Relationship between Digital Business Intensity and Process Innovation: An Empirical Examination
Completed Research

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Abstract

Drawing upon dynamic capabilities theory, this study examines the effect of digital business intensity on process innovation. The empirical evidence from a sample of CIO’s from US firms suggest that digital business intensity enhances process innovation, organizational mindfulness and knowledge management. Furthermore, our findings show that organizational mindfulness and knowledge management are key antecedents of process innovation.

Keywords

Digital Business Intensity, Process Innovation.

Introduction

In a rapidly competitive and turbulent business environment that requires continuous improvement and performance, process innovation has been identified as one of the most important sources of competitiveness (Piening & Salge 2015, Mustonen-Ollila & Lyytinene 2004). The ability to transform organizational processes through technological and operational innovations can be a major source of competitive advantage in a dynamic business landscape with fleeting market positions, evolving customer needs and changing technologies (Damanpour, Walker & Avellaneda 2009). Process innovation, which refers to changes and new elements, introduced into an organization's production or service operations (Damanpour et al., 2009), typically requires organizations to leverage existing or emerging technology to improve the efficiency of production operations and business processes (Piening & Salge 2015). Through process innovation firms can attain quality improvement, supply chain efficiency, growth and productivity gains (He & Wong 2004). Unsurprisingly, prior literature has advocated the importance of process innovation and has recognized it as a key antecedent of firm performance (Tarafdar & Gordon 2007). Interestingly, while past studies have acknowledged and empirically examined various aspects of product innovation, process innovation continue to receive limited attention (Piening & Salge 2015). Indeed, extant literature has not thoroughly scrutinized process innovation and the organizational capabilities that fuel process innovation (Piening & Salge 2015). As a result, though process innovation is viewed as a driver of firm performance, research on how firms can enable or shape process innovation and the underlying apparatus through which process innovation is attained has been limited (Tarafdar & Gordon 2007; Piening & Salge 2015).

The recent pervasive emergence and penetration of digital technologies has reignited and elevated the importance process innovation on productivity. Through investment in digital technologies, such as big data, analytics, cloud, mobile, social media, and embedded device, firms are able to drive and enable changes and process improvement (Horlacher & Hess 2016; Nwankpa & Roumani 2016). Directly to this point, companies are viewing the investments in these cutting-edge digital technologies as a means of strategically reshaping their IT capabilities. Firms are facing increased pressure to make digital investments a strategic priority and to embrace the opportunities created by these pervasive digital technologies (Horlacher & Hess 2016; Nwankpa & Datta 2017). Indeed, investments in digital technologies have
increased across industries as organizations seek to engage customers, streamline business processes and improve operational efficiency. Yet, little extract literature exists on how firms should manage their digital investments to deliver greater process innovation and the capabilities needed to achieve process innovation. Digital business intensity (DBI), which is a measure of the level of strategic organizational investments in emergent and innovative digital technologies (Nwankpa & Datta 2017), can enable or obscure an organization’s ability to develop and design appropriate digital business strategy and process innovation. Motivated by scholars calling for more nuanced understating of process innovation, this study attempts to fill the current gap in the literature. In this paper, we attempt to advance our knowledge of process innovation by examining the role of DBI in a firm’s quest for process innovation.

The objective of this study is to fill the aforementioned gaps in management and IS literature by drawing on the dynamic capabilities framework to provide insights into DBI and the mechanisms through which DBI shapes process innovation. The choice of dynamic capabilities is driven by its focus on a firm’s innovation engagements, changing climates and how organizations use emerging digital technologies to improve process efficiency (Helfal et al., 2007). We present a conceptual framework that investigates a fundamental question:

Is there a positive implication of DBI on organizational mindfulness, knowledge management and process innovation?

This study attempts to answer this research question by conceptually and empirically testing a developed research model with survey data collected from chief information officers (CIO) across US-based firms. The paper proceeds as follows. The next section reviews the theoretical foundation. The subsequent section introduces the research model and hypotheses. Then, we present the methodology and data analysis. The final section discusses the results, the contributions to research and theory.

**Literature Review and Theoretical Background**

**Dynamic Capabilities Perspectives**

Dynamic capabilities framework (Teece et al., 1997) has been widely applied within the IS literature to explain how firms are able to gain competitive advantage in a rapidly changing business environment (Sambamurthy et al., 2003). Dynamic capabilities refers to a firm processions that generate the ability to integrate, build, reconfigure and deploy a resource mix in a bid to address a rapidly evolving business climate (Teece et al., 1997; Teece 2007). Dynamic capabilities are key antecedents and drivers behind the ability of organizations to create, evolve and recombine other resources into a new source of competitive advantage (Eisenhardt & Martin, 2000). The theory suggests that sustainable competitive advantage in a turbulent environment is an outcome of how firms are able to build, integrate and reconfigure their limited resources to respond to changing business environment. In investigating the consequence of DBI, dynamic capabilities present an appropriate lens through which one may gain insight and better understand how organizations can foster process innovation enabled by pervasive digital technologies. Given that dynamic capabilities focus on how organizations can perform innovation activities, the theoretical framework can provide background insight needed to advance our knowledge on process innovation. As a result, the perspective taken in this research is that process innovation is an outcome of dynamic capabilities that are synthesized within an organization through opportunities created by investments in emerging digital technologies.

**Digital Business Intensity**

DBI refers to the level of a firm’s strategic investments in emerging and innovative digital technologies such as analytics, big data, cloud, social media and mobile platforms (Nwankpa & Datta 2017) in an attempt to build its IT portfolio. Businesses with high DBI are able to apply to cutting-edge digital technologies in many facets of their business operations leading to improved performance (Westerman et al., 2012; Markus & Loebbecke 2013; Nwankpa & Datta 2017). DBI has been identified as an important factor that enables firm performance (Westerman et al., 2012; Bharadwaj et al., 2013). Nwankpa & Datta (2017) argued that organizations invest in DBI as a way of repositioning their IT capabilities to deal with changing business landscape, leading to higher firm performance. In an increasingly digital business environment, inadequate DBI can obscure an organization’s ability to develop and design appropriate digital business strategy and innovation. In fact, prior investigations suggest that firms with higher DBI are superior at generating
revenues using their existing resources (Westerman et al., 2012). Furthermore, DBI firms are able to create and effectively utilize pervasive digital connections, and communicate among business partners within the value chain.

**Organizational Mindfulness**

Organizational mindfulness refers to the degree to which an organization captures details about emerging threat and opportunities as well as the willingness and capability to promptly act on these details (Weick & Sutcliffe, 2001). It involves creating a continuous state of alertness, an ability to make sense of unexpected events and a more nuanced ability to act and deal with the event. Within the last two decades, the concept of mindfulness has emerged in the organizational science literature and has extended to organizations in an attempt to understand what separates high-reliability organizations from other, less-reliable organizations (Weick & Sutcliffe 2001; Swanson & Ramiller 2004). Exploring mindfulness within the context of dynamic capabilities is useful because of the evolving business environment that companies operate. Dynamic capabilities are rooted in a firm’s ability to integrate, build, reconfigure and deploy a resource mix in a bid to address a rapidly evolving business climate (Teece et al., 1997). Likewise, developing a mindful organization entail building a capability to detect and benefit from emerging threat and opportunities such as digital technologies. Prior research has suggested that mindful organizations are more positioned to assimilate IT innovation because such organizations remain open to surprises, continued learning and unexpected development (Swanson & Ramiller 2004) and past studies has called for more empirical understanding of mindfulness and IT-enabled innovations (Fichman 2004; Sutcliffe et al., 2016).

**Knowledge Management**

Knowledge Management is defined as an organization’s effort designed to cultivate, expand and apply knowledge resource both explicit and tacit knowledge in ways that add value and competitive advantages (Hsu & Sabherwal 2012; Benbya et al., 2004). The objectives of knowledge management are to formalize and promote the management and use of an organizations knowledge asset. Knowledge management processes enable enterprises to act intelligently and realize the best value from existing knowledge assets (Wiig 1997). Prior studies have identified three dimensions of knowledge management, which include knowledge acquisition, knowledge conversion, knowledge application and knowledge protection (Gold et al., 2001; Hsu & Sabherwal 2012). Knowledge acquisition refers to new knowledge from various sources that a firm can accumulate and obtain (Gold et al., 2001). Knowledge conversion refers to efforts designed to incorporate the acquired knowledge into the enterprise processes (Gold et al., 2001). This implies that organizations need to have processes and mechanisms that make existing knowledge useful. Knowledge application refers to using the knowledge to perform tasks and solve organizations’ problems (Hsu & Sabherwal, 2012). Therefore, a firm’s knowledge management capability refers to the firm’s ability to acquire new knowledge, convert this knowledge into a usable form and apply this knowledge in its operations.

**Process Innovation**

Process innovation refers changes and new elements introduced into an organization’s production or service operations (Damanpour et al., 2009). It entails changes in ways a product is manufactured, or a service is provided (Tarafdar & Gordon 2007). Process innovation can take the form of changes to existing processes or the creation of new processes used by a firm to provide products or services (Kleis et al., 2012). Typically, the emphasis of process innovation is on internal working of an enterprise and the goal is primarily to drive efficiency (Damanpour & Gopalakrishnan 2001). Naturally, process innovation requires firms to apply new technologies to improve business processes and production efficiency. If properly implemented, process innovation can be a major source of competitiveness by driving process efficiency, quality improvement, flexibility and responsiveness (Terjesen & Patel 2017). Process innovation are typically complex and sometimes difficult to assimilate because of the innovation’s capacity to alter existing production processes (Tarafdar & Gordon 2007). In the era of evolving market positions and dynamic business environment, process innovation has emerged as a strategic imperative for firms seeking to sustain market positions and gain competitive advantage.
Research Model and Hypotheses Development

Research Model

Building on the background literature discussed above, this study develops a research model based on the theoretical rationale of dynamic capabilities. Process Innovation was our dependent variable. As suggested in the introduction, we believe that DBI should foster process innovation.

The Effect of Digital Business Intensity on Process Innovation

The link between DBI and process innovation is rooted in IT-enabled dynamic capabilities, which involves identifying and implementing new IT investment in order to meet new challenges (Pavlou & El Sawy 2011). DBI represents a firm attempt to extend and modify its resource base with emerging digital technologies. Following the underlining framework of dynamic capabilities, prior literature provides reasons for expecting DBI to influence process innovation. Digital resources can trigger and foster innovation through improved connectivity with other technologies, flexibility and reengineered processes (Yoo 2013). Similarly, anecdotal evidence suggests that in a pervasive digital world, digital technologies provide the environment need to drive innovation (Yoo et al., 2012). According to Yoo et al., (2012), digital technologies are equipped with digital capabilities that allows firms to expand, support different tasks and effectively utilize existing in-house resources. Directly to this point, firms that invest in digital platforms attain the foundation and building blocks necessary to harness innovation activities (Sedera et al., 2016; Yoo et al., 2012). Through digital investments firms are able to reposition, incubate and advance new ideas leading to process innovation and breakthroughs. Consistent with the above argument, we hypothesize the following:

H1: DBI has a positive effect on process innovation.

The Effect of Digital Business Intensity on Organizational Mindfulness

Mindful organizations develop processes that keep them sensitive to their environment, open and curious to new information while also retaining the capability to promptly act on these details (Weick & Sutcliffe 2001). We believe that DBI is a key enabler of the development of organizational mindfulness capabilities. Arguably, DBI promotes mindfulness by providing the platform through which firms can engage in more extensive search for new processes, make sense of unexpected events and recognize multiple perspectives. As a result, strategic investments in emerging technologies such as analytics, big data, social media, artificial intelligence are aimed at fostering mindfulness by capturing details about customers, competitive elements and emerging threats in a complex and turbulent business climate. Mindfulness is about building a workplace culture that nurtures attentiveness and superiority of attention. In this era of digital age, organizations invest in digital technologies as a way of repositioning their ability to identity, capture and deal with threat and opportunities. Through digital investments in emerging technologies organizations are
able to build and sustain the capabilities to detect and benefit from emerging threat and opportunities. Such insights may be challenging if organizations lack or fail to invest the necessary digital platforms and emerging digital technologies. As a result, firms that attain high DBI, are better positioned to leverage these emerging digital technologies and develop superior organizational mindfulness capabilities. The following hypothesis is derived from these arguments:

**H2: DBI has a positive effect on organizational mindfulness.**

**The Effect of Digital Business Intensity on Knowledge Management**

The emergence of digital technologies such as data analytics, social media, mobile and cloud platforms has transformed knowledge management by providing technological platforms for information dissemination, content generation and interactive communication (Zeng et al., 2010; Chua & Banerjee 2013). The depth of ever-growing information and meta-data generated through social media, cloud-based applications and mobile platforms enables knowledge acquisition and innovation (Zeng et al., 2010). For example, organizations such as Starbucks are able to develop and acquire rich knowledge and interactive communication about their products and services through Twitter and Facebook (Chua & Banerjee 2013).

Similarly, data analytics are providing companies with useful patterns and intelligence that foster knowledge management initiatives and strategies within an organization. Digital technologies such as social media, cloud applications, data analytics share key principles of KM namely: data, information and knowledge sharing (Levy 2009). The emergence of the digital technologies has enabled decentralized knowledge creation and effective knowledge sharing (Von Krogh 2012). The combination of DBI, connectivity and big data has created a digital network of people and huge quantities of data, information and knowledge that needs to be harnessed (Bharadwaj et al., 2013). Thus, as firms continue to increase DBI by inserting digital technologies into their business operations, we expect these technologies to nurture knowledge creation, dissemination and collaboration. Thus, we would expect the following relationships to hold true:

**H3: DBI has a positive effect on knowledge management.**

**The Effect of Organizational Mindfulness on Process Innovation**

The link between organizational mindfulness and innovation has been equivocal. On the one hand, anecdotal evidence suggest that mindfulness can enable an organizations innovativeness by fostering the ability to generate and apply new ideas and explore multiple perspectives (Swanson & Ramiller 2004). At the most basic level, mindful organizations are able to simulate innovation by embracing changes, making sense of unprecedented events and introducing new elements in the company’s business operations. On the other hand, some scholars argue that mindfulness may not always enable innovation. Mindful organizations may be hesitant and resistance to new innovations in a bid to avoid the innovation bandwagon (Fiol & O’Connor, 2003). A key characteristic of organizational mindfulness is the continuous state of alertness. Such state enables the organization to dissent innovations that fits its specific circumstance and facts (Swanson & Ramiller 2004). Firms with organizational mindfulness capabilities will be successful in capturing details about emerging opportunities in a complex and ever-change business landscape. As a result, we argue that mindful organizations are able to identify, interpret and adopt process innovations tailored to meet organization’s situation. Therefore, we hypothesize the following:

**H4: Organizational Mindfulness has a positive effect on process innovation.**

**The Effect of Knowledge Management on Innovation.**

Prior research suggests that knowledge management is positively related to innovation. For example, Hsu & Sabherwal (2012) showed that knowledge management supports Innovation within the organization. However, Darroch (2005) cautioned that knowledge management capability is less likely to develop radical new world innovation but more likely to develop incremental innovation. According to Darroch (2005) reliance on existing knowledge management within an organization can limit a firm’s ability to create radical groundbreaking innovation. Yet, knowledge management processes and capabilities enable the development of new ideas, knowledge-based products and services that led to firm innovation (Eisenhardt & Santos 2002). Through an effective knowledge management infrastructure, organizations are able to consolidate and transfer knowledge within the firm, thereby creating an environment that fosters new ideas and knowledge needed to produce innovation (Nonaka 1994; Nonaka & Takeuchi 1995; Hsu & Sabherwal
Furthermore, knowledge management enables organizations to update knowledge, transform the knowledge, and combine innovation effects in order to produce innovative products and services (Carneiro 2000). Hence, we hypothesize:

**H5: Knowledge management has a positive effect on innovation.**

**Research Method**

**Data Collection**

To validate the conceptual model and the associated hypotheses, a mail-based survey was conducted. The unit of analysis was the organizational level, as this study seeks to understand the consequence of DBI within the organization. Therefore, the target population was CIO's and IT executives of US firms involved in the strategic decision process of digital investment and deployment within their firms. A significant proportion (73%) of the respondents were CIOs. When using perceptual measures and single respondents, it is vital to solicit data from most qualified and well-informed individual (Huber & Power 1985). The survey instrument was designed after an exhaustive investigation of existing literature, interviews and reviews from individuals with extensive knowledge of digital investments and applications.

The finalized survey packet was initially sent to a stratified random sample of 1000 CIO's at firms across the US. Sources such as corporate directories and Dun and Bradstreet’s Million Dollar database – a directory that provides contact information of executives in various position in firms in the United States (Nwankpa & Datta 2017), were used to create a mailing list of 1000 firms. Our survey packet consisted of a cover letter that described our study and its purpose, the questionnaire, and a self-addressed stamped return envelope. Sample sizes for different industries were based on the population size in the Dun and Bradstreet’s database. Multiple phone calls to non-respondents and two waves of mailing yielded 193 usable responses, for a response rate of 19.3%. Of the possible 1000 firms, 167 (16.7%) declined participation for various reasons (e.g., too busy, company policy excludes participation in research projects). Table 1 provides sample characteristics information.

**Measures**

The variables in this study were measured using a questionnaire survey. Both the dependent process innovation and the independent variables namely: DBI, organizational mindfulness and knowledge management were measured using a survey multiple-item scale. Whenever possible, the constructs were operationalized and survey items were developed by identifying appropriate measurements from a review of extent literature and adapting them in the context of digital enabled process innovation. These constructs were measured with multiple indicators coded on a seven-point Likert scale with anchors ranging from strongly disagree to strongly agree. For new measures, we applied standard scale development procedures (Churchill, 1979). The dependent variable process innovation was modified to fit the context and the theoretical domain for the scales items was drawn from the literature. DBI was measured with four items adapted from Nwankpa & Datta (2017) while organizational mindfulness was measured using six items developed by Weick & Sutcliffe (2001). Consistently with prior literature, Knowledge management was operationalized using the three dimensions of knowledge management namely: knowledge acquisition, knowledge conversion and knowledge application (Gold et al., 2001; Hsu & Sabherwal 2012). Knowledge acquisition was measured with four items (Gold et al., 2001, Hsu & Sabherwal 2012), knowledge conversion was measured with five items (Gold et al., 2001 & Hsu & Sabherwal 2012) while the five items measuring knowledge application were also adapted from Gold et al., (2001) and Hsu & Sabherwal (2012).

**Data Analysis and Results**

SmartPLS 3.0 was used for the analysis. The moderating relationship was examined using the product indicator method first recommended by Kenny and Judd (1984) and later implemented by Ringle et al., (2005). The product indicator method involves creating an interaction term by multiplying the indicators of the predictor and moderator constructs. To ensure that the responses were free from non-response bias, our study followed the approach suggested by Armstrong & Overton (1997) and compared early and late responses. Early respondents were those who responded to the initial mail, while late respondents were those who responded after the second reminder and appeal. Results of the t-tests of the mean differences for each of the constructs did not reveal any significant differences (p < 0.05, two-tailed), suggesting that
nonresponse bias was not a serious threat to this study. Given that a single respondent completed each of the survey questionnaire, it was important to assess the potential of common methods bias. Following Podsakoff et al., (2003), this study applied the Harman’s one-factor test on the constructs by simultaneously loading all items from the combined dataset in factor analysis with no rotation. Results showed that the most covariance explained by one factor was 27.54%, suggesting that common method bias was not likely present in the study.

<table>
<thead>
<tr>
<th>PI</th>
<th>DBI</th>
<th>KAP</th>
<th>KC</th>
<th>KAC</th>
<th>OM</th>
</tr>
</thead>
<tbody>
<tr>
<td>PI1</td>
<td>0.916</td>
<td>0.407</td>
<td>0.397</td>
<td>0.266</td>
<td>0.434</td>
</tr>
<tr>
<td>PI2</td>
<td>0.909</td>
<td>0.322</td>
<td>0.381</td>
<td>0.282</td>
<td>0.343</td>
</tr>
<tr>
<td>PI3</td>
<td>0.873</td>
<td>0.395</td>
<td>0.393</td>
<td>0.352</td>
<td>0.325</td>
</tr>
<tr>
<td>PI4</td>
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<td>0.386</td>
<td>0.375</td>
<td>0.323</td>
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<tr>
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<td>0.893</td>
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<td>OM6</td>
<td>0.431</td>
<td>0.526</td>
<td>0.402</td>
<td>0.419</td>
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</table>

Table 1: item loadings and cross loadings

**Measurement Model and Construct Validity**

The adequacy of the measurement model was accessed with confirmatory factor analysis, reliability, convergent validity and discriminant validity. Appendix 1 reports the loadings of the variables. All item loadings were greater than 0.70 as recommended by Hair et al., (1998), indicating that the items represented their respective constructs. Further, item loadings were found to be much higher than all cross-loadings. Reliability was assessed using the composite reliability values. As shown in Table 2, all the values were above the commonly accepted threshold of 0.70. We tested convergent validity using two criteria (Fornell & Larcker, 1981). First, all indicator loadings should be significant and exceed 0.70, and, second, the average variance extracted (AVE) by each construct should exceed the variance due to the measurement error for that construct. As Table 2 shows, all factor loadings were greater than 0.70 and as shown in Table 2, the AVE of every latent construct was greater than 0.70, which suggests that the principal constructs capture much higher construct-related variance than error variance. Thus, the measures have acceptable convergent validity. Discriminant was assessed using three tests. First, an examination of cross-factor loadings in Table 1 indicated good discriminant validity because the loading of each item on its assigned construct was greater than its loadings on all other constructs (Chin, 1998). Second, the correlations among the constructs were below the 0.85 threshold (Kline, 1998), suggesting discriminant validity. Third, the
square root of the AVE from a construct was greater than the correlations among the construct and all other constructs in the model (Fornell & Larcker, 1981). Table 2 presents sufficient evidence of discriminant validity of the constructs.

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Number of items</th>
<th>Mean</th>
<th>SD</th>
<th>CR</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
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<tbody>
<tr>
<td>1. Process Innovation</td>
<td>5</td>
<td>4.34</td>
<td>1.09</td>
<td>0.89</td>
<td>0.84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Digital Business Intensity</td>
<td>4</td>
<td>4.21</td>
<td>1.15</td>
<td>0.86</td>
<td>0.35***</td>
<td>0.87</td>
<td></td>
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<tr>
<td>3. Knowledge Management</td>
<td>14</td>
<td>4.62</td>
<td>1.21</td>
<td>0.85</td>
<td>0.29***</td>
<td>-0.12</td>
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<tr>
<td>4. Organizational Mindfulness</td>
<td>6</td>
<td>4.37</td>
<td>1.17</td>
<td>0.91</td>
<td>0.31***</td>
<td>-0.09</td>
<td>0.17</td>
<td>0.86</td>
</tr>
</tbody>
</table>

Note: Figures along diagonal in bold are values of the square root of AVE. Significant at * p < 0.05, ** p < 0.01, *** p < 0.001

Table 2: Description statistics and correlation matrix

**Structural Model Testing**

In PLS, structural model testing, examines the structural paths to determine the significance of the hypothesized paths, the R-square scores of the endogenous variables and the explanatory power of the structural model. The results of the structural model are shown in Figure 2. The results suggest that the model is capable of explaining 47% of the dependent variable process innovation. Similarly, the model is capable of explaining about 29% of the variance of organizational mindfulness and 22% of the variance of knowledge management. Overall, most of the hypotheses were supported.

![Figure 2: Research model with results](image)

In support of hypothesis 1, DBI had a strong positive relationship with process innovation ($\beta = 0.41, p < 0.001$). Similarly, DBI had a significant direct effect on organizational mindfulness ($\beta = 0.45, p < 0.001$) and knowledge management ($\beta = 0.39, p < 0.001$) in support of hypothesis 2 and 3. Hypothesis 4 concerns the effect of organizational mindfulness on process innovation. The results reveal that organizational mindfulness had a strong positive relationship with process innovation ($\beta = 0.31, p < 0.001$), supporting hypothesis 4. Similarly, hypothesis 5 accessed the effect of knowledge management on process innovation. As hypothesized, the results reveal that knowledge management has a significant positive relationship with process innovation ($\beta = 0.24, p < 0.001$), supporting hypothesis 5.

**Contributions**

Given that today society is dominated by the emergence of digital technologies and innovations, businesses are facing increased calls to exploit and embrace the opportunities created by these pervasive digital technologies. Yet, we lack a comprehensive understanding of how organizations can apply, leverage and integrate new digital technologies to its prevailing capabilities to attain superior process innovation. To address this gap, our study examines how DBI can influence process innovation. Our result finds a positive
link between DBI and process innovation. While prior research has argued that digital technologies provide the environment needed to drive innovation (Pavlou & El Sawy 2011; Yoo et al., 2012), this finding presents an empirical support for hitherto anecdotal evidence regarding the impact of DBI on innovation. Our result by establishing the enabling role of DBI adds to the growing body of research that seeks to understand the mechanisms through organizations can leverage on digital investments to drive innovations and existing competences. In addition, our results show that DBI influences organizational mindfulness and knowledge management. At a time of increased reliance on ever-growing information and meta-data generated through social media, analytics, mobile platform and cloud-based applications, managers will welcome the findings that investments in digital technologies can boost organizational mindfulness and knowledge management capabilities within the organization. Through investment in digital technologies, firms are able to build and nurture in-house capabilities need to successfully detect and benefit from emerging threats and opportunities leading to process innovation. This study shows that both organizational mindfulness and knowledge management exert a significant impact on process innovation. The findings are similar to the results in Hsu & Sabherwal (2012), where knowledge management was identified as a key antecedent of innovation. In addition, our study reveals that mindful organizations are better positioned to adopt process innovations casting doubt on some anecdotal evidence that suggest that mindful organizations may be hesitant and resistant to new

REFERENCES


