



Citizen's adoption of an e-government system: Validating extended social cognitive theory (SCT)



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ABSTRACT

By employing an extended social cognitive theory, this study examines factors (such as *outcome expectation*, *affect*, *anxiety*, *self-efficacy* and *social influence*) influencing intention to adopt an electronic government system called online public grievance redressal system (OPGRS) in context of India. The extended social cognitive theory (SCT) was validated using 419 responses collected from eight selected cities in India. The empirical outcomes of the proposed model indicated the significant relationships of seven hypothesised relationships between six constructs. This is the first study, which has used the SCT model to understand the adoption of an e-government system. The policy implication provided in this research can help the government to improve upon the effectiveness and quality of the system and the level of social impact on the users by employing the project champions. It also helps in enhancing their positive feelings toward adopting this system and fully utilise the potential of the OPGRS as a useful tool toward a transparent and corruption free society.

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1. Introduction

Many governments have enriched the infrastructure and services provided to their citizens (Kim, Pan, & Pan, 2007). The introduction of electronic government (e-government) is a move undertaken by governments to become more service oriented and focused toward the implementation of the widespread digital services through one stop points of access for citizens (Anthopoulos, Siozos, & Tsoukalas, 2007). Though e-government provides obvious benefits to governments, professionals, and organisations (Venkatesh, Sykes, & Venkatraman, 2014), it is citizens who are actually predicted to receive a number of benefits (Jaeger, 2003). Looking at this aspect, one of the most significant requirements of citizen's day-to-day life is their grievances against the government systems, officials, organisations, and bureaucratic structure. As governments develop e-government systems to deliver services to the people, there is a need for evaluation efforts that could examine their effectiveness (Wang & Liao, 2008) in terms of their adoption. Furthermore, except for a few studies (e.g., Rana, Dwivedi, Williams, & Lal, 2015, 2013; Rana, Dwivedi, Williams, & Weerakkody, 2014; Rana, Williams, & Dwivedi, 2013; Rana et al., 2014; Venkatesh et al., 2014), the most of the research do not specifically focus on developing countries (Venkatesh et al., 2014). The OPGRS is one such e-government system which is primarily meant for addressing the grievances, issues,

and problems of citizens' everyday life and gets them resolved online by the high-level government officials designated for it. It provides enormous benefits to the people by resolving their problems without much concern.

Grievance redress mechanism is a part of the machinery of any administration. No government can claim to be answerable, responsive, and citizen-friendly unless it establishes a capable and effective grievance redress mechanism. In fact, the grievance redress mechanism of any organisation is an estimate to examine its efficiency and effectiveness as it provides significant feedback on the working of the administration. The grievances from public are accepted at various points in the Government of India. There are mainly two designated agencies in the central government of India handling these grievances namely Department of Administrative Reforms and Public Grievances and Directorate of Public Grievances. The public grievance redress mechanism in India functions on a decentralised basis. An officer of the level of Joint Secretary is designated as the Director of Grievances of the Ministry, Department, or Organisation (Rana et al., 2014, 2013). There are currently 20 different ministries, departments, and organisations in the Government of India, which come under the Directorate of Public Grievances. These include railways, posts, telecom, urban development, petroleum and natural gas, civil aviation, shipping, road transport and highways, tourism, public sector banks, public sector insurance companies, and regional passport authorities (DPG, 2014a).

The major reasons of grievances primarily include the socio-economic reasons such as prevalent corruption in the ministries, government organisations, and bureaucratic systems, which are ubiquitous in the current society. The factors such as lack of awareness and lack of relevant information about whom to complain make this process even

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more tedious. Looking at this aspect, the OPGRS has been designed and developed to take care of such issues of citizens without stepping into the ministry offices and government organisations or even without knowing sometimes where to go to register complaints. In majority of the cases, the people don't even know who is accountable to listen to their problems. Therefore, the significance of such e-government systems is felt even more for smooth, transparent and impartial running of governments. The past performance of this system indicates that it has settled 21,952 (i.e., 74%) of the overall (i.e., 29,665) complaints received until the 31st of March 2014 in favour of complainants whereas another 8% were settled partly in their favour. However, 18% of the overall complaints were not found sustainable (DPG, 2014b). Although the OPGRS offers several advantages, its adoption is currently low (as it is evident from the above statistics) and hence it is significant to explore the factors influencing its adoption.

Despite such low adoption rate, only a few recent research studies (e.g., Rana et al., 2015, 2014, 2013) have yet attempted to examine citizens' adoption behaviour of such an important public administration system. However, none of these studies has proposed any model based on the SCT to analyse the citizen's adoption of such online government services. Realising that the SCT is one of the most important theories of human behaviour, it would be useful to examine the adoption of the OPGRS using the model based on the SCT. This is done by validating an extended SCT. The selection of the SCT as a basic model is motivated from the lack of use of this model in the e-government adoption research and also as this model contains all suitable and important constructs which provides some relevant and useful factors to understand individual's adoption behaviour. To do so, this research has validated the extended SCT model accompanied with the additional construct *social influence*.

The remaining paper is organised as follows: the next section undertakes a brief review of e-government literature related to the SCT model and the OPGRS system. This would be followed by a brief discussion on the research model development and hypotheses. The next section follows a brief description on research methodology used for this research. Findings are presented and discussed in subsequent sections. Finally, conclusion including limitations and future research directions and implications for theory and practice are presented in the last section.

2. Literature review

There are many well-known technology acceptance and success models including the technology acceptance model (Davis, 1989), the theory of reasoned action (Fishbein & Ajzen, 1975), the theory of planned behaviour (Ajzen, 1991), the innovation diffusion theory (Rogers, 1995), the IS success models (DeLone & McLean, 1992, 2003), and the unified theory of acceptance and use of technology (UTAUT) (Venkatesh, Morris, Davis, & Davis, 2003), which have been used across different studies on e-government contexts. However, the theory such as the social cognitive theory (SCT) (Bandura, 1986) has not been fully used in any study to examine the adoption of any e-government systems. However, some of its constructs in their original forms such as self-efficacy and anxiety, and some other in their analogous forms such as outcome expectations (which is similar to usefulness (Compeau & Higgins, 1995; Davis, Bagozzi, & Warshaw, 1989)) and affect (which is similar to attitude toward using technology (Venkatesh et al., 2003)) have been used across a number of studies in e-government adoption research.

Only a few studies (e.g., Loo, Paul, Yeow, & Chong, 2009; Sahu & Gupta, 2007) on e-government adoption have partially used the SCT or its constructs in course of developing some integrated research model. For example, exploring the acceptance of Malaysian government multi-purpose smartcard application, Loo et al. (2009) used anxiety as one of the direct determinants of intention to use the intended system. Arguing on the non-inclusion of anxiety as a direct determinant of

intention to use under the UTAUT model (Venkatesh et al., 2003), the authors made it clear that this construct was considered in the proposed research model only because unlike the UTAUT, ease-of-use is not included from the research framework of their research. The findings somehow indicated that the respondents' views on using e-government applications such as MyKad national identity card (NIC) and driving licence (DL) were largely disinterested in terms of their anxiety and their subsequent intentions to use such systems. Similarly, analysing the user's acceptance of Indian Central Excise system, Sahu and Gupta (2007) developed an integrated research model by adopting two constructs from the SCT namely self-efficacy and anxiety into consideration.

Some studies on e-government systems (e.g., Gorla, 2008, 2009; Rana et al., 2015, 2014, 2013; Rao, 2004) have explored on the grievance related systems. For example, Gorla (2009) discussed an e-government system called 'Lokmitra' in the state of Himachal Pradesh in India. The grievance redressal system clarifies the doubts of citizens on a number of issues and has an e-mail facility to provide communication and supports local language. One another research by Gorla (2008) discussed the 'Gyandoot' project incorporating multi-functionality including recording grievances of citizens and addressing them. The author also discussed the multi-functional project such as 'N-Logue' which also facilitates public grievance redressal by which citizens can interact with government officials in India. Rao (2004) revealed a couple of other online grievance redressal systems operated at the state levels in India. The author revealed that the grievance redressal systems called 'Swagat' in Gujarat and one being upgraded in Madhya Pradesh in India were still under development and not fully equipped and functional to serve the citizens of the corresponding states in India. However, the current development of the online grievance redressal system indicates that the system developed by the government of India covers the grievances lodged from 36 states of India against the central and state government departments and officials across the country (PPG, 2013). Based on the data produced by an e-grievance redressal system submitted to it in 2007, Martinez, Pfeffer, and van Dijk (2009) identified what type of complaints were submitted, where and whether there was a relation with areas of multiple deprivations.

Some recent studies (Rana et al., 2015, 2014, 2013) have also explored online grievance systems, but they have used other dominant IS/IT adoption models such as the UTAUT (Rana et al., 2013) and DeLone and McLean (1992, 2003) IS success models (Rana et al., 2015, 2014). However, none of the studies on e-government have ever used the SCT model to understand the role of its factors toward adopting such systems yet. Realising the lack of empirical evidence of this model and importance of the variables of the SCT, this study will analyse the significance of its variables and the overall performance of the extended SCT model in the context of the online grievance system in the Indian context.

3. Research model development and hypotheses

The theoretical development for this research is primarily based on the SCT model. This is one of the most powerful theories of human behaviour (Bandura, 1986). Compeau and Higgins (1995, 1999) implemented and extended the SCT to the context of computer utilisation. This theory mainly studied the computer use but the nature of the proposed research model and the underlying theory allow it to be extended to acceptance and use of an e-government system, which is primarily an information system. The major reason for considering the SCT as a base model is motivated by couple of reasons: Firstly, the constructs used in this model represent all significant variables, which can be analysed as factors responsible for adopting an e-government system. Secondly, as the SCT is relatively an under-represented model in the context of e-government adoption research, it is necessary to understand the significance of its variables and the performance of the overall model in this context. The decision to incorporate one additional construct (i.e., *social influence*) and to remove an existing construct (i.e., *outcome*)

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