A Model for Impact of E-Government on Corruption: Exploring Theoretical Foundations

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ABSTRACT

Corruption in public administration is a cause for continuing concern, particularly in the developing world. Although optimism regarding the ability of e-government to reduce or eliminate corruption is widespread, neutral impact assessment reports however continue to expose cases where corruption persists even after the introduction of e-government. Clearly, there is a need for strengthening research on anti-corruption effects of e-government, which at present is largely a-theoretical and descriptive. In keeping with the above goal, this essay connects to a few theoretical frameworks which are relevant to corruption studies, and reviews the mechanisms by which e-government reduces or eliminates corruption. The insights developed from this exercise have helped to formulate a conceptual model of e-government's anti-corruption impacts. The proposed model is expected to stimulate further research on the anti-corruption effects of e-government, research that will help in: viewing the anti-corruption successes and failures of e-government in a more unified manner; understanding the limitations of e-government as an anti-corruption tool; and devising managerial interventions which may increase the likelihood of success in e-government led anti-corruption initiatives.

***Keywords**:* E-Government, Anti-Corruption, Corruption, Public Administration, Developing.

1. Introduction

The evolution of Internet has created the underlying infrastructure for electronic government (hereafter called e-government), both in information and service delivery; and, in fostering the exchange of information with an informed, aware citizenry. E-government generally refers to the delivery of national or local government information and services via the Internet or other digital means to citizens or businesses or other governmental agencies. The purpose of e-government is to develop a government e-portal, a one-stop Internet gateway to major government services. While definitions of e-government by various sources may vary widely, there is a common theme. E-government involves using information technology, and especially the Internet, to improve the delivery of government services to citizens, businesses, and other government agencies; and it enables citizens to interact and receive services from the federal, state or local governments twenty four hours a day, seven days a week.

There are several benefits attributed to e-government such as it provides efficient government management of information to the citizen; better service delivery to citizens; and empowerment of the people through

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access to information; improved productivity and cost savings in doing business with suppliers and customers of government; and participation in public policy decision-making. Besides, it is widely believed that e-government helps in reducing or eliminating corruption. Focus of the paper being on corruption, and the role of e-government in reducing or eliminating it, we proceed to clarify what corruption is, and the need to fight it.

Corruption is a complex term, and it has various connotations. For a consensual definition of corruption and its classification, we refer Jain (2001)'s review wherein corruption has been defined as 'acts in which the power of public officials is used for personal gains in a manner that contravenes the rules of the game'; and it has been classified as grand, bureaucratic, and legislative. Grand corruption refers to acts of political elite, wherein they change either the national policies or the implementation of national policies to serve their own interest. Bureaucratic corruption refers to corrupt acts of the appointed bureaucrats in their dealings with either their superiors (the political elite) or with the public. And finally, legislative corruption refers to the manner and degree to which the voting behavior of legislators can be influenced. Emphasis of the paper will mainly be on bureaucratic corruption, but the scope of a bureaucrat's corrupt dealings with his superiors need not remain limited to the political elite, and could also include civil servants above him in the hierarchy. Bribes taken by civil servants in assessing a lower income tax, distributing contracts or permits, approving contractors' bills, etc are instances of bureaucratic corruption.

In the past, some scholars have mounted arguments suggesting the counter-intuitive i.e corruption could raise efficiency, by way of: mitigating the adverse effect of errors made by governments in their policy decisions; offering some relief from the inefficiency inducing effect of an inflexible, over-centralized, but honest civil service; or by helping to speed up the processing of files in government offices (see Bardhan (1997) and Jain (2001)). But these speculations, which were based on conceptual and game-theoretic analysis, have lately given way to more compelling empirical evidence, which suggests that the effects of corruption are largely negative. Jain (2001) lists the following adverse consequences of corruption: bureaucratic inefficiency; increased cost of transactions (analogous to a tax); government preference for projects that help enhance the bribe inflows (rather than enhance value or welfare); reallocation of talent to rent-seeking activity; and a skewed distribution of income and wealth, resulting in poverty and inequality. So, elimination or at least a significant reduction in corruption levels needs to be a priority area for governments.

Recognizing the need to fight corruption, we address the following questions: is there a linkage between e-government and corruption; how e-government combats corruption; what can be done to make e-government more effective in anti-corruption; and what are the limitations of e-government in its role as an anti-corruption tool. This requires a more nuanced approach to the topic of e-government and corruption, one that is aligned with theories. In keeping with these goals, the paper goes on to evolve a conceptual model of e-government's anti-corruption impacts, one that can stimulate quantitative and qualitative research in this area.

2. E-government Impact on Corruption

For the present discussion, literature addressing the anti-corruption influences of e-government is organized along two dimensions: first, studies which take a micro view and focus on the description and outcome of specific e-government projects; and second, studies which do not focus on any particular e-government project, but take a macro view of the outcomes of e-government in a country/state.

Project-Based Studies (Micro View)

The anti-corruption impact of individual e-government projects finds mention in numerous e-government reports and narratives, alongside other benefits such as internal efficiency, service quality improvement,

and citizen satisfaction. Table 1 presents a representative list of this literature. Journal articles are by Cho & Choi (2004), Csáki & Gelléri (2005), Heeks (1999), and Iqbal & Seo (2008). Other outlets for these studies are conference/workshop proceedings, publications and book chapters (authored by academics, consultants, contractors, government officials, and project sponsors). These publications mostly convey that the e-government project(s) helped to reduce/eliminate corruption, or that it improved the transparency of government functioning. Since these reports are generally based on anecdotal or experiential evidence (Bhatnagar, 2004, p. 43), their findings need to be viewed with caution. Only in some cases are such reports backed by concrete evidence such as citizen surveys conducted with proper methodology, to ascertain the various e-government impacts, which also includes anti-corruption (e.g Bhatnagar, Rao, Singh, Vaidya, & Mandal, 2007; NeGP Report, 2007; Cho & Choi, 2004). Counter-intuitive though, in a few cases corruption continued unabated even after the introduction of e-government services (Bhatnagar et al., 2007; Heeks, 1999; NeGP Report, 2007).

While these reports and narratives have greatly contributed to our understanding of the linkage between e-government and corruption, it is necessary to take note of their shortcomings. First, this literature is largely a-theoretical, so that it tends to view each e-government project as distinct or unique, and fails to look at anti-corruption successes or failures of various e-government projects in a unified manner. Second, studies on anti-corruption effects of individual e-government projects are nearly always qualitative. This however is understandable because quantitative research in the domain of corruption, largely a secret operation, is fraught with data collection problems. Besides, the validity of such researches is challengeable (Jos, 1993). Third, in the absence of methodologically rigorous third-party impact assessments, findings of many of these studies might suffer from a pro-innovation bias. In fact, this a-theoretical approach and lack of methodological rigor is not just limited to the e-government writings on corruption, it is a weakness of e-government literature generally (Heeks & Bailur, 2007).

Country/Region Based Studies (Macro View)

The linkage between e-government and corruption at country/state level has been addressed by relatively few papers (Table 2), and these are discussed individually. Shahkooh, Fasanghari, & Abdollahi (2008) use correlation analysis and clustering to show that a country's e-government readiness and corruption levels are closely related. DiRienzo, Das, Cort, & Burbridge (2007) report a significant effect of digital access index (DAI) on Transparency International's corruption perception index (CPI) across a sample of 85 countries. The results reported by Pathak, Singh, Belwal, & Smith (2007) are in support of a positive connection between e-government and reduction in corruption. Interestingly, their finding that e-government can explain maximum 8.2% of the variance in reduced corruption (in Ethiopia), shows that while e-government is important to anti-corruption, it also has its limits. The variables and scales used in this Ethiopia context study have been sourced from an unpublished masters project report, and in absence of details, there remains a lack of clarity on conceptualization of the variables employed, and the measurement model. The findings of Andersen, & Rand (2005) suggest, that the number of internet users per thousand citizens (INTERNET), rather than the state of e-government development/maturity (eGOV), is the determinant of corruption levels in a country. The two qualitative case studies presented by Mahmood (2004) focus on four key factors, the presence or absence of which would determine if or not ICT-led reforms succeed in a country/state.

From the available limited number of studies, it emerges that if e-government readiness index is taken as the independent variable, then e-government would appear to exert a negative influence on corruption. Further, variables and indices which are proxies of citizens' access to information technology and internet, are also seen to have a negative influence on corruption. On the other hand, if a variable or index reflecting e-government development/maturity is chosen as the independent variable, then it appears that e-government may have very little or no influence on corruption. But there is a need for further empirical test on this particular aspect.

Table 1: Select studies which report individual e-government projects' impact on corruption

Author(s)	Study context and key findings
Iqbal, & Seo (2008)	Two cases i.e Seoul Metropolitan Government's 'OPEN' (online procedures enhancement for civil applications) project; and S.Korea's Government e-Procurement System (GePS) have been discussed as instances of e-government as an anti-corruption tool.
Bhatnagar, Rao, Singh, Vaidya, & Mandal (2007)	Impact assessment of five e-government projects of India was carried out. Percentage of transactions involving bribes was reduced in all the cases. But in two cases, number of transactions involving bribe (even after reduction) remained at levels which were high.
NeGP Report, (2007)	This pertains to India's National E-governance Plan impact assessment. In case of passport services computerization, bribes continued; the police take higher bribes (for verification), while passport office staff take lower bribes. The ministry of corporate affairs' computerization reduced corruption in a significant manner. In case of income tax, individual filers reported a marginal reduction in bribes, while corruption data could not be collected in respect of businesses, due to non-disclosure.
Pathak, & Prasad (2006)	The authors analyze nine e-government initiatives undertaken in India and conclude that e-government can be effective in reducing corruption or eliminating it altogether.
Csáki, & Gelléri (2005)	Use of Decision Support Systems in public procurement can limit the possible damaging effects of corruption.
Bhatnagar (2004)	The following e-government projects were successful in reducing bribes: (a) Land record computerization project 'Bhoomi' in Karnataka (India); (b) Computer aided registration project 'CARD' for immovable property sale/purchase transactions in Andhra Pradesh (India); (c) Indian Customs Online.
Cho, & Choi (2004)	Seoul Metropolitan Government's 'OPEN' (online procedures enhancement for civil applications) project succeeded in controlling corruption.
Heeks (1999)	Through five cases (the exact case context i.e country, organization, etc has been kept confidential), it is shown that even after implementation of ICT, corruption can persist.

3. How E-government Helps in Fighting Corruption

Corruption has been studied by scholars from various streams of social sciences. Sociologists hold, that the roots of corruption are both social and cultural, and that corruption hinders public welfare and social development. According to political scientists, non-transparent institutions, low paid public servants, and a shortage of independent and well-functioning market mechanisms are antecedents of corruption. Legal scholars believe that the type of legal system and its enforcement impact corruption. While this paper follows a political economy approach to corruption study, this however should not be treated as a de-emphasis on the value of those other alternative approaches.

In departing from the a-theoretical approaches in the previous writings on e-government and its anti-corruption impact, we connect to three theories which are relevant to corruption studies and we try to see through those lenses, as to how e-government helps to fight corruption. At the same time, we also try to speculate, as to how e-government could do more for anti-corruption.

The economics of crime

In economics of crime tradition, the underlying assumption is that crime is a utility maximizing decision of a person, in the matter of investing his time and other inputs. The number of offences committed is taken to be a function of: probability of conviction, punishment if convicted, and other variables, such as the income

available in legal and other illegal activities, frequency of arrests, and willingness to commit the offence. The following equation expresses this relation (Becker, 1968):

$$O_j = f(p_j, f_j, u_j)$$

O_j is the number of offences a person would commit in a given period; p_j is the probability of conviction per offence; f_j is punishment per offence; and u_j subsumes all other influences, which includes the 'p' and 'f' pertaining to other competing choices of criminal activity available to him.

Table 2: Studies on impact of e-government on corruption at country/state level

Author(s)	Study context and key findings
Shahkooh, Fasanghari, & Abdollahi (2008)	More than 180 countries were clustered on the basis of Transparency International's CPI index and United Nation's E-Government Readiness Index. Also, correlations between these two indices were computed. These two analyses indicated that e-government readiness index and corruption are very closely related.
DiRienzo, Das, Cort, & Burbridge (2007)	The study investigates the relation between Digital Access Index (DAI) and CPI (Transparency International's corruption index) for a sample of 85 countries, while controlling for other relevant variables. DAI was found to have a positive influence on CPI, but it adds to the model's explanatory power by only 3.5%. Also, these 85 countries were clustered into four groups, based on DAI, masculinity, economic freedom, and economic development.
Pathak, Singh, Belwal, & Smith (2007)	A survey of 400 citizens was conducted in Ethiopia. The regression model comprising the exogenous variables *Government Citizen Relationship*, and *e-governance model* could only explain 8.2% of the variance in *Corruption Reduction*.
Andersen, & Rand (2005)	In this cross-country study pertaining to the period 1998-2003, the variables *INTERNET* (number of internet users per 1,000 people) and *eGOV* (a dummy, which is assigned the value one if a country's e-government is either interactive or transactional) were regressed on CPI (Transparency International's corruption index). The authors conclude that the path of causality mainly runs from *INTERNET* to *CPI*.
Mahmood (2004)	Drawing from literature, the author posits four variables i.e. *regime type*, *a sense of crisis*, *a renewed ideology*, and *political will* as salient to the success of ICT-led reforms. Reasons for greater success achieved in e-government led reforms in Andhra Pradesh (India), but not in Bangladesh, have been investigated through these four variables.

On viewing corruption from an economics of crime perspective, it is seen that e-government has a lot to offer. In the traditional work environments, auditors' and anti-corruption officials' access to official records is cumbersome. Moreover, paper records are hard to archive, maintain, and retrieve. In contrast, electronic records can be maintained safely for a long time, and these are amenable to automated procedures, which includes data-mining. So, e-government helps by facilitating audits, preventive checks, and ongoing investigation of corrupt acts already detected. In terms of economics of crime, e-government should increase 'p' and thus reduce the corruption levels. It is lamented however, that those possibilities offered by e-government have not been exploited in many countries. Greater inter-operability and integration of e-government across individual agencies can bring about dramatic improvement in the probability of a corrupt official being apprehended and punished.

The mass reach of internet can be used to disseminate information about corrupt officials. A case in point is India's Central Vigilance Commission (CVC), which publishes the names of corrupt officials on its website (Bhatnagar, 2004, p. 188-193). The effect of such dissemination would be to inflict the probability of a substantial non-monetary cost (psychological or social) on culprits, and this should reduce corruption.

Principal-Agent Theory (Agency Theory)

Agency theory, roots of which lie in risk-sharing literature, is directed at a situation when one party (the principal) delegates work to another (the agent) and the resulting 'agency problem' (Eisenhardt, 1989). Agency problem refers to the conflict between goals of the principal and the agent, and constraints in principal's ability to monitor the agent. For the present context, we treat as agent, the front-desk civil servant who actually executes a task or delivers the service to a citizen, and the senior civil servant responsible for supervising the former's work as the principal.

In case of self-service model of e-government, the agent is disintermediated and the communication path between principal and the citizen is mediated entirely by technological artifacts. There is a need to proliferate this trend of disintermediation in public service delivery, made possible by e-government.

In a developing country, the self service model of e-government can only reach out to a minority segment of the population. In manual delivery of e-government services to the citizens, at service delivery counters or desks, the principal-agent problems could re-manifest. E-government generated statements such as status of pending complaints, applications awaiting final disposal, hourly/daily computer logs in respect of transactional e-government services (delivered at counters/desks) can help the principal in aligning the functioning of the agent to her goals and to reduce her classical principal-agent information asymmetry disadvantage. For instance, the principal could look for long pending complaints and applications, long outages and abnormally long time taken per transaction in transactional services, etc as possible symptoms of some malpractices. But it may be difficult to sift through volumes of computer generated management information reports. Identification of key monitoring parameters and their dissemination through timely, and readable reports can be very helpful in this regard. In addition, data mining tools can cull out interesting patters or outliers from voluminous data. But the principal has little prospect of making use of such efficient monitoring facilities offered by e-government, if she is lacking in the requisite know-how.

Taking the principal-agent discussion further, we now take the citizens as principals and the elected and non-elected officials as agents. The emergence of right to information laws and e-government services, offers prospects for citizens to directly monitor the working of elected and non-elected officials. But government information can be too complex for the ordinary citizen. In this regard, voluntary organizations, and professionals can play an active role in researching government information and pointing to possible wrong-doings of elected and non-elected officials. The immense possibilities that exist in this area, remain largely unexploited.

Transaction Cost Economics

Transaction Cost Economics (TCE) is founded on two complementary fields of economics research i.e. New Institutional Economics and New Economics of the organization, the former dealing with institutional environment and institutions of governance, and the latter with policy issues linked to industrial organization (Williamson, 1998). TCE holds that transaction costs decide the kind of organization for supporting exchanges or transactions. It also acknowledges two key features of human beings, namely bounded rationality, and opportunism. Bounded rationality implies that even as humans intend to be rational, their rationality is limited by certain constraints e.g. limited information processing and communication abilities, or uncertainties. Opportunism implies self-interest seeking behaviors, which includes lying, cheating, deceit, etc. In TCE, transactions have been characterized along three main dimensions i.e. asset specificity, uncer-

tainty, and frequency. In the following discussion, we focus on asset specificity, and uncertainty. Corruption is a form of contracting which can be studied through Transaction Cost Economics (Husted, 1994).

In general, if the assets required for performing a transaction have low asset specificity, ceteris paribus the risk from opportunism will be lower, resulting in lower transaction costs (bribes). We now explain how e-government helps to lower the specificity of assets required to perform a transaction. In traditional service delivery, clerks are vested with the custody of specific registers and they can service only the cases, which pertain to their registers. But in case of e-government services delivered in parallel at multiple counters of a government agency, a citizen can at his choice get served at any counter i.e. low (human) asset specificity. Further, if this service can be availed at several diverse locations in a town, or in any other town, asset specificity is lowered even further. Therefore, all steps aimed at lowering the asset specificity will help in reducing or eliminating bribes.

There can be two approaches towards lowering the asset specificity: as already elaborated, offering services at diverse locations, and if feasible, ubiquitously; and/or re-engineering of the transaction itself, so that specific assets are no longer required for performing that transaction. Here, perhaps an example would be more illuminative. In many countries, town authorities' inspectors extract bribes from the citizen-applicants seeking approval to their drawings/sketches for a proposed new house building. Generally, these inspectors are few in number, and they might have distinct territorial jurisdictions in the town. Now if the building plan application were submitted by a professional architect, duly answering all the regulatory questions, the same could be put through automated computer screening/processing at the municipal authority's office, on any of the multiple e-government service delivery counters manned by clerks, and the permit issued. This would be an instance of reduced asset specificity.

The other important issue here is uncertainty. By publishing the rules, guidelines, forms, etc online, e-government helps to clarify to a citizen, her specific rights, responsibilities, and liabilities. This is expected to result in reduced uncertainty in transactions with the government, whether online or offline. Reduced uncertainty would ceteris paribus result in low opportunism and hence lower transaction costs (bribes). Thus, reduction in uncertainty is another mechanism by which e-government fights corruption. To take this further, government agencies can consider the following steps: ensure that information posted on the e-government site is comprehensive and current; provide efficient search engines; and ensure prompt e-mail response to queries submitted by citizens. An efficiently functioning (365 days 24x7) e-government infrastructure, with pre-announced outages (if any), would also help to lower the uncertainty.

4. E-government Anti-corruption Impact: A Conceptual Model

Based on extensive literature survey, our experience, and the preceding discussion on anti-corruption mechanisms of e-Government, we find that there are three facets to a potential conceptual model of e-government anti-corruption impact:

- *Typology of E-government services*
  E-Government can be broadly classified as G2C and C2G (Government to Citizens and vice versa), G2B and B2G (Government to Business and vice versa), and G2G (Once government agency to another) (Seifert, 2003).
- *Characteristics of E-government services*
  The characteristics of e-Government that make it stand out in comparison to traditional government, are: low asset specificity, low uncertainty (online availability of information, service 365 days, 24x7), disintermediation, automated processing, low information asymmetry, lower monitoring costs, and audit trail of interactions and transactions between a government and citizens/businesses. A few of these have been highlighted in Bhatnagar (2004, p. 37-38), and Silcock (2001).

- *Likely Benefits of E-government*
  What are the benefits of e-Government? We summarize them as: government efficiency; user satisfaction; better surveillance; early warning on frauds; extensive audits; and reduced corruption. E-Government has a role to play in each of the three phases (Bhatnagar, 2004, p. 37-38). All these factors are intimately linked to corruption or the absence of it. There are inter-relationships amongst these factors, but those have not been explicitly marked on the model, the aim being to keep it more readable and easy to understand.

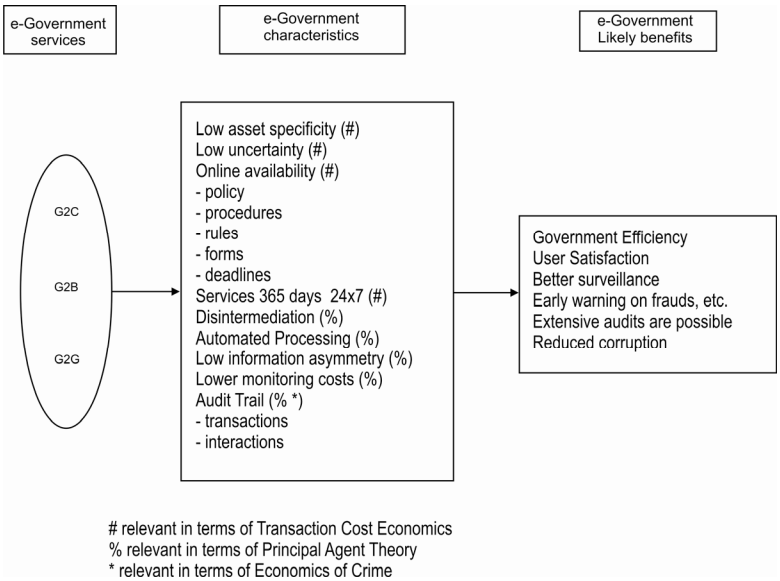

Figure 1: A conceptual model of E-Government anti-corruption impact

Figure 1 depicts our proposed conceptual model of e-government anti-corruption impact, which is founded on the three facets of e-government, and the theoretical foundations of e-government → anti-corruption link, as aforesaid. It is expected that the model help illuminate and advance the present understanding of e-government's anti-corruption impacts, and would stimulate research on anti-corruption effect of e-government.

5. Constraints in Combating Corruption through E-government

5.1 Government services and their fit with the on-line channel

It may appear paradoxical that traditional store formats continue to flourish, despite the emergence of on-line channels. This is due to the fact, that on-line channels are suited to certain types of products/services. As in the case of the market, we classify government products and services into search and experience goods. In case of search goods, access to externally provided information or description about the good is adequate. But experience goods require personal inspection. On-line channel is particularly suited to search goods (but not to experience goods), and more specifically, intangible or service related goods (Peterson, Balasubramanian, & Bronnenberg, 1997). Even in presence of a G2C online service, citizens may still prefer to use a traditional channel for either information search, or the final transaction, also referred to as the 'research-shopper' phenomenon (Verhoef, Neslin, & Vroomen, 2007). This tendency to use different channels in course of a purchase process (pre-purchase, purchase, and post-purchase phases) is more pronounced in case of complex products and services (Frambach, Roest, & Krishnan, 2007). Not all transactions with the government would fit into the following descriptions, which are well suited to on-line deliv-

ery: search goods, simple transactions, or intangible or service related goods. Therefore, say if a government department, responsible for distributing industrial plots to citizen-entrepreneurs, offers its services additionally in G2B online mode, entrepreneurs who would conclude such a deal entirely through the online channel, would be very few. Reason is that the citizen-entrepreneur may want to visit the physical site, accompanied by the government inspector or clerk, and make sure that the particular industrial plot would best serve her needs. And thereafter, she could choose to pay for that plot online, or possibly offline. The foregoing theoretical explanation suggests that opportunity for civil servants to interact with and extract bribes from citizens and businesses will continue to exist.

5.2 Legal and administrative hurdles in disintermediation and offering services on-line

Governments in many countries have not reviewed their laws, administrative manuals, and codes with a view to making them amenable to e-government. As a result, a number of government processes can't be moved to e-government channels. In cases where the e-government service has been offered alongside antiquated laws and procedures, its utility to the citizen or business could be marginal. There are instances wherein a citizen or a business can file his/its application online, but the official process may still require the visit of a government inspector, whose style of operation may have undergone little reform. To illuminate this point, we reiterate the case of India's passport services computerization project wherein both offline and online passport applicants, have to pay bribes to the police inspector, to get past the police verification stage (NeGP Report, 2007). Offering a G2B or G2C service wherein rent-seeking government inspectors continue to have a central role, may confer some efficiency benefits on a government agency, but almost no relief to a citizen or a business.

5.3 The continuing role of intermediaries in service delivery

In traditional settings, dealings between the government and a citizen are mediated by a front-desk civil servant, who is in a position to provide advice or tips that the citizen may require. If a citizen values such a service, he may prefer to get served at the government office, even if it entails payment of a petty amount as bribe to the dealing civil servant. In fact in market settings, manufacturers contemplating disintermediation by way of direct on-line selling, find that an efficient substitute for the useful customer services rendered by the intermediary i.e the retailer, may not exist (Alba et al., 1997). On the other hand, citizens who lack requisite skills and resources to use the self-use e-government services, have no option but to seek service in person, from (corrupt) civil servants.

5.4 Poorly functioning e-government infrastructure

Poorly managed and failure prone e-government services can help corruption by bringing back to life an environment of uncertainty, which provides incentives to the civil servant to act opportunistically and extract bribes, even while serving the citizen from the computerized facility. Also, failure of e-government services may necessitate periodical resort to manual working, and a return to the old ways.

6. Concluding Remarks

Corruption in many ways resembles viruses, whose survival mechanisms are so robust that containing or eliminating them proves an extra-ordinarily challenging task. E-government has shown promise this regard, and in many instances it has delivered by eliminating or at least reducing corruption in public services delivery. This essay represents a first attempt to view the anti-corruption effect of e-government from a theoretical perspective. The insights arising from this theoretical treatment, points at possibilities for using e-government to fight corruption more effectively. While there are certain limitations currently in combating corruption through e-government, our systematic identification and theoretical discussion of those limitations offers some prospect of overcoming them in the future. Finally, if this essay succeeds in stimulating more research on the anti-corruption impact of e-government, it will have largely achieved its intended purpose.

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