E-Government in Social and Economic Development:
The Asymmetric Roles of Information, Institutionalization and Diffusion

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Abstract: There are documented differences between the success and failure factors in the developed and developing countries with regard to the adoption and embracement of Openness in e-Government practice models. This paper posits that e-Government constitutes a critical context for social and economic development in both developed and developing countries. The paper also suggests that e-Government encompasses more than just technology, that is, attempts to highlight the social and economic implications of changes that have occurred in recent years as a result of the transparency and accountability of government and how software usage can influence digital inclusion, trust and privacy and possible strategies to eliminate the digital divide by encouraging greater public and commercial use and re-use of government information through putting government data on the Web. In addition to leveraging economic development, e-Government also helps to streamline government services to more social based values of inclusion and citizens’ participation, accessibility and power relationship ratios. Although e-Government is not a new phenomenon in most developed countries such as the US, UK, Japan, most of the European countries and some developing countries in Asia and Africa which have already announced their Open Government Initiatives and data portals it also leads to greater information asymmetry among citizens and government and also, institutionalization and diffusion asymmetry of the practice of the current Openness in e-Government models within developed and developing countries. Drawing on organizational decision-making research and following the explorative and grounded based research approach the findings of this research are that the information asymmetry between citizens and government and asymmetry in institutionalization and diffusion within developed and developing countries are widely attributed to socio-economic and political variations in developed and developing countries. Unless these differences are skillfully identified and accommodated as such into the development and use models, Openness in e-Government efforts would not help achieve the social and economic development goals by both developed and developing countries.

Key words: E-Government, institutionalization, diffusion, asymmetric roles, social and economic development.

1. Introduction

E-Government is about using the tools and systems made possible by Information and Communication Technology (ICTs) to provide better public services to citizens and business. ICTs are already widely used by government bodies, just as in enterprises, but e-Government involves much more than just the tools [1]. Effective e-Government involves rethinking organizations and processes, and changing behavior so that public services are delivered more efficiently to the people who need to use them. Implemented well, e-Government enables all citizens, enterprises and organizations to carry out their business with government more easily, more quickly and at lower cost [2]. Differing characteristics of local environments, both infrastructural and socio-economic, have created a significant level of variation in the acceptance and growth of e-Government in different regions of the world [3]. This paper posits that e-Government constitutes a critical context for social and economic development in both developed and
E-Government in Social and Economic Development: The Asymmetric Roles of Information, Institutionalization and Diffusion

658

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Although e-Government is not a new phenomenon in most developed countries such as the US, UK, Japan, most of the European countries and some developing countries in Asia and Africa which have already announced their Open Government Initiatives and data portals it also leads to greater information asymmetry among citizens and government and also, institutionalization and diffusion asymmetry of the practice of the current openness in e-Government models within developed and developing countries [4]. Drawing on organizational decision-making research and following the explorative and grounded based research approach, the findings of this research are that the information asymmetry between citizens and government and asymmetry in institutionalization and diffusion within developed and developing countries are widely attributed to socio-economic and political variations in developed and developing countries. Unless these differences are skillfully identified and accommodated as such into the development and use models, Openness in e-Government efforts would not help achieve the social and economic development goals by both developed and developing countries [5].

The author is proceeding in the following order of consideration: The author first examines some insights from the literature and conceptual framework; following the discussion of the conceptual framework, a discussion of this explorative and grounded based research approach into information asymmetry between citizens and government and asymmetry in institutionalization and diffusion within developed and developing countries is done, based on comprehensive literature review and the interpretive research conventions used in this study; the research methodology is outlined, followed by the analysis of the data, and discussion; finally, the conclusions are drawn and suggestions for further future studies are made.

2. Insights from the Literature and Conceptual Framework

2.1 The Concept of E-Government

E-Government involves the use of online information technologies by government agencies to provide services. E-Government services are essentially concerned with the delivery of public services to citizens, employees, businesses and government organizations through the use of Information Communication Technology (ICT). Suggested are three aspects of e-Government, that is, Government to Individuals (G2Is) or Government to Consumer (G2C) [6]. On the other hand, suggestions are made for Government to Business as a Citizen (G2BC) and Government to Business in the Marketplace (G2BMKT) [7]. Government to Individuals (G2Is) or Government to Consumer (G2C) takes public agencies to provide services to citizens such as issuance of national identity documents, drivers’ licenses, tax return applications, or obtaining passport via online, etc. Similarly, G2BC is involved with commercial transactions, such as institutional payment of taxes or fines by the commercial
enterprises to public agencies. G2BMKT is concerned with the business transactions between government and businesses such as e-procurement, government hiring of contractors, and government acquisition of goods or services. The term “e-Government” is a comprehensive term that is sometimes referred to as “on-line government” or “Internet-based government.” Given to us is a sense of the multidimensionality of the term and it is stated that it is “…the use of Internet technology to support government operations, engage citizens, and provide government services” [8]. The first of these, government operations, primarily involves management practices that, although critical, are largely invisible to the public.

Implementation of Internet technology in American state governments for example is taking place at a brisk pace [9]. In this annual review of features available online in American federal and state websites, there are several documents changes that have occurred since the review began in 2000 [10]. In 2000, only two percent of government sites offered three or more services online; in 2007, that figure was 58 percent. He notes that almost all sites now provide publications and databases (98 and 84 percent respectively). Almost half the sites (46 percent in 2007) now comply with the World Wide Web Consortium (W3C) standards for disability access. This is a phenomenal social development. The most common services offered by the states include business registration, professional licensing, driver license and license plate renewal, filing and paying taxes, locating information on sex offenders and missing persons. This reflects considerable effort towards achieving socio-economic development. Many state legislatures offer bill and legislation search and live broadcasts of legislative sessions. In addition, many states offer unique services. For example, in New York and New Jersey, using Privacy Policy links, citizens may request any site information that is public record. Georgia citizens may search for the lowest gas prices in the state, and South Carolina legislators provide legislative broadcasts with closed captioning [11]. From 2007, for example, 89 percent of government sites allowed the public to e-mail public officials directly rather than simply e-mailing the webmaster [11]. While state implementation of digital services and outreach is changing quickly, there is considerable progress to be made. Most sites exceed the reading level of the average citizen. Many are poorly organized; portal pages make it difficult to navigate through the sites. Some sites have limited accessibility, while others have no apparent privacy provisions, leading to more challenges of digital divide.

2.2 E-Government and the Digital Divide

Just because technology is available does not mean it is accessible to all. The term digital divide has been used since the 1990s to describe patterns of unequal access to ICTs—primarily computers and the Internet—based on income, ethnicity, geography, age and other factors, such as lack of skills [12]. The realization of these goals requires that the digital divide be addressed [13]. Indeed, in a study of e-Government use by citizens, the digital divide was found to be more pronounced among government web site visitors than among Internet users in general [14]. A lack of access to the Internet is a major element of the digital divide. Research consistently identifies ethnicity, income, age and education as significant predictors of access to technology. Sixty percent of white households had Internet access, while only 34 percent of African American and 38 percent of Latino households did [14]. Also, roughly 78 percent of households with income between $50,000 and $75,000 by then had Internet access, while only 40 percent of those with household incomes between $20,000 and $25,000 had Web access. The research, found that ethnicity, education, income, and age discriminate Internet users from non-users [15]. The research concluded that among Internet users, ethnicity and education are important predictors of
which Internet users will also utilize government Web sites, with those users more likely to be white and better educated. The perpetuation of digital exclusion in Zimbabwe and other developing countries for example is contradictory to citizens’ constitutional right to the access of information as enshrined in their constitutions, notwithstanding the negative impact of information asymmetry, another critical challenge to e-Government in social and economic development. In Zimbabwe, there is Access to Information and Protection of Privacy Act (AIPPA). The Act enshrines the citizens’ rights to access to information, at the same time gives the government agents’ authority to pry on individual citizens’ use and dissemination of information. The whole thing is politically motivated and used to curtail opposition to the ruling party. There is a clear contradiction here.

2.3 Information Asymmetry and Its Problems

The theory of asymmetric information has been lively developed in the field of economic research for the last two decades. The prominent foundations for this theory were established in the following research [16-18]. Information asymmetry occurs when one party has more or better information than the other party; it assumes that at least one party to a transaction has better relevant information whereas the other(s) do not. This is typically with governments. Naturally government would have more or better information about itself than its citizens. Information asymmetry has mass effect on the business networks, for example, supply chains. Information asymmetry is a key source of supply chain inefficiency and strategic partnerships and information sharing can help to cope with the “bullwhip effect”, caused by the information asymmetry in supply chains [19]. Pointed out is that information distortion may reduce the benefit levels or even stop information sharing in supply chains [20]. There are two typical problems asymmetric information may trigger, namely, moral hazard and adverse selection. Moral hazard refers to “situations where one side of the market cannot observe the actions of the other. For this reason, it is sometimes called a “hidden action problem” [20]. In addition, it means the chance, or hazard, that a party in a transaction with more information about its intentions or actions behaves in a way that a party with less information would consider inappropriate, or in the extreme “immoral”. An example of moral hazard is when people are more likely to behave recklessly if insured, either because the insurer cannot observe this behavior or cannot effectively retaliate against it, for example by failing to renew the insurance.

On the other hand adverse selection generally refers to a market process in which bad results occur due to information asymmetries between buyers and sellers, where the “bad” products or customers are more likely to be selected and the “good” ones are driven out of the market [21]. It has been discussed extensively in the fields of economics, insurance, and risk theory. An example of adverse selection in the insurance market is when people who are of high risk are more likely to buy insurance, because the insurance company cannot effectively discriminate against them. In some countries, for example, people living with Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS). The same premiums are set by the insurer for both groups with high risk and low risk. The insurance company anticipates or learns that the cost of the combined policy holders exceeds that of the general population and sets the higher premiums accordingly. The result is that people with lower risks tend to go uninsured.

Another famous example illustrated is that for the second hand car market, which is referred to as the “lemon” market—people buying used cars do not know whether they are “lemons” (bad cars) or “cherries” (good ones), so they are willing to pay an average price that lies in between the lemons and cherries [22]. As a result, the same situation as in the insurance market happens here, the “cherries” will be driven out and “lemons” will dominate the market. The similar
findings are also supported by the recent e-commerce research which concluded that, “poor vendor quality, especially as regards “lemons”, is identified as a significant disincentive to virtual retailing over the Internet” [23]. Two terms are equated here, that is, moral hazard and adverse selection with hidden action and hidden information, respectively. Moral hazard arises when the action undertaken by the agent is unobservable and has a differential value to the agent as compared to the principal [23]. With the fast development of Information Technology (IT), more recently, the theory of asymmetric information has been expanded in the field of economics of information technology and discussed by various researches, such as Refs. [21, 24-28]. In addition to “moral hazard” and “adverse selection” information asymmetry would also increase costs of acquiring information, such as transaction costs (which raise more in opaque situations). These could be: search costs, information costs, decision costs, policing costs and enforcement costs.

2.4 Information Asymmetry Problems between Business and Government

Very little attention has been paid to the asymmetric information issues between profit driven businesses and public good oriented government. However, the recent movement of the public sector transformation of forming the so called Public-Private Partnerships (PPP) by many countries in this world, where a government and a private entity collaboratively undertake traditionally public activity, has made the boundary between the government and private business become less and less obvious [29]. In this section the researcher puts his focal point on this transforming regime and discusses whether asymmetric information problems of moral hazard and adverse selection can also be triggered during the business and government interaction. One of the most important roles for government in the G2B relationship is the government control role.

A good example of such control is in Tax and Customs Administration, as it is directly related with the collection of government revenues. European Union (EU) governments for example have been experiencing severe losses from various tax frauds. According to EU Commission [30], estimates of tax fraud of 2 to 2.5% of Gross Domestic Product (GDP) are mentioned, which is about 200 to 250 billion Euro per year at EU level and at unprecedented levels in developing countries, especially in Africa. Such tax fraud is a fitting example and can be interpreted as the moral hazard problem caused by the asymmetric information. An illustrative example is the Value Added Tax (VAT) collection. Simply two parties are involved here: a private company who is obliged to declare VAT and pay the tax and a Tax office as a government agency who audits the tax report and control the VAT collection. However in the real world, especially in developing countries, the private company always knows better about its own operating details and the real value of transactions, whereas the Tax Office does not. Private company has better information than the Tax Office and thus has motivation to hide and even falsify certain information from Tax office to get tax advantages. If such motivation is obvious and easy to achieve without the Tax Office knowing, or the penalty of defaulting is not severer enough, the private company will choose to cheat—a moral hazard problem is caused that the Tax Office receives less VAT than it should have. The researcher posits that the problem of asymmetry does not only lie with information, in this case, pertaining to e-Government but also with institutionalization and diffusion of organisational practices, such as e-Government.

2.5 Asymmetry in Institutionalization and Diffusion

In accordance with the existing literature, diffusion is defined as a process by which policy innovations are communicated in the international system and adopted voluntarily by an increasing number of
countries over time [31-33]. Diffusion refers to an international spread of policy innovations driven by information flows rather than by hierarchical or collective decision-making within international institutions. At the micro-level it is triggered by mechanisms of social learning, copying or mimetic emulation [34]. The essential feature of policy diffusion is that it occurs in the absence of formal or contractual obligation. Moreover, diffusion is basically a horizontal process whereby individually adopted policies and programmes add up to a decentralized regulatory structure [35]. Unlike in the case of multilateral legal treaties, which are negotiated centrally between states and subsequently implemented top-down, with diffusion, decision-making procedures are decentralized and remain at the national level, at its own pace and ability to implement. In the absence of a centralized regulatory regime with highly visible and explicitly stated aims, international policy diffusion may thus result in a “regulatory revolution by stealth” [35]. While our understanding of diffusion follows the predominant use of this concept in the recent literature such as Refs. [28-29, 32, 34, 36], it contradicts those approaches that view diffusion as an outcome rather than a process. A prominent example for this body of literature is the understanding of diffusion as “any pattern of successive adoption of a policy innovation” [30]. This understanding of diffusion as the sum of all domestic adoptions of a policy innovation, regardless of the particular causal mechanisms through which these adoptions were brought about, certainly is legitimate.

3. Research Methodology Employed in This Study

At an early stage of investigation, the research was exploratory, for which a single country case study was appropriate [37-38]. The selections of Zimbabwe’s government departments, that is, Department of Information, Department of Local Government, Department of Registry and Zimbabwe Revenue Authority (ZIMRA) constituted this case study in a developing country, while literature review sufficed to appreciate the same developments in the developed countries, that is, US and EU. The researcher conducted a purposeful sampling technique, which provided a total of 168 households, based on the community members surrounding these government departments and as representative of the technologically disadvantaged. These represented the intended beneficiaries of e-Government services in Zimbabwe. Very few possessed skills or training in computer technology or had any knowledge and information about on-line government services and some communities had virtually no access to computer technology. The author served as volunteer within the community, which cultivated familiarity and trust necessary to collect data [31]. Any unintended influence of the author was minimized as the author was a volunteer among several other volunteers who were not even aware of the research objectives. In addition to 168 households, the author interviewed 8 heads of these selected government departments, 17 members of parliament of Zimbabwe, 7 permanent secretaries and 11 principal directors of some key ministries in the Zimbabwean government as well in this explorative and interpretive research. The semi-structured interviews lasted between 30 minutes and 1.5 hours and all of them were recorded. The interviews were transcribed and their contents were analysed. The processing and analyses of the information had the following stages:

- Creation of a content analysis matrix segment;
- Detailing the data collection and analysis procedures;
- Discussion and summary of research findings;
- Conclusion and suggestions for future studies

**Interview script**

The script for the interview had some of the following “grand tour” questions:

Do you have any knowledge and information about
e-Government practices in Zimbabwe?
What is your opinion and understanding of e-Government practice?
What is the government doing about information asymmetry within its departments?
In your opinion how far is Zimbabwe in terms of Open Government Initiatives and data portals?
What challenges is Zimbabwe facing with regard to adopting and implementing Openness in e-Government practices?
What is your assessment of the digital divide levels in Zimbabwe?
What is your assessment of the digital inclusion levels in Zimbabwe?
Are there any plans to expand technology accessibility to rural areas as well?
Do the promoters of technology usage participate readily? Where is there most resistance?
What is your role in the implementation of e-Government practice?
With increases in Internet usage, is there improvement in terms of government service delivery?
With increases in open government data portals and Internet usage, is there changes in social development of communities in the country?
With increases in open government portals and Internet usage, is there changes in economic development within the country?
What are the areas in which the department has most difficulty in implementing the usage of technology?
In terms of e-Government practices, can one say that there is a set of best practices which are transmitted by people?
With e-Government data portals usage, have there been changes in the sharing and distribution of information within the stakeholders in the country?
Is there an Intranet where the processes are managed within the departments?
What kind of innovations have emerged with e-Government practices?
Does the entire department staff have training?

How is the know-how of employees transmitted? Orally? Written? Have there been changes with information technology usage?
Is the government department well aware of its clients? How evident is it? How does the department try to meet the needs of its customers or clients?
Are there partnerships with various organizations? Are they the same as those that existed before e-Government practices or improvements were made? What kind of partnerships are these?
Does the department share knowledge and information in the network of openness in e-Government organizations? What are the advantages?
Do you consider that e-Government practice has made processes simpler or more bureaucratic?

4. Detailing the Data Collection and Analysis Procedures

The analysis was undertaken in a systematic format that is similar to previous interpretive research [38]. An extensive systematic and interpretive analysis employing categorization, abstraction, comparison, dimensionalization, integration, iteration and refutation, was conducted [32]. As interviews were conducted and transcribed notations were made regarding respondents’ opinions and perceptions of the effectiveness of e-Government as leverage for social and economic development. This paper posits that e-Government constitutes a critical context for social and economic development in both developed and developing countries. However the findings of this study are that e-Government also leads to information asymmetry among citizens and government and also, institutionalization and diffusion asymmetry of the practice of the current Openness in e-Government models within developed and developing countries. An interpretive analysis was developed, refined and reviewed by the researcher. Firstly, an individual or ideographic understanding of each interview was sought. Secondly, separate interviews were related to
each other as the researcher attempted to grasp, rather than impose meanings that emerged from the dialogue. In this way, the interpretations sought do describe common patterns of experience [33]. Still further, the researcher formulated a classification analysis of the data to identify concepts, guided by the literature in what is prevailing in the developed countries. Next, the researcher elaborated on this analysis by integrating concepts and bringing into the picture a process analysis that the perceptions of Openness in e-Government institutionalization and diffusion asymmetry are subject to change over time. Upon closer inspection of the e-Government, digital divide, information asymmetry and institutionalization and diffusion asymmetry literature and the transcriptions of the 211 interviews, this interpretive research analysis revealed two underlying attributes to this “asymmetry challenge” in e-Government: (1) Socio-Economic Variation and (2) Political Variation in developed and developing countries. Unless these differences are skillfully identified and accommodated as such into the development and use models, Openness in e-Government efforts would not help achieve the social and economic development goals by both developed and developing countries.

Fig. 1 combines these elements to present potential adoption motivations in a simple matrix diagram. Developing countries’ motivations appear in the left and upper segment; this segment is characterized by high socio-economic and political variation, and high information, institutionalization and diffusion asymmetry and hence, high digital divide intensity. Developed countries’ motivations appear in the right segment; this segment is characterized by low socio-economic and political variation, and low information, institutionalization and diffusion asymmetry and hence, high digital inclusion intensity.

However, connecting this part of the conventional diffusion model with theories of issue interpretation requires suggested hypotheses, which is not the focus of this paper at this stage. The researcher suggests future non interpretive research to consider sighting hypotheses and testing them.

5. Discussion and Summary of Research Findings

This article offers a look at combining rational and social accounts of e-Government practice institutionalization and diffusion by asking whether a concern with “asymmetry problems” discussed before are necessarily influenced by the level of a country’s development. The researcher’s argument is that the higher the socio-economic and political variation in a country the greater the challenge and problem of asymmetric information and asymmetry in diffusion of innovation like e-Government models. This study’s findings thus suggest that both developed countries based on previous studies and developing countries based on the results of this interpretive study are challenged by information asymmetry problems, digital divide and asymmetry in diffusion. As a result, concerns with social and economic development gains driven by e-Government practice models are not as period-dependent as has been argued; rather, they may be more universally shared. On the basis of this study, the researcher can only suggest as to why this is the case, but it appears possible that aspirations to achieve social and economic gains may be, to some extent, independent of the diffusion process. For instance, if the
E-Government in Social and Economic Development: The Asymmetric Roles of Information, Institutionalization and Diffusion

theorization of e-Government as offering performance benefits of greater social and economic gain appears compelling to adopting organizations throughout a diffusion process, one would not expect to see differences between developed and developing countries in terms of social and economic gains as a motive for adoption. The findings of this interpretive research are that the information asymmetry between citizens and government and asymmetry in institutionalization and diffusion within developed and developing countries are widely attributed to socio-economic and political variations in developed and developing countries. These findings prompt rethinking of the classic institutional and diffusion theory, to suggest e-Government models that will suit the socio-economic and political context of developing countries in particular. Specifically, this study has shown that both developed and developing countries report having both social and economic motivations for adopting openness in e-Government, albeit for pursuing social gains and economic gains. Overall, the findings support rethinking the institutional diffusion theory’s dichotomization of social and technical motivations for adopting innovations.

Finally, this study deepens understanding of why the implementation of new practices is frequently shallow or even nonexistent—an area that has drawn increasing research attention [34-35]. Developing countries, in this instance, are equally motivated by both social and economic gains for adopting innovation. However from the information gathered from the interviews conducted in this study, it became clear that developing countries have concerned about their social, economic and political contexts and they may not be ready to adopt the current e-Government models that are adopted by the rest of the world.

6. Conclusions and Suggestions for Future Studies

In this study, the researcher posits that e-Government constitutes a critical context for social and economic development in both developed and developing countries. The study also suggests rethinking of the role of motivations in the diffusion of practices among organization by extending the diffusion of practices and innovation to e-Government model. Specifically, this study has shown that both developed and developing countries report having both social and economic motivations for adopting e-Government models or practices, albeit for pursuing social gains and economic gains. Although organizations and managers or leaders are frequently subject to constraints that limit their ability to be mindful of practices or habits of thinking that are taken for granted in their institutional environments, the researcher believes that the extent of mindless imitation has been overstated. This study has taken considerable steps toward recognizing greater managerial or leadership rationality and agency [35]. For instance in this research, the findings are that the information asymmetry between citizens and government and asymmetry in institutionalization and diffusion within developed and developing countries are widely attributed to socio-economic and political variations in developed and developing countries. Unless these differences are skill fully identified and accommodated as such into the development and use models, e-Government practice efforts would not help achieve the social and economic development goals by both developed and developing countries. These findings prompt rethinking of the classic institutional, framing and diffusion model, to suggest full grounded theory research in future, that would develop e-Government models that suit the social, economic and political context of developing countries in particular. The findings and conclusions of this interpretive study could be strengthened by hypothesizing and testing the assertions on “asymmetry challenges” in the future.

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