Privacy preserving actions of older adults on social media: Exploring the behavior of opting out of information sharing

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ABSTRACT

Social media are being fast adopted by older adults for extending their social relationships. However along with the adoption, there have been concerns about risky issues regarding privacy leakages and information sharing hazards. Such risks are partially due to the fact that seniors (knowingly or unknowingly) share private information that may be misused by others. In this paper we explore the privacy-preserving actions regarding information sharing for this demography on one social media platform — Facebook. Facebook is the largest social networking platform today and many of its privacy related practices have been in the news recently. More specifically, we study the information sharing behavior of the elderly by observing the extent to which they opt out of sharing information publicly about themselves on their profile pages. In addition, we also observe how much overlap exists between these older Facebook users and their respective friends in terms of their public information sharing habits and explore the differences across gender. Finally for comparative purposes we also collect data on a sample of younger Facebook users and conduct an analysis.

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1. Introduction

One of the fastest growing demographics to utilize the Web as part of their everyday life is the group of older adults who are aged 55 and above. While conventional wisdom has usually pointed to a lower rate of adoption of information and communication technologies (ICTs) within this community, several studies [43] have shown that this story is far more nuanced. For example [48], have shown that ICTs enhance the knowledge, business transactions, and social connections of older adults. Since a high number of baby boomers, a term commonly used to refer to people born in the post world war II era of 40s and 50s, are expected to retire in the next few years, they will become more active users of the Web who will increasingly use online services to complement their retired lifestyle [29]. Older adults have not only become a valuable target audience for commercial Web properties but also those that offer social networking opportunities (e.g. Facebook) [35]. A strong indicator of the adoption of social media within this age group is the proliferation of several chapters of the AARP (formerly the American Association of Retired Persons) on Facebook which seek to bring together older adults. As of 2011, there are approximately 16 million people 55 and older, who are Facebook users [9,16] who have set up profiles on Facebook.

In spite of this increased adoption of the Web and online social media, people aged 55 and above remain the most vulnerable in

terms of online information security and privacy. Most older adults do not spend as much time on the Internet as younger consumers ("grey digital divide") and are not as knowledgeable about Internet fraud [38]. According to the U.S. Senate Special Committee on Aging (http://ageing.senate.gov/issues/elderfraud/index.cfm) while seniors 60 and older make up 15% of the U.S. population, they account for roughly 30% of fraud victims, making them a select group for our study. A recent report [47] based on complaints received at FTC shows that "scam artists are targeting older Americans more than ever before". Wall Street Journal [27] reported that 2011 was the record year for investment scams for people aged over 50. Frauds targeting older adults have become even easier to commit through online channels [13].

In addition to fraud, privacy breaches and leaks have been a major issue for social media websites. This has been exacerbated by the complexity that most users face about managing privacy on these websites [6,34,52]. Studies have shown that while people might express high privacy concerns about social platforms like Facebook, their information sharing habits tend to defy those concerns [1]. One of the unintended consequences of platforms like Facebook have been the embarrassment caused by over-sharing resulting in countless regrets [55]. Researchers have found that people of different age demographics have different attitudes towards computers [44] and more specifically privacy concerns on the Web [49] — it is therefore important to explore the phenomenon of information sharing on social media websites in terms of demographic factors like age groups. These differences are even more pronounced when it comes

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to actions in the context of online shopping that involve revealing sensitive information [40]. The growing use of social media like Facebook among older adults along with the existing threats of fraud targeting them, makes it important to investigate behaviors of information sharing of older adults on social media.

In this paper we investigate older adults' privacy-preserving decisions about personal information sharing on Facebook. We argue that social influence effects of social capital, in terms of building relationships and sharing interests and the actions of peers, have an impact on the privacy-preserving and sharing behavior of elders [52]. Relational social capital is built up on a social media platform and involves greater trust and reciprocity among its relational embedded members [6]. Such reciprocity may play a critical role in making them vulnerable or protecting them in the social media. Further, in line with several studies that have shown that men and women behave differently on the Internet; we draw theoretical inspiration from social role theory, which explains that women and men show different social behaviors [55]. We incorporate the gender parameter to explore the phenomenon of older adults sharing personal information in the social media. Henceforth, the term "gender" will be used to refer to the biological sex of the Facebook users.

While social media websites are part of everyday life, some actions in them are more common and frequent than others. We thus carefully chose the observable actions on a social media website such as sharing of personal and background information. It is through these actions or habits we investigate the information sharing characteristics of elders and the difference between the genders in the older adult population about privacy attitude in social media. Since social support has long been established as important criteria towards influencing decisions with technology, we argue that adopters of social media websites are influenced by the practices of relational peers particularly for making privacy-preserving decisions about sharing information.

In this paper, we address the following two broad research questions: (a) Do sharing (or non sharing) habits of friends on a social media platform influence an older adult's sharing habits? (b) Is this influence different between male and female older adults? Our research questions will help explore the phenomenon of privacy-preserving and information sharing on a platform that actually encourages public sharing by default, and understand how existing friends' privacy related behaviors on that same platform influence their respective opt-out decisions. To the best of our knowledge, this is one of the first studies to investigate privacy and information sharing in social media in the context of the older generation. Furthermore, this study uniquely approaches the concept of privacy-preserving action through actual observations of publicly shared information on a social media platform. While the objective of this study is to explore older adults' online privacy behavior, we do include a brief analysis of younger adults for comparative purposes. This can be expanded in future research.

The rest of the paper is organized as follows: Section 2 focuses on the theoretical foundation where we discuss selected works from the intersection of aging, privacy, social network, social capital and gender. Section 3 develops propositions to define the research model. The measurements of the variables are discussed in Section 4, followed by the elaboration of the data collection as well as the statistical methods used. The next section presents the results. The paper then concludes with practical implications about the findings in the context of the broad research questions posed above.

2. Theoretical foundation

The phenomenon being examined has several theoretical surfaces that allow us to articulate the fundamental motivation for this study. Social capital theory explains the outcome of maintaining relationships with other human beings in terms of goodwill, knowledge, influence and much. The basic assumption of social capital theory [15,39] is that the set of social resources embedded within a relationship can improve people's collective action. The networks of relationships give rise to the social capital. Such networks represent the perspective of social networks from every individual. Every relationship in a network of a person is qualified, according to this theory, as strong or weak and it has been established by several researchers that people have the strongest ties with those with whom they share similar interests, gender, age group, political views, etc. [26]. Such ties would have a social influence on peers and we argue that that the sharing habits of an individual can be considerably influenced by behavioral patterns of friends. Previous research has shown, for example, that within virtual communities, social influence which is part of social capital generated has a strong effect on the attitude towards products discussed within those communities [54]. Other studies [51] have established that social influence is an outcome of the social capital generated in an interactive environment and this influence can be predicted by prior relationships as well as ties to others within that environment.

Further, in order to understand sharing behavior that can help in devising protection mechanisms against such vulnerabilities on social networks, it is important to understand why older adults are increasingly using social networks today. One perspective to explain this adoption comes from the activity theory of aging [19], which explains that as people grow older, they tend to feel isolated from the younger portion of society and thus take up new activities that they might not have been exposed to in the past in order to get more satisfaction in life. Many have also argued that adoption of new things is not enough. Through the exchange theory of aging [46], it has been demonstrated that new artifacts and technologies that enable more social exchange with like-minded people lead to more substantial coping with the aging process. Finally, the theory of the subculture of aging [23], suggests that not only are older adults naturally adopting these social sharing technologies, but also their sharing habits can also be influenced by each other. The reason behind this influence comes from the fact that aging drives these individuals towards a shared community.

While strong friendships and relationships tend to generate positive influence in social media, the extent or the nature of that social capital can vary based on gender as found in the case of blogging [11]. Social role theory suggests that social norms are the main cause of gender differences that emerge during social interactions. According to [22], women and men show different social behaviors because of different societal and cultural expectations for the two genders. Social role theory proposes that all types of women's and men's social behavior can be framed within the two extremes of a continuum: men are agentic and women are communal [2]. As a consequence of these characteristics, the behaviors of men tend to focus heavily on outcome, whereas those of women are greatly dependent on interpersonal relationships.

In addition to the lack of attention to the older generation on Facebook as mentioned above, this age-demography also elicits interesting characteristics when it comes to technology adoption and attitude towards technology in general. Several studies have shown that cognitive ability is one of the key aspects of aging [25] and one that directly influences their usage of Web and email. However this usage has been shown to improve with the availability of social support [14]. We can reasonably argue that a social media platform like Facebook where the prime objective is to connect with friends and acquaintances, social support should be easier to receive which can perhaps help older adults overcome their general fear of anxiety [14], fear of unknown solicitors [32] and aversion to any kind of technology-related risk [45]. The social support on Facebook is available partially through the visibility of information one's friends are sharing on their respective profile. Such information leads to a peer influence, which we investigate by measuring the similarity of information sharing habits between the older adults and their friends. Social support is often a source for influence in actions and attitude [28,50]. Influence through friends on social