 4 = 6.0% \leq
POP	Municipal population; Under 50,000 residents
Manager Variables	Definition
P-EDEMC	Composite measure for managers' perspectives of the function of e-democracy (Scale of 1-7; negative to positive perspective)
SCRTY	Measure for managers' concern over security and privacy (Scale of 1-7; little concern to greatest concern)
GENDER	1 = Male 0 = Female
AGE	0 = 18-24; 1 = 25-34; 2 = 35-44; 3 = 45-54; 4 = 55-64; 5 = 65 and above
EDU	1 = Masters in Public Administration 0 = No MPA