



Building small firm performance through intellectual capital development: Exploring innovation as the “black box”[☆]

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ABSTRACT

Innovation seems to be a fundamental requirement for the growth and sustainability of small businesses. While previous research revealed a strong correlation between intellectual capital and performance, the role of intellectual capital in facilitating the innovativeness and performance of a firm has not been thoroughly examined in the small and medium-sized enterprise (SME) context. This study examines the role of innovativeness in the intellectual capital and organizational performance relationship using a sample of small firms. The results of a survey conducted on 460 small business owners indicate a positive relationship between two components of intellectual capital, human capital and organizational capital, and organizational performance. Further analysis finds that innovativeness partially mediates the relationship between intellectual capital and organizational performance. Our findings indicate that efficiently and effectively organized firms can leverage well skilled and innovative employees to achieve the best performance through innovation.

1. Introduction

Small and medium-sized enterprises (SMEs) must often be creative and diligent in establishing, solidifying, and defending strategies for sustained competitive advantage, given the difficulties in realizing gains from economies of scale (Patel & Jayaram, 2014; Wales, Patel, Parida, & Kreiser, 2013). Researchers argue that the development and deployment of knowledge-based resources are critically important tools for firms to garner a sustained competitive advantage and greater profitability (Cohen & Levinthal, 1990; Grant, 1996a, 1996b; Kogut & Zander, 1992). In particular, these intangible resources have been shown to be more important than tangible assets in the early stages of new venture development (Lichtenstein & Brush, 2001).

Entrepreneurs and small business owners have been consistently coached to focus on the novelty of their offerings compared to their often larger competitors, as well as to utilize their firm-specific knowledge to establish processes and routines that make them nimble (Rosenbusch, Brinckmann, & Bausch, 2011; Zulu-Chisanga, Boso, Adeola, & Oghazi, 2016). Response speed and ability to adapt to market demands allow SMEs to leverage the advantages of their “smallness” through innovation (Leal-Rodríguez & Alborn-Morant, 2016;

Rosenbusch et al., 2011). Therefore, innovation is an important topic of investigation in the research on SME performance. Most scholars consider innovation a key source of sustainable competitive advantage for SMEs (Andries & Czarnitzki, 2014; Rosenbusch et al., 2011). Based on the tenets of the Knowledge-based View (Grant, 1996a, 1996b; Kogut & Zander, 1992), which extends from the Resource-based View (Barney, 1991), the ability to successfully leverage innovation as a key firm strategy depends on the knowledge, skills, and other capabilities within the firm (Andries & Czarnitzki, 2014; Dibrell, Davis, & Craig, 2008; Subramaniam & Youndt, 2005). Thornhill (2006) argues that “...what an organization knows determines what it can do” (p. 691).

Small organizations often invest heavily in intellectual capital through their employees, communications, and processes and leverage such investments to foster innovation within the company (Maes & Sels, 2014; Thornhill, 2006). Therefore, the relationship between the development, accumulation, and distribution of knowledge (facilitated by intellectual capital development) and performance is likely to be indirect. Organizations work to build intellectual capital, which likely serves as an input to enhancing the firm's innovation strategy (Maes & Sels, 2014; Subramaniam & Youndt, 2005; Thornhill, 2006), providing sustained performance advantages. The effects and relationships among

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intellectual capital, innovation, and business performance in the SME context are, however, ambiguous and generally under-investigated (Gronum, Verreyne, & Kastelle, 2012).

Although the relationship between intellectual capital and innovation has been addressed in several ways in the SME context (Thornhill, 2006), to the best of our knowledge, an analysis of the mediating impact of innovation on the relationship between intellectual capital development and SME performance has not been conducted yet. Using the Resource-based View (RBV) approach, we aim at providing a preliminary examination of the mediating role of innovation as a strategic choice for SMEs (Thornhill, 2006), which translates intellectual capital stocks into enhanced firm performance. To this end, we use well-established measures for intellectual capital (Subramaniam & Youndt, 2005), innovation (Subramaniam & Youndt, 2005), and performance (Droge, Jayaram, & Vickery, 2004; Runyan, Droge, & Swinney, 2008) to analyze their relationships in a sample of 460 SMEs in the United States.

The remainder of this paper is organized as follows. In the second section, we examine intellectual capital and innovation in light of the RBV to develop our research hypotheses. In the third section, we describe our sample, measures, and methods, followed by a section that discusses the results of the examination of our hypotheses. In the last section, we discuss the academic and practical implications of our results and address both the limitations of our investigation and opportunities for future research.

2. Theory development and hypotheses

Stemming from the resource-based view (Barney, 1991), the knowledge-based view of the firm (Kogut & Zander, 1992) suggests that integration of knowledge is the primary mean for a business to develop a sustainable competitive advantage (Grant, 1996a). Knowledge has been argued as perhaps the most important resource for companies (Grant, 1996a; Lichtenstein & Brush, 2001) from a strategic perspective, as knowledge manifests itself through human capital development, interaction among people, and systematization of the resulting improved knowledge (Kogut & Zander, 1992; Subramaniam & Youndt, 2005). The knowledge-based view proposes that knowledge, as “know-how,” is both developed and exploited (Grant, 1996a, 1996b; Kogut & Zander, 1992). The development and exploitation of this tacit knowledge generate combinations of capabilities that are difficult for other firms to observe, isolate, and imitate (Barney, 1995; Teece, Pisano, & Shuen, 1997) as they are socially constructed and embedded within the organization (Kogut & Zander, 1992).

Knowledge is created and applied by the firm in the attempt to yield superior performance (Cohen & Levinthal, 1990; Grant, 1996a, 1996b). Subramaniam and Youndt (2005) suggest that knowledge is accumulated by the firm through individuals (human capital), relationships and networks (social capital), and the systematization of knowledge through processes and systems (organizational capital). Together, these forms of capital have been termed intellectual capital (Reed, Lubatkin, & Srinivasan, 2006; Youndt, Subramaniam, & Snell, 2004). In line with the knowledge-based view, Guthrie, Petty, and Ricceri (2006) contend that intellectual capital is an integral part of the firm's value, although assessing its actual value as a vital intangible asset may be difficult.

2.1. Human capital

The knowledge-based view suggests that knowledge emanates from individuals (Grant, 1996a, 1996b), and, therefore, human capital generally represents the resources created from the stocks and flows of knowledge and shared among individual owners, managers, and employees within a firm (Becker, 1962; Pennings, Lee, & Van Witteloostuijn, 1998). However, human capital is neither acquired nor “owned” the way that some other types of capital (i.e., physical, technological, financial capital) are stored by organizations; thus, human capital can leave the firm with the departure of an employee (Brymer,

Molloy, & Gilbert, 2014; Campbell, Coff, & Kryscynski, 2012). Despite this lack of firm ownership, human capital is considered one of the most important assets for an organization, and differences in human capital levels among organizations have been associated with the emergence of a competitive advantage (Ployhart & Moliterno, 2011; Reed et al., 2006). Subramaniam and Youndt (2005) contend that bright employees with tacit knowledge bring new ideas and knowledge to the organization, yielding an advantage through their superior capabilities in opportunity identification.

Scholars have widely acknowledged that human capital is a critical component of firm performance (Bendickson, Muldoon, Liguori, & Midgett, 2017; Colombo & Grilli, 2005; Reed et al., 2006), particularly when human capital investments focus on knowledge and skills rather than education levels (Unger, Rauch, Frese, & Rosenbusch, 2011). Prior empirical research suggests that entrepreneurs whose human capital comprises unique, or tacit, knowledge achieve greater entrepreneurial success and revenue productivity (Staniewski, 2016; Unger et al., 2011). Both Oh, Kim, and Van Iddekinge (2015) and Reed et al. (2006) found that human capital levels positively impact firm performance in both small and large organizations. Samagaio and Rodrigues (2016) found similar results in a study on young audit firms. The meta-analysis of human capital and performance conducted by Unger et al. (2011) further underscores the critical role that human capital as “know-how” plays in entrepreneurial success. Given both the tenets of the knowledge-based view and prior empirical research tying human capital to firm performance, we introduce the following hypothesis.

Hypothesis 1. Human capital will be positively associated with small firm performance.

2.2. Social capital

The communication and information sharing that occurs via social networks, both internally and externally, are often considered critical for integrating and synthesizing the knowledge generated by employees (Subramaniam & Youndt, 2005). Social capital is defined as “the sum of the actual and potential resources embedded within, available through and derived from the network of relationships possessed by an individual or social unit” (Nahapiet & Ghoshal, 1998, p. 243). Researchers suggest that significant breakthroughs and competitive advantage are outcomes of the social capital accrued in exchanges of tacit and explicit knowledge via networks within organizations (Smith & Coakes, 2012). Social capital development requires close attention to the fostering of norms and values within the firm that enable interaction, facilitate the development of relationships, and spur collaboration among employees (Subramaniam & Youndt, 2005). Social capital, as an intangible resource, is difficult for competitors to imitate and creates value for the firm through the communication and assimilation of individual-level knowledge, helping firms achieve and sustain competitive advantages (Barney, 2001; Martín-de-Castro, Delgado-Verde, López-Sáez, & Navas-López, 2011).

Prior research suggests that social capital is, in fact, an essential determinant of SME performance. Stable networks and work relationships have been shown to lead to higher levels of trust and goal congruence among organization members (De Clercq, Dimov, & Thongpapanl, 2013) and exhibit a direct, positive relationship with both firm performance and sales growth (Fonti & Maoret, 2016; Gronum et al., 2012). Given both the value of social capital as an intangible resource and prior research related to social capital, we introduce the following hypothesis.

Hypothesis 2. Social capital will be positively associated with small firm performance.

2.3. Organizational capital

The knowledge-based view argues that, since employees create knowledge that is internal to the individual (Grant, 1996a, 1996b), firms must work to integrate, systematize, and codify the knowledge generated and communicated by employees to add value and leverage competitive advantage from such knowledge (Roxas, Battisti, & Deakins, 2014). Organizational capital represents the unique knowledge institutionalized and codified by a firm through policies and procedures, routines, processes, work systems, and management structures (Miles & Van Clieaf, 2017; Youndt & Snell, 2004). As such, organizational capital is a critical element of knowledge management (Roxas et al., 2014) and appears to be an essential determinant of firm performance.

Across the literature, organizational capital is generally presented as intangible assets, practices, and processes related to acquiring and retaining talent, culture, leadership, alignment of human resources with strategic goals, organizational design, and leadership capability's role in transforming resources into a competitive advantage (Eisfeldt & Papanikolaou, 2013; Miles & Van Clieaf, 2017). Organizational capital is the only form of intellectual capital that the firm directly owns (Youndt & Snell, 2004) and remains within the company even when employees (human and social capital) leave the organization (Subramaniam & Youndt, 2005). Scholars have found higher levels of organizational capital to be associated with a myriad of positive outcomes, such as reduced absenteeism (Kemelgor & Meek, 2008), enhanced firm productivity and efficiency (Black & Lynch, 2005; Ray, Xue, & Barney, 2013), heightened enterprise value (Miles & Van Clieaf, 2017), improved likelihood of organizational survival (Bercovitz & Mitchell, 2007), and enhanced organizational performance (Bercovitz & Mitchell, 2007; Meyer, Skaggs, & Youndt, 2014; Reed et al., 2006). Given the implications of the knowledge-based view and previous results tying organizational capital to firm performance, we expect intellectual capital, as the codification and systematization of knowledge generated within the firm (Subramaniam & Youndt, 2005), to positively influence small firm performance.

Hypothesis 3. Organizational capital will be positively associated with small firm performance.

2.4. Small business innovativeness

Innovation is the exploitation of the knowledge developed within the firm and manifests through new or enhanced products, services, or processes (Gronum et al., 2012). The knowledge-based view of the firm suggests that sustainable competitive advantage primarily emanates from the ability to generate and leverage knowledge (e.g., Nonaka, Toyama, & Nagata, 2000). Scholars argue that innovation arises from the knowledge and skills that firms develop over time (Nonaka et al., 2000) to improve their performance (Martín-de-Castro et al., 2011; Roxas et al., 2014). Innovation, as a capability, is critical to SME success (Dibrell et al., 2008; Maes & Sels, 2014), and the positive relationship between innovation and success in SMEs is generally well accepted (e.g., Dibrell et al., 2008; Gronum et al., 2012; Roxas et al., 2014).

Innovation capabilities are considered an outcome of the intellectual capital developed and acquired by the organization (Roxas et al., 2014; Subramaniam & Youndt, 2005). Prior research has examined the individual effects of human, social, and organizational capital on innovation capabilities within the firm, and each intellectual capital component has exhibited a significant and positive association with innovation levels. Human capital has been linked to increases in new knowledge and heightened opportunity exploration (Bradley, McMullen, Artz, & Simiyu, 2012). Further, Subramaniam and Youndt (2005) found that human capital levels are positively associated with radical innovative capabilities in large organizations. Subramaniam and Youndt (2005) also found that social capital plays a significant role in

both incremental and radical innovative capabilities in large firms. Further, social capital has been shown to enhance a firm's ability to engage in (Aribi & Dupouët, 2015) and implement innovation (Gronum et al., 2012), particularly when speed and reactivity are involved in the analysis (Aribi & Dupouët, 2015). Organizational capital has also been associated with higher levels of innovation in larger organizations. Subramaniam and Youndt (2005) showed that organizational capital has a positive influence on incremental innovative capability, while Aribi and Dupouët (2015) argued that successful radical innovation relies on organizational capital stocks.

Another stream of research suggests that SMEs should concentrate their stock of intellectual capital on incremental innovation, seeking improvements to existing offerings rather than radical, "new-to-market" innovations (Oke, Burke, & Myers, 2007). Alternatively, Maes and Sels (2014) suggest that small firms may be more adept at implementing radical innovations due to their reduced bureaucratic processes. However, researchers generally agree that innovation capabilities stem from knowledge stocks, sharing, and systematization within the firm (e.g., Maes & Sels, 2014; Roxas et al., 2014) and innovation is a robust predictor of performance in the SME context (e.g., Dibrell et al., 2008; Rosenbusch et al., 2011). However, to the best of our knowledge, the simultaneous influence of human, social, and organizational capital on performance via innovation has not been explored in the context of SMEs. Therefore, we consider the effects of the three components of intellectual capital on both radical and incremental innovation. In the small firm context, we expect the exploitation of knowledge via innovation to partially mediate the relationship between the development of the three sources of intellectual capital and performance.

Hypothesis 4. Innovation levels partially mediate the relationship between intellectual capital stocks and small firm performance.

3. Methodology

3.1. Data collection

The sample of small businesses used in this study is the result of a survey distributed to small business owners through both a paper survey and an online survey. In summer 2015, researchers mailed surveys to 4103 businesses obtained from business owner lists provided by Chambers of Commerce in Kentucky. The paper survey data collection effort spanned from June 2015 to July 2015, beginning with an initial letter, followed by the survey, and completed with a reminder postcard. Respondents had the option to complete a hard copy of the survey to be returned with the postage-paid envelope included in the mailing or participate in the online survey utilizing the Qualtrics link provided. A total of 222 surveys were returned, yielding a 5.4% response rate. Of those, 115 full surveys were returned by SME (< 250 employees) owners, owner/managers or managers participating in the day-to-day operations, who make the major decisions regarding the firm.

The online survey respondents were identified and recruited via Qualtrics Panels in two rounds from the United States. The first round was recruited in Fall 2015 and the second round in Spring 2016. The first round consisted of 267 respondents and was restricted to SME owners, general managers, or managers with specific human resources responsibilities, while the second round included 117 responses for the same positions. The two rounds yielded 384 total observations based on Qualtrics data. After carefully examining the data, 345 of the Qualtrics observations were found to adhere to the criteria described above for the paper survey respondents. Using both the mail and Qualtrics Panels data, we obtained a total of 460 observations.

The respondents' ages ranged from 19 to 77 with an average of 44. Additionally, the number of employees ranged from 1 to 248 with an average of 33 total employees. The average business age was 17 and

ranged from very recent startups to 128 years old. 52% of the respondents identified as female, and 42% of the respondents indicated their business as a family-owned firm. 77.2% of respondents identified as Caucasian, 10.7% as Hispanic, 4.6% as African American, and 3% identified as Asian or Pacific Islander. The businesses surveyed belonged to a variety of industries: 44.6% from service, 13.9% from construction, 13.5% from retail, 5.7% from restaurant, 5.4% from both healthcare and from manufacturing, 4.1% from wholesale, and 2.2% from agriculture.

3.2. Measures and scale analysis

Intellectual Capital Measures. To assess intellectual capital, we used the 14-item scale developed by Youndt et al. (2004), which includes five items for human capital, four items for organizational capital, and five items for social capital. Human capital includes items merging the traditional human capital literature with the Society for Human Resource Management (SHRM) literature to assess issues such as selection and knowledge level (Subramaniam & Youndt, 2005; Youndt et al., 2004). Organizational capital items comprise concepts from multiple fields addressing institutionalized knowledge (Subramaniam & Youndt, 2005; Youndt et al., 2004). Social capital items provide an integration of the social capital and knowledge management literature (Subramaniam & Youndt, 2005; Youndt et al., 2004). Utilizing factor analysis and the Eigenvalue greater than one rule to confirm construct validity, the items yielded three factors with Eigenvalues equal to 5.72 ($\alpha = 0.800$), 1.56 ($\alpha = 0.727$), and 1.22 ($\alpha = 0.844$) respectively, with 51% of the total variance explained. One human capital item loaded highly on the social capital factor; it was retained in its original form and construct due to previous research that indicates good model fit (Youndt et al., 2004).

Performance. Firm performance is measured by an eight-item scale examining the business owner's assessment of organizational performance relative to key competitors over the last two years. The measurements specifically address sales growth, cash flow, market share growth, return on sales, return on investments, return on assets, profit growth, and an overall satisfaction rating on performance. Previous empirical examinations have found subjective measures to be highly correlated with objective performance measures (Dess & Robinson, 1984; Venkatraman & Ramanujam, 1986); therefore, subjective measures are frequently utilized across the business research literature (Subramaniam, Kumar, & Strandholm, 2009). Factor pattern results indicated a good fit to the data with the items combined in a single item performance measurement to assess performance ($\alpha = 0.904$).

Innovation. Innovation level for the firm was measured using a six-item scale, which measured the business owner's assessment of the organization's capacity to generate innovations in products and services relative to competitors (Dunne, Aaron, McDowell, Urban, & Geho, 2016). Three items in the six-item scale refer to incremental innovation, and three items represent radical innovation. When considered as a single innovation measure, the Cronbach's alpha well exceeds the minimum threshold ($\alpha = 0.835$).

4. Results

Our results suggest the presence of a significant, positive relationship between human capital and organizational capital and business performance. Further, these two components of intellectual capital positively and significantly influence innovation levels. Innovation mediates the relationship between organizational capital and business performance and partially mediates the relationship between human capital and business performance. These results hold novel and important academic and practical implications for small businesses.

To test our hypotheses, we utilized the mediated regression approach, as recommended by Baron and Kenny (1986). We examine the effect of the intellectual capital variables on innovation, the

Table 1
Regression results for the test on mediation.

Predictor variables	β	SE	t
Intellectual capital and innovativeness			
Human capital	.250***	0.054	4.615
Organizational capital	.262***	0.031	8.501
Social capital	.015	0.048	0.315
R ² for the Model = 0.305			
Innovation and performance			
Innovation	.602***	0.044	13.720
R ² for the Model = 0.295			
Mediation model			
1. Total employees	.003***	0.001	4.702
2. Total employees	.002***	0.001	3.640
Human capital	.244***	0.065	3.756
Organizational capital	.160***	0.038	4.188
Social capital	.024	0.058	.416
3. Total employees	.001*	0.001	2.062
Human capital	.122*	0.061	1.999
Organizational capital	.048**	0.037	1.308
Social capital	.010	0.053	.184
Innovativeness	.492***	0.052	9.394
R ² for Model 1 = 0.161			
R ² for Model 2 = 0.317			
R ² Δ = 0.151			

* $p < .05$.

** $p < .01$.

*** $p < .000$.

relationship between innovation and performance, the association of intellectual capital with performance, and, finally, the joint effects of the intellectual capital variables and innovation on performance. Results from these analyses are reported in Table 1.

The first three hypotheses predicted a relationship between each of the three areas of intellectual capital – human, social, and organizational – and performance. The results of this analysis indicate a statistically significant relationship between both human ($\beta = 0.244$; $p = 0.000$) and organizational capital ($\beta = 0.160$; $p = 0.000$) and performance, but no statistically significant relationship between social capital ($\beta = 0.010$; $p = 0.678$) and performance. Thus, Hypothesis 1 and 3 were supported, but Hypothesis 2 was not supported. The model introduced a control for the number of employees to account for firm size, which retained significance across the different model specifications.

Hypothesis 4 predicted a mediating relationship for small business innovativeness between intellectual capital and performance. To demonstrate mediation, the effect of the independent variables (intellectual capital) on the dependent variables must be lessened in the presence of the mediating variable. The results in the final step of the analysis indicate partial mediation for the human capital – performance relationship and full mediation for the organizational capital – performance relationship. Since social capital was not significantly associated with either innovation or performance, there is no mediation operated by innovativeness in this model. Thus, we find partial support for Hypothesis 4. Our results demonstrate that innovativeness is a critical link between intellectual capital and performance in small businesses.

5. Discussion

The knowledge-based view suggests that, as a rare, inimitable, valuable, and non-substitutable resource (Barney, 1991; Kogut & Zander, 1992), knowledge is the most critical asset developed, shared, and systematized by the firm for establishing sustainable competitive advantage. Researchers have long argued that intellectual capital is a critical factor in firm performance (Cleary & Quinn, 2016; Coder, Peake, & Spiller, 2017; Grant, 1996a, 1996b; Youndt et al., 2004), particularly for SMEs, which may have difficulties competing on scale

or scope (Patel & Jayaram, 2014; Wales et al., 2013). Further, since intellectual capital is represented by the acquisition, communication, and codification of knowledge (Subramaniam & Youndt, 2005; Youndt et al., 2004), researchers suggest that firms exploit such knowledge through strategic capabilities, like innovation, to improve firm performance (Martín-de-Castro et al., 2011; Nonaka et al., 2000; Roxas et al., 2014). In line with this view, we examine the mediating influence of innovation on the relationship between intellectual capital levels and SME performance.

Our results suggest the presence of at least a partial mediating influence operated by innovation on human and organizational capital and firm performance. Alternatively, social capital does not significantly influence innovation levels and firm performance, in contrast with the results of most prior research. In addition, human capital positively influences both innovation and performance, although its effect on performance is partially mediated by innovation. Since creative, talented employees have a heightened propensity to identify opportunities (Subramaniam & Youndt, 2005), such opportunity identification is likely to manifest through innovation, which improves firm performance.

Social capital did not show a significant association with either innovation or performance. Our social capital measures address collaboration, information sharing, exchanging ideas across different areas of the company, collaborating with key external stakeholders, and applying knowledge in one area to problems or issues that arise in another domain. In the large firm context, Subramaniam and Youndt (2005) found a significant effect of social capital on innovative capability, but no effect for human capital. However, in their study, the interaction between the two components was found to be significant. Human capital appeared to “activate” as a key factor to improve radical innovative capabilities only when the level of social capital was also high. This suggests the existence of an underlying substitution or compensation effect that should be further examined in future research.

The systematization and codification of knowledge, or organizational capital, is fully mediated by the firm's innovation level in our study. Organizational capital shows a substantial direct effect on innovation and firm performance before the introduction of innovation in the model. Given the results of prior research, this is both interesting and unsurprising. Innovation is a “collective” capability (Van de Ven, 1986); thus, it is not surprising that organizational capital, the firm's collection of processes, manuals, and culture, would affect performance through innovation. Our research, however, highlights the importance of the codification and systematization of individual level knowledge, which may fall to the wayside in smaller firms that depend heavily on their employees' individual knowledge base and networks and less on professionalization, such as the establishment of formal processes, procedures, monitoring and controls (Dekker, Lybaert, Steijvers, & Depaire, 2015) enabled by the creation and facilitation of organizational capital.

We believe that our examination of intellectual capital, innovation, and performance extends the literature on SMEs, intellectual capital, and innovation research. Although prior research in the SME context has argued for the positive performance implications of both individual components of intellectual capital (e.g., Aribi & Dupouët, 2015; Gronum et al., 2012; Marvel, Davis, & Sproul, 2016) and innovation (e.g., Dibrell et al., 2008; Maes & Sels, 2014; Roxas et al., 2014), to the best of our knowledge, researchers have not yet examined the simultaneous effect of the different forms of intellectual capital on SME performance through innovation. We base our hypotheses on the knowledge-based view, which suggests that both the knowledge stocks and flows within a firm are critical to achieving sustainable competitive advantage, particularly through the development of innovative capabilities. Although the resource-based view is prevalent in the SME literature, the knowledge-based view has gained some traction as a relevant extension. Given the critical role of knowledge within SME performance drivers such as human resource management (e.g., Coder

et al., 2017), firm strategy, innovation (e.g., Dibrell et al., 2008), and the likely differences in knowledge acquisition and use in the SME context, we consider the knowledge-based view a valuable lens to build our empirical investigation.

Prior research argued that human capital, as “skills” or “know-how,” is critical to entrepreneurial success (Unger et al., 2011). Since our human capital measure focuses on the skills, “know how,” and expertise of employees, it is intuitive and well supported by prior studies that human capital would lead to both higher levels of innovation (e.g., Marvel et al., 2016; Subramaniam & Youndt, 2005) and higher performance in SMEs (e.g., Colombo & Grilli, 2005; Reed et al., 2006; Staniewski, 2016; Unger et al., 2011). Although this result is relatively intuitive, the analysis of this variable and its relative influence when both social capital and organizational capital are considered provides important implications and opportunities for future research. Additional studies should examine the relationship between these different types of capital and firm innovation and performance.

5.1. Practical implications

SMEs often have limited access to resources, making it important to understand how to best attract and use intellectual capital to enhance firm performance. Our findings suggest that identifying human capital and creating internal processes that develop organizational capital are keys to success. Attracting talented employees has long been a challenge for SMEs, often due to limited compensation capabilities. However, research has indicated that the opportunities for personal growth and career development are essential benefits of employment within SMEs (Grubb, Harris, & MacKenzie, 2006). Based on our results, it is imperative for business owners to seek out talented employees, who bring the needed skills and knowledge into the organization. Without this influx of intellectual capital, the performance enhancement of SMEs will be limited. While founding entrepreneurs play a critical role in venture creation, it is often the acquisition of skilled employees that allows the firm to strategically develop a fully innovative business.

However, identifying and hiring skilled employees does not guarantee the success of a company. As suggested by Edelman, Brush, and Manolova (2005), resources alone do not explain firm performance; SMEs must identify and implement the best strategy to maximize firm performance. This requires companies to develop internal systems that allow these resources to be fully utilized. Previous research has shown that, without the effective implementation of processes and strategies, a waste of resources and lack of direction and sustainability often characterize SMEs (Mazzarol, Reboud, & Soutar, 2009). West and Noel (2009) suggest that small business owners must be rational in investing resources and make the best use of people and processes. This allows the development of innovative processes, which guide a firm through the various stages of business expansion.

The practical implications of our findings serve as a call for business owners to attract unique resources and create internal capabilities that lead to a sustainable advantage. SMEs characterized by a higher strategic flexibility are better in refining business capabilities and improving performance (Kelly, 2007). Prior research has shown that SME performance can be linked to knowledge about the marketplace and available opportunities as well as the strategic approach needed to take advantage of such opportunities (West & Noel, 2009). Based on our findings, SMEs need to use both people and processes to enhance firm performance. Therefore, understanding how to support and facilitate intellectual capital development and employee innovativeness is a key component to this organizational puzzle.

5.2. Limitations of the analysis and future research

While our results offer several implications based on our mail survey and Qualtrics Panels samples, there are limitations to the current analysis. Our results are based on cross-sectional data provided by a single

respondent at a single point in time. Although this is a common issue in SME research, concerns related to the potential for reverse causality and common method bias may arise. In line with the procedures described by Podsakoff, MacKenzie, Lee, and Podsakoff (2003), we attempted to mitigate common method bias to the best extent possible via both our survey instrument and statistical detections. As recommended, two experts reviewed the survey prior to deployment in an attempt to reduce ambiguity, to ensure that each item was clearly and concisely worded, did not contain jargon, and addressed only one measure of interest (Podsakoff et al., 2003). Overuse of similar Likert scale anchors reduces the cognitive effort for the respondent; thus, each of the three primary sets of constructs in our analyses held different anchors to avoid any systematic influence of responses (Podsakoff et al., 2003). For instance, performance was rated against competitors on a scale from “1 = Way below/behind” to “5 = Way ahead,” while innovation was rated from “1 = Much weaker” to “5 = Much stronger” than competition. The intellectual capital components were anchored from “1 = Strongly Disagree” to “5 = Strongly Agree.” In addition to our efforts to reduce common method bias via our instrument, we also examined the data using the Harman one-factor test (e.g., Roxas, Ashill, & Chadee, 2016; Skarmees, Lisboa, & Saridakis, 2016). The Harman single-factor test suggests that no single factor dominates; thus, common method bias does not appear to be a substantial limitation for our analyses.

Although we believe that our data can be generalized to the United States, given our range of respondents through Qualtrics Panels, we are unable to generalize our results beyond this one country. Cultural differences certainly come into play with the facilitation and development of intellectual capital and priority assigned to innovation. In their meta-analysis of the relationship between innovation and performance in SMEs, Rosenbusch et al. (2011) found that cultural context is an important factor to consider, and the impact of innovation on performance is much stronger in countries characterized by collectivist cultures. Although our results are based on U.S. data, in line with the findings of Rosenbusch et al. (2011), we support the view that the innovation-performance relationship may be stronger in collectivist cultures. Researchers have found that culture certainly influences the management of organizations (e.g. Schneider & De Meyer, 1991) as well as the knowledge transfer within organizations (Sarala & Vaara, 2010). We anticipate that some differences in cultures would exist regarding the relationships we examined; thus, a sample of international firms would provide an interesting avenue for future research.

6. Conclusion

SMEs often have limited access to resources, making it important to understand how to best attract and use intellectual capital to enhance firm performance. Our findings suggest that identifying human capital and developing internal processes that develop organizational capital are keys to success. Attracting talented employees has long been a challenge for SMEs, often due to limited compensation capabilities. Based on our results, it is imperative that business owners seek out talented employees, who bring the needed skills and knowledge into the organization. While founding entrepreneurs play a critical role in venture creation, it is often the acquisition of skilled employees to allow a firm strategically develop a fully innovative business.

As suggested by Edelman et al. (2005), resources alone do not explain firm performance; SMEs must identify and implement the best strategy to maximize performance. Research has shown that, without the effective implementation of internal processes and strategies, there is often a waste of resources and lack of direction and sustainability (Mazzarol et al., 2009). West and Noel (2009) suggest that small business owners must be rational in investing resources that make the best use of people and processes. We believe that the mediating effect of innovation on the human capital-performance and organizational capital-performance relationships sheds important new insights in the

SME performance domain.

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