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# THE CHALLENGES OF IMPLEMENTING STANDARDS BASED INFORMATION SECURITY WITHIN FAMILY INFLUENCED FIRMS: A PROPOSED RESEARCH AGENDA

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## ABSTRACT

Information security is a complex topic that spans technology, systems, management and culture. This article proposes a relationship between the family ownership influence of businesses and their success in implementing standardized information security management systems (ISMS). It further proposes a mixed method research style to further understand the nature and needs of family influenced businesses by qualitatively exploring the challenges that family influenced businesses face in implementing information security and quantitatively comparing the ISMS implementation and assimilation success of family influenced businesses to businesses that are not family influenced.

## Keywords

Information Security, ISMS, Family Influenced Businesses, Culture

## INTRODUCTION

Information security has evolved from a sub-specialty of information technology and become a significant concern to the management of businesses of all sizes and industries. With an increased management focus and the development of audit and regulatory requirements the standardization of information security has become a hallmark of the profession over the last decade (Ransbotham and Mitra, 2009). From the development of standardized information security management systems (ISMS) such as ISO 27001, PCI-DSS, FISMA and COBIT to the standardization of credentials for information security practitioners such as the CISSP, CISM and CompTIA Security+ the landscape of information security is more delineated defined and quantifiable (Susanto et al., 2011; Tipton and Hernandez, 2013).

While this standardization of information security may, on balance, be a net benefit to businesses, and to the information security profession, it may not benefit those companies that vary from standard business norms or work in niche industries. Of particular interest are those companies that are owned and influenced by families. These companies, to varying degrees, have goals, management structures and flows of trust and power that do not mirror their non-family owned and influenced counterparts (Chrisman et al., 2012; Verbeke and Kano, 2012). These differences may create misalignment with standardized ISMSs and may increase the difficulty in both adoption and assimilation of an information security regimen.

The purpose of this proposed study is to test the theory that family influenced businesses may face challenges implementing standardized information security management systems, controlling for firm size and revenue, that non family owned and influenced businesses do not.

## LITERATURE REVIEW

There is a body of extent literature that focusses on the human aspects of information security. Goodhue and Straub (1991) highlighted the importance of user perceptions in relation to their sensitivity to security concerns. Ashenden (2008) considered the human challenge of information security management wherein we consider “the individual’s unique attitudes, beliefs and perceptions that they bring with them to work. With this in mind we need to look at all individuals in the organization from end users to Information Security Managers to Senior Managers and Board members” (Ashenden, 2008, pp. 195–196). The influence of institutional cultures on the implementation of information security management was highlighted by Hsu, Lee and Straub (2012) and Ransbotham and Mitra (2009).

The study of the effectiveness of information security traces back to Straub (1990) as a subject of empirical study. Hsu et al. (2012) and Bulgurcu, Cavusoglu and Benbasat (2010) are more recent quantitative examples of the measurement of effectiveness and its causes and moderators.

In the literature of family owned businesses, the focus becomes the emic causes of non-standard processes. Daily and Dollinger (1993), Riordan and Riordan (1993) and Verbeke and Kano (2012) identify the lack of a principal-agent problem as a source of the variance of family-managed firms' business practices from best practices. The basic idea being that modern internal control systems exist to protect absentee owners' interest where there is a hired agent who manages the firm. When that perceived risk is attenuated, the need, real or perceived, for rigorous controls decreases. Daily and Dollinger (1993) and Verbeke and Kano (2012) go further and indicate that as a family-managed organization's size increases that the internal control systems of the organization become more rigorous and standardized. Verbeke and Kano (2012) attribute this to a bifurcation bias wherein the family management and the non-family management become differentiated due to an asymmetric human resource treatment. As the firm grows the non-family management becomes larger, more professional and more agent like, thus requiring stronger internal controls. These articles would seem to indicate that any measurable effect of family-ownership or family-management on security implementation success will be most observable in the small to medium sized enterprise (SME) environment.

Beyond the business control process issues, there is a great deal of literature looking at the way that family values, culture and goals affect the performance of firms. Haugh and McKee define family values as a "shorthand for a range of qualities in the family firm" (Haugh and McKee, 2003, p. 145). They go on to note that "it would appear that there is some common ground in the findings relating to the cultural dimensions of the family firm. Themes of loyalty, trust, communication, commitment, independence and survival have emerged" (Haugh and McKee, 2003, pp. 145–146).

Gudmundson, Tower, and Hartman (2003) identify a uniqueness to family businesses and draws conclusions about how this effects innovation within family businesses in ways that vary from non-family businesses. They conclude that family-owned businesses vary from non-family-owned businesses in material aspects including a lowered acceptance of risk, and a decreased willingness to empower employees to innovate.

Chrisman et al. (2012) developed a model to examine family involvement, family essence and family-centered non-economic goals. Family involvement is identified by attributes of family ownership, family management and the number of generations of the family within the business. Family essence involves factors such as trans-generational family goals and family commitment that affect the family management's behavior. The family-centered non-economic goals are goals such as family harmony, family social status and family identity linkage that provide value to the ownership, yet are not recognized in standard business metrics.

One work that I will single out is Kotey and Folker (2007). Their study comparing the effects of firm size and whether a firm was family-owned on employee training will serve as a model for this study. Their methodology achieves the comparative mechanisms related to the issue of training that I hope to accomplish regarding ISMS implementation success.

## **THEORETICAL FRAMING**

Hsu et al. (2012) proposed and tested a research model wherein institutional influences have a causal influence on the adoption of information security management and the assimilation of information security management into the culture of a firm. Institution influences were conceptualized to include peer influences and supervisory influences. They hypothesized and tested an array of economic and organizational related moderators on this effect.

This research model, shown in Figure 1, conceptualizes that within family owned and influenced firms, family influence may present a third form of institutional influence that is different in kind from the influences conceptualized by the previous study. I propose that the extent economic and organizational moderators may affect this relationship and also propose that firm size, by revenue or number of employees, may further act as a moderator on family influence as an institutional influence (Chrisman et al., 2012).

Based on the literature regarding the differences of family influenced businesses from their non-family owned counterparts and the standardized nature of most ISMSs, I presume that there will be negative relationship between family influence and the effectiveness of adoption and assimilation of ISMSs (Tipton and Hernandez, 2013). This is not to imply that family influenced businesses are insecure. It is possible that the trust dynamics embodied within family influence over a business may impart security benefits that has yet to be quantified (Chrisman et al., 2012; Riordan and Riordan, 1993).

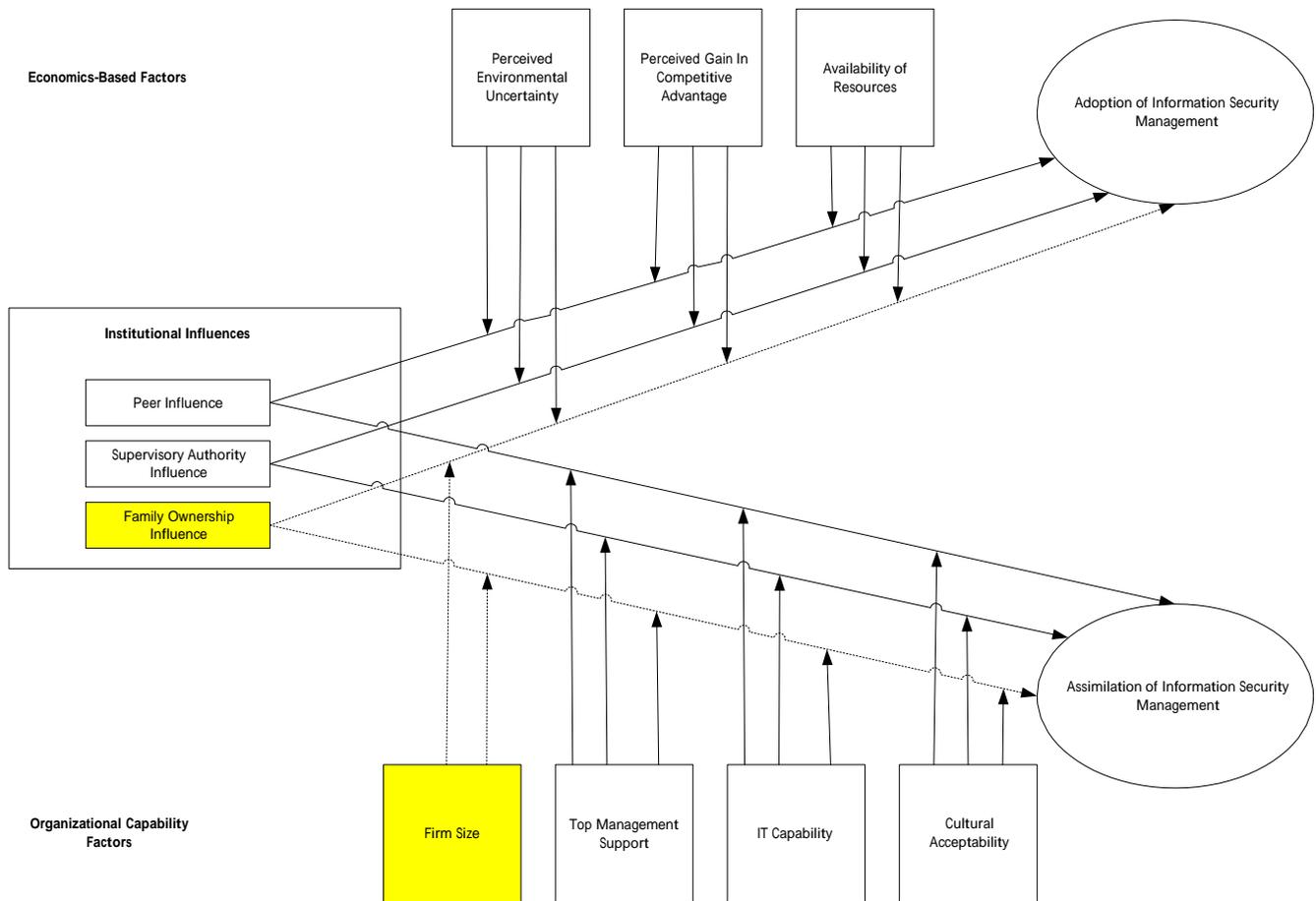


Figure 1. Conceptual Model Based on Hsu Et Al. (2012) (Additional Constructs Highlighted)

**RESEARCH METHODOLOGY**

Due to the exploratory nature of this study, I envision a mixed methods approach to its execution. Using a qualitative first approach will allow the proposed quantitative component to be refined. Also, I hope to use the qualitative portion of the study to gather some grounded observations on the issues related to technology in family influenced businesses for future research (Creswell, 2008).

**Qualitative**

I plan to conduct open ended interviews with ten senior managers of family owned and influenced firms. These firms will vary in size from \$20 million in annual revenue to \$100 million in annual revenue. The lower boundary is chosen based on the face validity that businesses beneath that threshold generally lack formalized ISMSs. The upper boundary is based on assertion that the asymmetric treatment of family members attenuates as a firm becomes larger and has more non-family managers (Daily and Dollinger, 1993; Verbeke and Kano, 2012). These interview subjects will include both managers with oversight responsible for the information security functions and managers who do not. There will be an effort to focus on managers who are family members.

These interviews will cover the manager’s attitudes regarding information systems, information security in general, the formalized management of information security and the issues that family involvement creates regarding these subjects. They will also include the manager’s perceptions regarding family attitudes towards these subjects.

These interviews will be used to discover various phenomena to be explored further during the quantitative phase of the study. They will also be used as a basis for future research into the information systems issues faced by family influenced firms.

## Quantitative

Following the qualitative phase of the study I propose to conduct a survey targeting senior managers of both family influenced and non-family influenced firms. I intend to target the same size firms as the qualitative portion of the study. I also intend to maintain a family member bias towards interview subject selection for the family influenced firms similar to the qualitative portion. The survey will be pilot tested on ten respondents and then distributed with a goal of 150 respondents evenly divided between family influenced firms and non-family influenced firms (Hair, Jr et al., 2011).

### Independent Variables

The primary independent construct of this study is family ownership influence. I intend to operationalize this using the Family Influence on Power, Experience and Culture (F-PEC) index, a standardized and validated scale for measuring family influence within a business (Astrachan et al., 2002; Klein et al., 2005). These questions will be supplemented with a collection of control and demographic questions, including number of employees, revenue, age of business and industry designation. In addition, items of interest that arise from qualitative interview portion of the study will be included.

### Dependent Variables

The operationalization of dependent constructs of this study, namely the adoption of information security management and the assimilation of information security management, will be largely based on the validated scales in Hsu et al. (2012) and Bulgurcu et al. (2010). In addition, items of interest that arise from qualitative interview portion of the study will be included.

## DISCUSSION

If the proposed study supports the proposition that family influence presents a negative effect on ISMS implementation then it will serve as a call to study the nature of family influence on information security with the goal of developing variations to standard ISMSs to better serve family influenced businesses.

It is also my hope that this study will serve as a catalyst to direct future research into the latent security structures that may exist within family influenced businesses for the purpose of better fitting security products and services to family influenced businesses and to discover security methodologies that may be adaptable to non-family influenced firms.

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