Chapter 16
The Efficacy of Security Awareness Programs from a Cross-Cultural Perspective

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ABSTRACT
Different cultures have different technological capabilities and, therefore, face a diverse set of security challenges. Increasing security awareness training can alert users to the existence of security vulnerabilities and threats. A user’s ability to understand these threats and vulnerabilities can empower them to take preventive and corrective actions in the event of such problems. This study proposes that users adopt situational awareness learning that is more receptive to high individualists than low individualists in their ability to increase their security awareness levels, which include comprehension, projection, and actions. We conducted an intercultural study to investigate if users from the U.S. and Taiwan exposed to the same situational awareness learning would have different performance in security awareness outcomes. Our findings confirmed that security awareness is cultural-ware learning, and our proposed situational awareness is a more useful learning approach to high individualists than low individualists.

INTRODUCTION
Lack of security awareness on the part of human beings can present security technology challenges that can often result in negative consequences. As an example, anti-virus software can alert one to suspicious emails, however, some users may go ahead and open those emails without even thinking of their potential adverse consequences.

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Other security breaches, such as identity theft, and dumpster diving, can also be caused by users’ carelessness and lack of knowledge. Technological solutions are effective only if users know how to utilize them. Security-savvy users may be able to act by detecting or predicting problems and next taking the appropriate actions to prevent and correct security breaches. Improving security awareness is a preventive measure which is, much less costly and certainly more effective than being reactive to costly situations.
Security awareness training is an effective approach in making users aware of the importance of securing their surrounding environment (O’Boyle, 2008). International firms, such as Daimler-Chrysler (Grant, 2007), consider employee security awareness as one of the key performance indicators of a successful security operation. Members of the European Network and Information Security Agency (ENISA), representing 67 government departments and private companies in nine European countries, are actively conducting internal and external auditing to assess their actual state of security awareness (Filipek, 2007). Although different countries may have different states of security awareness, increasing that awareness is unequivocally important for that may be affected.

This study will investigate the efficacy of web-based information security awareness programs from a cross-cultural perspective. Subjects from Taiwan and the United States participated in web-based programs, which were created to enhance their security awareness knowledge level. Both pre- and post-tests were given to assess both cultures’ receptivity to the use of technology-driven security awareness programs.

BACKGROUND

Information security deals with issues related to authorization, authentication, availability, integrity, non-repudiation, and privacy. These security issues are invariably very dissimilar within different countries. A cross-cultural study on the awareness of users in the area of availability shows that Chinese users are less aware of spyware and viruses than their U.S. counterparts (Schmidt, 2008). In the privacy area, a report on Internet Enemies shows that 13 countries have been exercising a more rigorous censorship than most countries (Reporters without Borders, 2008). For instance, China filters online information based on key words and has the world’s largest prison for online dissidents. Belarus bans anti-government websites via the use of denial of services. Libya owns the main Internet service provider, the General Post and Telecommunications Company (GPTC), and if their citizens spread online information that can endanger the country’s authority they could face the death penalty. All of these examples demonstrated that national security concerns can easily compromise personal privacy. Thus, it is important that residents in any county be aware of privacy-related security risks.

Security issues manifest themselves in various forms in different cultures. Countries establish different codes of conducts related to the use of information and communication technologies (ICT) in order to improve information security awareness and ethics (Bia and Kalika, 2007). Culture is the habitual method of doing things over time (Hofstede, 1993). Culture influences are acceptable ways to process information, such as labeling, languages, and symbols (Triandis, 1995). Moreover, culture defines an individual’s societal role and prescribes guiding principles in relation to security threat reactions. As a result, culture has influenced the formation of many security measures, such as national security policies, information ethics, security training, privacy, etc. It is therefore imperative to incorporate the culture into the design of IT applications (e.g. security awareness training systems) to improve their perceived values (Agrawal and Haleem, 2003) and adoption (Montealegre, 1998).

The increase of security awareness and cautious behavior at the individual’s level can improve the information security performance of an organization (Albrechtsen, 2007). Thus, the focus of security awareness training must be developed according to the needs of individual users in different countries and in their different cultures.
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