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Do Information Privacy Concerns Affect Students' Feeling of Alienation?

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ABSTRACT

Organizations such as universities collect and use personal data about customers such as students. How do students feel about their university's practices related to the collection and use of personal data? Using data collected via a survey of 187 students at a large U.S. university, we investigate the effects of these two privacy concerns on students' feeling of alienation. Implications of the results are discussed in light of ethics, strategy, design, control and administration of personal information management systems.

INTRODUCTION

As computerized information management systems (IMS) continue to shape modern organizations, ethical tensions between organizations and individuals affected by organizational practices of personal data collection and use gain heightened importance. Concerns about data collection and data use, are two of the many concerns individuals have about personal information privacy (Smith et al., 1996). As organizations become more information-based (Drucker, 1988), ethical concerns related to individual's information privacy become more relevant, creating an urgency to study the antecedents and consequences of individuals' information privacy concerns (IIPC). A significant amount of literature exists about the antecedents of IIPC , and about legal, social, organizational responses to IIPC.

On the basis of Culnan (1993) and Smith et al (1996), individuals' information privacy concerns (IIPC) has been defined in this paper as an individuals' level of discomfort, fear of harm, and feeling of loss of control associated with the collection and use of personal information. The research question we ask is: do individuals' information privacy concerns affect students' feeling of alienation at US universities? Since universities in the USA, where students from all over the world are subjected to practices of personal data collection and use, and recent legislation such as the Patriot Act, affects information exchange relationships between organizations and individuals (Rackow, 2002), the question we ask in this study is timely and relevant to information management in US organizations populated by both Americans and citizens from different nationalities, cultures and religions.

PRIOR STUDIES ON EFFECTS OF IIPC

To understand the effects of IIPC in this study, it is necessary to briefly review prior studies. Individual's information privacy concerns (IIPC) have been studied in different technological, organizational and other contexts. Technological contexts include 'yellow journalism' in newspapers (Warren & Brandeis, 1890) and the mass media , databases (Date, 1986; Garfinkel, 2000; Cespedes & Smith, 1993), computer networks (Rotenberg, 1993), the Internet and related technologies such as e-mail (Kent, 1993; Marchewka et al., 2003), software cookies (Berghel, 2001), camera phones (Dunphy et al., 2003), e-commerce systems and Internet marketing (Wang et al, 1998). Organizational contexts include the U.S. government and its different agencies that create the impression that the U.S. is a database nation (Garfinkel, 2000); different industries in the private sector such as health care (Rindfleisch, 1997) and insurance (Studdert, 1999; Borna & Avila, 1999); data flows in law enforcement and criminal justice systems (Laudon, 1986), as well as educational institutions such as schools (Hancock, 2001) and universities (Sethna & Barnes, 1999).

However, few studies have attempted to build theories and test hypothesized relationships among the different dimensions of IIPC and their effects on specific outcome variables. Examples of outcome variables or

consequences of IIPC that have been theorized and empirically tested indicate that organizational information management practices, individuals’ ethical perceptions of these practices, and societal responses are inextricably linked (Culnan, 1993; Milberg et al, 1995; Smith, 1994, and Stone et al., 1983).

It has been found that privacy concerns affect an individual’s willingness to give personal data to traditional organizations (Culnan et al., 1999) as well as to web-based vendors (Panichpathom, 2000;). Culnan (1993) found that IIPC—especially concern about secondary use of data-- was a viable cause of negative public attitude toward organizations engaged in privacy-invasive marketing practices. Milberg et al (1995 & 2000) found that privacy concerns led people to support governmental intervention over industry self-regulation. Olivero and Lunt (2004) find that perceived risk and awareness of information collection or extraction are associated with a shift in concerns from issues of trust to issues of control. They also find, in the context of e-commerce exchanges, that customers’ risk awareness reduces the level of trust and increases the demand for control and rewards, complicating the relationship between the retailer and the consumer.

About privacy threats posed by technology, Pottie (2004) writes that when sensors, cameras, and tags are pervasively embedded in the environment and networked, anyone in the world willing to pay a fee, exponentially decreasing over time, will be able to get information on anyone else. Luo and Najdawi, (2004) identify that lack of consumer trust with respect to online *privacy* and security, especially in health related services, has prevented many consumers or patients from engaging in online shopping. Many consumers are not comfortable divulging personal and financial information to a virtual storefront. They note that the degree of consumer trust required for using a health portal is higher than for online shopping sites. In many cases, consumers must reveal highly sensitive personal information, including medical conditions and health history in order to receive useful information. Vance (2000) found that privacy concern led employment seekers to evaluate some organizations more positively than others as a work environment. In another related study, Westin (1979) studied an individual’s attitude toward information privacy in the U. S. and found evidence of individual’s feeling of alienation from society and government in general that could be attributed to privacy-invasive data collection and related practices.

To show continuity of the current study with prior studies, the constructs used in this study, their definitions and sources are summarized in Table 1a.

Table 1a: summary of constructs and their sources.

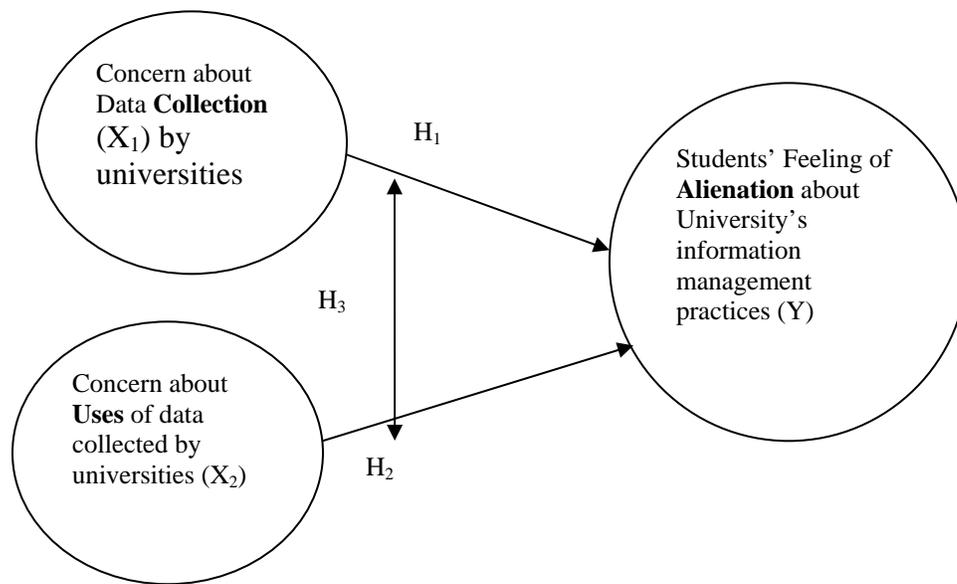
<u>Symbol</u>	<u>Construct</u>	<u>Definition</u>	<u>References</u>
X ₁	Collection	“Concern that extensive amounts of personally identifiable data are being collected and stored in databases”(Smith et al., 1996).	HEW, 1973 Laudon, 1986 Linowes, 1989 Miller, 1982 PPSC, 1977 Stone, et al., 1983 Stone and Stone, 1990 Westin and Baker, 1972
*X ₂	Unauthorized Secondary Use (internal)	“Concern that information is collected from individuals for one purpose but is used for another, secondary purpose (internally within a single organization) without authorization from the individuals.” (Smith et al., 1996).	HEW, 1973 Linowes, 1989 PPSC, 1977 Stone, et al., 1983
*X ₂	Unauthorized Secondary Use (external)	“Concern that information is collected for one purpose but is used for another, secondary purpose after disclosure to an external party (not the collecting organization)”(Smith et al., 1996).	Culnan, 1993 Linowes, 1989 Stone et al., 1983 Tolchinsky et al., 1981 Westin and Baker, 1972

Y	Alienation	The degree to which a consumer has negative beliefs and is alienated from universities in general with respect to personal information management practices.	Allison, 1978. Singh, 1988,1990, 1996
*In the current study both internal and external secondary, unauthorized use of data have been put together in one construct, X ₂ , which measures one's concern about inappropriate use of data.			

RESEARCH MODEL

A large U.S. university represents what Peter Drucker (1988) would call an ‘information-based’ organization, and students would represent individual customers of that information-based organization. As presented in the research model in Figure 1, we attempt to theorize and empirically test the effects of two independent variables—students’ concern about data collection (X₁), and concern about data use (X₂)—on students’ feeling of being alienated by their university’s practices related to personal data collection and use (Y)

Figure 1: The Research Model.



Organization Theory and Alienation (Y)

Students’ feeling of alienation about their university can be viewed as a prototypical example of the relationship between an organization and customers who have been internalized (Thompson, 1967) by their organization. In the context of an existing relationship between an organization and its internalized customers, members have a sense of belonging (Barnard, 1938) and membership (Simon, 1976), and mutual dependency (Donaldson, 1975). Internalized customers who carry out their transactions with their organization in the context of a reciprocal relationship operate on the basis of an expectation of good faith that their organization will be ethical, trustworthy, procedurally fair and just in how it treats and manages their personal information. *Alienation* can be viewed as a feeling that arises when the positive sense of belonging and membership turns sour or bitter and individuals perceive that their positive expectations are unfulfilled, ignored, neglected, violated or abused by their organization. Prior research indicates that individuals are more likely to perceive information collection procedures as privacy-invasive when the information is collected from someone who is not in the context of an existing

relationship with the collecting organization (Stone & Stone, 1990). As such, it is expected that students, when their university asks them for personal information, will not have high privacy concerns as non-students might have. For this reason, a relationship between students' privacy concerns and their feeling of alienation about their university's information management practices is expected to be mild. This is why the effect of students' privacy-concerns, X_1 and X_2 , on their perception of alienation (Y) from the university is expected to be significant but mild unless there are exceptionally privacy-invasive practices at a university.

Information-based organizations

We have chosen to study the effects of privacy concerns in the context of a relationship between students and their university because of the information-intensive nature of these organizations. Peter Drucker (1988) predicted that organizations of the future would become increasingly information-based such as hospitals and universities. Organizations such as universities are expected to be conscience-carriers (Mason et al 1995, p.196), moral agents (Mason et al., 1995; p.198-200) in how they use information-power (Mason et al., 1995; p.996) over different stakeholders (Freeman, 1984; Smith, 1994). Sources of power include information-based organizations' ability to collect, access, store, possess, legally own, control, share, communicate and buy or sell information about different stakeholders. Organizations are networks among individuals within and around an invisible legal entity. As such, different parties to the social network can be subjected to indignity, injustice and harm because of what information-based organizations do or fail to do with regard to customers' personal information management practices. The attitude that an affected party develops, such as a feeling of alienation, is not so much toward an individual employee of the organization, as toward the organization as a whole because students might not know the exact point within the organizational hierarchy or processes where responsibility should be placed and where their feeling of alienation should be directed to.

CONSTRUCTS AND HYPOTHESES

Organizational ethics, records management and alienation

Customers evaluate organizational practices according to their ethical and moral concepts and form judgments as to whether a particular practice should be viewed as good for their well being or should be viewed as an expression of lack of professional care and ethical responsibility on the part of the organization. Ethical tensions in the domain of organizational information management systems develop from conflicts between the differing and, often, conflicting interests of an organization's owners, employees, customers, suppliers, partners, and governmental agencies. For example, using social security numbers as student ID can be a source of efficiency and convenience for a university system's information system designers, administrators, and managers of student records. However, this same practice can compromise students' privacy and security and be a cause of a sense of discomfort, anguish, and insecurity that can lead to their sense of alienation. Additionally, the collection of other types of data can be a cause of concern for students. For example, collection of race and ethnicity related data (Landon et al., 1973) or life-style related data such as sexual orientation (Abbot & Liddell, 1996) can be a source of alienation for some students. In this study, we did not specify collection of any particular piece of data or specific uses of data that may be a source of concern for students. Our study focused on students' general concern about practices related to data collection and uses by universities in general and by their university in particular.

Smith et al (1996), through an extensive literature review and empirical testing and validation, identified four dimensions of individuals' privacy concern: concern about data *collection*, concern about data *use*, concern about *access to data* and concern about data *error*. Smith's study about information privacy concerns was related to organizations in general—not specifically about universities. The current study extends existing knowledge about individuals' information privacy concerns in that it theorizes and tests how two dimensions of privacy concerns—concern about data collection (X_1) and concern about data use (X_2)--contribute to students' feeling of alienation (Y) about their university's information management systems.

Independent Variables: (X1) Concern about data collection and (X2) Concern about data use

The Association for Computing Machinery (ACM) code of ethics dictates that ACM members shall

'always consider the principle of the individual's privacy and seek...to minimize the data collected [Smith et al., 1996; ACM, 1980]. The concern about excessive or unnecessary data collection represents the sentiment that 'there's too much damn data collection going on in this society' (Miller, 1982). This feeling of dislike or concern about data collection, especially in the context of increased computerization of organizations, was noted by Linowes (1989). It was also mentioned in two information privacy reports from the 1970s (HEW, 1973; PPSC, 1977). Kenneth Laudon (1986) focused on concern about excessive data collection when he wrote about a "dossier society". Stone and Stone (1990) also wrote about individual's concern about collection of personal data. Customers' concern about personal data collection by organizations (X_1) is defined by the extent to which customers feel bothered, disturbed, annoyed or threatened by organizational data collection practices.

Customers' concern about uses of customers' personal information by organizations (X_2) is defined by the extent to which customers feel an organization has violated a social contract (JJ Rousseau, 1762) between them and the organization they trusted their information with. Organizations can break this contract by using data for unauthorized reasons or in unauthorized ways that were not covered by the implied contract of data collection and usage. This psychological agreement often goes beyond any formal contract and is charged with sentiments such as trust and expectation of ethical and moral uprightness on the part of the organization beyond the minimum safeguards required of organizations under legal ethics. Such violations take place when personal information is used for unauthorized purposes and in ways that were not initially agreed upon when the contract was first formed between an organization and its customers. Smith et al (1996) identified two sub-scales of this construct: (1) unauthorized secondary use inside the organization that collected the data (HEW, 1973; Linowes, 1989; PPSC, 1977; Stone et al., 1983), and (2) unauthorized secondary used by parties external to the organization that initially collected the data (Culnan, 1993; Linowes, 1989; Stone et al., 1983; Tolchinsky et al., 1981; Westin and Baker, 1972). In this study, concern about data use refers to the composite scale that measures students' fear of unauthorized use of data both inside and outside their university.

In light of consumers' utility theory, it can be argued that if customers feel that they lose too much in terms of personal freedom, autonomy and control and get too little in terms of benefits when they are subjected to organizational practices of data collection and uses of the collected data, they will feel alienated. They perceive that the benefits they get are not adequate compared to the risks associated with the loss of control (Culnan, 1993; Smith et al., 1996) resulting from collection and use of personal information by others.

The dependent variable (Y): feeling of alienation

Social thinkers such as Plato, Hegel, Marx, Weber and others have expressed concerns about man's relationship to the society in which he lives and to which he belongs. One of those concerns was that of alienation of an individual or group by an organization, an industry or by a larger society. Today's society is dominated by organizations and organizations are dominated by computerized information systems. It is in this organizational-societal information privacy context that customers' feeling of alienation is defined, measured and analyzed. It is important to study and understand customers' alienation because customers can respond to alienation in the form of poor performance or dropping out from school (Alvarez, 1990), legal or political activism, rebellion (Brookes, 2002), non-cooperation, or even violence (Friedland, 1999) against the organizational or social entity they hold responsible for their alienation.

Most prior studies focused on customer's alienation—its sources and consequences but not in the context of customers' privacy concerns. One exception is Westin's (1979) study that investigated customers' alienation resulting from privacy concerns. Westin (1979) found that U.S. citizens felt alienated by government's data collection practices because of their privacy concerns. It has been documented that customers whose complaints are ignored feel alienated (Lipton, 2000). In the context of privacy, an extended, generalized argument can be made that students whose privacy complaints and concerns are ignored will feel alienated. An organizational strategy of growth by merger and acquisition can be a source of alienation for customers (Hafner, 1988; Hemphill, 2000) because customers' privacy is lost and their risks of exposure and harm are increased. In the context of this study, an analogy can be made that information sharing among different branches or among different units of a large university or university system will be a privacy concern which may cause students to feel alienated. Caller ID technology, viewed as dehumanizing, has been identified as a source of alienation for telecom customers (Tanner, 1998). If organizational activities in the domain of data collection and use are perceived by students as

unsatisfactory, unfriendly, risky, privacy-invasive and unsafe, the result can be that students will feel alienated. It has also been documented that as one's environment becomes more technical and complex, experiences of alienation become more common (Allison, 1978). Excessive collection and unauthorized or uncontrolled use of personal information can contribute to a student's environment being perceived by students as being too complex and technical—and thus they can be sources of alienation for students.

Research Questions (RQ_i) and Hypotheses (H_i)

The discussions presented this far can be summarized in the form of three research questions and the related hypotheses.

RQ₁: Do customers who report that they are concerned about an organization's practices of data collection feel alienated towards that organization as a result of organizational practices of personal data collection? The answer to this question depends on the extent to which customers perceive that organizations are responsible for data collection practices which raise their concern for privacy, autonomy, control, sense of fairness and justice. Thus, the more concerned they feel about organizational data collection practices, the higher the likelihood that they perceive that organizations are not being responsive to customers' concerns and will feel alienated.

H₁: The higher students' concern about data collection (X₁), the higher their feeling of being alienated (Y) by their university. It is expected that there is a *positive correlation* between X₁ and Y. ($B_1X_1 > 0$).

RQ₂: Do customers who report that they are concerned about how organizations use data feel alienated by organizations as a result of organizational practices of personal data use? An organization's use of data about customers can take place in a ways that can be perceived by customers as procedurally fair or unfair, just or unjust, indicative of true care for the well being and dignity of customers or lack thereof. The higher the level of concern or negativity in customers' perception of organizational uses of data about customers, as is measured by X₂, the more likely it is that they will feel alienated.

H₂: The higher the level of concern about data use (X₂), the higher the level of alienation (Y). It is expected that there is a *positive correlation* between X₂ and Y. ($B_2X_2 > 0$).

RQ₃: Does the feeling of alienation (Y) resulting from concern about data use (X₂) by organizations vary according to customers' level of concern about data collection (X₁)? Being subjects of data collection, all by itself, can be a source of discomfort and concern for customers. However, when customers perceive that an organization does not improperly use the data that it collects about customers, their concern about data collection might be low and the resulting feeling of alienation might also be low. On the contrary, when customers do not have the trust that organizations are fair and just in what they do with data about customers—but, instead, they have high levels of concern about improper uses of data—their concern about data collection and the resulting feeling of alienation will be higher.

H₃: Given the same level of concern about data use (X₂), individuals with higher score on concern about data collection (X₁) will feel *more* alienated (Y) than individuals with lower score on concern about data collection. Concern about data collection (X₁) positively influences (reinforces) the effect of concern about data use (X₂) on customers' feeling of alienation (Y). ($B_3X_1 * X_2 > 0$).

Sample, Data Collection and Research Methods

The sample consisted of 187 students from a large university in the U.S. There were no instances of missing data because the survey was set up online in a way that did not allow respondents to submit the survey without answering all the questions. Students got extra credit points for participating in the survey. Out of 220 students we solicited, 187 completed the survey. Because of this high response rate, non-response bias, if any existed, would not be high. Of the 187 students, 37 were graduate business students and 150 were undergraduate business students. The percentage of male (52%) and female (48%) students were almost equal. The age of the students in the sample had a mean of 23.22 years and a standard deviation of 5.26 years. There was no statistically

significant correlation between age and alienation ($r = -0.003565$). The mean alienation scores for graduates and undergraduates, male and female were not statistically significantly different.

Seven-point Likert scales were used to measure the level of concern students had about data collection, data use and alienation. The items for measuring concern about data collection and use were taken from Smith et al (1996) and the items to measure alienation were from Allison (1978) and Singh (1990). The items in the questionnaire were adapted to the context of students’ perception of data collection and use by universities. These modified items are presented in Appendix A.

A method of factor analysis revealed that the items used to measure concern about data collection and those used to measure concern about data use loaded unambiguously to the constructs they were expected to measure.

Table1: Reliability Analysis- Scale (Alpha).

Constructs/ No of items	Cronbach's Alpha	Standardized item alpha
Alienation (Y), 7 items	0.72	0.70
Collection (X1), 4 items	0.71	0.71
Use (X2), 4 items	0.60	0.61

To assess the internal consistency of the multi-item scales of measurement, Cronbach’s alpha values (Cronbach, 1955 & 1971) were computed for each of the three constructs Y, X₁ and X₂. Table1 shows that constructs Y and X₁ have Cronbach’s alpha values above .70 and the value for X₂ is .60. The generally agreed upon lower limit for Cronbach’s alpha is .70 (Robinson et al., 1991; Hair et al., 1999; p.118). However, the acceptable lower limit may decrease to .60 for exploratory research (Robinson, 1973). Thus, the values in Table1 indicate that the reliability of all three constructs: concern about data collection (X1), concern about data use (X₂) and feeling of alienation(Y) are acceptable even though the reliability of construct X₂ is acceptable on the basis of the argument that this research was exploratory rather than confirmatory.

RESULTS

The mean score on students’ concern about data use (X₂) is 6.30 compared against a mean score of 4.52 about data collection (X₁). X₁, X₂ and Y are average composite scores from multi-item scales used in the survey instrument presented in Appendix A. Students’ concern about data use was significantly higher than their concern about data collection by universities. However, the mean score on alienation was not an extreme value—it was 4.20 on a scale ranging from 1 to 7 where higher values indicated higher level of alienation [Table 2].

Table 2: Means, Standard Deviations [S] and Correlation [r].

	Mean	S	X1	X2	X1*X2	Y
(X1) Concern--collection	4.52	1.12	1			
(X2) Concern--Use	6.3	0.75	0.21	1		
X1*X2	28.62	8.57	0.92	0.6	1	
(Y) Alienation	4.2	0.86	0.49	0.1	0.47	1

The full multiple regression model, presented in Table 3, in which X₁, X₂ and the interaction of X₁ and X₂ have been used to predict and explain students’ feeling of alienation (Y) is (p-value=0.0000) statistically significant. The individual coefficient terms in this model will not be interpreted because the two independent variables exhibit multicollinearity. Multicollinearity makes determining the contribution of each independent variable in explaining Y difficult because the effects of the independent variables X₁ and X₂ are mixed or shared by each other (Hair et al 1998, p.188) However, the interaction term (B₃X₁*X₂) is statistically significant (p-value=0.022) and this indicates support for H₃. The reason for testing H₃ is to find out if students’ alienation associated with their concern about data collection varies depending on the level of concern they have about the uses, misuses or abuses of the collected data.

Table 3: Full Regression Model.
Y= B ₀ +B ₁ *X ₁ +B ₂ *X ₂ +B ₃ *X ₁ *X ₂ ;
Estimated Model: Y= 7.0149-0.674X ₁ -0.70454X ₂ + 0.1631(X₁*X₂)
P-value for estimate of the interaction term B ₃ = 0.225708

Hypotheses H₁ and H₂ regarding the main effects of X₁ and X₂ on Y were tested separately in two regression models which we present in Table 4. Variables X₁ and X₂, as indicated by the p-values in Table 4, are statistically significant predictors of students' alienation (Y). However, as the p-values indicate, students' concern about data collection (X₁) is a stronger predictor than their concern about data use (X₂). In fact, concern about data use (X₂), which has a p-value of 0.09, is not statistically significant at alpha of .05; it is only significant at alpha of 0.10. One possible explanation is that students do not know much about organizational uses of data but they do go through experiences of having to complete forms, surveys, and other activities related to data collection. Another possible explanation is that because the mean score on variable X₂ is so high, 6.30 on a 7-point scale, and the standard deviation is so low, 0.75 on the same scale, there is not enough variability in X₂ to clearly detect the correlation between X₂ and Y.

Table 4: Two Simple Regression Models.			
Specified Model	Model Estimate	Model P-value	Sample size, n
Y=B ₀ +B ₁ *X ₁	Y=2.52+0.37*X ₁	0.00000000	187
Y=B ₀ +B ₁ *X ₁	Y=3.31+0.14*X ₂	0.09	187

In summary, we find that all three of the hypotheses have been supported by the data even though the support for hypothesis H₂ is weaker than the support for the other two hypotheses.

DISCUSSION, IMPLICATIONS AND FUTURE RESEARCH

The results indicate that students' concerns about data collection and use of the collected data by their universities are likely to strengthen their feeling of alienation toward their university. For a university's information policy makers, system designers and administrators, this finding can be a call for addressing students' privacy concerns so as to minimize their level of alienation. Correlation between privacy concerns and alienation does not necessarily prove that privacy concerns cause alienation. However, since alienation can be a factor responsible for students' poor performance, their non-cooperation and withdrawal, revolts, protests or violence, the findings of this study are important for all parties related to universities. As universities increase their use of technologies such as intranet systems (Chen et al., 2003) and the Internet in carrying out transactions with students, they may need to pay more attention to improving security management in the e-commerce environment by following a comprehensive security plan (Bidgoli, 2003). We have found empirical support that privacy concerns are most likely among the factors responsible for students' feeling of alienation. Many other factors may be responsible for students' feeling of alienation. For example, not having enough parking lots on campus, low quality of food services, and such other factors can be responsible for students' feeling of alienation. If alienation related to privacy concerns can be reduced, students may be more interested to cooperate with their university and cherish their identity as a member of the university community during their period of study and long after they graduate. At a more practical level, alienation can be associated with students' level of charitable giving to the university in the future and whether or not they speak favorably to prospective students, donors or other patrons. Even though the study has been done in the context of a university, its findings might, with caution, be generalized to other information-based organizations where customers or subjects of data collection are internalized members of the organizational community. Such generalizations, however, must be supported by evidence to be presented in future studies. As we attempt to generalize the implications of this study, it is important to keep in mind the limitation that this study was based on a sample from only a single university.

Researchers can build on this study to examine other sources of students' or customers' alienation by organizational information management policies, practices and systems. Examples of such other sources could be nationality, culture, ethnicity, religion, personality type, and political beliefs. Research can also be conducted to

examine the effects of alienation on other constructs such as customers' willingness to give data, and their willingness to participate in different group activities sponsored by their organizations. Some qualitative interviews with students revealed that they were concerned because they were not adequately informed about what uses are made of data about them collected and stored by universities. A university's information collectors, users, managers, system designers, policy makers and administrators can conduct qualitative interviews to identify with greater detail what specific aspects of information management practices, policies and activities related to data collection and use raise students' privacy concerns so that they can take actions that can reduce their privacy concerns and associated feeling of alienation. This study can be a guide in that direction.

REFERENCES

- Abbott, Elizabeth; Liddell, Debora L. "Alienation of Students: Does Sexual Orientation Matter?" *College Student Affairs Journal*, v16 n1 p45-55 Fall 1996.
- ACM (Association for Computing Machinery). "Code of Ethics" *Communications of the ACM* (23:7), July 1980. 425.
- Allison, Neil K., "A Psychometric Development of a Test for Consumer Alienation from the Marketplace." *Journal of Marketing Research (JMR)*, Nov78, Vol. 15 Issue 4, p565, 11.
- Alvarez, Antonio G.; Welsh, James J., "Adventure: A model of experiential learning." *Social Work in Education Oct90*, Vol. 13 Issue 1, 49, 9.
- Barnard, C. I. (1938) *The functions of the executive*. Cambridge, M.A: Harvard University Press.
- Berghel, Hal; "Caustic Cookies." *Communications of the ACM*, May2001, Vol. 44 Issue 5, 19, 4.
- Bidgoli, Hossein. "An Integrated Model for Improving Security Management in the E-Commerce Environment" *Journal of International Technology & Information Management*, Vol. 12, Issue 2, pp.119-134.
- Borna, Shaheen; Avila, Stephen; "Genetic information: Consumers' right to privacy versus insurance companies' right to know..." *Journal of Business Ethics*, May99, Vol. 19 Issue 4, p355, 8p.
- Brookes, Geoff., "From rebellion to class war". *Times Educational Supplement*, 3/29/2002 Issue 4474, p33, 1/2p;]
- Cespedes, F. V. and Smith, H. J. "Database Marketing: New Rules for Policy and Practice," *Sloan Management Review* (34), Summer 1993, pp. 7-22.
- Chen, Kuo Lane; Etnyre, Vance; Lee, Huei; "Security Management in Intranet Systems", *Communications of the International Information Management Association*, Vol. 3 Issue 1. pp.15-23.
- Cronbach, L. "Test Validation" in *Educational Measurement* (2nd edition), R. L. Thorndike (ed.), American Council on Education, Washington, D.C., 1971, pp. 443-507.
- Cronbach, L. J. and Meehl, P. E. "Construct Validity in Psychological Tests," *Psychological Bulletin* (52:4), July 1955, pp. 281-302.
- Culnan, M. J. "How Did They Get My Name?: An Exploratory Investigation of Consumer Attitudes Toward Secondary Information Use," *MIS Quarterly* (17:3), September 1993, pp. 341-363.
- Culnan, Mary J.; Armstrong, Pamela K., "Information privacy concerns, procedural fairness, and impersonal trust: An empirical investigation." *Organization Science: A Journal of the Institute of Management Sciences*, Jan/Feb99, Vol. 10 Issue 1, p104, 12p.
- Date, C.J. *An Introduction to Database Systems (4th ed.)*, Addison-Wesley Publishing Co. , Reading, MA, 1986.
- Donaldson, Lex (1995). *American anti-management theories of organization: a critique of paradigm proliferation*; Cambridge studies in management 25; Cambridge University Press, New York.
- Drucker, P.F. (1988, January-February). "The coming of the new organization." *Harvard Business Review*, pp.48-53
- Dunphy, Joseph M.; Prendergast, Geoffrey J.; Scolal, Peadar O.; "The emergence of Camera Phones- Exploratory Study on Ethical and Legal Issues", *Communications of the International Information Management Association*, Vol. 3 Issue 1. pp.121-133.

- Freeman, R. E. 1984. *Strategic management: A stakeholder approach*. Boston: Pitman Publishing.
- Friedland, Stan., "Less Violence?" Change School Culture.; *Education Digest*, Sep99, Vol. 65 Issue 1, p6, 4p;
- Garfinkel, Simson (2000). *Database Nation*. O'Reilly & Associates, Inc.
- Hafner, K.M., "How Computer Associates climbed to No. 1" *Business Week*, 7/11/88 Issue 3060, p77, 2p
- Hair, Joseph F. Jr. Anderson, Rolph E.Tatham, Ronald L and Black, William C. *Multivariate Data Analysis* (1998), fifth edition, Prentice Hall.
- Hancock, Bill; "Student Privacy A Congressional Concern." *Computers & Security*, 2001, Vol. 20 Issue 2, p106
- Hemphill, Thomas A. "DoubleClick and Consumer Online Privacy: An E-Commerce Lesson Learned." *Business & Society Review*, Fall2000, Vol. 105 Issue 3, p361, 12p.
- HEW (U.S. Department of Health, Education, and Welfare). *Records, Computers, and the Rights of Citizens: Report of the Secretary's Advisory Committee on Automated Personal Data Systems*, U.S. Government Printing Office, Washington, D.C., 1973.
- Kent, Stephen T. "Internet privacy enhanced mail. (cover story)". *Communications of the ACM*, Aug93, Vol. 36 Issue 8, p48, 13p.
- Landon Jr., E. Laird; Lundstrom, William J., "Comments on 'Race, Alienation and Consumerism'" *Journal of Marketing*, Apr73, Vol. 37 Issue 2;
- Laudon, K.C. *Dossier Society: Value Choices in the Design of National Information Systems*, Columbia University Press, New York, 1986.
- Linowes, D. F. *Privacy in America: Is Your Private Life in the Public Eye?* University of Illinois Press, Urbana, IL, 1989.
- Lipton, David., "Now hear this...Customer complaints are not bad if viewed as business-building occasions." *Nation's Restaurant News*, 08/28/2000, Vol. 34 Issue 35, p30, 2p.
- Luo, Wenhong; Najdawi, Mohammad. "Trust-building Measures: A Review of Consumer HEALTH PORTALS." *Communications of the ACM*, Jan2004, Vol. 47 Issue 1, p109, 5p.
- Marchewka, Jack T; Chang, Liu; Petersen, Charles G. "Perceptions of unsolicited electronic mail or spam", *Journal of International Technology & Information Management*, Vol. 12, Issue 1, pp.77-91.
- Mason, R. O. "Four Ethical Issues of the Information Age," *MIS Quarterly* (10:1), March 1986, pp. 4-12.
- Mason, Richard O. Mason, Florence M. Culnan, Mary J. *Ethics of Information Management*. Sage series in business ethics (SSBE). Sage Publications, 1995.
- Milberg, Sandra J.; Burke, Sandra J., "Values, personal information privacy, and regulatory approaches." (cover story); *Communications of the ACM*, Dec95, Vol. 38 Issue 12, p65, 10p.
- .; Smith, H. Jeff; Burke, Sandra J., "Information Privacy: Corporate Management and National Regulation." *Organization Science: A Journal of the Institute of Management Sciences*, Jan/Feb2000, Vol. 11 Issue 1, p35, 23p.
- Miller, A. "Computers and Privacy," in *Ethics and the Management of Computer Technology*, W. M. Hoffman, and J. M. Moore (eds.), Oelgeschlager, Gunn, and Hain Publishers, Inc., Cambridge, MA, 1982.
- Olivero, Nadia; Lunt, Peter. "Privacy versus willingness to disclose in e-commerce exchanges: The effect of risk awareness on the relative role of trust and control." *Journal of Economic Psychology*, Apr2004, Vol. 25 Issue 2, p243, 20p.
- Panichpathom, Supeecha. Doctoral dissertation: "An Examination of the Willingness to Engage in Web-Based Purchase: The Impact of an Individual Buyer's Trust of Sensitive Information Exchange," University of Texas at Arlington, December 2000.
- Pottie, Gregory J.. "Privacy in the Global E-Village." *Communications of the ACM*, Feb2004, Vol. 47 Issue 2, p21.

- PPSC (Privacy Protection Study Commission). *Personal Privacy in an Information Society: Report of the Privacy Protection Study Commission*, U.S. Government Printing Office, Washington, D.C., 1977.
- Rackow, Sharon H.. "How The Usa Patriot Act Will Permit Governmental Infringement Upon The Privacy Of Americans In The Name Of 'Intelligence' Investigations." *University of Pennsylvania Law Review*, May2002, Vol. 150 Issue 5, p1651, 46p.
- Rindfleisch, Thomas C. "Privacy, information technology, and health care." *Communications of the ACM*, Aug97, Vol. 40 Issue 8, p93, 8p.
- Robinson, J.P.,P.R Shaver, and L.S. Wrightsman (1991), Criteria for Scale Selection and Evaluation," in *Measures of Personality and Social Psychological Attitudes*, J.P. Robinson, P.R Shaver (eds.) San Diego, Calif.: Academic Press
- Robinson, J.P.,P.R Shanver (1973) *Measures of Psychological Attitudes*, Ann Arbor, MI: Survey Research Center Institute for Social Research, University of Michigan.
- Rotenberg, Marc . "Communications privacy: Implications for network design." (cover story) *Communications of the ACM*, Aug93, Vol. 36 Issue 8, p61, 8p
- Rousseau, J.J. (1947) *The Social Contract*. New York: Hafner. (Original work published 1762)
- Sethna, Beheruz; Barnes, Cynthia C. "E-Mail Communications in Colleges and Universities: Are They Private?" *Journal of Education for Business*, Jul/Aug99, Vol. 74 Issue 6, p347, 4p
- Smith, H. J. *Managing Privacy: Information Technology and Organizational America*, University of North Carolina Press, Chapel Hill, NC, 1994.
- Smith, H. Jeff; Milberg, Sandra J. "Information privacy: Measuring individuals' concerns about organizational practices." *MIS Quarterly*, Jun96, Vol. 20 Issue 2, p167, 30p
- Singh, Jagdip (1988)"Consumer Complaint Intentions and Behaviors: Definitional and Taxonomical Issues," *Journal of Marketing*, 52 (January), 93-107.
- ___ (1990) "A typology of Consumer Dissatisfaction Response Styles," *Journal of Retailing*, 66 (Spring), 57-97.
- ___and Robert E. Wilkes (1996), "When Consumers Complain: A Path Analysis of the Key Antecedents of Consumer Complaint Response Estimates," *Journal of the Academy of Marketing Science*, 24 (Fall),350 65
- Simon, H. A. (1976). *Administrative behavior* (3rd ed.). New York: Mcmillan
- Stone, E. F. and Stone, D. L. "Privacy in Organizations: Theoretical Issues, Research Findings, and Protection Mechanisms," in *Research in Personnel and Human Resources Management* (8), K. M. Rowland and G. R. Ferris (eds.), JAI Press,Greenwich, CT, 1990, pp. 349-411.
- Stone, E. F., Gardner, D.G., Gueutal, H. G., and McClure, S. "A Field Experiment Comparing Information-Privacy Values, Beliefs, and Attitudes Across Several Types of Organizations," *Journal of Applied Psychology* (68:3), August 1983, pp. 459-468.
- Studdert, David M."Direct Contracts, Data Sharing and Employee Risk Selection: New Stakes for Patient Privacy in Tomorrow's Health Insurance Markets." *American Journal of Law & Medicine*, 1999, Vol. 25 Issue 2/3, p233, 33p
- Tanner, John C., "Do I know you?" *Telecom Asia*, Apr98, Vol. 9 Issue 4, p6, 1/2p
- Thompson, James D (1967). *Organizations in action; social science bases of administrative theory*; Published: New York, McGraw-Hill
- Tolchinsky, P.D., McCuddy, M.K. Adams, J., Ganster, D.C., Woodman, R.W., and Fromkin, H.L. (1981). *Employee Perceptions of Invasion of Privacy: A Field Simulation Experiment*. *Journal of Applied Psychology* (66:3), June 1981, 308-313.
- Vance, David (2000). Dissertation: *On the Effect of Information Privacy Policy on Employment Opportunity Attractiveness* (Supervisor: Arlyn Melcher), Southern Illinois University at Carbondale, IL 62901.

Wang, Huaqing; Lee, Matthew K.O. (1998). *Consumer privacy concerns about Internet marketing*. Communications of the ACM, Mar98, Vol. 41 Issue 3, 63, 8.

Warren, Samuel D.; Brandeis, Louis D (1998). *Privacy, photography, and the press*. Harvard Law Review, Feb98, Vol. 111 Issue 4, 1086, 18p (Originally published in 1890)

Westin, A. F. (1979). *The Dimensions of Privacy: A National Opinion Research Survey of Attitudes Toward Privacy*. January,.

Westin, A. F. and Baker (1972). *M. A. Databanks in a Free Society*, Quadrangle Books, New York,.

Appendix A

1. Strongly Disagree 2. Disagree 3. Slightly Disagree 4. Uncertain 5. Slightly agree 6. Agree 7. Strongly Agree

Items on the Survey

In the way they design, implement and control students' personal information management systems, most universities care nothing at all about the student.
It is usually an unpleasant experience to have to give personal information to a university.
Students are unable to determine what uses will be made of the personal information collected about them by a university.
In general, universities are plain dishonest in their dealings with students' personal information.
Universities stand behind their promises and guarantees made about the ethical standards of students' personal information management.
In the way they manage information collected from or about student, the student is usually the least important consideration to most universities.
As soon as they collect students' personal information, most universities forget about students' rights, dignity and well being.
It usually bothers me when universities (e.g. SIUC) ask me for personal information.
When a university asks me for personal information, I sometimes think twice before providing it.
It bothers me to have to give personal information to so many companies, organizations, agencies, universities and other entities.
I'm concerned that universities are collecting too much personal information about students.
A university (e.g. SIUC) should not use personal information for any purpose unless it has been authorized by the individuals who provided the information.
I think when people give personal information to a university for some reason, the university should never use the information for any other reason.
A university should never sell the personal information in its computer databases to other organizations.
A university should never share students' personal information with other organizations unless it has been authorized by the individuals who provided the information.