



SWST – International
Society of Wood
Science and Technology

Understanding SME Success in the Value-added Forest Products Sector: Insights from British Columbia



Philip Grace¹, Harry Nelson^{2*}, and Robert Kozak³

Abstract

Small and medium-sized enterprises (SMEs) in the value-added forest products sector play an important social and economic role in Canadian forest-dependent communities. In British Columbia (BC), the sector is not reaching its full potential. Many factors limit or enable growth of the value-added forest products sector in BC. This study seeks to assess what factors are most integral to success through an in-depth examination of four value-added forest product sector SMEs in rural BC representing four different types of firms with varying levels of performance. The results of the study indicate that, though factors typically considered vital, such as access to skilled labor, fiber supply, location, and financial capital, are integral to business success, business management skill and firm size are integral and often-overlooked factors. The results of this study point to a need for a better province-wide understanding of the barriers to success commonly faced by forest products SMEs, particularly barriers to management skill development.

Keywords: Value-added, small business, forest products, small and medium sized enterprises

1. Introduction

Small and medium-sized enterprises (SMEs) in the value-added forest products sector are important contributors to their local, regional, and provincial economies, yet their contributions are often overlooked. Lack of data, small firm size, diversity in firms' activities, and uncertainty regarding factors of SME success all contribute to an environment in which small business is poorly understood (Nelson, Hotte, and Kozak 2017). Consequently, SMEs receive less attention in public policy than their

economic contributions warrant. Despite this, a growing recognition of the benefits that SMEs provide, especially their ability to generate employment and income in rural communities, has led to renewed emphasis on SMEs in the international forest policy discourse (Nelson, Hotte, and Kozak 2017; Agrawal *et al.* 2013).

Long touted as the new direction of British Columbia (BC)'s forest products sector, due to the ability of value-added SMEs to generate more income and employment per cubic metre of wood, the BC government has held the strengthening and supporting of value-added forest products firms as a provincial forest policy goal for many years. Recently, supporting value-added SMEs has all but disappeared from official Ministry of Forests, Lands, and Natural Resource Operations goals (British Columbia Ministry of Forests, Lands and Natural Resource Operations 2016), although an Action Plan was released in September 2016 (Government of BC 2016). The Plan was short on specifics, however, with the main outcome the establishment of the Wood Secretariat to serve as a point of access for SMEs to government, rather than assessing the adequacy of existing policies and programs. This is surprising, given the reduction in timber supply

1 Department of Forest Resources Management, Faculty of Forestry, University of British Columbia, Forest Sciences Centre 2777 – 2424 Main Mall, Vancouver, BC V6T 1Z4.

2 Department of Forest Resources Management, Faculty of Forestry, University of British Columbia, Forest Sciences Centre 4609 – 2424 Main Mall, Vancouver, BC V6T 1Z4.

3 Department of Wood Science, Faculty of Forestry, University of British Columbia, CAWP 2926 – 2424 Main Mall, Vancouver, BC V6T 1Z4.

* Corresponding author: Email: Harry.Nelson@ubc.ca; Tel.: 604-827-3478.

Acknowledgements: The authors would like to thank Ken Day for his assistance in conducting the research for this paper. The authors would also like to thank all the case study participants and other interviewees for investing time and providing insight to the research, and Tim Hawkins for his assistance in preparing the manuscript. Finally, we would like to thank the two anonymous reviewers of this article for their helpful and insightful comments.

in the BC interior and the value-added sector's ability to mitigate the effects of timber supply reductions on forest-dependent local and regional economies. If the value-added SME sector is to reach its full potential and increase economic activity despite timber supply reductions, a strong understanding of the business and policy needs of the sector in BC is needed.

The forest policy environment is important for value-added firms as it influences the availability of timber, and various government policies and related discussions have historically been focused on ensuring a steady supply of timber, which underpins the main objective for forest policy in the Province. In this context, value-added is most often discussed as an alternative to primary commodity lumber production, that is, creating solid wood products with higher value. This framing tends to overlook smaller firms that may not necessarily be using logs as their main input or even local resources, while also ignoring the importance of other factors that contribute to firms' competitive positions, such as human capital and management skill development.

When these other factors are taken into account, the setting within which these firms operate – which includes not only the physical resources but also the communities in which they operate – has an important influence on factors such as labor supply or the availability of financial institutions. Regional and community-level strategies have tremendous impacts on SMEs, especially in resource-dependent communities where SMEs often rely on community networks in day-to-day operations (i.e. relationships with primary manufacturers for fiber supply). Therefore, it is essential for all levels of government to coordinate efforts when addressing needs of value-added SMEs.

While the value-added forest products SME sector has been discussed through descriptions of potential firm activities and possible socioeconomic contributions of the sector (Parfitt 2011; Woodbridge 2009; Schultz *et al.* 2013), careful and in-depth analyses of the factors that influence or limit success in this important sector is nascent and generally scant (for exceptions, see DeLong, Kozak, and Cohen 2007; Spetic, Kozak, and Vidal 2016). We address this knowledge gap and add to this emergent area of inquiry through an exploratory study by examining four different value-added SMEs operating in the rural BC Interior to identify the factors most important to these firms' success.

2. Background

2.1 Competitiveness Theory

We start with a general review of the literature examining competitiveness as it relates to SMEs and the viability of SMEs in the value-added forest products sector. Various approaches offer insight in areas of firm behavior. Some of these approaches include looking at firm decision-making, price-setting, human resource management, and marketing. An approach that systematically looks at outcomes and the determinants of success among firms is competitiveness theory.

Michael Porter's (1980) work on the competitive forces affecting businesses has come to be, for many, the *de facto* model by which industry competitiveness is assessed. Porter's analysis is built on five forces that affect a firm's competitive position. Moving away from the model of perfect competition, which is fraught with unrealistic assumptions, Porter looks at (1) the threat of new entrants, as well as (2) the jostling for position within an industry as two key forces that shape a business' competitive strategy. Recognizing that competitiveness is also heavily affected by (3) buyers and (4) suppliers, he incorporates bargaining theory into his examination. He completes his five-pronged analysis by looking at (5) the role that substitute products (or services) can play in competitive dynamics. Competitiveness ultimately boils down to advantage. If a firm can leverage a competitive advantage over its rivals, it is in a position to successfully compete in its industry.

Day and Wensley (1988) further extend competitiveness theory by developing the SPP framework (sources, positions, and performance outcomes) for measuring competitive advantage by asking the following questions: what are the sources of competitive advantage (e.g. skills, resources)? What are the firm's positional advantages (e.g. value, costs)? Are performance outcomes favourable (e.g. customer satisfaction, loyalty)? They argue that the SPP framework represents the components that make up competitive advantage, and that those components are sequential. This means that sources of advantage will only truly result in an advantage if a firm is positioned in such a way as to exploit those sources. Along the same lines, performance outcomes are a result of the carefully aligned source and positional advantages. They posit that, although superior skills and resources may be necessary for sustained competitive advantage,

they are not enough on their own to guarantee competitive advantage. An advantage can only be profitably exploited if the firm's advantage is positioned in such a way as to be valued by customers.

These two aspects of competitiveness theory (Porter 1980; Day and Wensley 1988) identify the factors relevant for explaining the overall competitive environment within which a regional sector is situated (as is the case in BC), and within that sector, whether or not a firm will be competitive. This synthesized framework highlights the importance of strategy in how it aligns with those factors at both the sector and firm levels, and how competitiveness (performance outcomes) can be assessed at those levels. This framework, however, glosses over one critical issue – firm size. A review of the existing value-added sector in Canada shows that the value-added forest products sector is overwhelmingly made up of SMEs. There are few large companies in Canada that operate in this sector (Stennes and Wilson 2008). While there are aspects of competitiveness theory that discuss size (i.e. in relationships between buyers and suppliers), this factor is generally overlooked. Firm size has important implications, not only in how a firm influences industry dynamics, but also in how a firm's success is heavily influenced by the role small business owners play in firm establishment and operation.

Many of the characteristics of competitiveness mentioned in competitiveness theory can be applied regardless of firm size; however, SMEs are often faced with further challenges to competitiveness because of their smaller size (Man, Lau, and Chan 2002). Therefore, competitiveness frameworks must be adapted to take into account how the size of a firm influences its competitive position (Bierly and Daly 2007). Two ways that size can influence competitive position is through the lack of economies of scale (having to do with production technology) and limited bargaining power (having to do with industry structure and firm relationships).

While Porter (1980) argues that the achievement of economies of scale will deter potential new entrants to the industry or industry subsector as well as position a firm to have a cost advantage, other researchers have argued that a reduction in economies of scale in favor of a diversified product line may help a firm more. Dixit and Stiglitz (1977) posit that, while economies of scale may enable a firm to compete in its pricing, product diversification, often achieved at the expense of economies

of scale, will be preferred by consumers and will lead to increased customer loyalty. This, they argue, reduces the threat of new entrants and, ultimately, improves a firm's competitive position in relation to its existing industry rivals. In the value-added sector, which includes a wide-range of product categories – some suited for commoditization and economies of scale, and others being more in line with strategies incorporating economies of scope – both Porter's and Dixit and Stiglitz's theories may be applicable.

The bargaining exercise can also play a significant role in the competitiveness of a firm or industry. Moving away from Nash's (1950) assumptions of equal discount rates, equal bargaining skills, and equal ability to consider and compare different alternatives, Porter (1980) notes that bargaining power at different stages of the supply chain can be a major determinant of the degree of competition in an industry. When an SME is negotiating with a much larger supplier, for example, the two parties likely have different discount rates. Where the larger firm can afford to be "less impatient" and hold out for as long as is required to meet certain negotiation goals, holding out beyond a certain amount of time could prove to be fatal for the smaller business (Wagner 1988).

While there is a plethora of tools available for assessing competitiveness, not all can be directly applied to SMEs. Evaluating competitiveness at the SME level is different from evaluating the competitiveness of larger firms because they are inherently different with respect to factors of competitiveness (Burns 2001). Perhaps the most important difference lies in the firms' relationship with its external environment. Understanding the environment, or the context, in which a company operates will help us better understand the competitive strategy adopted by a firm as well as offer insight into the competitive nature of an industry. A core concept that Porter stresses (1979; 1980; 1991) is that certain strategies will be more effective in certain environments. That is, the business environment will invariably shape what successful competitive strategy looks like.

Complementing this approach is the Resource-Based View (RBV) of firms, which looks at the internal capabilities and resources that firms utilize to gain competitive advantage (Barney 1991; Grant 1991; Peteraf 1993). These include human (e.g. skills and training), technological, financial, and physical resources, as applicable to the industry setting. The analysis then involves identifying

those factors which lead to sustained competitive advantage for the firm, and where those factors must be valuable, rare, and difficult to imitate or copy in order to generate that advantage relative to their competitors (Husso and Nybakk 2010).

Detailed studies looking at the competitiveness of SMEs in the value-added sector in the developing world have found several reoccurring barriers to success. These include the smaller scale of operations, scarce access to raw materials, and a lack of business capacity and capital (Nelson, Hotte, and Kozak 2017). These can reinforce one another to increase impediments to success; for example, a small scale of operations means that business owners often ignore basic managerial tasks, such as bookkeeping, have limited working capital, and have difficulty securing raw material. Forest policy and governance in many developing countries, by favouring larger corporations, only increases these barriers to success (Fisseha 1987; Arnold *et al.* 1994). Husso and Nybakk (2010) used both the Porter and RBV framework to analyze the performance of eight Scandinavian sawmilling SMEs and found that, while firm location did confer a competitive advantage (in their cases in terms of access to fiber and labor), most external factors, such as market demand, the impact of globalization and consolidation, had generally similar effects across all firms, and it was how firms organized themselves internally to offset these disadvantages in the external environment that was key to their success. Learning from these various perspectives, aspects to be analyzed when looking at competitiveness are: size, location, the influence of policy and the institutional setting, access to markets, and internal strategies and capabilities. In the next section, we describe the value-added sector in BC and take a look at its specific factors of and barriers to success.

2.2 The value-added sector in BC

In BC, the value-added forest products sector is broadly defined as the manufacturing of products beyond boards, dimension lumber, and panels; the sector spans from sorting for grade to making high-end goods like furniture or cabinetry (Schultz and Gorley 2006). Stennes and Wilson (2008), in a survey, found that approximately 20% of firms in the sector were primarily remanufacturers, 18% were log home and timber frame builders, 14% did millwork, about 12% manufactured engineered wood products, and the rest produced cabinets, furniture, pallets, containers, and shakes and shingles. Many of

the firms in this sector are located in or near the metropolitan areas of Vancouver and lower Vancouver Island, and in the Okanagan region (McIlhenney and Hayter 2013). A more recent study (Bogdanski and McBeath 2015) undertaken in 2012 found that the industry had contracted since the last survey, due in large part to the collapse in US demand, with a shift from panelboards and remanufactured lumber products towards sectors tied more closely to housing, such as cabinetry, millwork and furniture.

According to Schultz and Gorley (2006), the large number of small value-added manufacturers in the province could create more competition for raw materials, which in turn could lead to the implementation of a more market-based mechanism for pricing timber – as opposed to the current regulated system. Another perceived benefit of the sector is its ability to do more with less. That is, as economic timber supply decreases (especially in the Interior of the province), the sector has the potential to offset some of the expected setbacks in the primary processing sector (Schultz and Gorley 2006). The latter benefit is also cited by Stennes and Wilson (2008), who state that the level of economic activity associated with timber processed by value-added firms is higher than that associated with commodity product manufacturing. Some of the other benefits associated with a strong value-added sector are increased customer brand loyalty with non-commodity products, resilience to commodity market cycles, and possible increases in “green” investments due not only to higher profit margins, but to the perception that value-added production is more environmentally friendly than commodity production (Schultz and Gorley 2006; Spetic, Kozak, and Vidal 2016).

Despite the value-added sector contributing nearly \$4 billion to the BC economy (Bogdanski and McBeath, 2015), some industry players are skeptical of the view that the value-added sector is the way forward. On the other hand, it has also been argued that the commodity focus in the BC forest industry will likely remain due to the fact that BC’s forests are almost entirely comprised of softwoods (Nielsen 2011), and the sector is entrenched in manufacturing traditional commodity products that have historically been derived from these species (Kozak 2005). However, many in the industry have called for a larger, more active value-added forest products sector in BC, given the argument that it generates more economic

activity per unit volume than a purely commodity sector (Kozak, Maness, and Caldecott 2003; Parfitt 2011; Parfitt 2005; Schultz and Gorley 2006).

Many BC value-added firms struggle to meet their growth objectives (Cohen, DeLong, and Kozak 2005). An inability to find skilled workers is often cited as the biggest impediment to growth, along with unfavorable taxation policies and other government policies, difficulties accessing capital, and increasing competition (Price Waterhouse 1992; DeLong, Kozak, and Cohen 2007; Stennes and Wilson 2008; Spetic, Kozak, and Vidal 2016). A general lack of management and entrepreneurial skills has also been cited as an impediment to success in the sector (Spetic, Kozak, and Vidal 2016). Kozak, Maness and Caldecott (2003) point out that the value-added sector is very heterogeneous with regard to firms' characteristics, yet all sub-sectors have fiber procurement problems of one form or another. Stennes and Wilson (2008) also note that, although there have been improvements in the adoption of web-based tools for doing business since Kozak (2002) reported that wide-scale adoption of e-business was lagging, only 24% of surveyed firms used their websites for sales, which could also be limiting growth, particularly in foreign markets. This relates to a broader finding that, while access to international markets is not out of reach for value-added producers in BC, success is largely dependent on managerial skills and business savvy (Spetic, Kozak and Vidal 2016). In particular, the benefits that can be accrued from adopting and promoting sustainable business practices were seen as a potentially important means of gaining competitive advantage in international markets (Spetic, Kozak and Vidal 2016).

A recent study by McIlhenny and Hayter (2013) of 41 firms operating in the value-added sector in the Greater Vancouver area investigated whether or not a new type of business model in the forest industry was emerging marked by entrepreneurial green leadership. Their focus was on whether or not there were cluster economies, where firms take advantage of networking and other opportunities associated with clustering. In their findings they state that, although a self-sustaining critical mass of firms has emerged, firms are adopters, not leaders, and networking is weak or absent. Although their focus was not on firm performance, they did ask about factors affecting firms' success. They were surprised to find that the lack of skilled workers was an

issue, that improved access to supplier networks and local markets was desired, and that resource availability was not a major hurdle (fiber was not mentioned other than with difficulties in sourcing specialized types of wood not necessarily available in BC). Furthermore, they question whether value-added activities can prosper outside of large urban centres. They suggest that the concentration of value-added manufacturers in Greater Vancouver is the result of a greater availability of labor, access to coastal fiber, and a higher relative proximity to local and United States markets than more distant forest-dependent communities, implying that these are important determinants of success.

3. Methodology

This exploratory qualitative study focused on examining what sets successful small and medium-sized firms apart from their struggling counterparts. A multiple case study method was used as we investigated a "contemporary phenomenon in-depth and within its real-life context" (Yin 2009, p. 18) and drew data from multiple sources in order to develop comprehensive descriptions and analyses of the cases (Creswell 2007). The purpose of the study was not to make generalizations about all SMEs operating in the value-added wood products manufacturing sector, but rather to gain a strong understanding of the complexities of each case and describe common or recurring themes. These themes can then be used to guide further research and inform policy.

In order to best achieve the study's goals, firms operating in the rural Interior region of British Columbia, in or near a highly forest-dependent community¹, were selected. The BC Interior was chosen due to (1) its dependence on forest values for economic stability, (2) previous research experience in the area, and (3) over two-thirds of timber harvested is done so in the Interior; the region is also facing the most pressing supply constraints. Firms were selected as cases based on their competitive position at the start of the data-gathering phase of the research. A list of eight potential cases, including four successful firms and four struggling firms, was drafted with the help of local forest sector experts and after a careful review of each potential case's website (if available), relevant newspaper articles, and other

1 To preserve the confidentiality of the firms involved, the names of the communities are withheld from this paper.

grey literature. With careful consideration of the forest sector experts' input, the list was narrowed to the ultimate selection of four individual firms: two successful firms and two struggling firms. For the purpose of the selection process, 'successful' firms were characterized by the achievement or active pursuit of management's goals (Beaver 2003), and 'struggling' firms were defined as those firms that were either operating intermittently or had shut down.

The firms selected for the study were given generic names to protect their identities: Firm A (struggling), Firm B (successful), Firm C (struggling), and Firm D (successful). Firms were initially contacted by telephone to gauge interest and were then provided with a formal invitation to take part in the research. Although each firm was operating under the umbrella term of "value-added", considerable product diversity exists between the 4 cases. Table 1 below presents an overview of the firms' characteristics.

Data was collected in a number of iterations wherein various types of data, including academic literature, grey literature, focused interviews, and in-depth interviews, were collected. After a thorough review of relevant literature, interviews were conducted with the owner/operators of the firms (the same people in each round).

When interview sessions were completed, a second review of relevant academic literature was conducted in order to gain a better understanding of the data collected in the interviews, and to prepare for the following round of interviews. The data collection process is summarized in Figure 1 below.

The interview data was analyzed using a four-step process adapted from Rubin and Rubin (1995): (1) the interviews were transcribed to a word processor, carefully reviewed to identify themes and recurring topics, and coded according to these themes and topics; and (2) using the qualitative data analysis software NVivo 8, transcripts were re-read and coded further based on previously categorized themes. At this stage, if themes were deemed irrelevant, they were dropped from the analysis. In Step (3), a complete recoding of the original transcripts using the themes identified in the previous two steps was performed to ensure complete coverage and a thorough analysis of the interview material. After this second round of coding, a new set of text summaries was drafted. Once the findings were written up, each case study participant was provided with a copy of the section relevant to their firm in order to solicit feedback and validate the findings – this constituted the fourth and final step (4) of the data analysis process.

Table 1 – Characteristics of Firms Under Study.

	Product	Number of employees	Years active	Current status
Firm A	Custom remanufacturing	10 to 15	More than 20	Intermittent operations
Firm B	Timber frame houses, cabinetry, millwork	10 to 15	15 - 20	Operating full-time
Firm C	Engineered wood products, remanufacturing	More than 20	More than 20	Shut down
Firm D	Millwork, custom remanufacturing, engineered wood products	Less than 10	Less than 10	Operating full-time

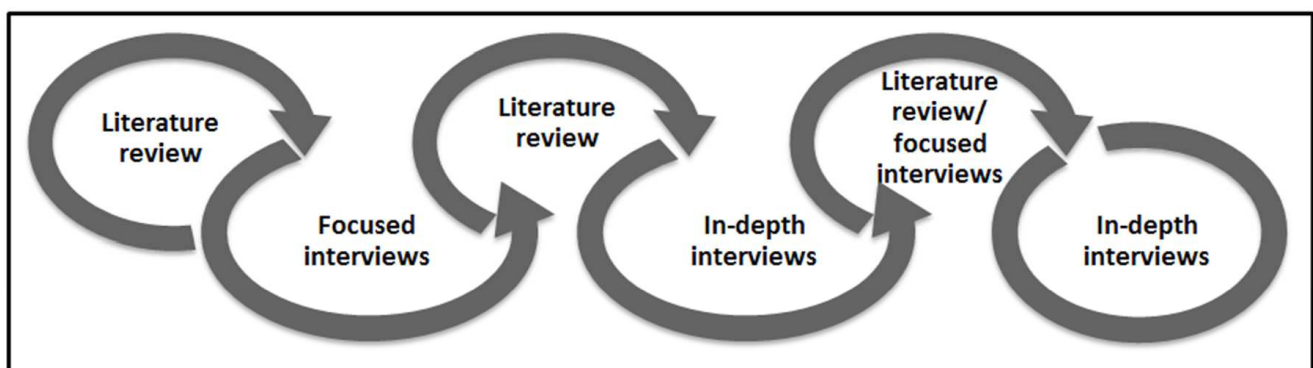


Figure 1 – Data Collection Process.

4. Results and Discussion

Firm owners identified three main keys to success: fiber supply, financial capital, and human capital. Other themes also emerged from the interviews, such as strategic planning and the impact of the external environment, but the three main keys to success mentioned earlier dominated discussion due to their impact on the production function. Upon analysis of the case results, it appears as though human capital – management skills, in particular – plays the most pivotal role in the ultimate success of each case; through in-depth interviews, participants addressed the issues of fiber supply, financing, and skilled laborers before turning the focus on themselves and their management. Previous studies of the value-added sector in BC, which have predominantly been surveys (Bogdanski and McBeath 2015; Stennes and Wilson 2008; DeLong *et al.* 2007) have always highlighted the importance of fiber supply, financing, and laborers, as these have been the focus of the provincial discourse. This study, through in-depth interviews, was able to find that the issues surrounding management skills are integral to firm success, though they are not often discussed.

The fact that fiber supply was the first issue raised in all cases is not surprising. Concerns regarding fiber supply have been at the forefront of British Columbian forest policy discussion since the first Sloan Commission on community forests in 1945 (Sloan 1945). As fiber is the primary input in value-added wood products, fiber supply generally preoccupies firm owners. The government, the owner of the raw material, is also keenly interested in fiber supply. The results of this research, however, demonstrate that some firms, notably Firm B, Firm D, and for a time, Firm C, have been able to work well within the imperfect fiber supply system. In fact, Firm B has been in a position where they've had to decline wood that was perfectly suited to their needs because they had too much inventory. Through relationships along the supply chain, as well as an organized and experienced approach to obtaining timber, these firms were able to meet their timber needs with relative ease. As the owner of Firm C stated, *"I had a great personal relationship with the managers and owners at the primary manufacturer I used to work for, so that turned into a very good business relationship. We had some small tenures and we made a deal with the major: we sell you our logs and buy your lumber. That relationship was huge for us."* Similarly, Firm

B takes an open approach to sourcing raw materials: *"We don't buy the whole, 'we can't get wood' argument. It doesn't come easy, but there are ways to get wood if you're willing to pay for it; and being able to pay for it should be part of your business strategy... If our regular supplier can't produce for one reason or another, we can go to the log sorts. It's more hit or miss with the log sorts, but you do what you can to make sure you keep your fiber supply steady."*

That said, all owners did make suggestions on how to improve wood supply channels or restore aspects of the tenure system that worked in their favor in the past. Participants in this study said the dissolution of the Small Business Forest Enterprise Program (SBFEP), which was specifically geared toward firms in the value-added sector², as part of the Forestry Revitalization Plan (FRP)³, has significantly handicapped small players in the value-added sector who used timber harvesting rights acquired through the program for leverage along the supply chain or to improve their financial positions. Policy-makers should take note of the issues raised and suggestions tabled by the owners in their review of current and future policies.

Given the high fixed costs required to participate in the forest products sector, the fact that financing is an issue of importance for all firms is to be expected. While firms sought financing through different channels and for different purposes, the issue was clearly important in all cases. For example, when Firm C experienced lower than usual cash flows, they would seek significant cash advances from one of their primary suppliers: *"This was an unusual relationship, but they knew we had a good business plan and we would be able to cover the advance, no problem."* While it would seem fairly obvious that financial matters would be at the forefront of a struggling firm's owner-operator's mind, this study demonstrates that even for successfully established, thriving companies, such as Firm B, financial trouble is always a worry. That said, even Firm B has had to rely on loans, but when it has done so, it ensures that they "get all our ducks in

2 The SBFEP awarded short-term timber sales licenses to value-added firms through competitive sealed bid auctions. While many firms in the value-added sector saw the SBFEP as vital to their success and survival, the program as a whole did not result in significant growth for the sector; in fact, in the final years of the program's existence, value-added production in the province stagnated (Parfitt 2005).

3 The BC Government introduced the FRP in 2003 to create a market-based competitive market for fiber that would also contribute to a competitive pricing system for timber (British Columbia Ministry of Forests 2003). The FRP also set aside 10% of the Provincial allowable annual cut for small tenure holdings.

row" with respect to bookkeeping, updated quotes and invoices, and year-end accounting.

Likely the best buffer against financial troubles for the firms involved in this study is a strong business plan and strategy. As Firm B put it, *"[Strategy is] simply a necessary part of staying in business. That's why so many start-ups fail: it's easy to start a business; the hard part is keeping it going. You need a good bookkeeper, a good accountant, good employees, good marketing, good wood supply, good relationships along the supply chain."* On the other hand, the owner of the less successful Firm A stated that, *"in [forestry], you cannot make a plan for the future,"* opting instead to merely *"ride the wave"* while markets were heated and cash flow could be accumulated. Similarly, Firm D takes a decidedly pragmatic approach to doing business, only taking on orders that exceed the firm's minimum profit margin: *"If an order is below that certain threshold, we don't do it. It's just not worth the effort and the possible opportunity missed if we commit to this low paying job and have to pass up a higher paying job tomorrow or next week."*

As Firm B identified, strategy is inextricably linked to the third component of the production function, human capital, stating that retaining good employees, providing high quality jobs, and offering training are *"the core of our strategy. We are always reflecting on and updating our strategy to make sure that we're in a position to not only be a successful company, but also an attractive one to work for."* The issue of skilled labor and skilled managers is one that touches both business owners and policy-makers. The owners highlighted a common difficulty in finding skilled workers and all believe that some of the responsibility for addressing the lack of workers lies with the provincial and regional authorities. This sentiment is echoed in a number of reports, including a recent report by the Research Universities Council of British Columbia (Research Universities' Council of British Columbia 2012), which calls on the Province to increase its support of post-secondary education to meet a projected skills shortage.

The findings of Addis (2003) are echoed in our study: despite the potential risk of having under-skilled workers, employers are still reluctant to embrace skills training as a means of improving their competitive position, though investment in skills development would help managers fill their labor needs. One major finding of this study is that investment in management skills training

could significantly help SME owners and managers in the quest for business success.

Though size is not viewed as one of the central elements to competitiveness theory (Porter, 1980), the results here suggest that size may play a role in relation to the issue of skilled management. When a firm is very small, management shortcomings can be both more frequent and more severe due to the large influence of the owner or manager over the business operations, in contrast to a larger firm wherein a group of managing leaders make decisions. Despite not saying so explicitly, the two struggling firms in this study have management shortcomings. Both Firm A and Firm C demonstrated that significant strategic miscalculations have been made due to a lack of understanding of the operating environment or mismanagement of commercial and economic risk. For Firm C, *"Management was not an issue for us. It was probably our strongest asset. If it hadn't been for the market we would still be there... Ultimately, the market collapsed in 2008 and took us down with it. I guess had we been better financed we would have been in a better position."*

Improved management skills training could lead to better performance in core areas of business such as financing and strategy development. Management skill development, an area often seen as being of secondary importance for SMEs (Fitzsimmons and Fitzsimmons 2013; Coetzer et al. 2011), is an essential component of a successful SME's overall business strategy (Libutti 2000). As the owner of Firm C was quick to point out, *"I'm not the best at selling and dealing with money, you know, but I do my best. I'm a guy who makes things, not sells things."* With two of the four firms studied lacking such fundamentals as a detailed business plan, the fact that owners from Firm A and Firm D report that they were refused loans from lending institutions is not surprising. With better business management foundations, these owners may have taken different approaches to running their firms and seen better results in obtaining loans.

It is interesting to note that many studies continue to report that access to markets, labor and fiber supply are the most significant barriers to success and expansion for value-added manufacturers. Bogdanski and McBeath (2015) conducted a survey with secondary manufacturers which, among other things, asked respondents to rank a predefined list of constraints to capacity expansion. Markets, labor, and wood supply were ranked most

constraining by respondents with management capacity being ranked least constraining. This finding was borne out in this study, for example, with marketing being top-of-mind with all of the participants, who pointed to the importance of international markets, the need for market research through communications with supply chain actors and clients, and the strategic advantages of diversifying target segments. While the inclusion of management capacity as a constraint in the survey was an important step, the results do not account for social desirability bias, which may threaten the validity of the results (Greenlaw and Brown-Welty, 2009). In-depth interviews, focused interviews, or surveys administered by field enumerators would likely reduce social desirability bias (Jo 2000; Randall and Fernandes 1991; Roxas and Lindsay 2011) and could increase the reporting of management capacity limitations as constraining factors to success.

An interesting finding of this study is that industry associations were mainly talked about in a positive light. This may serve as an opportunity to achieve economies of scale while remaining a small business, or, as noted by Firm B, local government officials can play an active role in helping SMEs address some of their firm's needs. Formal industry associations can serve to provide access to otherwise unattainable markets, provide opportunities for cost-sharing, and provide an environment that helps build supply chain relationships; all lowering the risks experienced by firms (Biggs and Shaw 2006; Macqueen 2004, Macqueen *et al.* 2006).

The results of this exploratory study confirm the value of the approach utilized by Husso and Nybakk (2010) in integrating Porter's framework, with its focus on external factors with the RBV focus looking at the internal resources and capabilities that firms have and could develop. While we were limited in the number of case studies, we did control for location (all firms were in the same region), one of the three important external factors that Husso and Nybakk (2010) identified as underpinning their competitiveness. We also addressed one of the limitations in their study in which they acknowledged that they only interviewed successful firms and that adding firms that were struggling or failing could provide additional insight; we agree and point to how these results underscore the importance of management and ways in which firms can overcome the disadvantages of size.

Finally, the results of this exploratory study are optimistic about the potential for value-added activities to take place outside the metropolitan areas of Vancouver, Vancouver Island and the Okanagan. Contrary to McIlhenney and Hayter's (2013) assertions, the size of community, location, and type of fiber do not seem to be limiting factors to success.

5. Conclusions

The findings of this study bring a fresh perspective to widely held perceptions about the causes of lackluster performance in the BC value-added sector and reveal a need for more information regarding the policy and business needs sector-wide. For example, though the interviewees discussed fiber supply, three of the four case study firms were skeptical that an inability to access timber is the main reason that firms struggle. The provision of timber through different forest tenure types and supply chain agreements play a large role in addressing the raw material needs of SMEs in the sector, but fiber supply is merely one of several factors in the production function of value-added SMEs. Interviews with case study participants revealed that human capital – both skilled labor as well as skilled management – plays an equal or greater role in determining the competitive position of firms. This study also suggests that firm size is an important factor of success, but more in how it may be related to management skills and resources, rather than in the more traditional sense of how it may influence bargaining power or access to capital.

These results call for a new, more coherent policy approach to addressing the multifaceted needs of this diverse sector. For years, the focus has been on increasing fiber supply to the sector, reflecting the belief that fiber access is the key to success as well as reflecting the institutional mandate of the Provincial Ministry of Forest Lands and Natural Resource Operations, which is tasked with making timber available. Given that the Ministry is not set up to provide technical and skills training assistance, that responsibility would lie with a different government agency.

In addition, the study shows that while location is an important influence on the competitive positions of firms, it does not predetermine success in the sector. Proximity to metropolitan areas is not essential. This does not mean that all locations are equal; interviews with experts and firm owners revealed that there are

attributes of a community that make it easier to attract skilled labor. The nature of a forest-dependent community is such that other local businesses, particularly lending institutions, are familiar with forest products firms and their day-to-day realities. Understanding the interplay of these factors: fiber access, human capital, financial capital, and location, especially from a community development perspective where there is strong interest in promoting local economic activity, can aid policy that facilitates the growth of small business.

This study also suggests areas of exploration in future research. Case studies with a greater number of firms and in other areas of the province with the approach adopted by Rubin and Rubin (1995) can be used to develop a more thorough understanding of the most pressing policy needs for government to address regarding this sector, as well as factors of success for individual firms to address in their strategic plans. In addition, further investigations into the transition from entrepreneur into manager as value-added firms grow and implications for firm success are also warranted.

6. References

- Addis, M. 2003. Basic skills and small business competitiveness: some conceptual considerations. *Education + Training*. 45:152-161.
- Agrawal, A., B. Cashore, R. Hardin, G. Shepherd, C. Benson, and D. Miller. 2013. Economic contributions of forests. Forum on Forests. http://www.un.org/esa/forests/pdf/session_documents/unff10/EcoContrForests.pdf.
- Arnold, J.E.M., C. Liedholm, D. Mead, and I.M. Townson. 1994. Structure and growth of small enterprises in the forest-products sector in southern and eastern Africa. Oxford, UK.
- Barney, J. 1991. Firm resources and sustained competitive advantage. *Journal of Management* 17(1):99-120.
- Beaver, G. 2003. Small business: success and failure. *Strategic Change*. 12:115-122.
- Bierly, P.E., and P.S. Daly. 2007. Alternative knowledge strategies, competitive environment, and organizational performance in small manufacturing firms. *Entrepreneurship Theory and Practice*. 31(4):493-516.
- Biggs, T. and M. Shah. 2006. African small and medium enterprises, networks and manufacturing performance. World Bank, Policy Research Working Paper 3855. Washington, DC.
- Bogdanski, E.C., B. McBeath, and A. McBeath. 2015. Secondary manufacturing of solid wood products in British Columbia 2012: Structure, economic contribution, and changes since 1990. Information report BC-X-436. Natural Resources Canada, Canadian Forest Service, Pacific Forestry Centre, Victoria, British Columbia.
- British Columbia Ministry of Forests, 2003. *The forestry revitalization plan*. Victoria: Ministry of Forests.
- British Columbia Ministry of Forests, Lands and Natural Resource Operations. 2016. 2016/17 – 2018/19 service plan. Victoria: Ministry of Forests, Lands and Natural Resource Operations.
- Burns, P. 2001. *Entrepreneurship and small business*. New York: Palgrave.
- Coetzer, A., M. Battisti, T. Jurado, and C. Massey. 2011. The reality of management development in SMEs. *Journal of Management & Organization*. 17(3): 290–306.
- Cohen, D., D. DeLong, and R. Kozak. 2005. Can Canada be a global competitor in the secondary wood manufacturing sector? A current assessment of the Canadian secondary wood products sector in a global context. A report prepared for the Canadian Forest Service.
- Creswell, J.W. 2007. *Qualitative inquiry and research design: choosing among five approaches*. 2nd ed. Thousand Oaks: Sage Publications.
- Day, G.S., and R. Wensley. 1988. Assessing advantage: a framework for diagnosing competitive superiority. *Journal of Marketing*. 52(2):1–20.
- DeLong, D.L., R.A. Kozak, and D.H. Cohen. 2007. Overview of the Canadian value-added wood products sector and the competitive factors that contribute to its success. *Canadian Journal of Forest Research*. 37(11):2211–2226.
- Dixit, A.K., and J.E. Stiglitz. 1977. Monopolistic competition and optimum product diversity. *The American Economic Review*. 67(3):297–308.
- Fisseha, Y. 1987. Basic features of rural small-scale forest-based processing enterprises in developing countries. In Food and Agricultural Organization (FAO) of the United Nations, Forestry Paper 79. Rome, Italy: Food and Agricultural Organization (FAO) of the United Nations.
- Fitzsimmons, J.A., and M.J. Fitzsimmons. 2013. *Service management: operations, strategy, information technology*. 4th ed. New York: McGraw-Hill.
- Government of BC. 2016. British Columbia Forest Sector Competitiveness: Value Added Sector Action Plan. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/competitive-forest-industry/value_added_plan_sept_2016.pdf
- Grant, R. 1991. The resource-based theory of competitive advantage: implications for strategy formulation. *California Management Review* 33(3):114-135.
- Greenlaw, C. and S. Brown-Welty. 2009. A comparison of web-based and paper-based survey methods: Testing assumptions of survey mode and response cost. *Evaluation Review*. 33(5):464-480.
- Husso, M, and E. Nybakk. 2010. Importance of internal and external Factors when adapting to environmental changes in SME sawmills in Norway and Finland: the manager's view. *Journal of Forest Products Business Research* 7(1): 1-14.
- Jo, M. 2000. Controlling social-desirability bias via method factors of direct and indirect questioning in structural equation models. *Psychology & Marketing*. 17(2):137-148.
- Kozak, R.A. 2002. Internet Readiness and E-Business Adoption of Canadian Value-Added Wood Producers. *The Forestry Chronicle*. 78 (2): 296–305.
- Kozak, R.A., T.C. Maness, and T. Caldecott. 2003. Solid wood supply impediments for secondary wood producers in British Columbia. *The Forestry Chronicle*. 79(6):1107-1120.
- Kozak, R.A. 2005. Research and Resource Dependent Communities: A World of Possibilities. *BC Journal of Ecosystems and Management* 6(2):55-62.

- Libutti, L. 2000. Building competitive skills in small and medium-sized enterprises through innovation management techniques: overview of an Italian experience. *Journal of Information Science*. 26(6):413–419.
- Macqueen, D. 2004. Associations of small and medium forest enterprise: An initial review of issues for local livelihoods and sustainability. International Institute for Environment and Development (IIED), Briefing Paper. London, UK.
- Macqueen, D., S. Bose, S. Bukula, C. Kazoor, S. Ousman, N. Porro and H. Weyerhaeuser. 2006. Working together: forest-linked small and medium enterprise associations and collective action. International institute for environment and development (IIED), Gatekeeper series 125. London, UK.
- Man, T.W.Y., T. Lau, and K.F. Chan. 2002. The competitiveness of small and medium enterprises: a conceptualization with Focus on Entrepreneurial Competencies. *Journal of Business Venturing*. 17:123–142.
- McIlhenney, K., and R. Hayter. 2013. Sustaining jobs and environment? The value-added wood industry in Metro Vancouver, British Columbia. *Local Environment*. 19(6):605–625.
- Nash, J.F. 1950. The bargaining problem. *Econometrica*. 18(2):155–162.
- Nelson, H., N. Hotte, and R.A. Kozak. 2017. The changing socio-economic contributions of forestry. In *Sustainable Forest Management: From Principles to Practice*, edited by John L. Innes. Earthscan, Oxford, UK.
- Nielsen, M. 2011. Developing Valued Added Forest Products Remains Source of Contention. *Prince George Citizen*, September 6. <http://www.princegeorgecitizen.com/article/20110906/PRINCEGEORGE0101/309069986/developing-value-added-forest-products-remains-source-of-contention>.
- Parfitt, B. 2005. Getting more from our forests: Ten proposals for building stability in BC's forestry communities. Canadian Centre for Policy Alternatives. Vancouver, BC.
- Parfitt, B. 2011. Making the case for carbon focus and green jobs in BC's forest industry. Canadian Centre for Policy Alternatives. Vancouver, BC.
- Peteraf, M. 1993. The cornerstones of competitive advantage: A resource based view. *Strategic Management Journal* 14 (3):179–191.
- Porter, M.E., 1979. How competitive forces shape strategy. *The Harvard Business Review*, 57 (2), pp. 137–145.
- Porter, M.E. 1980. *Competitive strategy: Techniques for analyzing industries and competitors*. New York: Free Press.
- Porter, M.E. & The Monitor Company, 1991. *Canada at the crossroads: the reality of a new competitive environment*. A study prepared for the Business Council on National Issues and the Government of Canada, Ottawa.
- Price Waterhouse. 1992. Performance of the value-added wood products industry in BC. FRDA Report. Vancouver, BC.
- Randall, D.M. and M.F. Fernandes. 1991. The social desirability response bias in ethics research. *Journal of Business Ethics*. 10(11):805–817.
- Research Universities' Council of British Columbia (2012) Opportunity Agenda for BC.
- Roxas, B. and V. Lindsay. 2011. Social desirability bias in survey research on sustainable development in small firms: An exploratory analysis of survey mode effect. *Business Strategy and the Environment*. 21:223–235.
- Rubin, H.J. and I.S. Rubin. 1995. *Qualitative Interviewing: The Art of Hearing Data*. Los Angeles: Sage Publications.
- Schultz, R. and A. Gorley. 2006. What is a value added forest sector? Why is it important to competitiveness in British Columbia? In BC forum on forest economics and policy 1–19.
- Schultz, R., R.A. Kozak, G. Merkel, R. Sunderman, and J. Thrower. 2013. *Growing The BC Interior Value Added Wood Sector: Background Report*. Southern Interior Beetle Action Committee (Government of British Columbia). 77 pp.
- Sloan, G.M. 1945. *The forest resources of British Columbia*. Victoria: Charles F. Banfield.
- Spetic, W., R.A. Kozak and N. Vidal. 2016. Critical Factors of Competitiveness for the British Columbia Secondary Wood Products Industry. *BioProducts Business* 1(2)2016:13–31.
- Stennes, B. and B. Wilson. 2008. *Secondary manufacturing of solid wood products in British Columbia 2006: Structure, economic contribution and changes since 1990 (Vol 416)*. Pacific Forestry Centre
- Wagner, R.H. 1988. Economic interdependence, bargaining power, and political influence. *International Organization*. 42(3):461–483.
- Woodbridge, P. 2009. *Opportunity BC 2020, BC's forest industry: moving from a volume focus to a value perspective*. Woodbridge Associates, prepared for The Business Council of BC. Vancouver, BC.
- Yin, R.K. 2009. *Case study research: design and methods*. 4th ed. Thousand Oaks: Sage Publications.