Exploring the Relationships Among Corporate Entrepreneurship, IT Governance, and Risk Management

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Abstract
This study develops a more comprehensive picture of how a hospital’s entrepreneurial behavior influences its focus on IT governance and IT risk management. The key findings of this study contribute to the IT and corporate culture literatures in several ways. First, it presents corporate entrepreneurship as an antecedent to both IT governance and IT risk management. Second, it establishes a causal relationship between IT governance and IT risk management. Third, it introduces culture strength as moderator of the relationship between corporate entrepreneurship and IT risk management.

1. Introduction
High-velocity environments, such as hospitals, are often characterized by products and services with relatively short life cycles. When there is a shift or major change in the healthcare industry, the shift can dramatically reshape the industry structure and define the context of the competitive strategies used by hospitals to build new sources of competitive advantage [1]. As a result, organizations (e.g., hospitals) that compete in a high-velocity environment or industry must adopt short planning horizons and develop environmental scanning mechanisms that detect shifts in trends or practices that provide opportunities for new products and services [2]. Given the congruency between environmental scanning and the entrepreneurial process, a high-velocity environment is typically viewed as an entrepreneurial environment [2-4]. An entrepreneurial environment represents organizations with an emphasis on spontaneity, flexibility, and individuality [5-8].

Entrepreneurship has been described as a process of creative destruction, in which the entrepreneur continually displaces or destroys existing products or methods of production with new ones [2, 9-10]. In many settings, entrepreneurship is arguably an organizational-level phenomenon [2, 11-12]. Prior literature typically views organizational-level entrepreneurship as corporate entrepreneurship. Corporate entrepreneurship (CE) is the degree to which an individual or group of individuals, in association with an existing organization, embody a spirit of entrepreneurship by way of their emphasis on growth and the acquisition of new resources and are committed to innovation and development [13-15].

Hospitals continue to experience major transformations in its application of information technology [16-17]. One of the major forces transforming the application of IT in hospitals is patients’ needs to have more resources electronically, including healthcare information, medical consultation, and instrumentation for diagnosis, monitoring, and treatment of medical conditions [16]. Furthermore, the recent changes to the Health Insurance Portability and Accountability Act of 1996 (HIPAA) and the Health Information Technology for Economic and Clinical Health (HITECH) of 2009’s time-sensitive mandate for greater adoption of IT in hospitals and physician offices have greatly increased the pressure on hospitals to make investments in complex and unfamiliar IT. Such actions introduce technological risks that could threaten the success of IT initiatives. Therefore, hospitals will become more reliant on their IT governance mechanisms to help them manage risks associated with the implementation of emerging technologies.

The objective of this study is to develop a more comprehensive picture of how a hospital’s entrepreneurial behavior influences its focus on IT risk management. Specifically, we seek to answer the following question: What is the nature of the relationships among corporate entrepreneurship, IT governance, and risk management in hospitals? This study contributes to the IT and corporate culture literatures in several ways. First, we propose corporate entrepreneurship as an antecedent to both IT governance and IT risk management. Second, we propose a causal relationship between IT governance and IT risk management. Third, we propose corporate culture strength as moderator of the relationship between corporate entrepreneurship and IT risk management. Figure 1 depicts our research model.
This article proceeds in the following manner. First, we review the extant literature on corporate culture. Second, we present our conceptual model, explain the proposed constructs (corporate entrepreneurship, IT governance, IT risk management, corporate culture strength), and articulate our research hypotheses. Third, we describe the research design and report our findings. Finally, we discuss the contributions of this study and implications of the results for managers and researchers.

2. Theoretical foundation and model development

Corporate entrepreneurship has its roots in corporate culture theory. Since the 1970s, corporate culture, also known as organizational culture, has been used as a powerful tool to interpret and understand organizational life, behavior, and processes of decay, adaptation, and radical change [18]. Two main classifications of culture are commonly cited in the organizational culture literature. The first classification, sometimes referred to as entrepreneurial [6, 19], represents organizations with a tendency of being on the leading edge and of being first to market. Organizations that fit this cultural type are often viewed as “agents through which a creative new product, process, or service is brought into the marketplace” [6]. The second classification, sometimes referred to as formal [6], represents organizations with an emphasis on control, stability, order, and bureaucracy [5-7]. Formal organizations have a predisposition to demonstrate cost-effectiveness continually and to be consistently rigid. Relative to corporate entrepreneurship, organizations with a more innovative orientation tend to be on one end of the spectrum, whereas organizations with little to no entrepreneurial intensity are considered to be on the other end of the spectrum of corporate entrepreneurship.

Corporate entrepreneurship is believed to be based on internally-oriented beliefs concerned with how to manage, and externally-oriented beliefs concerned with how to compete [2, 20]. An organizations entrepreneurial behavior has been shown to affect organizational variables in planning and other domains, including IT [21-24].

2.1 IT governance

IT governance is the capacity of top management to control the formulation and implementation of the IT strategy via organizational structures and processes that produce desirable behaviors, which will ensure that IT initiatives sustain and extend the organization’s strategy and objectives [25-27]. A desirable behavior is one that is consistent with the organization’s mission, strategy, values, norms, and culture, and can manifest in a number of ways [25]. IT governance can be coordinated using a mixture of various structures, processes and relational mechanisms [28].

IT governance is considered a critical factor in determining whether organizations are getting acceptable value from their IT investments [26]. Organizations that succeed where others fail all have one thing in common – effective IT governance [26]. Hence an organization’s IT governance mechanisms are often indicative of the sophistication of its management (both IT and business) capability [29]. For example, some corporations and government agencies began with the implementation of IT governance mechanism to achieve a fusion between IT and business to obtain needed IT involvement of top management. As a result, getting value from IT is more so an organizational competency that business and IT executives alike are responsible for developing.

The majority of research on IT governance focuses on the structural alternatives and mechanisms of IT governance. However, limited attention has been devoted to an equally important aspect of IT governance – process mechanisms. Such limited attention has led to only a partial understanding of IT governance and its mechanisms. In this study, we restrict our view of IT governance to hospitals’ overarching initiatives to manage the effectiveness of IT investments, manage enterprise-wide technical standards, align IT projects with business priorities, and encourage business process modularity [30].

2.2 IT risk management

According to classical decision theory, risk is associated with the amount of variance in the possible outcomes, their likelihoods, and their subjective values [31]. The greater the variance in these attributes of a given situation or task, the greater the risk [31-32]. However, in practice, managers may not see large variation in positive
outcomes as risky, only large variations for possible negative outcomes are seen as risky [31]. It is reasonable to assume that managers prefer less risk to more risk if the expected benefits are the same [31]. Thus, as March and Shapira state, “expected value is assumed to be positively associated, and risk is assumed to be negatively associated, with the attractiveness of an alternative” (p. 1405). To put the concept of risk into perspective, "only the threat of negative outcomes is considered a risk" [32, pg. 291]. Based on this concept, risk factors are conditions that can pose a serious threat to the successful completion or accomplishment of a specific task [32-34].

Risk management, in the IT literature, has mainly been associated with individual software projects and has not been extensively examined at the organizational level [33, 35]. However, the realities of the growth in the number of enterprise and extended enterprise systems and the extent of their impact have pushed IT risk management to the level of top management [36]. IT risk management pertains to anticipating, preventing, and mitigating problems arising in the management of some organizational tasks such as making decisions about IT implementations (including decisions about personnel), communication, and coordination [35]. Additionally, risk management in the IT literature tends to be viewed bilaterally. For the sake of this study, we limit our focus the technical subsystem of risk (i.e. IT risk, which also referred to as technical risk). IT risk involves the risk posed when new, unfamiliar, or complex technology, in the context of its intended use, adds to the complexity of a task or project [32].

3. Hypothesis development

3.1 Corporate entrepreneurship and IT governance

According to corporate culture theory, an entrepreneurial organization demonstrates innovation, spontaneity, and flexibility. Findings from prior research suggest that organizations do not employ or use IT in the same manner [24, 37]. Rather, they conclude that an organization’s level of entrepreneurial focus contributes significantly to their use of IT. For example, Bradley, et al. found that variations in the effectiveness of IT are a function of an organization’s entrepreneurial focus.

Given that one of the objectives of IT governance is to ensure the effectiveness of IT investments and initiatives, we, by extension of Bradley, et al.’s finding, would expect the level of IT governance to be tied to an organization’s level of entrepreneurship. For example, others have found that top-performing organizations have effective IT governance that supports their strategies and institutionalizes desirable behaviors, which are often tied to the organizations’ value systems [25, 38]. Based on these findings and our arguments, we present our next hypothesis as follows:

Hypothesis 1: A hospital’s level of corporate entrepreneurship will positively influence their level of IT governance.

3.2 Corporate entrepreneurship and IT risk management

It is clear from the literature on corporate culture and corporate entrepreneurship that entrepreneurial organizations have a propensity for taking risks [2, 14]. However, conservative organizations are risk-adverse, and less innovative [14, 24]. In fact, it is common for such organizations to take a more cautious and reactive approach to innovation [24]. An organization’s position along this continuum is indicative of its corporate entrepreneurship intensity.

Drew [39] implies that organizations either manage risk (this includes accepting risk) or they avoid risky initiatives. Even though organizations in turbulent environments (e.g. hospitals) tend to be quite innovative, we can’t assume that all are at the same place on the continuum of corporate entrepreneurship intensity. We expect that those hospitals that have a greater focus on corporate entrepreneurship are likely to be more innovative in the area of IT. As such, they are more likely to manage IT risks than hospitals that are relatively conservative. Because conservative hospitals are risk-adverse they are not as likely to immediately engage in or pursue IT that present risks and uncertainty, even when mandated by external forces such as regulatory bodies. Therefore, we posit the following:

Hypothesis 2: A hospital’s level of corporate entrepreneurship will positively influence their level of IT risk management.

3.3 IT governance and IT risk management

The need for more effective ways to manage risk is widely recognized [59]. Some have identified IT governance as a viable means to manage risk [19, 31, 59]. Moreover, some argue that effective and timely measures aimed at addressing risks fall under the domain of IT governance [59]. Additionally, it has been shown that risks can be proactively managed by implementing processes and structures from a management standpoint [54]. In fact, studies have shown that companies with IT governance strategies
stand a much better chance of managing risks, as compared to those without such strategies [33]. In light of these findings and arguments, we present the following hypothesis:

Hypothesis 3: A hospital’s level of IT governance will positively influence their level of IT risk management.

4. Research methodology

4.1 Measurement development

Wherever possible, measurement items were adapted from existing scales. Survey items were measured on a Likert-type scale anchored by “not at all” (1) and “very great extent” (7) or “strongly disagree” (1) and “strongly agree” (7). The items are listed in Appendix 1. Before the survey was administered, 14 CIOs and three academicians knowledgeable about IT governance and risk management in healthcare organizations reviewed the survey for understandability of the questions being asked, clarity of the questions, and consistency of the terminology between the survey questions and the healthcare industry.

<table>
<thead>
<tr>
<th>Construct Items</th>
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<tr>
<td><strong>Corporate Entrepreneurship</strong></td>
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<tr>
<td>• My firm is very dynamic and entrepreneurial.</td>
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<tr>
<td>• My firm's CEO is an innovator or risk taker.</td>
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<tr>
<td>• The glue that holds my firm together is commitment to innovation and development.</td>
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<tr>
<td>• My firm emphasizes growth and the acquisition of new resources.</td>
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<tr>
<td><strong>IT Governance</strong></td>
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<tr>
<td>• My organization employs a methodology to increase the effectiveness of IT investments.</td>
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<tr>
<td>• My organization employs a methodology to manage enterprise-wide technical standards.</td>
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<tr>
<td>• My organization employs a methodology to align IT project priorities with business priorities.</td>
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<tr>
<td>• My organization employs a methodology to encourage business process module reuse.</td>
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<tr>
<td><strong>IT Risk Management</strong></td>
</tr>
<tr>
<td>• The use of new/emerging information technology.</td>
</tr>
<tr>
<td>• The high level of technical complexity of IT projects.</td>
</tr>
<tr>
<td>• The use of leading edge information technologies.</td>
</tr>
<tr>
<td>• The use of information technology that has not been used in prior projects.</td>
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</table>

4.2 Operationalization of constructs

Corporate entrepreneurship was measured using four items adapted from Quinn and Spreitzer [23]. Respondents were asked to rate the extent to which their hospitals exhibited characteristics of an entrepreneurial culture. IT governance was measured using four items adapted from Brown and Grant [40], Ross [41], and Sambamurthy and Zmud [42]. Respondents were asked to rate the extent to which they employed specific mechanisms or processes to ensure that IT and IT resources are transformed and leveraged to meet the enterprise-wide needs of the organization. IT risk management was measured using four items adapted from Jiang, et al. [33] and Wallace, et al. [32]. Respondents were asked to rate the extent to which their hospitals addressed risks pertaining to the complexity of IT projects and the use of new, emerging, and unfamiliar technologies.

4.3 Control variables

The control variables used in this study were number of non-IT full-time equivalents (FTE), number of IT FTE, number of staffed beds, and hospital profit status. The non-IT FTE and staffed beds variables were chosen as proxies for hospital size. The IT FTE variable was chosen as a proxy for IT unit size. Additionally, the profit status variable was chosen to account for differences in profit motives among hospitals. These variables have been consistently used in prior studies related to IT implementation and healthcare informatics [24, 43-44].

4.4 Data collection

We sent surveys to 1,000 CIOs of hospitals based on information contained in the HIMSS...
Analytics Database. As part of our request for participation, we offered a complimentary report of the summarized results of the study to all participants as an incentive to participate in the study (nearly 95% of the respondents requested this report). Forty-five CIOs could not be contacted, and 81 indicated that hospital or healthcare system policy forbade their participation in the study. After two reminders, 167 responses were received (19%). Two responses were deemed not usable, and subsequently dropped from the dataset. The responding hospitals, on average, have 822 non-IT FTE, 35 IT FTE, 151 staffed beds, and net operating revenues of $122 million.

Nonresponse bias was assessed by verifying that early and late respondents did not significantly differ in their demographic characteristics and responses on principal constructs. Early respondents were identified by selecting those that responded in the first two weeks. All t-tests between the means of the two groups showed no significant differences (p < .05 level).

Consistent with prior studies, we conducted two tests to assess the extent of common method bias. Because only two variables have questions that were answered by the same respondent, we assess method bias for those two variables only. First, we performed Harman’s one-factor test by including all indicators in a principal components factor analysis [45] and examining the unrotated factor solution to determine the number of factors that are necessary to account for the variance in the items. Using Harman’s test, evidence for common method bias exists if either a single factor emerges or if one general factor accounts for the majority of the covariance among the items [45-46]. Our results show that neither case exists; therefore, our data do not indicate evidence of substantial common method bias. Second, we examined correlations between our constructs. Our correlation matrix (shown in Table 2) does not indicate any highly correlated factors (highest correlation is r = .57), whereas evidence of common method bias would have resulted in extremely high correlations (r > .90) [46].

5. Data analysis and results

5.1 Analysis

Partial least squares path modeling (PLS-PM), a second-generation path analysis technique that uses a correlational, principal component-based approach to estimation [47], was the methodology employed to test the hypothesized relationships in this study. PLS-PM has been used in many studies, and it has consistently been cited for its robustness in conducting causal-predictive analysis and its ability to handle deviations from normality [47-50].

5.2 Measurement validation

Table 2 contains the composite reliability scores, correlation matrix, and average variance extracted (AVE) of the principal constructs in our research model. Reliability estimates for all first-order constructs are above .80. Our model demonstrates convergent validity as all construct item loadings are significant at p < .001, and the items load more heavily on their respective construct (see Table 3).

We used the measure of AVE to assess discriminant validity. As reported in Table 2, the AVE for all constructs are above the recommended threshold of .50 [51]. We compared the square root of the AVE of each construct (bold diagonal elements in Table 2 to the inter-construct correlations (off-diagonal elements in Table 2). The square root of the AVE for each construct is greater than their respective inter-construct correlations. These results suggest that the principal constructs are distinct measures, and thus demonstrate discriminant validity [52-53].

| Table 2. Correlation Matrix and Average Variance Extracted of Principal Constructs |
|---------------------------------|---------------------------------|-------|-------|-------|-------|-------|-------|
| **Construct**                  | **Reliability (no. of items)** | **AVE** | **Mean** | **S.D.** | **CE** | **ITG** | **ITRM** |
| Corporate Entrepreneurship (CE) | .88 (4)                      | .65    | 4.27   | 1.23    | .81    |        |        |
| IT Governance (ITG)            | .90 (4)                      | .70    | 4.64   | 1.31    | .52    | .84    |        |
| IT Risk Management (ITRM)      | .89 (4)                      | .68    | 4.76   | 1.19    | .46    | .57    | .82    |

Note: The bold numbers on the leading diagonal are the square root of the AVE
Table 3. Factor Loadings

<table>
<thead>
<tr>
<th>ITEM</th>
<th>CE</th>
<th>ITG</th>
<th>ITRM</th>
</tr>
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<tbody>
<tr>
<td>CE1</td>
<td>0.85</td>
<td>0.45</td>
<td>0.39</td>
</tr>
<tr>
<td>CE2</td>
<td>0.77</td>
<td>0.33</td>
<td>0.30</td>
</tr>
<tr>
<td>CE3</td>
<td>0.82</td>
<td>0.53</td>
<td>0.42</td>
</tr>
<tr>
<td>CE4</td>
<td>0.77</td>
<td>0.31</td>
<td>0.32</td>
</tr>
<tr>
<td>ITG1</td>
<td>0.48</td>
<td>0.88</td>
<td>0.49</td>
</tr>
<tr>
<td>ITG2</td>
<td>0.41</td>
<td>0.89</td>
<td>0.52</td>
</tr>
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<td>ITG3</td>
<td>0.39</td>
<td>0.82</td>
<td>0.54</td>
</tr>
<tr>
<td>ITG4</td>
<td>0.47</td>
<td>0.76</td>
<td>0.34</td>
</tr>
<tr>
<td>ITRM1</td>
<td>0.43</td>
<td>0.48</td>
<td>0.85</td>
</tr>
<tr>
<td>ITRM2</td>
<td>0.36</td>
<td>0.34</td>
<td>0.80</td>
</tr>
<tr>
<td>ITRM3</td>
<td>0.43</td>
<td>0.55</td>
<td>0.87</td>
</tr>
<tr>
<td>ITRM4</td>
<td>0.30</td>
<td>0.45</td>
<td>0.76</td>
</tr>
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5.3 Results of hypothesis testing

The research model was analyzed with SmartPLS 2.0 (M3) [54], a PLS-PM tool that is well-cited for highly complex predictive path models [55]. We used the bootstrap resampling technique with 500 samples to estimate the significance of the path coefficients. The path coefficients for our proposed research model are shown in Figure 2. In accordance, with prior studies, the effects of all control variables on the latent variables in the research model were tested but, because we found none of the effects to be significant, they are not included in Figure 2.

![Figure 2. Results of Hypothesis Testing](image)

First, corporate entrepreneurship has a significant and positive effect on IT governance (beta=0.54, p < 0.001), thereby supporting H1. Second, corporate entrepreneurship has a significant and positive effect on IT risk management (beta=0.22, p < 0.01), thus supporting H2. Likewise, IT governance has a significant and positive effect on IT risk management (beta=0.47, p < 0.001), thereby providing support for H3.

5.4 Post-hoc analysis

Culture strength is defined as the degree to which an organization holds to policies and principles that go beyond those of the current executive leadership. It also refers to commonly held beliefs, whether explicitly or implicitly stated, within a stable internal environment. Prior studies have suggested that the strength of an organization’s culture has an impact on the organization’s performance [56]. Despite such findings, the small body of literature on corporate culture strength “presents neither a compelling nor coherent image of the effects of culture strength on organizational variables [57]. Furthermore, Sorensen suggests that corporate culture strength has implications for organizational outcomes that go beyond their effects on mean performance levels. As such, we suspect that hospitals’ culture strength will influence the relationships between the corporate entrepreneurship and both IT governance and IT risk management.

However, given the scant literature and limited theory to develop hypotheses around the effect of culture strength as a moderator of the impact of corporate culture related activities on organizational variables, we perform a post-hoc analysis.

Figure 3 contains the results for our main effects model. Figure 4 contains the results of our moderated model. The interaction (or moderating) variable between corporate entrepreneurship and both IT governance and IT risk management was computed following Goodhue, Lewis, and Thompson [58] in which the average values of the indicators for corporate entrepreneurship and culture strength were used. The interaction effect between corporate entrepreneurship and culture strength was significant for IT risk management (β = -0.15, p < .10, R² = 5.4%); therefore, the findings show that the interaction term significantly increases the model R² from that found with just the main effects. Conversely, the interaction effect between corporate entrepreneurship and culture strength was not significant for IT governance. The negative moderating role of culture strength suggests its additive inverse effect to the positive relationship between corporate entrepreneurship and IT risk management. To further examine the moderating effect of culture strength, we tested whether the variance explained due to the moderated effect is significant beyond the main effects using the following F statistic recommended by Carte and Russell [59]:

\[
F = \frac{\text{df} \cdot \text{interaction} - \text{df} \cdot \text{main} \cdot N - \text{df} \cdot \text{interaction} - 1}{\Delta R^2 / (\text{df} \cdot \text{interaction} - 1)}
\]

The F statistic was found to be significant (13.88; p < .001), thus providing support for the significant role played by the moderating effect of culture strength on the relationship between corporate entrepreneurship and IT risk management.
6. Discussion

This study set out to explore the relationships between corporate entrepreneurship and both IT governance and IT risk management. It was also our intent to explore the relationship between IT governance and IT risk management. The results of our analysis of the responses received from 165 CIOs of hospitals reveal several key findings. We discuss the key findings and suggestions for future research below.

Our findings suggest that the level of organizational entrepreneurial values and norms explains why the degree of commitment to IT governance and IT risk management varies across hospitals. Specifically, we find that the higher a hospital’s level of corporate entrepreneurship the more it focuses on governance of IT resources and managing IT-related risks. Relative to IT governance, the result could be explained by the typical structure of entrepreneurial organizations. Bradley et al. [24] argue that entrepreneurial organizations are more likely to have a decentralized organizational structure. They further contend that entrepreneurial organizations face more relative uncertainty and are, therefore, more likely to need guiding mechanisms concerning IT. Consequently, Bradley et al. report the effects of the IT plan to be significantly greater in entrepreneurial organizations. To further this point, Veliyath and Shortell [60] also found that strategic plans pertaining to IT were more effectively implemented in organizations with an entrepreneurial focus. However, neither study considers the level of entrepreneurship as an antecedent to the IT plan or the effectiveness of the IT plan. Rather, they establish the level of entrepreneurship as a contingency variable relative to the effects of the IT plan on IT resources. Although their findings are valid, our findings serve as an extension of Bradley et al.’s work. Whereas we do not focus on the content and quality of the elements in the IT plan, we do consider the role of IT governance mechanisms in helping guide the development of the IT plan, as well as the role of IT governance mechanisms as an enabler of the IT plan. As such, our finding that the effects of IT governance mechanisms are a consequence of the level of corporate entrepreneurship provides insight into the nature of the relationship between corporate entrepreneurship and IT governance mechanisms. In contrast, our finding is in conflict with that of Weill and Ross [30]. In their study, Weill and Ross report that organizations with an entrepreneurial focus require few governance mechanisms. The conflicting findings could be due to the level of uncertainty and the high velocity environment in which the organizations in our study operate. Although Weill and Ross’ study spanned multiple industries, very few of the organizations in their study were from the healthcare industry. As such our finding highlights the importance of IT governance mechanisms in organizations that operate in high velocity environments, specifically hospitals, and that have an entrepreneurial focus.

As it pertains to the relationship between corporate entrepreneurship and IT risk management, our finding is consistent with prior literature. For example, Weill and Ross report that organizations with an entrepreneurial focus are more likely to manage IT risks. Thus, our study empirically validates Weill and Ross’ claim that organizations with an entrepreneurial focus are more likely to manage IT risks. Although we demonstrate that this relationship holds, it is of more importance to note that based on the context of our study (i.e. hospitals) the relationship remains intact even in high velocity environments. Given that such organizations are more likely to take risky initiatives, which can further exacerbate the inherent risks associated with IT, it is no surprise that organizations with an entrepreneurial focus are more likely to manage IT risks. Such organizations understand that for them to succeed and/or remain true to who they are, they must face risk head-on. In doing so, they will typically have mechanisms in place to mitigate the risk. To ignore the risk, and not address them would not only be unwise, but potentially detrimental to the success of entrepreneurial initiatives and activities.

Another key finding is the intervening effect of IT governance on IT risk management. We find that as hospitals engage in IT governance initiatives they
are more likely to address IT risks. The findings of prior studies could help to explain this result. Van Grembergen et al. [61] and Fletcher [62] identify risk management as a core issue and domain, respectively, of IT governance. Further, Van Grembergen et al. argue that IT governance is important to ensure that risks associated with IT are mitigated. Although we didn’t test for mediation, the results suggest that IT governance may potentially mediate the relationship between corporate entrepreneurship and IT risk management. Future studies should consider formally examining the mediation effect of IT governance. Previously we discussed the direct relationship between corporate entrepreneurship and IT risk management. Our results now reveal an indirect relationship between the two variables via IT governance. Additionally, the results suggest that indirect relationship via IT governance is stronger and more significant than the direct relationship. This seems to suggest that the level of IT governance is a relatively better predictor of the level of IT risk management as compared to corporate entrepreneurship.

Our final key finding pertains to the moderating role of culture strength on the relationships between corporate entrepreneurship and both IT governance and IT risk management. The results indicate that culture strength is a contingency variable in need of consideration when studying the impact of corporate entrepreneurship on IT risk management, and not IT governance. According to Van Grembergen et al., effective risk management begins with a clear understanding of an organization’s appetite for risk. This appetite for risk is generally driven, in part, by the level of entrepreneurial focus exhibited by an organization [24]. As such, the strength of an organization’s culture has the potential to temper the effect of corporate entrepreneurship on IT risk management. Interestingly enough, strong cultures create an environment in which the impact of corporate entrepreneurship on IT risk management is diminished. This result could be a function of the level of commitment to and identification with the organization on the part of its employees. More specifically, employees of an organization that has a strong culture have a unified sense of the mission of the organization and whose members agree on the powerful values and norms in place in the organization [57].

7. Conclusion

The objective of this study was to develop a more comprehensive picture of how a hospitals’ entrepreneurial behavior influences its focus on IT governance and IT risk management. Our pursuit of this objective was driven by a single research question: what is the nature of the relationships among corporate entrepreneurship, IT governance, and IT risk management in hospitals? We addressed this question using quantitative data from a field study, in which we used SmartPLS to analyze data collected from CIOs of hospitals to empirically test our theoretical model. The model positioned corporate entrepreneurship as an antecedent to both IT governance and IT risk management. The model also positioned IT governance as an intervening variable between corporate entrepreneurship and IT risk management. The result of our analysis indicates that corporate entrepreneurship is positively associated with both IT governance and IT risk management. Further, we found that corporate entrepreneurship has an indirect relationship with IT risk management via IT governance. In this case, IT governance was found to be positively associated with IT risk management. Lastly, we found culture strength to be a significant moderator of the relationship between corporate entrepreneurship and IT risk management.

Based on our findings, this study contributes to the IT and corporate culture literatures in several ways. First, it presents corporate entrepreneurship as an antecedent to both IT governance and IT risk management. Second, it establishes a causal relationship between IT governance and IT risk management. Third, it introduces culture strength as a moderator of the relationship between corporate entrepreneurship and IT risk management.

As U.S hospitals continue to experience major transformations in their application of IT [16-17], it is of utmost importance that clinicians and hospital administrators and executives understand and prepare for the impact of technological change on their organizations. In preparation for such changes, hospitals will need to understand the role corporate entrepreneurship plays in their employment of IT governance mechanisms, as well as their approach to managing IT risks.

8. REFERENCES


