Does E-government Trust in e-Commerce when Investigating Trust? A Review of Trust Literature in E-Commerce and e-government Domains

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Abstract. Trust has been acknowledged to be an important determinant of e-commerce acceptance. Therefore, understanding the nature and importance of trust is momentous in promoting e-government adoption. This paper reviews the trust discussion in business-to-consumer (B2C) e-commerce and government-to-individuals (G2IS) e-government. The aim of the paper is to identify potential differences as well as common denominators in order to introduce aspects that could potentially mutually benefit the research in the e-government and e-commerce domains. The main findings of the study are: 1. both domains trust largely conceptualize as multidimensional construct. 2. In the e-government field, trust is more often also empirically investigated as more than only one variable. 3. In the e-government literature, two main discourses related to trust were identified; trust in government in general, and trust in e-government, referring to the technology aspects.

1 Introduction

Trust has been identified as an important factor in explaining customer's adoption of e-commerce and e-services.[1][2; 3] Pavlou and Fygenson (2006, 133) articulated in their study on B2C e-commerce trust being perhaps the most interesting and empirically influential belief associated with getting information and purchasing products.[4]As stated by numerous authors, trust has been in the interest of several disciplines such as marketing, social psychology, sociology, management and marketing. [5][2]

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The multi-dimensional of trust nature has been widely acknowledged [cf. e.g. 6]. Moreover, the conceptual complexity and thus the difficulties in finding a universal definition of trust have been addressed. [5] Despite these challenges, numerous studies in the e-commerce domain have contributed to increasing understanding on the nature and role of trust as well as its antecedents and consequences.

According to OECD (2003), e-government can be defined as "the use of ICTs, and particularly the Internet, as a tool to achieve better government". According to Lee, Tan, Xin and Trimi (2005) e-government is mainly concerned with providing high quality public services and value-added information to citizens.[9] In this study, e-commerce is defined rather broadly to encompass products and services

E-government has become an emerging field of research in the recent years. [7] E-government can be categorized in several ways, depending on the services offered and the target group of the offering. In this paper, we conceptualize e-government as the services that a governmental organization provides to individuals, referring to the categorization (G2IS) by Bélanger & Hiller (2006).[8]

This paper investigates the trust literature in business-to-consumer (B2C) e-commerce and G2IS e-government fields of research. The aim is to identify potential differences as well as common denominators in order to introduce aspects that could potentially mutually benefit the research in the e-government and e-commerce domains. Thus, the paper contributes the e-government research by presenting an overview of the trust discussion within the domain and reflecting it to the respective literature from e-commerce. In practical terms, this is done by reviewing prior literature and presenting the findings in a structured form.

This study focuses on business-to-consumer (B2C) e-commerce and e-services. Similarly, the e-government domain is restricted to electronic services the government provides to citizens. Thus, services targeted to corporate customers (B2B and G2B) are excluded from this study, as well as C2C e-commerce.

2 Trust in B2C e-Commerce and G2IS e-Government Literature

As stated by Cheung et al (2005, 8), trust and perceived risk have been extensively investigated in relation to online purchase intentions.[10] IT acceptance has evolved as one of the most influential streams of research within the IS discipline [11]Several models have been developed to investigate and explain users' acceptance of new technologies[12; 13] However, in the IS research IS continuance and post-adoption behavior have become an emergent topic in the recent years which is also reflected in the reviewed trust literature. [14; 15][16; 17]

In ProQuest database a search using terms 'e-commerce' and 'trust' returns 1745 results, when limiting the search to academic articles the number of hits drops to 166. Conducting the search with 'e-government' and 'trust' the number total number of hits is 65 of which 18 are peer reviewed.

In the first round of the review, a keyword-based search was done in ProQuest/Abi/Inform, EbscoHost, Emerald and Elsevier ScienceDirect databases. Key-

words 'trust' and 'e-government', 'trust' and electronic government', and finally, 'trust', 'government', and 'internet' were used. The first round of the review revealed that the academic discussion around e-government is fragmented across several forums. Therefore, two one dedicated e-government journals, *Electronic Government*, and *International Journal and Electronic Journal of e-Government* were included in the second round consisting of systematic review of the key publications as suggested by Webster & Watson (2002)[18]. The review of e-commerce trust literature was done solely using keywords 'trust' and 'e-commerce' and 'trust' and 'electronic commerce'.

The reviewed e-commerce trust literature has been divided into three rather wide categories, studies discussing trust in e-commerce adoption and studies focusing on ongoing customer relationships after the initial adoption or acceptance has taken place, i.e. the post-adoption phase. The third category consists of literature reviews and conceptual papers. Self-evidently, the table does not contain all the literature that has been published, but the purpose is to give an overview of trust literature in the e-commerce domain. The aim of the categorization is used to somewhat compress and systematize the way the results are presented. The reviewed e-commerce trust literature is presented in tables 1, 2 & 3 and the e-government literature in table 4.

Table 1. B2C e-commerce studies focusing on trust in initial acceptance

Studies on adoption and acceptance	View of trust	Findings	Theoretical framework
Pavlou [3] Lim et al. (2006)[19] Pavlou et al. (2006)[4] Gefen et al.(2003)[21] Gefen & Straub (2003)[22] Pavlou et. al. (2007)[23] Hampton-Sosa & Koufaris (2005) [20] Bhattacharjee (2002)[1] McKnight et al. (2002)[6]	Set of trusting beliefs, operationalized as a single variable [3] Trusting beliefs + trust propensity as variables [20] Multidimensional, Also operationalized as multidimensional [1] [6]	TAM+trust+risk determinants of purchase intentions and actual purchases [3] Trust increases willingness to buy [19] Trust influences attitudes and controllability over getting information and purchasing [4] Trust integrated to TAM [21] [22] Trust impacts purchase intentions indirectly through perceived uncertainty [23] Initial trust as a mediator between web site appeal and usefulness and intention to use a web site, trust propensity an antecedent of initial trust [20] Develops and test a scale for measuring trust [1] Familiarity Willingness to transact [1] Tests and validates the framework developed by McKnight [6]	TAM [3] TRA [19] TPB [4] TAM [21] [22] Principal-agent theory [23] TAM [20] Trust literature from several disciplines TRA [6]

Table 2. B2C e-commerce studies focusing on trust after the initial acceptance

Studies	View of trust	Findings	Theoretical framework
Li et al. (2006a)[29]	Operationalized as a single variable, however the authors discuss that trust is not un-dimensional [29]	Commitment a stronger predictor for stickiness than trust. The impact of trust also mediated by commitment [29]	Investment model for interpersonal relationships
Thatcher & George (2004)[30]	Trust in the Internet [30]	After a certain level of experience, trust in the Internet not correlated to loyalty. [30]	& commitment trust theory [29]
Gummerus et al. (2004)[31]	Operationalized as a single variable	Service quality-trust-satisfaction-loyalty chain. Trust as a mediator between service quality dimensions and customer satisfaction [31]	TRA [30]
Cyr et al. (2007)[32]	Operationalized as a single variable, yet the multidimensional nature of trust is discussed [32]	Trust mediates between perceived social presence and e-loyalty [32]	SERVQUAL [29]
Anderson & Srinivasan (2003)[33]	Operationalized as a single variable [33]	Trust mediates the impact of service quality and web site quality on loyalty. [34]	TAM [32]
Floh & Treiblmaier (2006)[34]	Multidimensional, Evolving [35]	Presents a framework for consumer e-trust building process [35]	N/A [33] [34] [36]
Pennanen et al. 2007 [35]	Multidimensional, Operationalized as a single variable [36]	Trust has an impact on relationship intention [36]	Qualitative study, [35]
Wang & Head (2006) [36]	Operationalized as a single variable	Trust important also among veteran customers, servqual an antecedent of trust [37]	SERVQUAL [37]
Gefen (2002)[37]	Reliability and empathy investigated within servqual [37]	Privacy the most important determinant of trust. Also communication is important.[38]	Commitment-trust theory [38]
Mukherjee & Nath (2007) [38]	Multidimensional, Operationalized as a single variable	Commitment as a powerful mediator between trust, satisfaction, perceived value and loyalty [28]	Trust-commitment framework [28]
Luarn & Lin (2003)[28]	Set of specific beliefs (integrity, benevolence, competence and predictability) Operationalized as a single variable [28]		

Table 3. B2C e-commerce literature reviews on trust

Studies	View of trust	Findings
Wang & Emurian[24]	Multidimensional, [24] [2] [27] [25]	Framework for trust inducing features [24]
Tan & Sutherland (2004)[25]	Proposed operationalization one-dimensional [26]	In IS literature, trust is often seen as one-dimensional, only focusing on the interpersonal aspect, ignoring the dispositional and institutional dimension. [25]
Holsapple & Sasidharan[26]	Multidimensional, Dynamic [5]	Proposes a research model that includes subjective norm, computer anxiety and computer self-efficacy to the TAM framework. [26]
Grabner-Kräuter & Kaluscha (2003) [5]		Conceptual challenges in empirical studies, different definitions & concepts, comparing empirical studies difficult [5]
McKnight & Chervany (2001)[2]		Comprehensive conceptualization of trust [2]
Kim et al. (2005)[27]		Comparison of academics' and practitioners' perspectives of trust. Content analysis, semantic network analysis. [27]

Table 4. G2IS e-government literature discussing trust

Studies	View of trust	Findings	Theoretical framework
Carter & Bélanger (2005)[39]	Multidimensional, Operationalized as a single variable [39]	Compatibility, ease of use and trustworthiness significant predictors of intention to use. [39]	Integrated DOI + TAM + trustworthiness [39]
Schaupp & Carter (2005)[40]	Multidimensional, Operationalized as a single variable [40]	Compatibility, perceived usefulness and trust the predictors of internet voting among young citizens. [40]	Integrated DOI + TAM + trust [40]
Horst, Kuttschreuter & Gutting (2007)[41]	Trust in relation to risk [41]	Trust in e-government main determinant of PU. [41]	Applied TBP framework [41]
Bélanger & Carter (2008)[7]	Multidimensional, also operationalized as multidimensional, including disposition to trust [7]	Trust of the Internet and trust of the government influence the intention to use. [7]	TRA [7] N/A [42]
Tolbert & Mossberger (2006)[42]	Trust and confidence in government	E-government can increase process-based trust by improving interaction with citizens. [42]	Interpretive approach to IS evaluation. [43]
Grimsley & Meehan (2007)[43]	Multi-dimensional, process-based and institutional-based. [42]	Trust is related to feeling of being well-informed, greater personal control and sense of influence or contingency [43].	N/A [44]
Welch, Hinnant & Moon (2004)[44]	Community perspectives of trust, trust in relation to public value [43]	Visiting local government web site lead to enhanced trust in local government. [44]	Trust + TRA [45]
Li, Hess & Valacich (2008) [45]	Trust in government		DOI+TAM+S ERVQUAL [46]
Gilbert, Balestrini & Littleboy (2004)[46]	Multi-dimensional Fiduciary, mutual and social trust [44]	Cognitive base trust (reputation) and calculative base have a significant impact on adoption whereas e.g. personality base and institutional based had a smaller effect.	Case study [47]
Gonzales, Gasco & Llopis (2007)[47]	Multidimensional, Also empirically investigated as multidimensional [45]	(Lack of) Trust were found to be an adoption barrier [46]	
	One-dimensional [46]	Trust creation as a final phase e-government evolution [47]	
	One-dimensional [47]		

3 Discussion

Implications for research and practice

E-government is still a relatively new area of research. The first e-government articles presented in this paper were published in 2004. Thus, compared to rather large number of studies on trust within the e-commerce field of research, the trust discussion within the e-government domain is relatively meagre.

As stated earlier, the complex nature and challenges in defining of trust have been articulated by several authors. [cf. e.g. 5; 48] As articulated by e.g. McKnight et al. 2001, trust can be viewed to have dispositional, interpersonal and institutional dimensions and neither of these dimensions is by nature monolithic. Despite most of the authors acknowledge the fact that trust is a multi-dimensional construct, in most of the listed e-commerce studies trust is operationalized as a single variable. In the e-government field, relatively more studies empirically investigate trust as a multidimensional construct. This interesting finding may be explained by the fact that the research on trust within the e-government domain has benefited from prior trust research within e-commerce and e-services.

In the reviewed e-government literature, two main areas of trust discussion were identified. Trust in e-government [cf. e.g. 39] refers to individuals' perception of the trustworthiness of the technology used in producing and delivering the governmental service whereas trust in government [cf. e.g. 42; 44; 49] reflects individuals' perception on trustworthiness of the government in a wider perspective, including the political system and administration.

In the e-commerce literature, trust has been extensively discussed in relation to adoption.[10] However, particularly the recent e-commerce research includes examples of studies investigating trust also related to continuous use and customer loyalty. [cf. e.g. 13; 29] In the e-government literature the emphasis has so far been rather on exploring the adoption than continuous use of e-government services. This can be explained by the fact that the e-government per se is a relatively new phenomenon and therefore, investigating citizens' initial adoption is of particular importance. When looking back to the early days of trust research within the e-commerce domain, which is a more mature field of research, one can interpret that e-government research will evolve similarly from adoption towards focusing more on continuous use.

As regards the theoretical frameworks, multiple background theories have been used in the reviewed studies. In the presented e-commerce studies, quantitative analysis and literature reviews are in an important position. Quantitative research methods dominate also the reviewed e-government literature on trust. The e-government studies largely utilize the conceptualizations of trust from the e-commerce literature which may explain the lack of literature reviews focusing on trust in the e-government literature.

From a managerial perspective, trust is an issue of great significance in both e-commerce and e-government areas, influencing not only the initial adoption but also

the subsequent phases of the customer relationship. Since the role of trust evolves, it is a dynamic construct. Developing differentiated means for nurturing trust for novice and experienced users could potentially help to build enduring relationships with the users.

E-government has reported to provide several benefits from both the citizens' and government's perspective in form of costs savings and improving the availability of the service. (cf. e.g. Gonzales et al. 2007.) [47] Moreover, as stated by e.g. Welch et al. (2005) [44], use of e-government can increase citizens' overall trust in government. As trust has been identified to have an influence on e-commerce adoption, building trust is an important issue also from a managerial perspective.

Limitations

As with every research, also this study has its limitations. First of all, the risk with literature reviews is that important contributions are for some reason not included in the scrutiny. To reduce this risk, a systematic review of two dedicated e-government journals was conducted. However, since the e-government discussion is fragmented across several journals, the systematic approach did not create much additional value.

As the focus of this study was more on the e-government side, only a fraction of trust literature from e-commerce domain was selectively included in this review. Since both e-commerce and e-government are published on same forums, conducting a systematic review of e.g. ten key e-commerce journals would be a natural step to continue this path of research.

Directions for future research

This paper has investigated trust discussion in e-commerce and e-government fields. A potential avenue for further investigation would be to include e-health in the focus of the study. This could provide a more comprehensive picture of the trust discussion in the e-area.

One potential avenue to enrich the view of trust in the e-government domain would be to investigate trust from political science perspective. Introducing the concept of power from political science would potentially offer insight on how power and authority influence may trust in the e-government context.

Since trust is a dynamic construct, its role probably evolves after the initial adoption has taken place. So far, only very studies have done systematic attempts to investigate the dynamics of trust.

Moreover, attempts to put a price tag on trust would be interesting, i.e. what cost and/or benefit of nurturing trust. This issue has been investigated to some extent related to electronic marketplaces [50] but not extensively related to e-government. Thus, gaining a better understanding on the financial consequences of trust would be an insightful avenue for research also in the e-government domain.

4 Conclusions

The aim of the paper was to review B2C e-commerce and e-services and G2IS e-government trust literature in order to find differences as well as common denominators that could identify potential paths for further research and help to understand the present state of trust discussion within the two domains. The reviewed trust literature was divided into four categories, findings were discussed from a theoretical and managerial perspective and avenues for additional research suggested.

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