



Perceived Internet privacy concerns on social networks in Europe



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ABSTRACT

The development of computing technologies and the Internet has made it possible to capture, save and analyze increasing amounts of personal information, leading to increased public concern over privacy. The present article analyzes individuals' Internet privacy concerns with respect to social networking sites. We study data on a set of 22,253 individuals in 26 EU countries, collected in December 2009 by Eurobarometer. We use an ordered logit model to examine the variables associated with the probability of increased concerns over privacy, in order to draw policy implications. The results show that national efforts to safeguard personal data positively affect perceived privacy. We observe also that both cultural and socio-demographic variables affect the level of privacy concerns.

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1. Introduction

The increased digitization of information coupled with reduced costs for its storage, is allowing increasing amounts of information, and especially personal data (Acquisti, 2010) to be collected, saved and analyzed. These personal data are a crucial input for many Internet firms and especially Social Networking Sites (SNS) such as Facebook, Twitter, and LinkedIn, whose business models are based on exploitation of personal data. At the same time, the practices of SNS are becoming frequent source of controversy and concern over privacy.¹ To reduce people's privacy concerns and their potential threat to e-commerce and digital economy developments, the European Commission in 2012 announced a draft regulatory reform to

the 1995 EU Data Protection Directive. In relation to social networks, the European commission is proposing to strengthen online privacy protection by creating or promoting the 'right to be forgotten', 'privacy by default', and 'privacy by design'.² However, advocacy groups are claiming that many people want the right not to be forgotten, and it is becoming clear that individual requirements for privacy protection on the Web and the well-being associated with enforcement of the proposed law may vary among individuals. Thus, analysis of individuals' privacy concerns in the European context should help to clarify this issue.

The aim of this article is to test how institutional and demographical factors affect the level of individuals' privacy concerns related to SNS and to draw some policy and managerial implications. This article focuses on SNS for two reasons. Firstly, SNS have witnessed extremely rapid spread

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¹ E.g., in June 2012, an Austrian law student requested from Facebook a copy of all the information gathered about him. Facebook sent him 1222 pages of personal information, and the student realized that some personal data had been collected without his knowledge or approval.

² These new rules might allow Internet users to delete personal information held on the Web, to set high privacy protection by default, and to consider privacy concerns at the software/application development phase.

with more than a billion users.³ Secondly, they are able to collect more individual data (friends, hobbies, travel, etc.) compared to other websites such as e-commerce sites. To our knowledge, few studies analyze the impacts of both individual characteristics and the institutional environment on privacy concerns (O'Neil, 2001; Palm and Hansson, 2006; Bellman et al., 2004; Rochelandet, 2010), and especially in relation to the use of SNS such as Facebook, Twitter and MySpace. We exploit data from a survey of 22,253 individuals conducted by Eurobarometer in 26 EU countries in December 2009.⁴ This survey was designed to measure different aspects of individual attitudes to Information and Communication Technologies (ICTs) and especially the extent of individuals' concern over the misuse of their personal data uploaded onto SNS. We combined these data with data from multiple sources including the organization Privacy International and cultural indexes constructed by Hofstede (computed in 2008),⁵ which permit us to test the cross-country effects of institutional protections and cultural values on perceived privacy concerns related to SNS.

We fit an ordered logit model with fixed effects to test the institutional effects on privacy concerns. The empirical evidence shows that a stringent regulatory framework is associated with a higher level of perceived privacy concerns. National cultural characteristics also seem to drive the perception of personal data misuse. Once we take account of country fixed effects, demographic variables still affect individuals' perceptions of personal data misuse.

The article is organized as follows. Section 2 provides a review of the literature dealing with privacy concerns in different theoretical frameworks and presents the main hypothesis tested. Section 3 discusses the descriptive statistics and Section 4 describes the empirical models and presents the results. The paper concludes with a discussion in Section 5.

2. Literature and hypothesis

Since the seminal work of Warren and Brandeis (1890), which defines privacy as the “right to be let alone”, privacy has become a multidisciplinary topic that overlaps various disciplines – economics, management, law, sociology and psychology (Jarvenpaa et al., 1999; Smith et al., 1996). More specifically, privacy has been defined as the individual's ability to control the use of personal information (Westin, 1967; Stigler, 1980; Hui and Png, 2006) and is related to different aspects of life (Lessig, 1999), for example, government and regulation (Milberg et al., 2000; Westin, 2003), consumer and price discrimination (Varian, 1985), and health (Heikkila, 2011). The recent rises of e-commerce and SNS have resulted in renewed emphasis on online privacy concerns (Koyuncu and Lien, 2003; Johnson et al., 2004; Montgomery et al., 2004; Palm and Hansson, 2006; Arora et al., 2008; Chen and Hsieh, 2012).

Building on the work of Westin (1967, 2003), there is a strand of empirical literature studying privacy issues (Ackerman et al., 1999; Sheehan, 2002; Jensen et al., 2005;

Acquisti and Gross, 2006). However, most are related to small samples (often students), from single countries, and use a small number of explanatory variables. Although the results are not always significant from a statistical viewpoint, these studies highlight the influence of different types of variables (socio-demographic, ICT equipment and usage, and geographic location) on individuals' perceived concerns over privacy on-line.

In relation to institutional factors, several studies take account of the cultural dimensions proposed by Hofstede (1980, 1991) to understand differences in privacy concerns among countries (Bellman et al., 2004). Hofstede's four indexes are Uncertainty Avoidance, Power Distance, Individualism, and Masculinity. Milberg et al. (2000, 1995) test relationships between cultural values and privacy concerns, while Bellman et al. (2004), Bandyopadhyay (2009) and Cullen (2009) analyze the relation between cultural indexes and the determinants of concern over privacy on the Internet.

The Uncertainty Avoidance Index (UAI) is associated with high levels of anxiety, stress and concern over security, which suggests that avoidance of high uncertainty is positively related to privacy concerns. According to Milberg et al. (2000, 1995), levels of privacy concerns are positively correlated with the UAI. The Power Distance Index (PDI) measures the acceptance of institutional inequalities and respect for authority and hierarchical relationships. A high PDI means that a country exhibits high levels of mistrust of powerful organizations (Milberg et al., 2000). A low PDI characterizes a society that tends towards “egalitarianism”. The literature shows that people in countries with high PDI feel suspicious and mistrustful of others which may be positively linked to high privacy concerns (Hofstede, 1980, 1991; Smith et al., 1996; Jarvenpaa et al., 1999). Individualism (versus collectivism) is defined by Hofstede as a “preference for a loosely-knit social framework in which individuals are expected to take care of only themselves and their immediate families”.⁶ In the literature, the effect of the Individualism Index (IND) on privacy concern diverges. On the one hand, Milberg et al. (2000) show that a high Individualism Index is positively associated with a high level of concern over privacy, and argue that individualist cultures are keen to guarantee the right to preserve privacy, while a low IND suggests a strong sense of community and a society that accepts organizational practices and intrusions into private life. However, Bellman et al. (2004) find that a high IND is associated with low privacy concerns. They argue that in line with cross-cultural studies, people from individualistic cultures are more comfortable with personal information disclosure. For instance, Hofstede (2001) shows that individualist societies are more likely to use the media to disclose and openly share information, while collectivist societies refer more to the group. A high Masculinity Index (MAS) measures the societal value associated with the accumulation of money and material objects (Hofstede, 1980). A high value of this index is associated with a culture that might condone use of personal information justified by the associated economic benefits (Bellman et al., 2004).

In addition to cultural effects, the literature shows that the regulatory context can influence an individual's privacy

³ For instance, according to the Alexa traffic rank (www.alexa.com, last retrieved 29 May 2013), Facebook is the second most-used website in the world after Google with more than 1 billion active users per month (<http://news.cnet.com>, last retrieved 29 May 2013).

⁴ Released end 2010.

⁵ <http://www.geerthofstede.nl/research-vsm> (last retrieved 29 May 2013).

⁶ <http://geert-hofstede.com/dimensions.html> (Last retrieved 26 May 2014).

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