A Conceptual Examination of Distrusting Beliefs in Older Adults about the Internet

Research-in-Progress

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ABSTRACT

Older adults are adopting the Internet in increasing numbers today. At the same time they are also experiencing uncertainties about their safety and information privacy on this medium. Several media reports have shown a rising number of incidents involving older Internet user, that indicate lack of awareness of Internet-related security and privacy issues. This conceptual paper provides a framework to help understand the reasons why older adults might distrust the commercial websites in general. Based on established theoretical frameworks about trust, distrust and aging-based technology adoption challenges, we develop several postulates to explain distrusting beliefs that can result in precautious Internet behavior. Implications of this framework will be found in building educational programs and interventions for the population over the age of 55.

Keywords

Older adults, Internet privacy, distrust, aging.

INTRODUCTION AND BACKGROUND

Older adults, aged 55 and above (AARP 1958), particularly in the United States, have increasingly adopted the Internet for several activities (Brockman 2010). At the s`ame time they are also experiencing uncertainties about their information security and privacy on this medium. A recent report (2012) based on complaints received at FTC show that "scam artists are targeting older Americans more than ever before". Wall Street Journal (2011) reported that 2011 was the record year for investment scams for people aged over 50. Much of these scams and other reported frauds highlight both security and privacy problems for older adults. In addition to these privacy scares, older adults inherently might have a trusting nature that is distinct from the rest of the population. The fact that complaints to FTC about financial and other kinds of fraud for this age group rose by 62% in three years (2012) indicates a possible lack of awareness of Internet-related security and privacy issues among the older population. Despite efforts to help educate members of this population about such issues to increase their awareness, we have not noticed their significant effect yet.

In this conceptual paper, we argue that a combination of inherent trusting issues and fear about privacy on the Internet could drive older adults to distrust websites a little more. At the end of the day, our research aims at finding a balance where e-commerce is adopted safely by the older generation. In other words, we want older adults to make informed and reasonable decisions about making transactions on the Web. While literature has looked at the importance of trust (Miyazaki 2008, Gefen et al. 2003) on the potential adoption and patronage of websites, the aforementioned stats show that sufficient amount of incidents have happened or are happening that create an expectation of the worst kind from the entire channel of the Internet. These incidents also tell us that the Internet has turned from a social and cooperative setting to a more of a prey-predator setting. We thus expect that making informed decision will not only factor in the amount of trust the older adults

have on the online entities but also on the level of distrust they harbor towards many of them. It has also been established (Liu et al. 2004) that privacy concerns do not lead to actions and decisions on the Web directly, especially when it comes to e-commerce websites. It is always mediated through trust. However, it has been shown (Harrison McKnight and Chervany 2001; Lewicki et al. 1998) that a person can have both trusting and distrusting relationships with another person or even an institution. We are thus interested in the role distrust plays in determining privacy-related actions of older adults. In this paper, we thus shift our focus from the actions to the negative trust or distrust component in this privacy calculus (Dinev and Hart 2006).

The role of concerns about privacy on the Internet is important in this discussion about distrusting beliefs. In addition to the privacy concerns we look at the vulnerabilities that lead to these concerns and their role in creating distrusting beliefs. Privacy is a social construct that has essentially been defined as a control over any personal information or knowledge (Posner 1978; Xu et al. 2008). In this age of unprecedented communication through Internet, much of that personal information is embedded in entities (e.g., blog comments, cookies, forum message, credit card information) that travel without much transparency to other parts of the Internet. In addition, there are not many proper mechanisms (legal or otherwise) for end-users to control or ensure the security and integrity of this information piece. While the social norm of privacy is evolving thus forcing out conventional methods of protecting privacy (EFF 2009; Mediaweek 2010), such a drastic change through socio-technical artifacts would be met with a higher amount of tension from the older generation (Gilly and Zeithaml 1985; Lunsford and Burnett 1993). It is partly this higher degree of expected strain coupled with the unfamiliarity with the Internet and the Web during their younger years, that the issues of protection of online privacy for older adults becomes more difficult to handle (Beresford and Rivlin 1966; Schopp et al. 2003). In addition, the data-centric nature of activities that older adults are beginning to pursue over the Internet and the Web (e.g., shopping, posting on forums, social networking) creates new avenues for information leakage. Although literature exists on gerontology and Information Technology adoption (Lam and Lee 2006; Selwyn 2004), there is a dearth of research on privacy issues for older adults.

The ultimate objective of our study is to encourage older adults to adopt technology with precaution. We want them to adopt technologies that they rightfully trust and reject those that they rightfully distrust. That technology in our study happens to be websites that allow financial transactions, most of which commonly rank as shopping site. IS literature (Gefen et al. 2003) has often looked at trust, especially about security practices, as a significant indicator of adoption of commercial websites. However similar attention (McKnight and Chervany 2002) has been paid to the role of the competing concept called distrust in the same scenario.

Just like past literature (Komiak et al. 2006) has shown that familiarity is an essential aspect of trust and adoption of information technology, we argue here that familiarity with the negative consequences from a system can promote distrust, which in turn can justifiably impede its adoption. Although literature on distrust with commercial websites is relatively mature, they do not necessarily look at this phenomenon from a demographic perspective. It is our position that there has to be a place for generational characteristics in explaining distrust. In addition to awareness about negative incidents, many other personality and attitude based factors must contribute to distrusting beliefs about online entities. Here we focus on e-commerce sites as representing such technology to demonstrate the phenomenon of distrust. The contribution of this paper is the theoretical framework to understand the reasons why older adults might distrust the Web in general, even though most anecdotes point to a possible trust-based and awareness-less adoption of the Internet.

THEORY AND RESEARCH MODEL

Older adults grew up in an age where Internet was not part of the mainstream life. Reports (2011, 2012) also show that people of this generation tend to fall victims to scams quite often. This is, arguably, indicative of one of two things, if not both: (1) older adults are not aware of threats that exist on the Internet and (2) they somehow trust online entities more than any other generation. No comprehensive work exists that establishes either trend for the baby boomer generation.

The objective of this study is to investigate the factors that are responsible for the distrusting beliefs that older adults might hold against websites in general. To fulfill these objectives one needs to identify and measure the role of the inherent trusting nature of such Internet users as well as the perceptions and concerns they have about the different threats to their privacy associated with the Internet. In the next subsection we introduce some of the variables in our model. The actual instrument can be provided to the reader upon request. Theoretical frameworks describing trust have always taken into consideration both personality as well as perceived fear as drivers of trust., especially with regards to IT artifacts like the Web. While trust has usually been associated as one of the last hurdles before forming a decision or having an intention about an action, very few papers have seen explored the trust-related reasons why people might avoid using certain technologies. While trust explains why a person will adopt an artifact, it might not completely explain why that person will not adopt an artifact.

It is important to approach the problem of adoption of technology in the context of trust and privacy from an angle of distrust because distrust has been established as being not the exact opposite of trust. If a person trusts another person or an entity or organization less, it does not automatically imply that the same person has an equal amount of distrust in the latter as well. Research conducted both at the behavioral level (Lewicki et al. 1998; McKnight and Choudhury 2006) as well as at a neurological level (Dimoka 2010) has shown that trust and distrust can exist in parallel. For instance, an older adult can trust a prominent auction site like eBay enough to load it on her Web browser, but at the same time can be wary of the scams some of the sellers on such a site could pull off. In effect, that person would distrust the outcome of engaging in auction-related activities on the same site that she trusts enough to visit. In another example, a person though trusting of the business goals of an e-Commerce website can simultaneously distrust the payment system it uses. This is one of the novelties we expect to bring to the field of trust whereby we are exploring certainties in the mind of older Internet users about negative things that will happen from interacting with commercial websites and other information-centric online entities.

Past literature has also distinguished distrust from "untrust" and "mistrust" (Marsh & Dibben, 2005). It is very likely that some of the older adults will have strong expectation of negative consequences from the Internet based on their experience of misplace trust (or mistrust) with similar websites. It is also possible that the lack of complete knowledge about privacy practices might make a person not place total trust (untrust) in a new website. What we are thus postulating is that based on the relationship of the website and the older person, different types of beliefs might play an important role in defining their adoption.

The rise in scams against them (2011) also tells us that majority of the older adults on the Internet are indeed too trustful of certain online entities that the rest of the population may not trust. We have also found that traditional models that explain security behavior in young and middle-age groups of ICT users well, don't explain the same for older adults adequately. This has presented a unique opportunity to attempt to theorize the behavior of older adults for computer security in a new framework.

Distrusting Beliefs

In this paper we investigate the concern that older adults have about websites in terms of the harm they might do to users. We are particularly interested in their distrust in websites that involve monetary transactions. This indicates not only the lack of trust among older adults about being consumer friendly but also a certain amount of negative feeling that probably was borne out personal experience as well as reports and stories heard about websites' practices in the past. There have been several reports about users' information not being protected by websites. These incidents pertain mostly to e-commerce and social network websites, which have either engaged in unethical sharing of information with third parties for ad-related monetizing purposes, or have had their servers hacked into for stealing customer information. Both kinds of reports bring into question the reliability of these websites especially in the eyes of older adults. In addition, most people are aware that e-commerce as well as social networking websites are not being run for charity purposes. People with experience in the real world, especially older adults, correctly identify that these are being run by for-profit organizations. If a website is not directly selling a product but rather a service, there are chances of advertisements being shown and users are quite aware of the value of user information to these organizations. More money can indeed be made by selling this information to third parties. When these

sharing activities happen in an unethical way (e.g. without seeking permission from the user), it leaves a mark of distrust in the users.

Attitude towards Aging

While we have stressed on the reputation aspect about the Web which results in privacy concerns, it is also important to highlight the personality-related reasons that also can contribute to a negative trust about websites. Websites represent organizations to most people, especially if they facilitate e-commerce or social networking. For a generation that grew up in the age of brick and mortar stores and dealing with people face to face rather than virtually, websites still feel like a black-box where they cannot feel what is being done with their information. It is thus important to explore the aging factor when it comes to trusting and distrusting beliefs about entities that are not contemporary to a population. In particular, we argue in this paper that it is not the actual (or chronological) age but rather the attitude towards life one has despite one's chronological age. Attitude towards aging has been established (Cody et al. 1999) as a strong indicator of technology adoption. On the other hand, attitude towards aging encompasses the notion of being happy and content with one's life. (Mock and Eibach 2011) has shown that one of the personality traits to have a strong correlation with those who are significantly content with their life is trust. That is, people who perceive to be enjoying life better and accepting things as they come will tend to be more predisposed to trust other people.

Disposition to Trust

An individual might be more inclined to trust other people, especially strangers, if he/she is less cynical about the world around. This personality trait can arguably carry over to entities that represent organizations although to, perhaps, a lesser degree (McKnight and Chervany 2001). In a discussion about distrusting beliefs, as mentioned earlier, we need to look at both artifact-specific perceptions as well as personality traits. In this paper, we argue that part of that personality trait is captured by a person's general tendency to trust other human beings. When a person is less likely to trust strangers, we anticipate such a person to be more suspicious about entities that they did not grow up with. This is particularly true in the case of older adults and the Internet. Since Internet changes the mode of communication for many life activities (e.g. shopping, banking, keeping in touch with family members), the channel can understandably seem suspicious to many folks in that age group and thus it is important to talk about the role of predisposition to trust in this discussion. According to (Cho 2006), disposition to trust has an impact on both trusting and distrusting beliefs, even though asymmetrically. We thus look at the influence of the general tendency of older adults to trust in people on their trusting beliefs in websites that involve monetary transactions.

Security Threat Awareness

Past literature (Olivero and Lunt, 2004) has shown that a higher level of risk awareness reduces trust. On the other hand, (Yoon 2002) has shown that higher brand-awareness contributes towards trust in e-commerce sites. The same study also cautions against using awareness as the only major indicator of trust, a finding we concur with through our overall model. General awareness of security issues and repercussions have been shown (Bulgurcu et al. 2010) to influence attitude. We argue in this paper that just like high awareness about a site increases trust in that site, high awareness about the negative aspects of a website increases the certainty about negative outcomes from that website as well. Thus high awareness about threats associated with websites in general should increase distrusting beliefs about e-commerce websites in general.

Privacy Concerns

Concerns about the impact on personal information privacy have become mainstream since websites started accepting personal information for several purposes, especially for e-commerce and social networking. While websites originally started as outlets of sharing information, it is very unlikely for any website these days to be not collecting some information from the user, be it explicitly or implicitly. For example, users are either explicitly asked to provide personal information

(like name, contact information and in some cases bank information) to facilitate several transactions that were earlier impossible to carry out over the Internet. Implicitly, many websites and third party sites putting ads on the former have started collecting information and tracking users through cookies both for better and more personalized services as well as for monetizing purposes. These shifts in information flow have given rise to privacy concerns that have not been helped by occasional privacy leaks and malpractices by websites and third parties. Distrusting e-commerce websites result partially from these concerns as literature (Eastlick et al. 2006) has shown that trust is usually a consequence of privacy concerns. In this case, we are specifically talking about concerns about a user's privacy while browsing or using a website. Furthermore, we also break up these concerns into one that relates to an older adult's own information and one that deals with public in general. We are arguing here that a distrusting belief about the Web comes not only from concerns about threat to personal information privacy but also threats to privacy of the population in general.

Perceived Vulnerabilities

One of the most important factors that lead people to have concerns about privacy on the Internet are knowledge and assumptions about different risks to their privacy, which in turn make them feel vulnerable (Dinev and Hart 2004). This perceived vulnerability of being on the Internet stems from fear of unauthorized access to personal information and misuse of that information which might even lead to monetary losses in addition a breach of their privacy. Not only are these vulnerabilities felt from the fear of potentially criminal activities, but also from a sense of helplessness against bigger entities like the Government. We argue that this is not going to be different for the population of older adults.

Based on the discussion above we propose the following hypotheses that our research model (figure 1) comprises of:

H1: The more positive the attitude towards aging, the greater is the disposition to trust.
H2: The more positive the attitude towards aging, the lesser are the distrusting beliefs.
H3: The greater the perceived vulnerabilities, the greater are the online privacy concerns.
H4: The greater the perceived vulnerabilities, the greater are the distrusting beliefs.
H5: The greater the disposition to trust, the lesser are the distrusting beliefs.
H6: The greater the online privacy concerns, the greater are the distrusting beliefs.
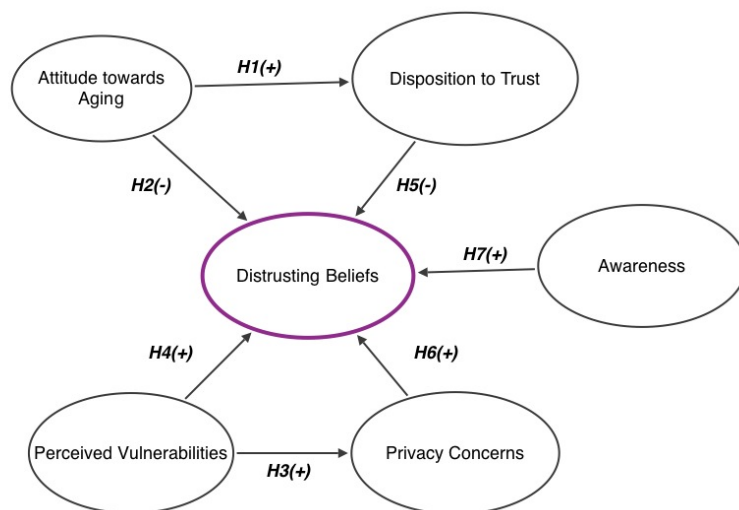H7: The greater the awareness of security and privacy issues, the greater are the distrusting beliefs.

Figure 1: Research Model

FUTURE WORK AND POTENTIAL IMPLICATION

The key contribution of this research is that we are trying to understand security and privacy based distrusting beliefs in older adults from diverse perspectives. The practical implication of this study lies in helping businesses design marketing studies that should employ a more hands-on approach to extract the true trusting nature as well as privacy concerns of older adults in order to appropriately recommend tools that compensate for the distrusting beliefs some of them might hold against e-commerce websites.

	Constructs	Levels of Measurement	Selected References
1	Distrusting Beliefs	Ordinal (Scales)	Cho 2006; McKnight and Chervany 2001
2	Disposition to Trust	Ordinal (Scales)	Xu et al. 2005; McKnight and Chervany 2002; McKnight et al. 2002
3	Privacy Concerns	Ordinal (Scales)	Malhotra et al. 2004
4	Privacy Vulnerabilities	Ordinal (Scales)	Dinev and Hart 2004
5	Attitude towards Aging	Ordinal (Scales)	Cody et al. 1999
6	Age	Interval	Awad and Krishnan 2006

Table 1: Sources of measures for variables

We will be using the original 5-point Likert scales from established literature as listed in Table 1 to measure the constructs. The data will be collected through both paper and online survey on a national basis. We are targeting a sample size of 250 for the older population. However before that we will be using the same survey for a pilot study at a local level with a smaller sample size to both fine-tune the survey items and the length of the survey. In both the pilot and the final study, the research model will be evaluated using Partial Least Squares regression on SmartPLS. We also plan to ask open-ended questions at the end of the survey to help us collect qualitative data for anecdotes to help support the theory presented in this paper. The findings will be used to establish intervention methods and mechanisms that are most effective about teaching older adults on how to use the Internet safely without compromising any information security or privacy.

In addition to the model testing exercises, in future, we would also like to examine the parallelism of trusting and distrusting beliefs older adults harbor towards websites. This would be possible by looking at the contribution of the antecedents considered in this paper towards trusting beliefs. In addition, we would like to examine the potential moderating and mediating roles of some of the variables, especially cognitive age and risk aversion. We would like also like to address the limitations in our pilot study imposed by the geographical bias in our dataset. We hope to accomplish this by (a) collecting more geographically and demographically diverse data and (b) conducting the survey through a mix of printed and online questionnaires.

CONCLUSION

In this paper, we have presented a set of postulates to help us investigate the factors resulting in distrusting beliefs about the Web among older adults. This study extends the discussion of trust and privacy in the context of one of the fastest growing users of the Web – older adults. In addition, this is one of the first studies to attempt to incorporate personality-related factors in combination with privacy-related fears to understand a concept that is parallel to trust – distrust. Among these factors we

have identified that contentment about life and eagerness to try new things play an important but indirect role. We have argued for similar indirect effects from concerns about privacy breaches to one's personal information. The academic contribution of this paper is in the concept that captures how suspicious older adults are about e-commerce websites.. On the other hand, its managerial implication lies in the usefulness of the latent independent variables in designing Internet-related interventions and workshops for older adults.

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