

2010

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Recommended Citation

Li, Manning and Gregor, Shirley, "IT Empowerment or Exclusion? The Dilemma of Online Government Advisory Services" (2010).
ACIS 2010 Proceedings. 90.

<http://aisel.aisnet.org/acis2010/90>

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IT Empowerment or Exclusion? The Dilemma of Online Government Advisory Services

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Abstract

Currently there are two prevailing strands of thought related to government online advisory services. One school considers the empowerment effect of online advisory systems on citizens and claims that such systems, when appropriately designed, can lead to empowerment outcomes including a better sense of control and better perceived power relative to government officials. On the other hand, the phenomena of the digital divide or digital exclusion is discerned - where there are excluded and disadvantaged groups because of the shifting focus of government services towards online delivery. Faced with this dilemma, we aim at understanding the seemingly contradictory implications of the provision of online advisory services for public use by government agencies. We conducted a literature review of online government advisory services, e-government and empowerment, in order to form a consolidated view theory-wise and to explore a sound explanation of this dilemma. This study represents the first stage of an ongoing research project. The expected outcome of the research project is a comprehensive framework for online government advisory service delivery and design strategies for advisory systems that truly empower the general public. The project is expected to benefit both the public and government agencies who wish to enhance their advisory services.

Keywords

IT Empowerment, Digital Exclusion, Online Government Advisory Services, Theoretical Framework, Literature Review

INTRODUCTION

You can empower all of the people some of the time and some of the people all of the time, but you can't empower all of the people all of the time. In the last analysis, nobody should expect more than that.
- (Argyris 1998) paraphrase Abraham Lincoln

Two decades ago, the term “empowerment” emerged as an identifiable concept in the social science literature (Mullender et al. 1991). The concept has since been defined and systematically studied in various fields including management, psychology, business and medical science; although rarely in the Information Systems discipline in connection with advisory services. Recently, we have noticed the increasing importance that government agencies place on the idea of “IT empowerment” of citizens through online government advisory services (OGAS), such as online systems provided to assist the public to self-assess pension or healthcare benefits eligibility. Typical targeted empowerment groups include the minority, the poor and women (Harris et al. 2006; Subuddhi 2009). The term has also become a buzz word in many government agency reports and academic papers. Despite the high frequency of use of “IT empowerment”, many questions still remain unclear. For example, what does “IT empowerment” really mean? What is the role of IS in empowerment? What exactly empowers, whereas what does not? What are the outcomes of IT empowerment? Existing endeavours surrounding the “IT empowerment” theme in practitioner reports and academic research papers are mostly vague, casual or simplistic in addressing the above questions. In contrast, there is another strand of thought related to OGAS. Some people claim that the availability of OGAS only serves elite groups and enlarges the digital gap, while further excluding the disadvantaged or weak-end power groups in society (Hall et al. 2003). Consequently, these two contradictory views motivated us to seek a well-rounded understanding of the IT empowerment phenomena in the extant literature and practitioner reports.

Despite its importance and wide use as discussed above, the concept of empowerment has not been thoroughly studied in the information systems literature (Psoinos et al. 2000). Given the seemingly intuitive link between

information and empowerment, we believe the topic of IT empowerment deserves more research from an IS perspective. Further, the few existing studies related to IT empowerment mostly focuses on the empowerment of employees through IT in an organizational context. The issue of how IT empowers the general public in the e-government context has not been systematically studied or clearly understood despite the frequent and uncritical use of the term “IT empowerment”. Our study aims at addressing this gap in the IS literature.

Consequently, we seek to explore:

- 1) What is the nature of IT empowerment, more specifically:
 - a. *What are the key dimensions of IT empowerment in the e-government context?*
 - b. *What are the antecedents of IT empowerment in the e-government context?*
 - c. *What are the consequences of IT empowerment in the e-government context?*

Based on this understanding, we further discuss:

- 2) Do OGAS empower the public or create further digital exclusion?
- 3) If IT empowers, what features of the OGAS make them potentially empowering for citizens? If not, why not?

In the following sections, we first look at the theory of empowerment elaborated in several disciplines, which is enlightening given the scarce attention to empowerment theory from the IS perspective. In doing so, we aim to conceptualize empowerment and explore its key dimensions, antecedents and consequences, which are deemed important and applicable for the OGAS context. Next, we look for traces of IT empowerment in published IS research and summarize the existing ideas. We then propose a model of IT empowerment in the context of OGAS and highlight its key dimensions, antecedents and consequences. Finally, we discuss the phenomena of IT empowerment, based on which we elicit answers to the research questions of interest, and provide suggestions for future research.

EMPOWERMENT THEORY REVISITED

Empowerment as an identifiable concept has received considerable attention in the areas of business and management (Argyris 1998; Smith 1996; Thomas et al. 1990), psychology (Perkins et al. 1995; Zimmerman 1995) and medical science and nursing (Gibson 1991; Laschinger et al. 2005; Rodwell 1996). This multifaceted term has been conceptualized in different ways. To name a few notable examples in literature, “to give power to” (Thomas et al. 1990) p.666; “to enable people to do things that they would otherwise be unable to do” (Jenkins 1996) p.37; “encourage them to be more involved in decisions and activities”(Smith 1996) p. 9; and “a process by which people, organizations, and communities gain mastery over issues of concern to them” (Zimmerman 1995) p.581. From these definitions, we note some interesting and diverse angles that different researchers perceive in the concept and the phenomena. For instance, Zimmerman conceptualizes empowerment from the *empoweree*'s perspective, whereas the other example definitions scrutinize this concept from the *empowerer*'s perspective. Besides, some definitions indicate an active role that empowerees play in the empowering process (Zimmerman 1995), while others seems to indicate that the empowerees are passive recipients of the empowerment initiative from the empowerers (Jenkins 1996; Smith 1996; Thomas et al. 1990). Further, many scholars consider empowerment as a relational or power sharing process (Rodwell 1996; Spreitzer 1995; Thomas et al. 1990). Yet several others claim that the motivational aspects (for example, the intrinsic task motivation¹) should also be incorporated into the concept (Conger et al. 1988; Spreitzer 1995; Srivastava et al. 2006).

Correspondingly, in the online government advisory context, our study focuses more on the active role that the empoweree should take in the empowerment process. This is because the provision of OGAS by government agencies will not empower unless people take the *initiative*. As demonstrated in a case study in Hall (2005), although the local agencies try to push for ICT services to empower the citizens through various programmes, the outcome is far from satisfactory. For example, around one month after giving a computer to a family and providing the members with basic training, the recipient family replied that they had not set it up, because they had no suitable table to put it on and no other resources to get it connected to Internet. Besides poverty being one important reason, another factor is related to people's self-awareness about the need to change their current life status through the use of ICT. In other words, the empowerees have not realized the importance of ICT in impacting on their life - thus no priority has been given to make the best use of this resource. Just as Labonte (1989) pointed out, it is self-awareness and resources that self-empower, not merely depending on the services provided. Consequently, we take the “empoweree as active actor” view in examining the IT empowerment phenomena.

¹ Intrinsic motivation refers to motivation that is driven by factors internal to an individual such as an interest or enjoyment in the task.

Moreover, we also believe that an “intrinsic motivation” view can complement a “power sharing” view in assisting us to understand IT empowerment. This idea is based on close observation of the key dimensions raised in the empowerment literature (Table 1). “Intrinsic motivation” highlights the impact on empowerees and “power sharing” emphasizes more the delegation of authorities by the empowerer.

Table 1 presents a summary of some well-cited and systematic studies on empowerment in the psychology, management and medical science (nursing) literature, outlining the context, definitions, antecedents, consequences and dimensions accordingly (Table 1). Clearly, there are many constructs identified in common across disciplines; for example, sense of control and power. It is also worth noting that some studies mention sense of control or mastery as empowerment outcomes, whereas several others consider them as key dimensions. We acknowledge it is difficult to reach a consensus on this issue. In this study, we follow Zimmerman’s categorization and consider power and control to be key dimensions of empowerment (Zimmerman 1995; Zimmerman et al. 1992).

Table 1 Empowerment theory, context, definitions, antecedents, consequences and key dimensions

Study	Context	Definition	Antecedents	Consequences/Outcomes	Dimensions
(Rodwell 1996)	Medical Science /Nursing	The process of enabling or imparting power transfer from one individual or group to another.	<ul style="list-style-type: none"> • Respect for an individual's beliefs about his/her destiny, rooted in issues such as locus of control, learned helplessness • Mutual trust • Education as an important vehicle • Emotional support • Participation and Commitment 	<ul style="list-style-type: none"> • Positive self-esteem • Ability to set and reach goals • A sense of control over life and change processes • A sense of hope for the future 	<ul style="list-style-type: none"> • Autonomy • Responsibility • Accountability • Power • Choice • Advocacy • Motivation • Authority • Relinquishment of professional power
(Gibson 1991)	Medical Science /Nursing	A social process of recognizing, promoting and enhancing people's abilities to meet their own needs, solve their own problems and mobilize the necessary resources in order to feel in control over the factors which affect their health.	<ul style="list-style-type: none"> • Requires a radical paradigm shift • Trust • Mutual respect • Participation • Interactions are mutual beneficial • Powerful party willing to give up power • Commitment to serve • Understanding • knowledge 	<ul style="list-style-type: none"> • Positive self-concept • Personal satisfaction • Self-efficacy • A sense of mastery • A sense of control • A sense of connectedness • Self-development • A feeling of hope • Social justice • Improved quality of life 	Analysed from three factors: <ul style="list-style-type: none"> • Characteristics of the service provider • Characteristics of the clients • Characteristics common to service provider and clients
(Laschinger et al. 2005)	Medical Science /Nursing	N/A	Various 'power tools' <ul style="list-style-type: none"> • Access to information • Support • Resources • The opportunity to learn and grow • Formal power - e.g. Job visibility/importance/flexibility • Informal power - e.g. Relationships with supervisors and peers 	<ul style="list-style-type: none"> • Feelings of organizational justice • Respect • Trust in management • Job satisfaction • Organizational commitment 	Structural empowerment based on (Kanter 1993)'s organizational empowerment framework.

(Zimmerman 1995; Zimmerman et al. 1992)	Psychology	Empowerment is a process by which people, organizations, and communities gain mastery over issues of concern to them.	<p>Empowering processes</p> <ul style="list-style-type: none"> • Efforts to gain control • Access to resources • A critical understanding of one's socio-political context • Development of group identity; development of an "eco-identity". • Participative ownership process • Skill development • Participation in important organizational tasks 	<p>Empowerment outcomes</p> <ul style="list-style-type: none"> • Being more informed • More skilled • More healthy • More involved in decision-making • May not acquire the actual power and control 	<p>Intrapersonal component:</p> <ul style="list-style-type: none"> • Domain specific perceived control • Domain specific self-efficacy • Motivation control • Perceived competence <p>Interactional component:</p> <ul style="list-style-type: none"> • Critical awareness • Understanding causal agents • Skill transfer across life domains • Resource mobilization <p>Behavioural component</p> <ul style="list-style-type: none"> • Community involvement • Organizational participation • Coping behaviors
(Thomas et al. 1990)	Management Science	To empower means to "give power to"	<p>Environmental variables that shape the task assessments:</p> <ul style="list-style-type: none"> • Leadership • Delegation • Job design • Reward systems 	Motivation in workers	<p>Four dimensions</p> <ul style="list-style-type: none"> • Impact • Competence • Meaningfulness • Choice
(Conger et al. 1988)	Management Science	<p>A relational construct</p> <ul style="list-style-type: none"> • The process through which a leader or manager shares his/her power with subordinates. <p>A motivational construct</p> <ul style="list-style-type: none"> • To enable 	<p>To provide self-efficacy information to subordinates using four sources:</p> <ul style="list-style-type: none"> • Enactive attainment • Vicarious experience • Verbal persuasion • Emotional arousal <p>Remove conditions which leads to a psychological state of powerlessness</p>	Affects both initiation and persistence of subordinates' task behaviour.	One highlighted aspect is self-efficacy
(Spreitzer 1995)	Management Science	Increased intrinsic task motivation manifested in a set of four cognitions reflecting his/her work role. Context-based cognitions shaped by a work environment.	<ul style="list-style-type: none"> • Locus of control • Self-esteem • Access to information • Rewards 	<ul style="list-style-type: none"> • Managerial effectiveness • Innovation 	<ul style="list-style-type: none"> • Meaning – the value of a work goal or purpose, judged in relation to an individual's own ideals or standards. • Competence-self-efficacy • Self-determination – individual's sense of having choice in initiating and regulating actions • Impact – the degree to which an individual can influence outcomes at work.
(Srivastava et al. 2006)	Management Science	In literature, empowerment was conceptualized as an aspect of the relational or power sharing view.	<ul style="list-style-type: none"> • Empowering leadership 	<ul style="list-style-type: none"> • Improved team performance 	<ul style="list-style-type: none"> • Knowledge sharing • Team-efficacy

Enlightened by the conceptualization of the term empowerment by experts in various disciplines, we formed a unified understanding of the empowerment concept in more depth. In the next section we look at some existing studies on IT empowerment in the Information Systems discipline to facilitate the theoretical framework development process. As discussed above, we are aware that there is a dearth of systematic studies on empowerment in the Information Systems literature. Frequently, the term IT empowerment is only used as a vague concept and has been 'mainstreamed' or 'diluted' in a manner that has virtually deviated from its original meaning. For instance, some studies discuss citizen engagement and empowerment together, and use the words interchangeably (Olphert et al. 2007). However, we believe inspecting these existing studies will help us to uncover interesting dimensions specific to the Information System discipline and to build our research pedigree.

VIEWING ONLINE GOVERNMENT ADVISORY SERVICES THROUGH AN IT EMPOWERMENT LENSE

Empowerment theory is context-specific (Zimmerman 1995), therefore we need empowerment theory that is particular tailored for our OGAS context. However the extant IS literature does not have a good coverage of the empowerment theory or concept (several exemplar studies on IT empowerment in the Information Systems field have been reviewed²). Narrowing the scope to government online advisory services identified even fewer studies in this area. In addition, most of these existing studies do not clearly differentiate “participation”, “involvement” and “empowerment” and frequently mix up the antecedents, dimensions and consequences of empowerment (Psoinos et al. 2000). Therefore, where appropriate, we choose from the list of dimensions raised in the Information Systems literature to complement the pool of dimensions identified in Table 1. As a further step, we discussed the candidate dimensions with experts in the field to refine the list. The resultant key dimensions, antecedents and consequences of IT empowerment in the OGAS context are presented in Table 2.

Table 2. Empowerment antecedents, key dimensions and consequences judged as relative to the online government advisory context

Empowerment	Relevant Aspects	Source	* IS design?	Exemplar design feature in the online government advisory service context
Antecedents				
	Mutual respect between the empower and empoweree	(Rodwell 1996) (Gibson 1991)	N/A	N/A
	Mutual trust between the empower and empoweree	(Rodwell 1996) (Gibson 1991)	N/A	N/A
	Mutual commitment to the empowerment initiative	(Rodwell 1996) (Gibson 1991)	N/A	N/A
	Rewards, incentives or motivation	(Gibson 1991; Spreitzer 1995; Thomas et al. 1990)	N/A	N/A
	Vicarious experience	(Conger et al. 1988)	✓	Scenario-based advisory mechanism especially suitable for highly dynamic and complex problems.
	Understanding or transparency	(Gibson 1991; Spreitzer 1995)	✓	The advisory system should be designed to facilitate understanding. The system should allow users with different capacities to process content.
	Knowledge or skill development	(Gibson 1991; Laschinger et al. 2005; Zimmerman 1995; Zimmerman et al. 1992)	N/A	Yes and no. This initial level of skill development to use e-government services needs human intervention to achieve.
	A critical awareness of the social political context	(Zimmerman 1995; Zimmerman et al. 1992)	N/A	N/A
	Self-esteem	(Spreitzer 1995)	N/A	N/A
	Effective access to information and resources	(Laschinger et al. 2005; Rhina 2001; Spreitzer 1995)	✓	Advisory system highly structured based on Toulmin's model (Toulmin 1958);
	Opportunities for participation	(Gibson 1991; Rodwell 1996; Zimmerman 1995; Zimmerman et al. 1992)	N/A	N/A
Personalized services	(IDeA 2008)	✓	Content Relevance, self-referent advisory mechanism	
Key Dimensions	Sense of Control or Choice	(Gibson 1991; Rodwell 1996; Spreitzer 1995; Thomas et al. 1990)		
	Power or Impact	(Gibson 1991; Rodwell 1996; Thomas et al. 1990)		
	Meaningfulness	(Spreitzer 1995; Thomas et al. 1990)		
	Competence	(Spreitzer 1995; Srivastava et al. 2006; Zimmerman 1995; Zimmerman et al. 1992)		
	Domain Specific Self-efficacy	(Conger et al. 1988; Zimmerman 1995; Zimmerman et al. 1992)		
Consequences	Trust to the empowerer	(Laschinger et al. 2005)		
	Commitment to the empowerer	(Laschinger et al. 2005)		
	Personal satisfaction	(Gibson 1991)		

² Due to page limitation, for further detail, please feel free to email the corresponding author.

	Perceived connectedness	(Gibson 1991; Olphert et al. 2007)
	Perceived social justice	(Gibson 1991; IDeA 2008; Subudhi 2009)

*The column uses a tick to indicate antecedents that reflect user experiences directly related to a certain design feature of Information Systems.

Key Dimensions of Empowerment

We identified *sense of control, perceived power, competence, domain-specific self-efficacy and meaningfulness* as relevant to the OGAS context. Among these key dimensions, sense of control, perceived power (impact), domain-specific self-efficacy and meaningfulness are the motivational aspects of empowerment. Competence is the cognitive aspect of empowerment.

Antecedents of Empowerment

The first group of antecedents include *mutual respect* and *trust* between the government and the public using online advisory services, *mutual commitment* to this empowering process and subsequent changes, the motivations or incentives for the users of the system, and *the transparency* of such services (which facilitates knowledge understanding and skill development for the particular areas of concern). These empowering antecedents require mutual effort from both the public and the government agency. Here we highlight the importance of mutual commitment as antecedents of the empowerment process. To commit is to pledge oneself to a certain purpose, that is, how strongly one holds certain belief and faithfully carries it out. Commitment involves generating human energy as well as activating the human mind. There are two types of commitment: external commitment refers to contractual type of compliance, which gives people little control over their destinies; internal commitment happens when people are given more control to shape their life and become intrinsically motivated to pursue a certain goal. Only internal commitment can reinforce empowerment (Argyris 1998). Without internal commitment from the public, the effect of any new empowerment initiative would be seriously compromised. On the other hand, the government agency also needs to faithfully commit to the change process, striving for *true empowerment* rather than lip service. Second, from the public's perspective, the antecedents of empowerment also means having a *critical awareness* of the social political context and the need to change – meaning that they need to have the awareness that the current way (i.e., before the use of OAGS) of approaching government agencies for advice is insufficient, unproductive and potentially putting them in a weak-end power situation compared with the government officers behind the bureaucratic wall. It also means that the empoweree should have basic *self-esteem* - that they will be able to “gain mastery over issues of concern to them” (Zimmerman 1995, p.581) with the assistance of innovative online advisory tools. Third, the government agency's role in making empowerment happen is to ensure that the public have *effective access to information resources*. This can be done through 1) enhancing the advisory service delivery mechanism and 2) improving the actual quality of the information or knowledge being delivered (Tan et al. 2010). The government agency can also try to foster the public's *participation in the decision making process* regarding policy, rules and regulations. For complex and dynamic advisory contexts, the online advisory services should use innovative technologies such as virtual worlds, to create a *vicarious experience* for its users.

In summary, empowering people means more than the government agencies being willing to relinquish their power. It also requires self-initiated awareness and self-esteem from the empoweree. Finally, the mutual effort, relationship dynamics and interactions between both parties are also critical antecedents for successful empowerment. Among the relevant candidate antecedents, we ticked those aspects that can be directly influenced via *design* of the advisory systems (Table 2) and put them in the theoretical framework. This is because the focus of the study is on how effective OGAS design could help in empowering the public. Those aspects that are mainly influenced through human intervention, the availability of information systems or other similar factors are not the focus of the framework.

Consequences of Empowerment

Now we briefly summarize the identified consequences of empowerment, which are considered to be relevant to empowerment through OGAS. These outcomes mainly fall into three groups: 1) trust and commitment; 2) personal satisfaction and 3) perceived connectedness and social justice. Trust and commitment to the government agency are clearly mirroring the constructs identified in the antecedents of empowerment. This is not wrong or contradictory. The empowerment process is an interactive and iterative process for the affective components. There is a virtuous loop related to the process. The more empowered the public, the more likely they are going to appreciate the government agencies providing such services. The more they respect, trust and commit to the government agency, the healthier the government public relationship is going to be. This definitely facilitates further empowerment of the public. Personal satisfaction reflects an individual's feeling of self-worth. It is a subjective self-appraisal by an individual with respect to the attainment of certain goals or needs based on his or

her level of aspiration or expectation. This construct shows the enhanced satisfaction of the person’s self-image as a result of being successfully empowered through IT. Perceived connectedness and social justice depict the relational impact among community members once being empowered. Perceived connectedness refers to the extent to which an individual feels being associated with the rest of the community, rather than a sense of isolation. Perceived social justice describes the feeling of being fairly treated as other members of the community by the government agency. Empowerment is said to be able to challenge the ideologies that justify social inequality (such as gender) (Subuddhi 2009).

Based on the constructs identified in Table 2, next we identify constructs of interest in our OGAS empowerment framework. Tan, Benbasat and Cenfetelli (Tan et al. 2010) suggest that we can examine e-government services from two aspects namely the service content and the service delivery mechanism. For “advisory service content” aspects (in Table 2, the ticked antecedents), our study is interested in two constructs, namely “personalized services (e.g., in terms of content relevance)”, and “transparency/understanding”. For “service delivery mechanism” aspects, we want to explore “personalized services (e.g., in terms of self-referent mechanisms)”, “vicarious experience (e.g., scenario based advisory)” and “effective access to information and resources (e.g., structured argument design based on Toulmin’s model).

The research framework is depicted in Figure 1. The proposed model situates nicely in the extant literature. Based on the Elaboration Likelihood Model (Petty et al. 1986), when the advisory content has a high level of transparency and the public perceive that they have the capability to process information, it is more likely to be processed by the central routes of the user’s brain and result in successful persuasion (Dhaliwal et al. 1996; Toulmin 1958) and consequently strengthen empowerment. Besides, personalized content (i.e. content relevance) and the delivery mechanism (self-referent mechanism) are more likely to enhance the empowerment effect. Prior studies show that when the online advice or recommendations are highly personalized, the information is more likely to result in successful persuasion (Tam et al. 2006). Hence the public are more likely to accept personalized advice, which enhances empowerment. Further, highly structured advisory mechanism are more likely to be appreciated by the tool user and lead to improved user performance and satisfaction (Gregor et al. 1999) and thus are expected to better empower users. Finally, for clarification, scenario-based mechanisms refer to the way that an advisory service is designed to use scenarios to demonstrate and explain suggestions to users. If the advisory context is highly dynamic and complex, or when the advisory issue is sensitive, this is the recommended means to avoid users getting stressed when providing information. For instance, a virtual world has been used by government health agencies in US to provide scenario-based emergency and health advice to people (Wyld 2009). The capability of second life to simulate dynamic emergency situations makes it a “killer application” in this area.

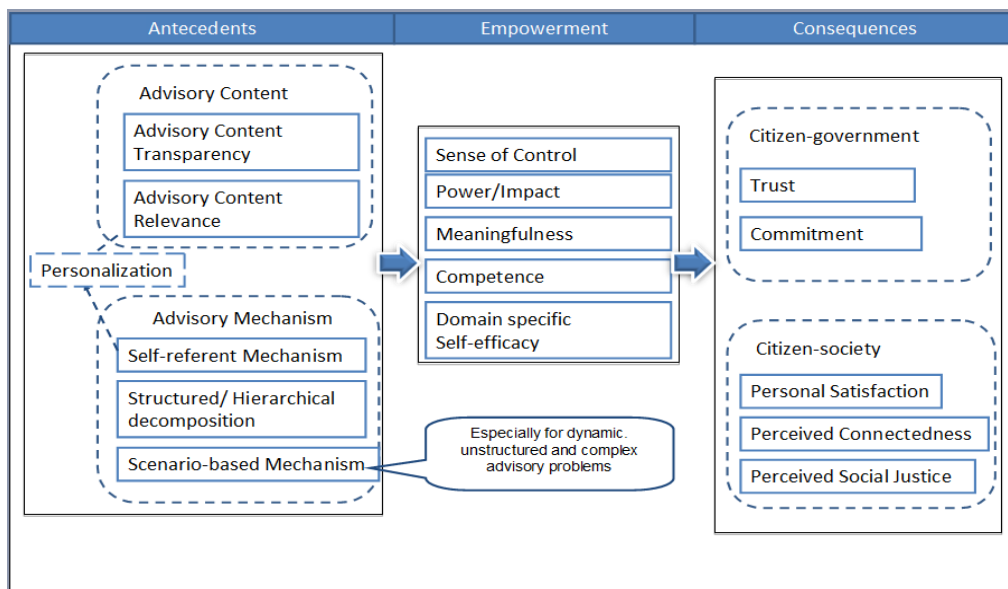


Figure 1: The IT Empowerment Framework for Government Advisory Services

The hypotheses that emerged from the above discussion are as follows. These hypotheses will be tested in the next stage of the research:

H1: Advisory services that have higher advisory content transparency can better empower citizens.

H2: Advisory services that have higher content relevance can better empower citizens.

H3: Advisory systems that use a self-referent mechanism can better empower citizens.

H4: Advisory systems that are designed following Toulmin's model of argumentation can better empower citizens.

H5: Advisory systems that utilize a scenario-based mechanism can better empower citizens.

H6: Problem complexity and problem dynamicity moderate the effectiveness of scenario-based mechanisms in empowering citizens.

H7: Empowerment through the use of effective government online advisory systems can increase a citizen's trust in the government.

H8: Empowerment through the use of effective government online advisory systems can increase a citizen's commitment to the government.

H9: Empowerment through the use of effective government online advisory systems can increase a citizen's personal satisfaction.

H10: Empowerment through the use of effective government online advisory systems can increase a citizen's perceived connectedness to the society.

H11: Empowerment through the use of effective government online advisory systems can increase a citizen's perceived social justice.

DISCUSSIONS AND CONCLUSION

Important Understandings of IT Empowerment

Having scrutinized "IT empowerment" in the OGAS context, we find that various factors need to be in place for empowerment to happen, including the virtuous interactions between the public and the government agency (i.e., mutual trust and respect and commitment to the empowerment initiative), motivation or incentives for the public to use the online service, a sense of transparency in a decision process, the necessary knowledge or skill development to be able to use the online service, a critical understanding about the application context, a sense of self-esteem, effective access to information and resources, opportunities for participation in the decision making process, and well-personalized online services. Among these antecedents, we wish to highlight the following ones.

First, although empowerment is frequently regarded by researchers as a helping process which enables people to take charge of their lives, make choices and believe the future can be influenced, we emphasize that self-initiation is also extremely important in this process: it is self-awareness and resources that self-empower, rather than the services provided alone (Srivastava et al. 2006). In order to be empowered through OGAS, the public need to have a critical understanding of their socio-political context surrounding the applications of concern and the motivation to make use of the given tool to change their current life situation. "Self-empowerment" is a new school of thought towards IT empowerment, which states that the empowerer can not empower people – people can only empower themselves. In other words, regardless of how government enhances their OGAS, if an individual is not willing to adapt to the change process, then this 'empowerment' is not going to happen. This perspective underlies our discussion of the design of OGAS that can facilitate the empowerment of the general public.

Further, virtuous interactions between the public and the government agency (the mutual trust, respect and commitment to the empowerment initiative) are all important facilitators of the IT empowerment phenomena. This means the empowerment of the public through OGAS needs far more effort than the bureaucracy's willingness to relinquish power and set up an online advisory service for the public. It also means that the government (agency) needs to use different strategies to prompt mutual trust and respect with the general citizens, as well as campaigning for the OGAS through various channels to encourage citizen's commitment to using such services.

Last but most importantly, in exploring the design of OGAS, we need to clarify that technology in itself does not equal development, democracy or empowerment. In fact, there is a need to separate the technology from the information it produces (Tan et al. 2010). In empowering people through OGAS, we need to pay attention to both the content that can potentially empower people, and the delivery mechanism. If the delivery mechanism is not well-developed, it could even adversely impact the democratic process. In terms of the role of effective information systems design in impacting the empowering process, the level of cognitive transparency that such services can bring about for general citizens is critical. Prior study indicates that the major problems that the poor are facing are linked to the gaps in knowledge and imperfections in information. This gives meaningful insights to practitioners. For example, government agencies need to enhance the relevance and clarity of the information

content and ensure that it is delivered to the public in a highly structured and personalized way. Besides, for dynamic and complex advisory situations, such as emergency responses, innovative technologies like virtual world can provide scenario-based advices to the public to facilitate the empowerment process.

IT Empowerment or Exclusion?

From the public administration sector perspective, the government agencies' efforts in trying to bridge the digital gap and help the minority or marginalized groups through IT development seem to be effective. However, there is little evidence so far of public empowerment through OGAS. Some researchers point out that the powerful government and political agencies that have dominated the country or state during the past remain so and information technology has just becomes a new way to replicate the traditional bureaucracy: "History suggests that the decline of old forms of community and the rise of new ones, based on associations of self-interested individuals may be part of a natural process of institutional development. If this is the case, the techno-visionaries hopes for IT as a vehicle of empowerment may yet be borne out" (Hall et al. 2003) p.34. In a case study conducted in the city of New Haven, Connecticut, the city council placed their information technology services online in an effort to empower the general public. However the study shows that online government services still did not properly serve the neediest populations, including the disabled, the elderly and the poor. Other researchers report similar findings - that certain OGAS only serve elite groups, such as university students, government officials, professionals and small business owners. This outcome means a potential enlarging of the digital gap, since IT gives further advantage to those people who already have access to many valuable resources (Rhina 2001). However, IT empowerment means more than serving the elite groups; it should have a clear focus on the marginalized and minority groups in its design. Further, IT empowerment also indicates fairness of access to the service, which ideally means no particular user group should be disadvantaged as a result of having such a service. For instance, the state of New South Wales Road Traffic Authority has an online driving test booking system for the public to use, however, it does not allow people who transferred from other States to change their booking status online even though no technical issue exists that mandates a manual check. As a result, they have to call in office hours and wait on the phone, while other NSW users can quickly take the vacancy online. Hence, this is not a government online service that truly empowers. Government agencies should try to consider and accommodate diverse user groups in their online service design so as to guarantee unbiased accessibility.

Therefore, whether an IT advisory service is empowering or potentially excluding citizens largely depends on the following factors:

- The public are aware of the social political context surrounding an application of concern and are motivated to commit to the empowerment process through using online government advisory service.
- A government agency should have established virtuous interactions with the public, including mutual trust and respect, before providing OGAS. Otherwise the service is likely to be perceived as an online replica of the old bureaucracy.
- Unbiased and effective access to information resources is key to the success of empowerment through such advisory services. Government agencies need to design various strategies to ensure fair access, especially with careful consideration of the needs of marginalized and minority groups: for example, providing zooming features for the elderly and setting up free Internet Kiosks in locations of convenience for the public to securely use such services with minimal cost.
- To facilitate the empowerment effect, the design of online advisory services needs to follow the core aspects mentioned in the proposed OGAS empowerment framework (Figure 1). In particular, the advisory content should be highly relevant and transparent to diverse user groups. The advisory service presentation and delivery mechanism should be well-structured and hierarchically decomposed to facilitate smooth completion of user tasks. For instance, Toulmin's model of argumentation can be followed in the design of arguments in such tools. Further, the advisory tool should be personalized to ensure a high level of engagement and empowerment of the user.

To summarize, this paper gives a review of empowerment theory and examines the antecedents, dimensions and outcomes of IT empowerment in the OGAS context. Based on this review, we proposed a research model surrounding core design issues for such OGAS that potentially empower the general public. The constructs in the model are closely tied to the features of online advisory systems and are of particular interest for researchers in the IS discipline. From the analysis, we conclude that an online advisory service can be potentially empowering if the identified issues are addressed. Otherwise, the service may hinder the empowerment process and will not serve its purpose of enhancing the public's trust, commitment, sense of connectedness and perceived social justice. In the worst case, it could even enlarge the digital gap by further excluding the most needy groups.

We acknowledge limitations relating to the current study. In this paper, we have discussed the relevance of key empowerment dimensions raised in the literature and through consulting a panel of field experts. However, more needs to be done in the next stage of the research, including using systematic construct development methodologies (for example, Lewis et al. 2005) to more rigorously refine the empowerment constructs for the OGAS context.

This paper describes the first stage of an ongoing research project. The next stage of the research will qualitatively and quantitatively examine the impact of online advisory systems and service design strategies on empowerment and the related consequences. For example, we plan to conduct experiments with the delivery of OGAS in the virtual world to see whether and how they empowers general users in this context.

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