

# The Cultural Foundation of Information Security Behavior: Developing a Cultural Fit Framework for Information Security Behavior Control

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## ABSTRACT

Past behavior research overwhelmingly focused on information security policy compliance and under explored the role of organizational context in shaping information security behaviors. To address this research gap, this study integrated two threads of literature: organizational culture, and information security behavior control, and proposed a framework that integrates mid-range theories used in empirical research, connects them to organizational culture, and predicts its role in information security behavior control. Consistent with the cultural-fit perspective, this framework shows that information security policy compliance fits hierarchical culture and the approach of promoting positive, proactive, and emerging information security behaviors fits participative culture. Contributions and practical implications of this framework, together with future research directions, are discussed.

## KEYWORDS

Hierarchical Culture, Information Security Behavior, Information Security Policy Compliance, Organizational Culture, Participative Culture

## INTRODUCTION

Given the importance of information security to organizations, security-oriented technology and database management techniques (for a few examples, see Patnaik & Panda, 2003; Reid & Dhillon, 2003; Thompson, 2005; Wang, Zhao, & Chen, 2012; Wei, Lin, & Loho-Noya, 2013; Wilson & Rosen, 2003) have been developed to manage information. However, organizational information assets are ultimately handled by employees. It is well documented that a lot of incidents and losses related to information security are due to ignorance, errors, and even deliberate computer abuse behaviors of employees in organizations (Lee & Lee, 2002; Lee, Lee, & Yoo, 2004). This shows that organizational information security is not “only an opinion of officials responsible for information security” (Baskerville & Portugal, 2003, p. 4). To address this issue of security threat stemming from internal employees, information systems (IS) researchers, borrowing behavior theories from social sciences, have examined a variety of factors that contribute to individual employees’ security behaviors.

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Understanding these behaviors and their precursors is equally important. However, significant issues concerning past and current research in these two sub-areas have emerged. Researchers (e.g., Posey et al., 2013) have red-flagged the tendency in past research to focus on just a single behavior or subset of behaviors such as information security policy compliance (ISPC). Similarly, it raised our eyebrows that organizational stimuli that contextualize the cognitive processes leading to information security behaviors (ISBs) were under explored in past research (Hu, Dinev, Hart, & Cooke, 2012). Ideally, both issues should be addressed in empirical research. To do this calls for use of a framework that can integrate both efforts. In this study, we propose such a framework that uses organizational culture, a major concept of organizational context, to envelop cognitive and behavior theories that have been utilized in empirical research on ISBs and simultaneously to examine different sets of ISBs.

Although organizational culture has been examined in previous research, it was, however, either investigated for its impact on just one behavior such as ISPC (see, e.g., Hu et al., 2012), or proposed to be an information security culture helping organizations to manage information security (see, e.g., Da Veiga & Eloff, 2010; Ruighaver, Maynard, & Chang, 2007; Van Niekerk & Von Solms, 2010). The latter approach appeared to be too functional to be enough analytic. Further, it did not connect current cognitive and behavior theories to address how organizational culture shapes ISB control (ISBC). To make further improvement in this direction, this study proposes a framework that conceptualizes organizational culture as a foundation supporting organizations' approaches to ISBC. The proposed framework rests on the idea of "cultural-fit" between an organizational practice and the existing culture of an organization (Ansari, Fiss, & Zajac, 2010; Canato, Ravasi, & Phillips, 2013). Consistent with the cultural-fit perspective, we argue that an organization's approach to ISBC should be culturally fit. By connecting current theories used to highlight cognitive processes leading to behaviors in empirical ISBC studies to organizational culture, we show how that cultural-fit can be accomplished.

By proposing this framework, we aim to make the following contributions. First, our framework theoretically integrates past and current research on ISBC. This integration will inform future research in this area. Second, this framework shows that organizational culture is not just one type of ISBC. It serves as a foundation for organizations' approaches to ISBC. Third, this framework extends the cultural-fit perspective in the area of organizational ISBC, showing the importance of adopting culturally fit approaches to ISBC. This will effectively inform organizations in their ISBC practices. The rest of the paper is organized as follows. First, we survey the current literature on ISBC to provide a comprehensive review of major theories used in this area of research and the major findings regarding ISBs. Such a review will help us to identify areas of improvement in this field and, more importantly, look for directions for future research. Next, we integrate that review and a brief review of organizational culture in order to show how organizational culture serves as both a platform for and an effective control mechanism for ISBC in organizations. Lastly, we discuss contributions of our framework, its possible implications for organizational practice, and future research directions. More specifically, we focus on demonstrating how different approaches to ISBC should be culturally fit, particularly by showing that the ISPC approach fits hierarchical culture and the promoting proactive, emerging, and positive behaviors approach fits participative culture.

## **LITERATURE REVIEW: THEORY AND RESEARCH IN INFORMATION SECURITY BEHAVIOR CONTROL**

### **Information Security Behavior Control**

As employees are deemed as the weakest link in organizations' efforts in addressing information security (Warkentin & Willison, 2009), IS researchers have made efforts to gain a thorough understanding of this issue. They examined possible factors that influence employees' ISB and searched for effective means to control it. A review of the ISB research literature shows that two major approaches have

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