Classifying Articles in Information Ethics and Security

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INTRODUCTION

Practitioners and researchers have been working to develop information systems (IS) that are functional and yet secure from a variety of threats at a reasonable cost (Austin & Darby, 2003; Mercuri, 2003; Cavusoglu, Cavusoglu, & Raghunathan, 2004; Sipponen, 2005). *Information security* and *ethics* (ISS/E) research involves a number of diverse subjects, including networking protocols (Sedaghat, Pieprzyk, & Vossough, 2002), database management (Sarathy & Muralidhar, 2002), cryptography (Anderson, 1994), ethics (Tavani, 2004; Straub & Welke, 1998), coping with risk (Banerjee, Cronan, & Jones, 1998), end-user attitudes (Harrington, 1996), and passwords (Zviran & Haga, 1999).

This diverse body of research illustrates two related needs that provide the motivation for this article. The first is to identify critical *knowledge gaps,* which are content areas in ISS/E where little or no research has yet been done (Webster & Watson, 2002). The second is that research methodologies must be periodically evaluated to gain additional insights into a field of interest, which in our case is information security and ethics (Scandura & Williams, 2000).

We first identify the trends in the ISS/E literature pertaining to: (1) the number and distribution of ISS/E articles published in leading IS journals, (2) methodologies employed in ISS/E research, and (3) the research topics being published in ISS/E research. We then discuss these trends in past ISS/E research in order to provide directions for future research efforts in this important area.

BACKGROUND

We examined 15 information systems (IS) journals over the last 15 years. To determine which journals to search, we chose four relatively recent rankings for IS journals (Rainer & Miller, 2005; Lowry, Romans, & Curtis, 2004; Katerattanakul, Han, & Hong, 2003; Peffers & Ya, 2003). By choosing the top seven journals in each of these four rankings, we created a list of 15 journals.

We then used the ABI/INFORM database to find ISS/E research articles by searching the titles and abstracts of the 15 journals using the phrases "security," "computer security," "information security," and "ethics." Because we were looking only for research articles, we omitted book reviews, editorials, and studies of job security and financial securities. Our search yielded a total of 217 articles.[1]

MAIN FOCUS OF THE ARTICLE

From 1991 to 1995, the 15 journals published an average of eight articles per year. In 1996, 25 articles appeared. The years from 1997 to 2003 saw an average of 13 articles per year, followed by 2004 with 23 articles and 2005 with 36 articles. These numbers indicate that ISS/E issues are becoming increasingly important to practitioners and researchers. The spike of ISS/E articles in 1996 is interesting. We speculate that it may have been due to emergence of e-commerce (Borenstein, 1996) and the increasing availability of the Internet (Bhimani, 1996).

Table 1. ISS/E articles as a percentage of total articles

Journal Name	ISS/E	Articles/Year	Years	Total	%
Information & Management	34	32	15	480	7.1
Communications of the ACM	75	84	15	1260	6.0
Decision Support Systems	14	16	15	240	5.8
Journal of the ACM	20	30	15	450	4.4
IEEE Transactions on Software Engineering	30	48	15	720	4.2
Communications of the AIS	13	80	7	560	2.3
MIS Quarterly	5	20	15	300	1.7
Information Systems Research	4	24	15	360	1.1
European Journal of Information Systems	3	20	14	280	1.1
Journal of Management Information Systems	6	44	15	660	0.91
Decision Sciences	4	36	15	540	0.74
Harvard Business Review	4	90	15	1350	0.30
Artificial Intelligence	2	60	15	900	0.22
Management Science	3	120	15	1800	0.17
Human-Computer Interaction	0	15	15	225	0.00

To determine the degree to which leading IS journals are focusing on ISS/E topics, we calculated the percentage of ISS/E articles based on the total number of articles published in each journal over the 15-year timeframe. We eliminated editors' notes, book reviews, editorial pages, and other such journal material. (The *European Journal of Information Systems* was published for 14 of the 15 years, and *Communications of the AIS* was published for seven of the 15 years.) Table 1 shows the journals, ranked by percentage of ISS/E articles published. The low percentage of ISS/E articles published (7% or less), compared to the importance of information security and ethics, illustrates the variety of broad, wide-ranging topics in the information systems field.

Each research strategy is associated with certain trade-offs that researchers must make when designing a study. These trade-offs are inherent flaws that limit the conclusions that can be drawn from a particular design method. The trade-offs refer to: generalizability from the sample to the target population which relates to the issue of external validity; precision in measurement and control of behavioral variables which relates to internal and construct validity; and the issue of realism of context (see Scandura & Williams, 2000).

The three authors independently classified each article into one research strategy. Upon completion of the classification, we calculated the three pairwise intercoder reliabilities using Cohen's kappa (Cohen, 1960) for each pair. All three values were greater than .8, indicating an acceptable level of agreement among us. If two authors did not agree on how a particular article was coded, the third author arbitrated the discussion of how the disputed article was to be coded. This process resolved the disputes in all cases. Table 2 shows the number of ISS/E articles in each research strategy.

The three most widely used strategies are exploratory in nature and exhibit high generalizability to the target population (Scandura & Williams, 2000). The Theory and Literature Review strategy provides the foundation for future empirical studies by developing theoretical models. The Sample Survey strategy uses questionnaires whose items are derived from a review of relevant theory and literature. The computer simulation strategy is typically used to test research hypotheses when it is difficult to obtain an analytical solution to a problem.

To elicit the ISS/E topic categories, we independently examined the 217 articles and created a proposed list

Related Content

The Social Contract Revised: Obligation and Responsibility in the Information Society

Robert Joseph Skovira (2003). *Current Security Management & Ethical Issues of Information Technology (pp. 165-186).*

www.irma-international.org/chapter/social-contract-revised/7390

A Survey of Risk-Aware Business Process Modelling

Hanane Lhannaoui, Mohammed Issam Kabbajand Zohra Bakkoury (2017). *International Journal of Risk and Contingency Management (pp. 14-26).*

www.irma-international.org/article/a-survey-of-risk-aware-business-process-modelling/181854

Forensics Challenges for Mobile Phone Security

Halim M. Khelalfa (2012). *Information Assurance and Security Technologies for Risk Assessment and Threat Management: Advances (pp. 72-133).*

www.irma-international.org/chapter/forensics-challenges-mobile-phone-security/61221

eHealth Governance, A Key Factor for Better Health Care: Implementation of IT Governance to Ensure Better care through Better eHealth

Elena Beratarbideand Tom Kelsey (2011). *Ethical Issues and Security Monitoring Trends in Global Healthcare: Technological Advancements (pp. 72-92).*

www.irma-international.org/chapter/ehealth-governance-key-factor-better/52361

Ethical Usability Testing with Children

Kirsten Ellis (2007). *Encyclopedia of Information Ethics and Security (pp. 235-240).*

www.irma-international.org/chapter/ethical-usability-testing-children/13478