A Cross-Cultural Comparison of Information Privacy Concerns in Singapore, Sweden and the United States

Zafer D. Ozdemir
Miami University
Oxford, OH 45056, USA
+1 (513) 529-8397
ozdemir@miamioh.edu

John H. Benamati
Miami University
Oxford, OH 45056, USA
+1 (513) 529-4835
benamajh@miamioh.edu

H. Jeff Smith
Miami University
Oxford, OH 45056, USA
+1 (513) 529-1560
smithhj@miamioh.edu

ABSTRACT
We propose to investigate the antecedents and consequents of information privacy concerns from a cultural perspective. Using Hofstede’s dimensions of cultural values, we will gather data from countries that reportedly differ with respect to these dimensions and study the role of culture at the individual level in shaping individuals’ privacy-related behavior. Other relevant constructs will also be included in the research model.

CSC Concepts
• Security and Privacy → Human and societal aspects of security and privacy

Keywords
Information Privacy; Culture; Trust; Risk; Personality

1. INTRODUCTION
Information privacy is of growing concern to multiple stakeholders including business leaders, privacy activists, scholars, government regulators, and individual consumers. Surveys indicate mounting concern among Internet users and confirm privacy as a top priority for businesses. For instance, a Harris Interactive survey showed that 74 percent of consumers do not like being tracked by advertisers, and 98 percent expressed a strong desire for better controls over how their information is collected and used via mobile devices and applications [14]. These concerns are warranted because a large number of firms like Google, Yahoo, Microsoft and Facebook share their collected customer data with hundreds of their affiliated companies [12]. Such extensive use and sharing of consumer data brings with it the risk of data breach and the corresponding negative psychological impacts on consumers.

The global nature of the Internet and e-commerce further complicates privacy issues because consumers’ perceptions regarding privacy, risk, and fair information practices vary across cultures (Milberg et al., 2000; Bellman et al. 2004). In addition, there are notable cross-country differences in privacy regulations across the globe. For example, privacy is viewed as a human right in Europe, whereas it is more of a commodity in the U.S. that can be exchanged for personalized services. Global corporate marketers need to design appropriate practices for information collection and use that take into account the variation in privacy perceptions of consumers across countries.

In this research, our primary aim is to understand the role culture plays in shaping individuals’ privacy concerns and the way it affects their information disclosure decisions on the Internet. Past research on information privacy has found differences across cultures, but as explained below, the relationships among culture, privacy concerns, and information disclosure have not been investigated in the context of a model that takes into account both antecedents and consequents of privacy concerns.

Hofstede (1984) has developed the most well known multidimensional approach in quantitatively measuring culture. His framework clusters cultures based on four dimensions: power distance, individualism-collectivism, uncertainty avoidance, and masculinity-femininity. Not surprisingly, country scores can vary substantially along these four dimensions. Given our objective in this research, we have contrasted cultural dimension scores of various countries in Europe and Asia with those of the U.S. and concluded that a comparison among Singapore, Sweden, and the U.S. would potentially be the most fruitful approach.

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Table 1. Cultural dimension scores for Singapore, Sweden, and the United States

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Singapore</th>
<th>Sweden</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Distance</td>
<td>74</td>
<td>31</td>
<td>40</td>
</tr>
<tr>
<td>Individualism</td>
<td>20</td>
<td>71</td>
<td>91</td>
</tr>
<tr>
<td>Masculinity</td>
<td>48</td>
<td>5</td>
<td>62</td>
</tr>
<tr>
<td>Uncertainty Avoidance</td>
<td>8</td>
<td>29</td>
<td>46</td>
</tr>
</tbody>
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2. RESEARCH QUESTIONS
Against the aforementioned background, we intend to conduct our study in Singapore, Sweden, and the U.S. and ask the following research question:

Research Question 1: What are the cultural dimensions that drive privacy concerns and disclosure of personal information online, and are these different in distinct national cultures?
As we tackle this research question, we would also like to properly position our work in the general stream of literature on privacy concerns and make a meaningful contribution to it. Recently, some rigorous attempts have been undertaken in order to provide an over-arching framework that explains this research stream. Among these, Smith et al. [26] noted that the majority of existing empirical privacy concern research has been focused on examinations of the relationships between privacy concerns and different consequents associated with those concerns, such as regulation preferences and stated intentions regarding information disclosure behaviors. They highlighted the fact that only a few studies have considered actual behaviors; most have focused on stated intentions. Further, they noted that the former portion of the model, which focuses on antecedents to privacy concerns and their relationships with privacy concerns, has received proportionately much less attention.

Our own recent review of literature confirms these observations. Through an extensive review of the extant literature, we have found that studies that incorporate antecedents of privacy concerns, privacy concerns, and consequents of those concerns form a very limited set of only five studies, as opposed to tens of studies that consider only antecedents of privacy concerns and privacy concerns (no consequents) or privacy concerns and its consequents (no antecedents). Therefore, we hold that the most instructive privacy concern studies are those that consider at least a subset of variables from each of the domains on the full path from antecedents through privacy concerns and consequents. Such studies will not only provide researchers a fuller view of the issues involved, but they will also address a neglected area in the privacy literature. It is in this domain that this proposed study is situated.

In that light, in addition to culture, antecedents that we will consider are individuals’ awareness of privacy-related issues (PA) and their perceptions of previous privacy-invading experiences (PE). Smith et al. [28] provided elementary tests (using single measurement items) of these constructs’ relationships with privacy concerns, but subsequent research has not tested these relationships with either validated measures or in a larger path model. This leads to our second research question:

**Research Question 2:** What is the relationship between Privacy Awareness and Privacy Experiences of individuals and their stated privacy concerns?

We will also consider how privacy concerns vary based on gender. In an early observation, Culnan [6] noted that privacy concerns vary across several demographic factors; Sheehan [3] found, in particular, that women have expressed more concern about many privacy-related activities than have men, although she did not test this in a rigorous model. This leads to our third research question:

**Research Question 3:** What is the relationship between gender and stated privacy concerns?

Personality differences may also play a role. In past research, Smith et al. [28] correlated a few personality characteristics with their Concern for Information Privacy (CFIP) scale, but they did so solely in an exploratory evaluation of the nomological model for their instrument. Smith et al. [26] suggested that the widely-accepted “Big Five” personality scales [11] should provide a useful composite for a more rigorous examination of this relationship. We explore the relationship by asking:

**Research Question 4:** What is the relationship between the “Big Five” personality traits of individuals and their stated privacy concerns?

As Smith et al. [26] noted, trust has been consistently viewed by privacy researchers as having an important role in the privacy concerns nomological network [1; 10; 19; 23; 32], although its role is inconsistently modeled. Risk, on the other hand, has seldom been considered as an explanatory construct within the studies that focus directly on the relationship between privacy concerns and outcomes; its consideration has usually been relegated to the rubric of privacy calculus, which has not previously been well integrated into the overall privacy research stream [26]. Thus, our fifth research question is:

**Research Question 5:** What are the roles of trust and risk in a privacy concern model?

Smith et al. [26] refer to the disclosure of personal information as an important outcome variable, and Li [15] also notes the related behavior of protecting information. Thus, to complete our investigation of the path from factors that influence privacy concerns through outcomes, we ask:

**Research Question 6:** What is the relationship between privacy concerns and privacy-related behaviors such as disclosure of personal information online?

In summary, the objectives of this study are to (i) understand the role of culture in the context of information privacy concerns and privacy-related behaviors (ii) consider some variables from each of the domains on the full path from antecedents through privacy concerns and consequents; (iii) measure the construct of “privacy concerns” as it was originally conceptualized and subsequently confirmed in the information systems literature; (iv) use samples drawn from a broad population across three countries via a professional research firm; and (v) measure a dependent variable associated with subjects’ (self-reported) behaviors in a real-world context using a multi-item scale.

### 3. PROPOSED RESEARCH MODEL AND HYPOTHESES

As can be seen in Figure 1 (see the Appendix), the research model includes several antecedents, privacy concerns, and behavioral outcomes.

**Figure 1. Proposed Research Model**

#### 3.1 Culture

The limited number of studies considered cultural values as an antecedent to privacy concerns report significant but mixed results. Regarding power distance, Bellman et al. (2004), Cao and Everard (2008), and Lowry et al. (2011) all found that it had a negative effect on the overall level of information privacy concerns, whereas Milberg et al. (2000) found a positive effect. Regarding individualism, Bellman et al. (2004) and Lowry et al.
(2011) found that it had a negative effect on information privacy concerns, whereas Milberg et al. (2000) found a positive effect. Regarding uncertainty avoidance, Cao and Everard (2008) and Lowry et al. (2011) found that it had a positive effect on information privacy concerns, whereas Milberg et al. (2000) found a negative effect. There is no consensus on the effect of masculinity. We thus propose:

H1: An increase in (a) power distance and (b) individualism will be associated with a decrease in information privacy concerns; and increase in (c) uncertainty avoidance will be associated with an increase in information privacy concerns.

3.2 Privacy Awareness

The concept of privacy awareness was first considered by Westin [30], who noted that individuals' levels of privacy concern may increase with their exposure to privacy-related media coverage. Smith et al. [28] confirmed this relationship in their efforts to establish nomological validity of their CFIP measurement instrument, although they relied on a single item to measure the level of exposure. Some later research [17; 20] considered the construct of "privacy awareness" in a different context, but the original construct has never been considered as an antecedent within a test of a robust model. In that light, we revert to the original postulate of Westin [30]:

H2: Higher levels of media-generated privacy awareness will be associated with higher concern for information privacy.

3.3 Privacy Experiences

Early research on information privacy suggested that previous personal experiences may impact an individual's level of CFIP [5; 29]. Smith et al. (1996) interpreted this as having "personally been the victim of what you felt was an improper invasion of privacy"; defined as such (and using a single measurement item), they confirmed the relationship with CFIP. Surprisingly, the privacy research stream has devoted little further attention to the manner in which a subject's own privacy-related background correlates with his or her level of privacy concern. We include this relationship in the research model and test it with a more rigorous measurement scale:

H3: Stronger perceptions of negative privacy experiences will be associated with higher concern for information privacy.

3.4 Gender

Several researchers have explored the relationships between demographic differences and stated privacy concerns [4; 7; 24; 25]. Culnan [6], who used a national public opinion dataset, found relationships between privacy concerns and age, education level, and ethnicity. More common are studies based on a researcher's own data collection (such as the present effort), in which a more limited number of demographic factors are considered. In one directly relevant example, Sheehan [3] found that women were generally more concerned than men about many dimensions of privacy. However, her survey relied on a single-item measure for privacy concern and largely relied on a theoretical set of practices. Using a more rigorous approach, we will test a hypothesis motivated by her exploratory findings as follows:

H4: Men will exhibit lower levels of concern for information privacy than will women.

3.5 “Big Five” Personality Traits

In past research, personality differences such as introversion vs. extraversion [16], independent-self vs. interdependent-self [31], and social awareness [9] have been shown to be associated with individuals' privacy concerns. Smith et al. [27] called for additional research regarding the promising role of the “Big Five” personality traits within the privacy domain. These “Big Five” traits, which have been acknowledged by psychologists since the early 1960s, are frequently considered to be Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness [11; 13]. With only a few exceptions (Devaraj et al. 2008; McElroy et al. 2007), top-tier studies in information systems have not utilized these personality scales. In spite of the strong motivation for exploration of the relationship between the specific “Big Five” traits and the construct of privacy concerns, previous theoretical development is non-existent. For that reason, we will subject the relationships between each of the “Big Five” traits and privacy concerns to exploratory (i.e., not hypothesized) evaluations.

3.6 Consequent: Behavior

As noted earlier, recent reviews of privacy research [15; 26] focus on individuals' behaviors as the ultimate reflection of their concern for information privacy (CFIP). Many studies have considered this linkage, with the majority finding expected relationships between CFIP and privacy-protecting behaviors, which often include limiting the disclosure of personal information. We expect similar findings in this study, so we hypothesize:

H5: Higher CFIP will be associated with privacy-protecting behaviors.

3.7 Trust and Risk

The roles of trust and risk in information privacy-protecting behaviors are unclear. Although the relationship between trust and privacy-related behaviors has been examined in a number of previous studies, there has not been a clear conclusion regarding trust’s role. Likewise, to the extent that risk has been considered in privacy-related studies, there has not been a consistent conclusion regarding risk’s role in information privacy research frameworks [2; 8; 9; 17; 32].

Dinev and Hart (2006) found that risks associated with opportunistic behavior related to the personal information collected by Internet sites negatively influence individuals’ willingness to disclose personal information (trust) required to perform Internet transactions. (The study did not consider outcomes that may have resulted from this willingness/trust.) A more recent study [2] extended the work of Dinev and Hart [9] and showed that higher risk lowers willingness to be vulnerable. That study found that the general perception of risk of disclosing personal health information online has a strong negative influence on trust in a specific health website and that higher levels of trust positively influence intentions to disclose information to the health website. We propose combining the findings from these two studies and hypothesize:

H6: Higher expressed perceptions of information-related risk when dealing with certain companies/organizations will be associated with lower trust in those companies/organizations.

Acting on a willingness to be vulnerable requires actually taking risk [18]. An alternative to simply assuming the risk in situations
of low trust—where willingness to be vulnerable is low—would be to take actions to avoid the risk. In the case of information privacy-related risk, this would suggest an increase in privacy-protecting behaviors. Individuals might limit the amount or type of information that they share or limit access to that information to the extent possible. This suggests that an inverse relationship exists between trust and privacy protecting behaviors. Hence, we hypothesize:

H7: Higher information-related trust in certain companies/organizations will be associated with fewer privacy-protecting behaviors when dealing with those companies/organizations.

4. METHODS

Whenever possible, we will use previously developed and validated instruments to measure the constructs of interest. The Concern for Information Privacy (CFIP) scale will be taken from Smith et al. [28]. The “Big Five” personality traits will be taken from [13].

The data will be collected using survey questionnaires through Qualtrics which will allow us to reach representative populations of consumers in the U.S., Sweden, and Singapore.

We will utilize the Partial Least Squares (PLS) technique—specifically, SmartPLS version 3.0.M3 [22]—to analyze the survey data.

We will assess the measurement model by looking at the reliability of the indicators, the internal reliability of the measurement scales, and the discriminant validity of the indicators. In completing our assessment of the measures, we will identify any indicators of potentially questionable validity, and we will remove them and re-run the PLS analysis. To assess scale reliability and internal consistency, we will consider the composite reliability score and the average variance extracted. We will perform two tests for discriminant validity. To assess common method bias, we will perform Harman’s one-factor test as well as the test proposed by Podsakoff et al. [2121].

5. REFERENCES


