



Contents lists available at ScienceDirect

Government Information Quarterly

journal homepage: www.elsevier.com/locate/govinf

Social identity and trust in internet-based voting adoption

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ARTICLE INFO

Keywords:

iVoting
Adoption
Social identity
Trust
Perceived usefulness
Perceived ease of use
Shared values

ABSTRACT

The growth of eGovernment applications has initiated profound re-engineering of numerous citizen-government interactions but has not yet provided significant impacts on internet-based voting (iVoting). This study examines the role of trust and the technology adoption model (TAM) in influencing citizen intentions to adopt iVoting, and whether a social identity perspective may play a role in this individual decision process. The study is based on the integrated trust and TAM model. TAM posits that people choose to adopt a new Information Technology (IT) because they perceive it to be useful and sometimes also because it is perceived as easy to use. Trust plays a central role in building that sense of perceived usefulness in cases where the IT is a conduit to the trusted party, as we propose for iVoting. In support of this social identity extension to the trust and TAM model, our results show that citizens' perceptions that they share the same values as the individuals affiliated with providing eGovernment (and internet-based voting) services are especially instrumental. The perception that the agency is made of "people like me" is associated with increased trust in the agency, which in turn is associated with increased levels of other factors that contribute to the intention to vote electronically over the internet. Implications for theory and practice are identified.

1. Introduction

Electronic Government (eGovernment) services comprise the use of various technologies to provide citizens, businesses, and other entities with more convenient access to government information and services (Fietkiewicz, Mainka, & Stock, 2016; Huang, 2007; Turban, King, Lee, Warkentin, & Viehland, 2002). It is often touted as a powerful tool for enhancing the government-citizen relationship and improving the internal efficiency and the quality of service delivery (Fang, 2002; Gibson, Krimmer, Teague, & Pomares, 2016). The use of eGovernment services to reach and interact with citizens and businesses has been growing in recent time (Fietkiewicz et al., 2016). One such emerging facet of eGovernment is internet-based voting which implies the use of an election system that uses encryption to allow a voter to transmit his or her secure and secret ballot over the internet and electronic media from any location (Oostveen & Van den Besselaar, 2004).¹

eGovernment services might be especially beneficial in the case of internet-based voting (iVoting). This study integrates the eGovernment and iVoting acceptance literature with the integrated Trust and TAM model (Gefen, Karahanna, & Straub, 2003a) of technology adoption and trust. We posit that when the voting agency is comprised of "people like me" (a sense of social identity), there is an increase in voters' willingness to vote online. TAM, in the context of internet enabled activities, typically addresses the effects of perceived usefulness and ease of use on behavioral intention to adopt a technology. Trust is the willingness to depend on another party in cases where that party could take undue advantage of the trusting person. As a major contribution of this paper, we have extended the concept of TAM and Trust by adding a social identity perspective. Using the social identity theory, this study suggests that people naturally form an "us versus them" boundary based on their exaggerated perceptions of supposed social similarities with others. As such, this study extends the literature by finding that

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E-mail addresses: m.warkentin@msstate.edu (M. Warkentin), ssharma@csUMB.edu (S. Sharma), gefend@drexel.edu (D. Gefen), grose@wsu.edu (G.M. Rose), pavlou@temple.edu (P. Pavlou).¹ The term electronic voting/eVoting is a blanket term used to describe an array of voting methods such as punched cards, optical scan voting systems, specialized voting kiosks, private computer networks, or the Internet that operate using electronic technology. Often used synonymously to eVoting, internet voting/internet-based voting/iVoting refer to several forms of computer aided voting that "aid or take care of the chores of casting and counting votes." (Kantha, 2017). It often includes remote voting via the internet. As a result, even though many studies historically refer to internet-based voting simply as eVoting, to eliminate confusion, we are using the term internet voting/ internet based voting throughout this paper.<https://doi.org/10.1016/j.giq.2018.03.007>Received 7 May 2017; Received in revised form 23 March 2018; Accepted 31 March 2018
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citizens' perception of having people like them in the election agency could influence their assessments and behavior towards internet-based voting. This research also contributes providing mechanisms for government policymakers to design policies for a widely accepted iVoting implementation.

We propose that the addition of a social identity perspective (Hogg & Terry, 2000) extension to the Trust and TAM model (Gefen et al., 2003a) will result in better prediction of iVoting participation. The Trust and TAM model (Gefen et al., 2003a) suggests that perceived usefulness, perceived ease of use, and the intended use of an Information Technology (IT) artifact (the TAM part) is closely coupled with trust in the agency behind the IT. This model suggests that trust is an integral component because IT adoption depends not only on the IT itself but also on the people behind it.²

The addition of this perspective is consistent with other research that shows that cultural similarity between the service provider and the users of the service is an important factor in the adoption of eGovernment services (Gefen, Rose, Warkentin, & Pavlou, 2005). We logically assert that beliefs that the “agency is made of people like me” will positively influence the “trust in the agency” which in turn will likely positively influence perceived usefulness. Our model extends the technology acceptance model in internet-based voting and adds the perspective of social identity and the sense of belongingness (Hogg & Terry, 2000). Thus, our study identifies perceived ease of use, perceived usefulness, trust, and most importantly, the sense of belongingness towards election agency as the fundamental constructs that impact intention to use internet-based voting services.

2. Current research on eGovernment and iVoting

There is an increasingly weak turnout of voters in European and North American countries. One of the reasons for the lower turnout maybe the lack of a habit of voting. Franklin (2004) states that those who find reasons to vote in their first eligible election continue to vote in subsequent elections and vice versa, implying that those who do not form the habit might not vote thereafter. Showing how bad voting turnout is, the average turnout at European elections declined from 59% in 1984 to about 43% in 2014 (Schmitt, Hobolt, & Popa, 2015). The level of participation in the midterm elections to the US Congress also looks discouraging. The average turnout at the US midterm election has been declining: in 2014 it was the lowest in the last 70 years (National Voter Turnout in Federal Elections: 1960–2014, 2010). Similarly, the voting turnout for U.S. presidential elections seems underwhelming; it too declined dramatically from the 1960s to the present (Harrington & Gould, 2016) with the recent US presidential election of 2016 having a voter turnout of only 55.5% (United States Elections Project, 2016). The US Census Bureau provided the list of why nonvoters did not vote in the 2014 midterm election: “too busy, topped the list followed by other reasons such as general lack of interest, illness, being out of town, and simply forgetting” (Celement, 2015). As per the US Census Bureau, these reasons were similar to the ones provided by the general public in the 2010 election. Importantly for this study, 61.3% of the reasons listed could have been solved by the presence of iVoting (Carter & Campbell, 2012). Supporting this, a qualitative research by Shat and Abbott (2016) suggested that nearly all the interviewees believed that iVoting will increase participation rates in elections because it would allow people to vote at their discretion without any pressure and the need to be at the poll stations. Thus, the emergence and acceptance of internet-based voting may help citizens participate in democratic processes and

reanimate participatory democracy (Toots, Kalvet, & Krimmer, 2016). This resonates with Norris (2004) who asked “If citizens will not come to the polls, ... why not bring the polls closer to the citizens?” With 83.8% of the households in the United States having internet access, according to the US Census Bureau,³ internet-based iVoting may be the solution to low voter turnout.

However, the impact of iVoting on electoral turnout is debatable. Trechsel and Vassil (2010) explored the moderate success of iVoting in Estonia, which implemented iVoting at local, national, and European elections. Starting in 2005, Estonia organized eight internet-enabled elections in which voters could cast votes remotely over the internet. Voter turnout for parliamentary election increased from 58% in 2003 to 61.9% in 2007, to 63.5% in 2011, and to 64.2% in 2015. Similarly, turnout in local and European elections also increased after adopting iVoting. The major original reason behind adopting iVoting was to increase turnout among the younger generation and to make the process simpler and more convenient for everyone. The number of online voters in local, national, and European elections indeed grew from 2% in 2005 to > 30% in 2014 (Vassil, Solvak, Vinkel, Trechsel, & Alvarez, 2016). Similarly, several countries, including Canada, Brazil, France, and Switzerland, have experimented with iVoting at on a limited scale and found some success in terms of voter turnout. In contrast to these success stories, Germann and Serdültb (2017) suggested that the introduction of iVoting did not raise voter turnout in federal referendums in the two Swiss cantons of Geneva and Zurich where iVoting was available along with other voting methods, such as postal voting and polling station voting. That study concluded that iVoting presents only slightly more convenience than postal voting and may not present the “pull” often attributed to iVoting. By contrast, Norway's iVoting experiment, which used an individual verification method similar to Estonia's and was implemented in 2011 and 2013, was discontinued because officials cited a lack of “political desire” and distrust in the security of the system (Norwegian Ministry of Local Government and Modernization, 2014).

Nonetheless, overall, research suggests that iVoting is overall a success story. Spada, Mellon, Peixoto, and Sjoberg (2016) found that during the annual participatory budgeting vote in the southern state of Rio Grande do Sul in Brazil, iVoting increased the turnout by > 8 percentage points. That study found that iVoting was mainly used by younger, male, wealthier, and better-educated individuals who were substantially more likely to report being online-only voters and would not have voted had internet voting not been available. Similarly, Goodman and Stokes (2016) analyzed the original panel data of local elections in Ontario, Canada and found that internet voting increased turnout by 3.5 percentage points, with larger increases when voting by mail was not available and when registration was not required.

Reflecting the overall success of iVoting, a recent survey found that 75.25% of Australians favor iVoting and understand its benefit (Zada, Falzon, & Kwan, 2016). Realizing this importance on the US side of the Pacific, the US Military and Overseas Voter Empowerment Act of 2009 mandates assistance for military and overseas voters to exercise their voting rights. As a recent study showed, almost eight million US military personnel and other US citizens living abroad could have been permitted to cast their vote over the internet in a recent election (Bachmann, 2016). A conservative estimate for 2012 shows that only 12% of the five million US citizens living abroad voted for the presidential election of 2012 (Andelic & Sexton, 2016).⁴ Alabama is one of the latest states to offer online voter registration and the first in the

² In the trust and TAM model (Gefen, Karahanna, & Straub, 2003a) perceived ease of use is hypothesized to increase trust because it shows how much the people behind the IT invested in it—thereby indicating their honesty, benevolence, and capability. Trust is hypothesized to increase perceived usefulness because many IT are conduits to the people behind them providing the service, and so at least part of the utility of an IT service depends on those people being trustworthy. Trust also directly affects intended use as it does in many other interactions involving other people.

³ <http://www.census.gov/content/dam/Census/library/publications/2014/acs/acs-28.pdf>

⁴ This scenario is changing slightly as 33 states and the District of Columbia now allow US citizens to vote online, and also for military and overseas voters to return the ballots electronically. Absentee voting for military uniformed personnel can take up to 30 days to send and receive absentee ballots, given the standard use of postal mail. Some states provide returning ballots using fax as well. However, these voting methods less online.

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