Information Security Controls in Organizations: Multidimensionality of the Construct and a Nomological Model

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Abstract

Because a single security breach can have catastrophic consequences, organizations continue to expend considerable resources to improve the security of their information. Nonetheless, the extant literature offers few theoretical explanations of what constitutes a coherent set of resources that organizations need to increase their control over the security of their information. To fill this gap in the literature, this study was conducted to accomplish two specific objectives. First, we examined the nature and dimensionality of the information security controls deployed by organizations to improve their information security performance. Second, we developed and tested a nomological model that combines information security controls as a central construct along with the key determinants and security performance outcome of the construct. The results, based on data collected through a survey of 358 organizations in the United States, offer empirical support for our assertion that information security controls can best be represented as a second-order construct with three distinct, but interrelated, dimensions: information security technologies, qualified information security personnel, and security-aware knowledge workers. Moreover, our nomological model was strongly supported. Empirical support was found for key determinants of information security controls that include coercive and normative pressures rooted in the legitimacy-based perspective, and security investment rationale and risk analysis rooted in the rationality-based perspective. A strong link was also found between the extent to which organizations possess information security controls and their overall security performance.

Keywords: Organizational security management, security controls, resource-based theory, survey, second-order construct