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Are SMEs with immigrant owners exceptional exporters?

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ABSTRACT

Immigrant owners possess valuable human and social capital from which small and medium-sized enterprises (SMEs) might derive advantages when internationalizing. According to this resource-based perspective, such advantages might be manifested in immigrant-owned SMEs' enhanced ability to identify, evaluate, develop and exploit opportunities in international markets. However, a cognitive perspective offers an opposing view: insofar as immigrant owners are more prone to overconfidence than their non-immigrant counterparts when making internationalization decisions, immigrant-owned SMEs might reap less financial rewards from potentially high-risk international markets. We pit the two perspectives against each other theoretically and empirically by evaluating a) the relationship between business owners' immigrant background and SMEs' export intensity, and b) the extent to which such background moderates the relationship between SMEs' export intensity and (risk-adjusted) financial performance. Based on a representative sample of 9977 Canadian SMEs, we find that the presence of immigrant owners positively impacts export intensity, but negatively moderates the relationship between export intensity and financial performance. We interpret this evidence, combined with supplementary analyses, as support for a cognitive theory of international entrepreneurship in general, and particularly in relation to the role and consequences of entrepreneurs' immigrant background.

1. Executive summary

Entrepreneurship scholars have begun to pay increasing attention to the role that owners' immigrant background play in the development and global expansion of small and medium-sized enterprises (SMEs). Based on an overarching resource-based perspective (Barney, 1991), a dominant view is that immigrant business owners possess knowledge, experience and other capabilities that constitute valuable resources for conducting business globally (e.g., Neville et al., 2014; Sui et al., 2015). In short, an immigrant background is generally perceived to be an enabling attribute when it comes to global expansion. However, it remains difficult to verify this basic theoretical insight because there is an unresolved performance puzzle, and the resource-based framework is not as adequate as one might initially believe.

By unresolved performance puzzle, we mean that the existing evidence does not definitively show that immigrant-owned SMEs systematically outperform other SMEs in creating and capturing value in foreign markets at levels that adequately compensate for the risks assumed in potentially difficult foreign markets (Neville et al., 2014; Sui et al., 2015; Wang and Liu, 2015). Therefore, more systematic evidence is needed. Meanwhile, there is a fundamental gap in the resource-based framework by virtue of its exclusive

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focus on the enabling (individual) attributes (i.e. internationalization-relevant human and social capital) of an immigrant background. An alternative theoretical framework that identifies counterproductive or detrimental attributes in owners' immigrant background may shed new light on the role and consequences of immigrant ownership in SMEs.

Drawing on insights from a cognitive perspective, we propose a competing and complementary theory of why and how owners' immigrant background shapes the observed patterns of export activity and financial performance in SMEs. This framework has the following two fundamental building blocks (Grégoire et al., 2011): a) *cognitive resources*, as reflected in individuals' prior knowledge and experience, and b) *cognitive representations*, as reflected in how individuals perceive themselves, others, tasks, and/or the decision-making environment. We propose that immigrant owners possess advantageous cognitive resources in the form of prior foreign market knowledge and experience; however, the advantages they derive from such resources may be offset by counterproductive cognitive representations of themselves and the international business environment within which they operate. We focus on overconfidence; that is, an individual's tendency to "[overestimate] the probability of being right" (Busenitz and Barney, 1997: 10) in a specific situation. Overconfidence is problematic because when present in entrepreneurs it may distort their judgment, accentuate risk-taking, and induce overcommitment to marginal or money-losing export activity. We propose that immigrant owners are particularly vulnerable to overconfidence when faced with export market decisions.

Based on our analysis of 9977 Canadian SMEs, the emerging picture is that although immigrant owners bring resources to their ventures that are particularly helpful for global expansion, these resources seem to make them overconfident; and therefore, less able to realize superior performance from internationalizing. Further, because we have found that the relative financial underperformance of immigrant exporters extends to less and more capable or established players, an alternative interpretation of our results based on a necessity-based entrepreneurship hypothesis is less consistent with the evidence. We contribute by offering a coherent multiple-lens framework and evidence that do not only lend support to a cognitive theory of international entrepreneurship in general, but also clarifies and verifies the role and consequences of immigrant ownership in SMEs.

2. Introduction

Do immigrant entrepreneurs merely internationalize more aggressively than their non-immigrant peers, or can they also consistently reap greater financial benefits from their international endeavors? Immigrants are generally recognized for their enhanced entrepreneurial orientation (Chaganti et al., 2008; Green et al., 2016; Li et al., 2017; Saxenian, 2002). Furthermore, because they often have foreign language and cross-cultural skills, and especially pre-existing ties to global networks (Cerdin et al., 2014; Kloosterman et al., 1998; Portes et al., 2002), they may develop and operate small and medium-sized enterprises (SMEs) that become exceptional exporters in their host countries. By exceptional exporters, we mean exporters that excel at multiple entrepreneurial processes—such as the identification, evaluation, development and enactment of opportunities—in international markets. This train of thought implies that immigrant-owned SMEs might engage in export activity more intensively and more profitably than other SMEs.

A theoretical foundation for these expected immigrant ownership effects can be found in an overarching resource-based perspective (Barney, 1991), where owners' immigrant background is presumed to be a critical source of valuable, rare and inimitable human and social capital resources that foster entry and success in international markets. However, while immigrant-owned businesses have been found to exhibit a relatively strong export orientation, the extant evidence does not definitively show that they systematically outperform other businesses in creating and capturing value at levels that adequately compensate for the risks assumed in potentially difficult foreign markets (Neville et al., 2014; Sui et al., 2015; Wang and Liu, 2015). This unresolved performance puzzle constitutes a major research deficit, both from a theoretical and empirical perspective. A mere resource-based perspective cannot tell the whole story because it focuses on enabling attributes (i.e. immigrant owners' internationalization-enabling human and social capital resources) while omitting potential counterproductive attributes (such as overconfidence). We argue that a cognitive lens may challenge and complement the resource-based perspective by clarifying why and how the enabling and counterproductive aspects of owners' immigrant background shape international expansion and its performance effects in SMEs; and consequently resolve the performance puzzle.

We add to prior research at the intersection of international and immigrant entrepreneurship by delineating and juxtaposing resource-based and cognitive theories of the role and consequences of immigrant ownership in internationalizing SMEs. To do so, we address the following two key questions: a) Do immigrant-owned SMEs engage in export activity more intensively than other comparable SMEs? b) Do immigrant-owned SMEs generate higher profitability from intensive export activity than other comparable SMEs when the risks associated with such activity are taken into account?

Central to our approach is a novel conceptualization of the implications of owners' immigrant background for the international expansion and financial performance of SMEs. In this regard, we move beyond the conventional view of owners' immigrant background as an embodiment of enabling attributes, and introduce the possibility that such a background might engender potentially detrimental or counterproductive cognitive attributes such as overconfidence. By overconfidence, we mean an individual's tendency to "[overestimate] the probability of being right" (Busenitz and Barney, 1997: 10) in a specific situation. Although entrepreneurs are generally more prone to overconfidence than managers (Busenitz and Barney, 1997; McMullen and Shepherd, 2006), we argue that immigrant entrepreneurs are particularly susceptible to overconfidence when making internationalization decisions. Specifically, by virtue of their potentially superior social ties, prior first-hand knowledge and experience in foreign markets beyond their host countries, immigrant entrepreneurs might mistakenly downplay substantial risks, or outrightly overstate their chance of success in such markets. As a result, immigrant entrepreneurs may imprudently intensify their operations in excessively risky foreign markets, and thereby potentially incur greater financial loss than their non-immigrant peers.

Our study contributes to the international and immigrant entrepreneurship research streams along three lines. First, by analyzing individual-level antecedents of firm internationalization decisions, processes and their performance effects through multiple theoretical lenses, we have responded to recent calls for more comparative analyses or multiple perspectives in the international business domain (e.g., Verbeke et al., 2017). We make a second related contribution by specifically proposing a cognitive perspective that challenges and complements a resource-based perspective (Grégoire et al., 2011). Central to our contribution is the articulation of more psychologically realistic assumptions about the nature, role and effects of a complex demographic characteristic such as owners' immigrant status in the context of internationalizing SMEs. Specifically, we consider the potential for entrepreneurs with an immigrant background to not only differ from other entrepreneurs in terms of internationalization-relevant cognitive resources (i.e. prior foreign-market knowledge and experience), but also their cognitive representations (i.e. perceptions of themselves, others and/or environmental conditions). Building on the cognitive perspective, we show, among other things, that exporting SMEs with immigrant owners may financially underperform because such owners are more susceptible to overconfidence when making export market decisions.

We make a third contribution to the immigrant entrepreneurship research stream (Neville et al., 2014; Sui et al., 2015; Wang and Liu, 2015). Specifically, our study raises the level of understanding about precisely why and how enterprising immigrants shape the development, global expansion and performance of SMEs in their host countries. Beyond lending support to a cognitive theory of international entrepreneurship, these contributions provide a basis for practitioners, business leaders and policy makers to take more informed actions that foster the development and growth of immigrant exporting businesses.

3. Theories and hypotheses

3.1. A resource-based perspective

A well-received view in the international entrepreneurship literature is that owners are an important source of human and social capital resources that can help younger or less established companies, such as SMEs, (Stam et al., 2014; Unger et al., 2011) enter and succeed in foreign markets. Specifically, business owner-managers' international experience, foreign social ties, among other attributes, may foster development, international expansion and financial performance in SMEs (Barringer et al., 2005; Bloodgood et al., 1996; Oviatt and McDougall, 2005; Reuber and Fisher, 1997; Vandor and Franke, 2016). As noted above, the presence of immigrant owners in SMEs may particularly support their international operations because such owners are likely to have privileged access to international networks and social capital, as well as their own foreign language and cross-cultural skills, and experiential knowledge of foreign markets (e.g., Kloosterman et al., 1998; Neville et al., 2014; Portes et al., 2002; Saxenian, 2002).

All these insights may be subsumed under a resource-based perspective (Barney, 1991). The core assumption behind such a perspective is that immigrant owners have an enhanced ability to introduce valuable, rare and imperfectly imitable resources into their companies. Specifically, they are likely to possess an array of internationalization-relevant human and social capital that might equip them to identify opportunities in international markets that others might overlook, or outrightly avoid because they perceive them to be excessively risky. In addition, given their international experience and cross-cultural knowledge (e.g., Cerdin et al., 2014; Sequeira et al., 2009; Portes et al., 2002), immigrant entrepreneurs might be highly knowledgeable about what foreign customers want, and how to appropriately design, promote and distribute products or services to meet their specialized needs. Consistent with this view, prior research indicates that enterprising individuals have an enhanced ability to identify business opportunities in international market settings when they have substantial cross-cultural knowledge of customer problems, foreign markets and how to deliver value to diverse customers (Vandor and Franke, 2016).

In addition to their human capital, immigrant owners' ties to geographically dispersed social networks can be an important source of valuable internationalization-relevant resources (Coviello, 2006; Elango and Pattnaik, 2007; Ellis, 2000; Johanson and Vahlne, 2009). Specifically, based on their potentially strong ties to global co-national communities, coupled with their prior experience working or living abroad, immigrant entrepreneurs might be privy to information about local demand conditions in foreign markets that is generally unavailable to their non-immigrant peers (Neville et al., 2014). But even when immigrant entrepreneurs lack pre-existing relationships with co-nationals in a given foreign country, their chance of tapping external knowledge resources in international markets is relatively high because their foreign language and cross-cultural skills equip them to cultivate and manage new international business relationships (Cerdin et al., 2014; Liu et al., 2015; Sui et al., 2015). Based on the evidence reported in prior research on the relatively strong export orientation of immigrant-owned SMEs (e.g., Neville et al., 2014; Sui et al., 2015; Wang and Liu, 2015), immigrant owners seem to possess the kinds of human and social capital that are advantageous for opportunity identification and business development in international markets. Hence, we propose the following baseline hypothesis:

Hypothesis 1. SMEs' export intensity is positively affected by immigrant ownership.

3.1.1. Moderating effect of immigrant ownership on the export intensity-performance relationship

Although SMEs have the potential to achieve superior performance outcomes when they operate more intensively in international markets, prior research in strategic management and international business has yielded mixed results on the performance effects of internationalization strategies such as exporting (Brouthers et al., 2009). Specifically, while some studies report that export activity has a positive impact on the profitability of SMEs (e.g., Pangarkar, 2008; Qian and Li, 2003), others suggest that intensive export activity might lead to poor performance in such firms (e.g., Lu and Beamish, 2001). Importantly, prior research has largely addressed the ambiguous nature of the performance effects of internationalization through a contingent approach (e.g., Elango, 2006; Zhou

et al., 2007). Following this approach, we focus on the contingent effect of immigrant ownership on the relationship between export intensity and firm financial performance.

In keeping with the above articulated resource-based perspective, one would expect immigrant owners to excel at evaluating, developing, and ultimately, exploiting opportunities in international markets. Immigrant owners have a higher likelihood of possessing specific human or social capital that is helpful for making the most of SMEs' export activity. They may carry out multiple entrepreneurial processes relatively well partly because they initially have more first-hand knowledge about foreign markets than their non-immigrant counterparts. This knowledge-based advantage could be enduring because prior foreign market knowledge may enable immigrant owners to effectively evaluate, assimilate and act on the private information acquired from foreign contacts over time (Domurath and Patzelt, 2016). In practice, this could mean that immigrant owners are able to quickly evaluate whether a business idea is feasible and financially rewarding in a foreign market; and hence, better positioned to quickly exploit opportunities when there is limited competition, if any. If so, immigrant-owned SMEs could have an enhanced potential to realize high profits in international markets.

Given their pre-existing relationships abroad, coupled with their enhanced potential to build international business relationships (Liu et al., 2015; Sui et al., 2015), immigrant owners are also likely to enjoy greater legitimacy than their non-immigrant counterparts in international markets; specifically, the former are likely to receive relatively strong local endorsements or support from co-nationals including customers, indigenous companies, industry leaders, and government officials (Hernandez, 2014; Liu et al., 2015). Furthermore, by virtue of their potentially superior access to key contacts or 'gate-keepers' in international markets, immigrant entrepreneurs might also be adept at manipulating or circumventing bureaucratic hurdles and restrictions that might impede the exploitation of lucrative opportunities (Liu et al., 2015; Riddle and Brinkerhoff, 2011; Yeung, 2002).

Consistent with these theoretical insights, immigrant-owned exporting businesses have been found to achieve relatively high levels or growth rates of sales and wages (Neville et al., 2014; Wang and Liu, 2015). However, it remains to be seen whether they actually achieve profitability at levels that adequately compensates them for the potentially elevated risk exposures they face in what could be difficult international markets. In sum, based on a resource-based logic, we propose that the unique mix of scarce and valuable human and social capital that immigrant owners bring to SME exporting businesses will enable them to achieve relatively high profit levels on a risk-adjusted basis; hence our hypothesis:

Hypothesis 2a. Immigrant ownership positively moderates the relationship between export intensity and (risk-adjusted) profitability in SMEs.

3.2. A cognitive perspective

3.2.1. Moderating effect of immigrant owners on the export intensity-performance relationship

Although a resource-based theory offers important theoretical insights in the international entrepreneurship domain, its focus on the enabling aspects of owners' immigrant background leaves potentially negative performance effects unaddressed. A cognitive perspective should be helpful in overcoming such shortcomings; and hence, may provide a basis for a more complete picture of the role and consequences of immigrant ownership in internationalizing SMEs. Based on prior cognition research (e.g., Grégoire et al., 2011), we focus on the following two important cognitive constructs: *cognitive resources* and *cognitive representations*. In the context of our study, cognitive resources constitute internationalization-relevant resources such as immigrant owners' prior foreign-market knowledge and international experience. Although such cognitive resources may be subsumed under a resource-based perspective (Alvarez and Busenitz, 2001), a cognitive perspective is fundamentally different from a resource-based perspective when it comes to cognitive representations—that is, individuals' perceptions of themselves, others, tasks and/or prevailing environmental conditions. Based on cognitive representations, a cognitive perspective suggests that the presence of immigrant owners in exporting SMEs may not necessarily lead to superior financial performance. This is so because the average positive performance effect of cognitive resources could be offset by the average negative performance effect of unwarranted cognitive representations. Specifically, we propose that the competitive advantages associated with internationalization-relevant cognitive resources will be undermined because immigrant owners are more prone to overconfidence than their non-immigrant peers when making internationalization decisions. As noted above, overconfidence may be manifested in an overestimation predisposition in a given setting (Windschitl et al., 2003); that is, a tendency to "[overestimate] the probability of being right" (Busenitz and Barney, 1997: 10) in a specific situation. This overestimation tendency is likely to be manifested in individuals who make inflated self-evaluations, as reflected in relatively high levels of self-esteem, self-efficacy, internal locus of control, and/or emotional stability (Hiller and Hambrick, 2005). Overconfident individuals may also evaluate themselves to be "better than average" (Malmendier and Tate, 2005). When individuals make inflated or better-than-average self-evaluations, not only are they likely to hold overly optimistic beliefs about their ability and chance of success when confronted with difficult tasks (Windschitl et al., 2003), they may also have misplaced trust in the accuracy of their memories and the soundness of their judgments under uncertainty (cf. Dunning et al., 1990; Talarico and Rubin, 2003).

Previous research suggests that entrepreneurs vary in terms of overconfidence; and hence, individual differences in overconfidence may explain observed differences in their decision-making processes and business performance outcomes (Shepherd et al., 2015). For instance, overconfidence appears to be more pronounced in younger entrepreneurs, and those who operate ventures without private equity investors (Forbes, 2005). Moreover, overconfident entrepreneurs seem to overestimate their capabilities to operate in a given market (Wu and Knott, 2006). This view suggests that overconfident entrepreneurs—even if they knew the actual performance distribution and expected value of entry in a given market—would believe their own ability was drawn from a narrower and positively biased distribution (Busenitz, 1999; Norton and Moore, 2002). According to prior strategy and entrepreneurship

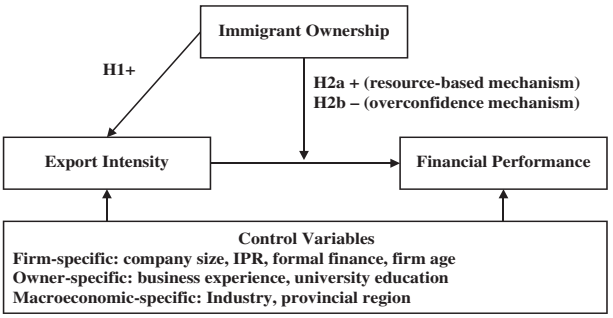

Fig. 1. A model of immigrant ownership's impact on export intensity and its performance effects in SMEs.

research, overconfident entrepreneurs are likely to overlook vicarious learning opportunities because of their tendency to show little, if any, regard for the decision rules or judgments of others in uncertain or complex business contexts (Malhotra et al., 2016); even worse, they might be susceptible to money-losing market entry decisions (Artinger and Powell, 2016; Cain et al., 2015; Camerer and Lovallo, 1999).

In our view, these theoretical insights and findings are also relevant in the context of immigrant entrepreneurship. Overconfidence is strongly connected with expert status (Almandoz and Tilcsik, 2016). Since immigrant entrepreneurs' internationalization-relevant human and social capital enhances the chance that they are perceived, and perceive themselves, as experts regarding international business operations, they are likely to overestimate the actual value of their human and social capital in such domain. This view is supported by previous literature suggesting that overconfidence is among "the most common (and potentially severe) problems in expert judgment" (Lin and Bier, 2008: 711). Systematic overconfidence has been detected among various groups (such as physicists or psychologists) making expert judgments in certain contexts (Angner, 2006).

Immigrant entrepreneurs might hold strong or overly optimistic beliefs about their ability, memories and chance of success in international markets. Furthermore, the more knowledge they initially have or acquire from foreign social ties, the more susceptible they might become to an illusion of control over difficult and excessively risky foreign markets. Based on such cognitive dispositions, immigrant entrepreneurs might perceive international markets to be less risky than other entrepreneurs (Gillespie et al., 1999; Keh et al., 2002), or may perceive their individual abilities as being more suited for entering these markets. If so, they will be more inclined to treat even marginally feasible or profitable business ideas as opportunities worth developing and exploiting (Wu and Knott, 2006). The problem that emerges here is that overconfidence is linked with negative outcomes (Shepherd et al., 2015). Specifically, overconfident immigrant entrepreneurs might not only enter industries despite ambivalent information and performance prospects (Deligonul et al., 2008), but may also imprudently expand their ventures even when the market provides mixed or even negative feedback (McCarthy et al., 1993).

Importantly, these arguments suggest that the resource-based and cognitive perspectives both yield observationally equivalent predictions about the relationship between immigrant ownership and export intensity in SMEs. That is, they both lead to hypothesis 1 above, and rely on the same evidence for empirical validation. However, they make empirically distinguishable predictions about the moderating effect of immigrant ownership on the export intensity-performance relationship. As predicted above, a positive moderating effect is expected under the resource-based perspective. However, the opposite is expected under the cognitive perspective. In line with our foregoing arguments, the potentially greater susceptibility of immigrant entrepreneurs to overconfidence suggests that they are inclined to make positively biased evaluations about which foreign opportunities are worth developing and exploiting. Furthermore, their potentially elevated risk-taking propensity might overexpose them to money-losing commercial operations in international markets. In sum, these arguments support the following hypothesis:

Hypothesis 2b. Immigrant ownership negatively moderates the relationship between export intensity and (risk-adjusted) profitability in SMEs.

Fig. 1. summarizes our theoretical model based on the proposed resource-based and cognitive perspectives.

4. Methodology

4.1. Data

We drew on the following confidential data sources from Statistics Canada in order to empirically test our predictions: 2011 Survey on Financing and Growth of Small and Medium Enterprises (SFGSME) and T2-LEAP (Longitudinal Employment Analysis Program). These databases have been linked by Statistics Canada's Centre for Data Development and Economic Research (CDER).

SFGSME survey questionnaire was conducted by Statistics Canada on behalf of a consortium led by Industry Canada.[1] It was

[1] More details about this questionnaire can be found at Industry Canada's website at: http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=2941&lang=en&db=imdb&adm=8&dis=2#a2

directly collected via computer-assisted telephone interviews (CATI). The sampling frame is based on the entire population of private sector, for-profit, Canadian SMEs employing between one and 499 employees and generating between $30,000 and $50 million in annual revenues in 2011. The sample was randomly selected and stratified by region, industry, size, age of business, and participation in the Canadian Small Business Financing Program. The survey collected extensive firm demographic data along with attributes of the primary owners of the firms (the key respondents). The interviews were conducted between February and June in 2012. The design of SFGME is cross-sectional and the reference period is 2011. The survey completion rate was 40% and contains 9977 SMEs, in which 15% was immigrant-owned.

In order to get information on firms' financial performance, SFGSME was linked to T2-LEAP. T2-LEAP provides annual information on profits, revenue, and assets for all incorporated firms in Canada and is available between 2011 and 2013. Linking these different data sources provides a unique dataset, which is very well suited for addressing our research questions. Moreover, by linking different data sources we reduce potential biases such as common-method bias or same-source bias.

4.2. Dependent variables

Export intensity: Export intensity is measured as the firm's ratio of its foreign sales to total sales in 2011. This ratio is among the most commonly used indicators of export intensity or scale of internationalization in the fields of small firm internationalization or international new venturing (Baum et al., 2015; Sousa, 2004; Zahra et al., 2000).

Risk-adjusted profitability: We considered two accounting-based measures of profitability: return on assets (ROA), measured as the ratio of profits to assets; return on sales (ROS), measured as the ratio of profits to revenue. While these firm-performance measures capture the extent to which companies are efficiently using their resources, they do not capture the extent to which they are compensated for the degree of risk that they assume when they engage in highly risky operations in foreign markets that might be risky to begin with. To empirically evaluate the implications of overconfidence for the performance of SME export businesses with immigrant owners, we need to explicitly account for the variability in the financial returns from their business operations because it is theorized that overconfidence might accentuate risk-taking among immigrant entrepreneurs. Following prior research (Robb and Watson, 2012), we computed risk-adjusted ROA and ROS for each firm by dividing their average ROA and average ROS by the standard deviations of ROA and ROS, respectively.

4.3. Explanatory and instrumental variables

The primary explanatory variables are immigrant ownership and the native languages of business owners. Based on prior research (Sui and Morgan, 2014; Wang and Liu, 2015), we created a dummy variable, *Immigrant-owned*, that equals one if the majority owner of the firm was born outside Canada and 0 otherwise. Based on Sui et al. (2015), we used the owner's native languages—a set of dummy variables including English, French and other languages—as instrumental variables to control for the potential endogenous effect of export intensity on firm performance. The Sargan (1988) test was used to determine the appropriateness of the instrumental variables. We found that the native language dummies constitute good instrumental variables because they are highly correlated with export intensity, but uncorrelated with other unmeasured or unobservable owner and firm attributes that influence firm performance. In light of the closer attention that endogeneity issues have begun to receive in international business research (Reeb et al., 2012), our focus on such issues is well-placed. We explain below in greater detail how our regression techniques mitigate endogeneity bias in our estimation.

4.4. Control variables

Besides applying an instrumental variable approach, we used a broad set of control variables to rule out alternative interpretations of our key findings. Based on prior research, we control for firm-specific variables and macroeconomic or environmental factors that might affect firm export intensity and financial performance. Firm-specific control variables include: *Company size*, measured as the logarithm value of the company's number of employees. This variable is particularly important because prior studies find a systematic relationship between firm size and export orientation (Bonaccorsi, 1992; Salomon and Shaver, 2005). *IPR* denotes a dummy variable with value 1 if a firm holds any type of intellectual property rights (such as registered trade-marks, patents, registered industrial designs, etc.) and 0 otherwise. It is particularly important to control for the presence of IPR because prior research finds that such intangible assets are among the most important antecedents to firm internationalization and success (Almor and Hashai, 2004; Autio et al., 2000). *Formal Finance* denotes a dummy variable with value 1 if the firm has either debt or equity financing at the time of founding and 0 otherwise. Given the limited track record of SMEs, and the risks they pose to traditional financial institutions such as banks, controlling for access to equity-based finance is particularly important because it might alleviate external financing constraints and their potentially adverse impact on export activity and firm performance (Berger and Udell, 1998; Cassar, 2004; Gartner et al., 2012). *Firm age* indicates the age of the firm in 2011. Based on prior research on the importance of owner characteristics for export activity (e.g., Westhead et al., 2001), we also controlled for business owners' human capital in the form of *Business experience* (measured as the number of years of experience the owner has in owning or managing a business) and *University education* (a dummy variable which equals to 1 if the owner has college or higher education and 0 otherwise). Importantly, by accounting for major sources of owner- and firm-specific differences in the resources and capabilities across immigrant- and non-immigrant-owned firms, we control for the potential conflating influence of internal resource and capability deficiencies in immigrant-owned firms that might hurt their relative financial performance (Aldrich and Waldinger, 1990; Barrett et al., 1996; Raijman

and Tienda, 2000).

To control for macroeconomic or environmental factors, we created the following set of industry dummy variables: accommodation and food, construction, manufacturing, agriculture/primary, retail trade, wholesale trade, transportation, professional services, other service, and all other industries. Finally, we incorporated a set of provinces/provincial regions dummy variables in our regression analysis—*Atlantic* (New Brunswick, Prince Edward Island, Nova Scotia, and Newfoundland and Labrador); *British Columbia*; *Ontario*; *Prairie* (Alberta, Saskatchewan and Manitoba); and Québec. The use of industry and location dummies is consistent with prior studies that suggest that these variables are associated with firm internationalization (Mudambi and Zahra, 2007).

4.5. Statistical methods

As noted above, a firm's export intensity and performance could be endogenously determined; that is, they may be determined by common underlying factors. Studies that do not control for endogeneity may yield biased estimates with respect to the impact of export intensity on firm performance (Reeb et al., 2012). Therefore, we used a two-stage instrumental variable model with a split-sample method to control for potential endogeneity (Angrist and Krueger, 1991; Sui and Baum, 2014). Specifically, we used a Tobit model to estimate a firm's export intensity in the first stage, and a linear regression model to estimate their performance in the second stage.

Our two-stage model is not a conventional regression model. This is so because the first stage is a nonlinear model (Bolduc et al., 2008). Since traditional tests such as the Hausman test of endogeneity may not be effective for such a model, we used the split-sample method to verify the appropriateness of the model and the robustness of the results (Angrist and Krueger, 1995; Beaulieu et al., 2009; Sui and Baum, 2014). This method has the advantage of producing an estimate that is not only biased towards zero (Angrist and Krueger, 1995), reliable and powerful (Dufour and Jasiak, 2001), but also effectively controls for Type I error (Bolduc et al., 2008). Specifically, we applied this method by randomly splitting the sample in half. We used one half to estimate the parameters of the first-stage equation for export intensity. We then used these estimated first-stage parameters to construct fitted values for export intensity from the data in the other half of the sample. After completing this estimation process, we used the predicted values of the endogenous regressor (the predicted value for export intensity) in the second-stage performance analysis.

In sum, our analysis involves three steps: (1) Using the first of two subsamples, we obtained parameter estimates by conducting a regression analysis on export intensity; (2) using the second sub-sample and the estimated parameters, we calculated the predicted value for export intensity; and (3) using the second subsample, we regressed the predicted export intensity values on the performance measure. Altogether, our regression techniques considerably mitigate the threat of endogeneity and common-method bias (Antonakis et al., 2010). Therefore, our estimation is not susceptible to spurious results caused by unobserved variable bias or reversed causality (Antonakis et al., 2010), and thereby further raise the level of confidence in our findings.

5. Results

Descriptive statistics are presented in Table 1. In Table 2, we compare the characteristics of immigrant-owned and non-immigrant-owned SMEs. The last column in Table 2 indicates whether the unconditional mean value of each variable is significantly different for the population of immigrant-owned and non-immigrant-owned SMEs, at the 5% level. In comparison with non-immigrant-owned SMEs, we find that immigrant-owned SMEs have significantly higher export intensity on average, but significantly lower risk-adjusted profitability on average. More generally, although immigrant-owned SMEs tend to be younger, smaller, and less likely to have access to equity financing than non-immigrant SMEs, they are more likely to own valuable intangibles such as intellectual property rights (i.e. patents and registered trademarks). Given these considerable differences, we must conduct a more comprehensive regression analysis before we draw conclusions about the direct effect of immigrant ownership on SMEs' export intensity, and its moderating effect on the export intensity-performance relationship.

Table 1
Descriptive statistics.

		1	2	3	4	5	6	7	8	9	10
1	Risk-adjusted ROA	1									
2	Risk-adjusted ROR	0.21*	1								
3	Export intensity	0.15*	0.12*	1							
4	Immigrant	0.10*	0.13*	0.32*	1						
5	Company size	− 0.03*	− 0.05*	− 0.01	− 0.01	1					
6	IPR	0.02	− 0.03	− 0.01	0.00	0.08*	1				
7	Formal finance	0.02	− 0.03*	0.04*	0.01	0.12	− 0.02	1			
8	Business experience	− 0.01	− 0.03*	0.024	0.03	0.23*	0.06*	− 0.02	1		
9	Firm age	0.06*	0.04*	0.02	− 0.00	0.07*	− 0.05	0.17*	0.08*	1	
10	University education	− 0.01	0.03	0.06*	0.11*	0.08*	0.15*	0.02	− 0.13*	− 0.02	1
	Mean	9.59	36.00	0.05	0.15	20.49	0.19	0.27	2.98	6.96	0.64
	S.D.	12.62	47.05	0.18	0.08	41.33	0.39	0.44	0.63	6.78	0.47

$N = 9977$.
* $p < 0.01$.

Table 2
Comparison between immigrant-owned and non-immigrant owned firms.

Variables	Immigrant-owned	Non-immigrant owned	Mean values are statistically different at 5% level?
Observations	1506	8471	
Export intensity	0.09	0.05	Yes
Risk-adjusted ROA	8.89	9.71	Yes
Risk-adjusted ROR	33.01	36.55	Yes
Company size	18.55	20.83	Yes
IPR	0.24	0.18	Yes
Formal finance	0.28	0.27	No
Business experience	2.96	2.98	No
Firm age	6.84	7.98	Yes
University education	0.76	0.62	Yes

N = 9977.

Table 3 reports the Tobit regression analysis on export intensity. Our first hypothesis is that SMEs owned by immigrants are associated with higher export intensity. Consistent with our prediction, the effect of immigrant ownership on export intensity is positive and significant ($p < 0.001$). Thus, Hypothesis 1 is supported. The results from Table 3 also suggest that firms that are larger, have intellectual property rights, have access to formal (external) finance at the time of founding, and have more experienced and more educated owners are more likely to have higher export intensity than firms that are otherwise comparable. Thus, by controlling for resource and capability differences along these lines, our regression analysis yields a more reliable and valid estimate of the impact of immigrant ownership on export intensity than might otherwise be the case.

Table 4a reports the linear regression analysis on risk-adjusted ROA. Model 1 is based on a conventional analysis; that is, it includes the original value of export intensity, and hence, does not control for endogeneity. Models 2–4 account for endogeneity with respect to export intensity by using estimated export intensity from the regression results from Table 3. Model 2 includes the direct effects of export intensity on risk-adjusted ROA. Model 3 includes the interaction of export intensity and immigrant ownership. Model 4 uses the split-sample methodology to determine the robustness of the results of Model 2. Models 2 and Model 3 provide the most reliable and unbiased results because unlike Model 1, they account for endogeneity and, unlike Model 4, they are based on the entire sample.

To determine whether the effect of export intensity on risk-adjusted ROA depends on immigrant ownership, we interacted export

Table 3
Regression results on initial export intensity: Tobit model.

Variables	Coef.	Std. err.
Immigrant	0.130***	(0.005)
Company size	0.003***	(0.000)
IPR	0.474***	(0.004)
Formal finance	0.006*	(0.004)
Business experience	0.071***	(0.003)
Firm age	− 0.045***	(0.002)
University education	0.184***	(0.004)
Owner's language (reference: allophone)		
English	0.119***	(0.005)
French	− 0.166***	(0.008)
Firm's province of location (reference: Quebec)		
Atlantic	− 0.124***	(0.008)
Prairie	− 0.342***	(0.007)
British Columbia	− 0.142***	(0.007)
Ontario	− 0.157***	(0.006)
Firm's industry (reference: all other industries)		
Accommodation and food	− 0.179***	(0.008)
Construction	− 0.387***	(0.009)
Manufacturing	0.532***	(0.006)
Agriculture/primary	0.268***	(0.007)
Retail trade	− 0.008	(0.006)
Wholesale trade	0.444***	(0.006)
Transportation	0.607***	(0.007)
Professional services	0.353***	(0.005)
Other service	− 0.239***	(0.010)
Observations	9977	
Log likelihood	− 150,209	
Pseudo R2	0.189	

Note: ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels.

Table 4a
Regression results on risk-adjusted ROA: linear regression model.

Variables	Model 1 Conventional	Model 2 Two-stage	Model 3 Two-stage	Model 4 Split sample
Export intensity (EI)	− 1.461*	0.078***	0.092***	0.231***
	(0.793)	(0.018)	(0.018)	(0.025)
Immigrant	− 0.004	− 0.012***	− 0.060***	− 0.029***
	(0.003)	(0.003)	(0.007)	(0.005)
EI × immigrant			− 0.065***	
			(0.007)	
Company size	0.059***	0.033***	0.033***	0.033***
	(0.001)	(0.001)	(0.001)	(0.001)
IPR	0.053***	0.024***	0.023***	0.041***
	(0.003)	(0.007)	(0.007)	(0.009)
Formal finance	0.031***	0.030***	0.030***	0.054***
	(0.003)	(0.003)	(0.003)	(0.004)
Business experience	0.045***	0.041***	0.041***	0.063***
	(0.002)	(0.002)	(0.002)	(0.003)
Firm age	0.016***	0.016***	0.016***	0.011***
	(0.002)	(0.002)	(0.002)	(0.002)
University education	− 0.004	− 0.004	− 0.004	− 0.004
	(0.003)	(0.003)	(0.003)	(0.003)
Firm's province of location (reference: Quebec)				
Atlantic	0.050***	0.044***	0.042***	0.051***
	(0.006)	(0.006)	(0.006)	(0.008)
Prairie	− 0.064***	− 0.056***	− 0.057***	− 0.029***
	(0.004)	(0.004)	(0.004)	(0.006)
British Columbia	0.011***	0.004	0.002	0.077***
	(0.004)	(0.004)	(0.004)	(0.006)
Ontario	− 0.022***	− 0.027***	− 0.028***	− 0.030***
	(0.003)	(0.004)	(0.004)	(0.003)
Firm's industry (reference: all other industries)				
Accommodation and food	− 0.028***	− 0.014**	− 0.014**	− 0.016**
	(0.005)	(0.006)	(0.006)	(0.008)
Construction	− 0.123***	− 0.093***	− 0.087***	0.119***
	(0.004)	(0.008)	(0.008)	(0.011)
Manufacturing	− 0.025***	− 0.016	− 0.015	− 0.025*
	(0.005)	(0.010)	(0.011)	(0.015)
Agriculture/primary	0.059***	0.038***	0.039***	0.091***
	(0.008)	(0.009)	(0.009)	(0.013)
Retail trade	0.072***	0.074***	0.075***	0.054***
	(0.004)	(0.004)	(0.004)	(0.006)
Wholesale trade	− 0.023***	− 0.058***	− 0.057***	− 0.119***
	(0.005)	(0.010)	(0.010)	(0.013)
Transportation	0.036***	− 0.012	− 0.012	− 0.056
	(0.006)	(0.012)	(0.012)	(0.017)
Professional services	− 0.017***	− 0.044***	− 0.044***	− 0.044***
	(0.005)	(0.008)	(0.008)	(0.011)
Other services	0.092***	0.112***	0.115***	0.278***
	(0.005)	(0.007)	(0.007)	(0.010)
Other service	9977	9977	9977	9977
Adjusted R2	0.119	0.119	0.120	0.190

Note: Standard errors in parentheses.
***, ** and * indicate statistical significance at the 1%, 5% and 10% levels.

intensity with immigrant ownership in Model 3. Hypotheses 2a and 2b predict that immigrant ownership positively and negatively moderates the relationship between export intensity and risk-adjusted ROA, respectively. We found the sign of the interactions between export intensity and immigrant ownership is negative and significant ($p < 0.01$) in Model 3. Thus, Hypothesis 2a is rejected while Hypothesis 2b is supported.

Table 4b reports the linear regression analysis on risk-adjusted ROS. The results are presented in the same way as in Table 2a. The results from Table 4b are consistent with Table 4b results: the sign of the interactions between export intensity and immigrant ownership is negative and significant ($p < 0.01$); and thus, Hypothesis 2a is rejected while Hypothesis 2b is supported.

5.1. Identifying the proposed overconfidence mechanism more comprehensively

We have reported evidence that links the presence of immigrant owners in exporting SMEs to relatively low levels of profitability adjusted for risk. Based on our proposed theoretical framework, we interpret this evidence as support for a cognitive theory of the role

Table 4b
Regression results on risk-adjusted ROR: linear regression model.

Variables	Model 1 Conventional	Model 2 Two-stage	Model 3 Two-stage	Model 4 Split sample
Export intensity (EI)	− 12.989***	− 13.433***	− 12.362***	− 20.512***
	(0.488)	(1.074)	(1.080)	(1.565)
Immigrant	− 2.758***	− 1.744***	− 5.348***	− 4.532***
	(0.184)	(0.211)	(0.437)	(0.305)
EI × immigrant			− 4.220***	
			(0.448)	
Company size	0.095***	0.129***	0.128***	0.161***
	(0.004)	(0.005)	(0.005)	(0.007)
IPR	− 0.306	3.536***	3.476***	6.248***
	(0.211)	(0.434)	(0.434)	(0.627)
Formal finance	7.050***	− 6.836***	− 6.841***	− 3.635***
	(0.178)	(0.179)	(0.179)	(0.256)
Business experience	0.458***	0.187***	0.188***	1.683***
	(0.1250)	(0.138)	(0.138)	(0.195)
Firm age	1.969***	2.036	2.015	1.137***
	(0.103)	(0.103)	(0.103)	(0.145)
University education	1.744***	4.078***	4.104***	7.490***
	(0.166)	(0.263)	(0.263)	(0.380)
Firm's province of location (reference: Quebec):				
Atlantic	10.697***	11.760***	11.619***	17.606***
	(0.341)	(0.352)	(0.352)	(0.499)
Prairie	8.534***	7.321***	7.187***	3.0409***
	(0.230)	(0.258)	(0.258)	(0.607)
British Columbia	7.039***	8.181***	8.044***	7.266***
	(0.241)	(0.260)	(0.260)	(0.375)
Ontario	11.526***	12.270***	12.180***	8.135***
	(0.208)	(0.218)	(0.218)	(0.332)
Firm's industry (reference: All other industries)				
Accommodation and food	− 16.596***	− 18.847***	− 18.862***	− 18.890***
	(0.138)	(0.377)	(0.377)	(0.567)
Construction	− 39.287***	− 44.557***	− 44.170***	− 47.444***
	(0.269)	(0.502)	(0.503)	(0.727)
Manufacturing	− 36.767***	− 37.074***	− 30.954***	− 28.223***
	(0.324)	(0.642)	(0.642)	(0.936)
Agriculture/primary	− 27.844***	− 24.924***	− 24.851***	− 26.670***
	(0.515)	(0.584)	(0.584)	(0.816)
Retail trade	− 31.515***	− 31.813***	− 31.735***	− 32.082***
	(0.264)	(0.266)	(0.266)	(0.379)
Wholesale trade	− 33.739***	− 28.626***	− 28.604***	− 27.030***
	(0.329)	(0.574)	(0.574)	(0.828)
Transportation	− 6.800***	0.335	0.293	6.773***
	(0.384)	(0.384)	(0.754)	(1.100)
Professional services	− 1.289***	− 2.832***	− 2.904***	11.979***
	(0.303)	(0.484)	(0.486)	(0.699)
Other services	− 23.409***	− 26.796***	− 26.618***	− 28.769***
	(0.332)	(0.430)	(0.431)	(0.626)
Observations	9977	9977	9977	4988
Adjusted R2	0.319	0.326	0.326	0.358

Note: Standard errors in parentheses.
***, ** and * indicate statistical significance at the 1%, 5% and 10% levels.

and consequences of owners' immigrant background in international expansion and its performance effects in SMEs; specifically, the evidence lends support to the view that overconfidence and its detrimental effects might be particularly pronounced among immigrant exporters. However, since we do not directly measure and incorporate overconfidence in our analysis, how can one be sure that such an overconfidence mechanism is at work? Another concern is related to an alternative necessity-entrepreneurship hypothesis. Specifically, it is possible that the financial underperformance of immigrant exporters could be reflecting the tendency of the least capable or established immigrants, without acceptable job opportunities, to pursue entrepreneurship and intensive export activity. To more comprehensively identify the proposed overconfidence mechanism, we developed and applied an identification strategy that directly addresses these issues.

First, we estimated the extent to which owners' immigrant background predicts their tendency towards overconfidence in general, and particularly in the context of export decisions. To do so, we operationalize overconfidence as a binary variable with value 1 if the owner's expected annual sales growth rate is greater than the actual sales growth rate and 0 otherwise. Not only is this measure of overconfidence consistent with prior research (e.g., Invernizzi et al., 2016), but the underlying notion of over-estimation bias is also

Table 5a
Probit regression results on the predictors of owners' propensity to exhibit overconfidence (measured as a binary variable with value 1 if the owner's expected annual sales growth rate is greater than the actual average sales growth rate and 0 otherwise).

Variables	Model 1	Model 2
Immigrant	0.032*** (0.004)	− 0.015*** (0.005)
Export	0.090*** (0.006)	− 0.006 (0.007)
Immigrant × export		0.367*** (0.013)
Previous 3-year growth	0.049*** (0.002)	0.048*** (0.002)
Company size	0.002*** (0.000)	0.002*** (0.000)
IPR	0.137*** (0.005)	0.139*** (0.005)
Formal finance	0.033*** (0.004)	0.032*** (0.004)
Business experience	0.113*** (0.003)	0.113*** (0.003)
Firm age	− 0.028*** (0.002)	− 0.027*** (0.002)
University education	0.019*** (0.004)	0.019*** (0.004)
Firm's province of location (reference: Quebec)		
Atlantic	0.038*** (0.008)	0.038*** (0.008)
Prairie	0.044*** (0.006)	0.053*** (0.006)
British Columbia	0.185*** (0.006)	0.188*** (0.006)
Ontario	0.037*** (0.005)	0.041*** (0.005)
Firm's industry (reference: all other industries)		
Accommodation and food	0.222*** (0.007)	0.217*** (0.007)
Construction	0.309*** (0.006)	0.299*** (0.006)
Manufacturing	0.394*** (0.008)	0.381*** (0.008)
Agriculture/primary	− 0.437*** (0.009)	− 0.443*** (0.009)
Retail trade	0.298*** (0.006)	0.294*** (0.006)
Wholesale trade	0.389*** (0.008)	0.378*** (0.008)
Transportation	0.104*** (0.009)	0.097*** (0.009)
Professional services	0.154*** (0.007)	0.145*** (0.007)
Other services	0.196*** (0.008)	0.187*** (0.008)
Observations	9977	9977
Log likelihood	− 354,499	− 354,085
Pseudo R2	0.265	0.276

Note: Standard errors in parentheses.
***, ** and * indicate statistical significance at the 1%, 5% and 10% levels.

consistent the conventional view of overconfidence as one's tendency to "[overestimate] the probability of being right" (Busenitz and Barney, 1997: 10) in a specific situation. To obtain information on owners' expected annual sales growth rate, we drew on responses to the following SFGSME survey question: "In the next three years, what is the expected average yearly growth of your business' sales or total revenues?" We computed the actual average sales growth rate based on the reported financial results—from the T2-LEAP database—over the three subsequent years.[2] Finally, to capture the export decision context, we defined the binary variable, *Export*, with value 1 if the firm exports goods or services and 0 otherwise. Table 5a reports the results of our Probit regression analysis of owners' propensity to exhibit overconfidence. Model 1 shows that owners' immigrant background has a positive and statistically significant effect ($p < 0.001$) on such a propensity. Based on the positive and statistically significant estimate ($p < 0.001$) for the interaction between immigrant status and an export decision context in Model 2, we also know that owners' immigrant background has a particularly pronounced effect in such a context.

Second, we extended our regression analysis on the predictors of overconfidence in business owners by estimating the direct effect of overconfidence on export intensity and the moderating role of immigrant ownership. Table 5b reports the results from our Tobit regression analyses. Model 1 shows that overconfidence has a positive and statistically significant effect ($p < 0.001$) on export intensity. Interestingly, Model 2 shows that immigrant ownership has a positive and statistically significant ($p < 0.001$) moderating effect on the positive relationship between overconfidence and export intensity. Furthermore, we also observe from model 2—based on the statistically insignificant overconfidence coefficient—that the positive impact of overconfidence on SMEs' export intensity is largely accounted for by the presence of immigrant owners with relatively high levels of overconfidence.

Finally, we sought to rule out the possibility that immigrant-owned SMEs' relatively high export intensity and less financially successful export activity reflect the tendency of immigrants to disproportionately engage in necessity entrepreneurship. Prior research (e.g., Chrysostome, 2010) identifies education and access to formal (external) finance as two of the most defining characteristics of necessity entrepreneurs—i.e. individuals who primarily start a business because they lack acceptable job opportunities—as opposed to opportunity entrepreneurs—i.e. individuals who primarily start a business to exploit an opportunity under conditions that are perceived to be attractive. Specifically, less educated and more financially constrained immigrant entrepreneurs could be disproportionately represented among necessity entrepreneurs. This could also mean that they are predisposed to develop less innovative businesses than other entrepreneurs (Block et al., 2015). In sum, if immigrants, as necessity entrepreneurs, primarily

[2] In the SFGSME survey, the managers were given a range such as below 0%, 1–10%, 11–20, or above 20% for their estimated future growth. Therefore, we were not able to measure *Overconfidence* as a continuous variable, but rather as a binary variable.

Table 5b
Regression results on the moderating effect of owners' immigrant background in the relationship between overconfidence and export intensity.

Variables	Model 1	Model 2
Immigrant	0.125*** (0.005)	0.128** (0.006)
Overconfidence	0.068*** (0.003)	0.002 (0.004)
Immigrant × overconfidence		0.250***(0.007)
English	0.116***(0.006)	0.111***(0.005)
French	− 0.173***(0.008)	− 0.173***(0.008)
Company size	0.003***(0.000)	0.003***(0.000)
IPR	0.343***(0.004)	0.344***(0.004)
Formal finance	0.005 (0.004)	0.005 (0.004)
Business experience	0.070***(0.003)	0.066***(0.003)
Firm age	− 0.043***(0.002)	− 0.044***(0.002)
University education	0.182***(0.004)	0.177***(0.004)
Firm's province of location (reference: Quebec)		
Atlantic	− 0.128***(0.008)	− 0.119***(0.008)
Prairie	− 0.344***(0.007)	− 0.335***(0.007)
British Columbia	− 0.150***(0.007)	− 0.144***(0.007)
Ontario	− 0.159***(0.006)	− 0.153***(0.006)
Firm's industry (reference: all other industries)		
Accommodation and food	− 0.184***(0.008)	− 0.182***(0.008)
Construction	− 0.399***(0.009)	− 0.390***(0.009)
Manufacturing	0.521***(0.006)	0.518***(0.006)
Agriculture/primary	0.274***(0.007)	0.266***(0.007)
Retail trade	− 0.014**(0.006)	− 0.018**(0.006)
Wholesale trade	0.433***(0.006)	0.433***(0.006)
Transportation	0.608***(0.007)	0.597***(0.007)
Professional services	0.347***(0.005)	0.343***(0.005)
Other services	− 0.245***(0.010)	− 0.242***(0.010)
Observations	9977	9977
Log likelihood	− 149,984	− 149,380
Pseudo R2	0.19	0.19

Note: Standard errors in parentheses.
***, ** and * indicate statistical significance at the 1%, 5% and 10% levels.

engage in entrepreneurship as a means to economic adaptation under difficult circumstances in their host countries (Zhou, 2004), their ventures are unlikely to be directed by the kinds of resource-intensive strategies that facilitate participation and financial success in markets beyond their host countries (e.g., Chaganti and Greene, 2002).

To rule out a necessity-entrepreneurship interpretation of the relative underperformance of immigrant-owned exporting SMEs, we repeated the regression analyses behind the main results reported for Hypothesis 1 (Table 3) and Hypothesis 2a (Tables 4a and 4b) based on the following sub-samples: a) SMEs with and without intellectual property rights (IPR), b) owners with and without a university degree, and c) SMEs with and without formal (external) finance at the time of founding. The new results related to hypotheses 1 and 2a are reported in Appendix A (Table A.1) and Appendix B (Tables B.1–B.6), respectively. The main findings are qualitatively similar: relative to SMEs with non-immigrant (majority) owners, those with immigrant (majority) owners tend to export more intensively, but are generally less financially successful (on a risk-adjusted basis) as exporters, whether or not they are university-educated, formally financed or technologically capable. Taken together, the evidence does not lend support to a necessity-entrepreneurship interpretation of the main findings, and further underscores our overconfidence hypothesis.

5.2. Additional robustness tests

In additional statistical analyses (available upon request from the authors), we examined the following variations in our key variable measures and model specifications to assess the robustness of the reported main results. First, instead of using risk-adjusted profitability, we used the annual average growth rate of profitability to measure financial performance. Insofar as overconfidence engenders excessive risk-taking behavior in international markets, the negative consequence for risk-adjusted profitability might be impounded in the annual average growth rate of profitability. Specifically, firms that incur substantial financial losses on ill-advised undertakings might deplete the financial resources required to sustain more financially rewarding endeavors; thus, a lower risk-adjusted profitability could translate into a lower average growth rate of profitability. Another important observation is that the information on export intensity is based on data in 2011, and the data on profits is available between 2007 and 2013. However, prior research shows that SMEs were particularly subjected to external financing constraints during the global financial crisis of 2008–2009, and consequently, may been forced to curtail their export activity (Bricongne et al., 2012). Insofar as immigrant-owned export businesses were more adversely impacted than their non-immigrant counterparts by the credit crunch that ensued, it is possible that the former could have had a slower post-crisis recovery; and hence, possibly unusually poor financial results during our

2011–2013 estimation period. Thus, as a second variation, we measured risk-adjusted profitability between 2007 and 2013 (which incorporates the pre-crisis period) rather than between 2011 and 2013 (post-crisis period only). Third, instead of using the number of employees as our non-financial measure of firm size, we used financial measures such as revenue and assets. In all these variations, the results were entirely consistent with our primary results.

6. Discussion

This study examined why and how SMEs with immigrant owners might fare better than other firms when it comes to identifying, evaluating, developing and exploiting opportunities in international markets. We sought to do by drawing on two competing theoretical lenses that provide different insights into why and how immigrant owners shape export intensity and its performance effects in SMEs. Starting with a resource-based perspective, we proposed that SMEs with immigrant owners will not only have higher export intensity than other comparable SMEs with non-immigrant owners, but also an enhanced ability to generate relatively high risk-adjusted profitability from intensive export activity. Turning to a cognitive perspective, we theorized that immigrant-owned SMEs will achieve relatively high export intensity, accompanied by relatively poor financial performance, because immigrant owners are particularly susceptible to overconfidence when making export decisions. We reported systematic evidence that is generally more consistent with the cognitive perspective, and particularly with an overconfidence mechanism. The empirical support for this overconfidence mechanism is considerably strong because we also found that more as well as less capable or established immigrant entrepreneurs tend to engage in less financially successful export activity than their non-immigrant peers. Taken together, the evidence is more consistent with the proposed overconfidence mechanism than a resource-based perspective or necessity-entrepreneurship logic.

6.1. Contributions to theory

Our study makes several contributions to the international and immigrant entrepreneurship research streams. First, we contribute by responding to recent calls for the comparative analysis of firm internationalization processes and outcomes through multiple theoretical lenses (Verbeke et al., 2017). By drawing on different theoretical realms, we are able to build and test conflicting hypotheses regarding how well immigrant entrepreneurs' export activity can be transformed into superior financial performance. In doing so, our study not only suggests that the dominant use of resource-based theories as the sole theoretical framework is at least questionable, but also that the integration of a cognitive perspective into international entrepreneurship theorizing might be a particularly fruitful endeavor. We make a second related contribution by adding to the development of a cognitive theory of international entrepreneurship; specifically, we show that it offers novel insights that challenge and complement a resource-based perspective (Grégoire et al., 2011). This cognitive perspective rests on a more complete conceptualization of the cognitive elements of business owners' immigrant background than can be found in a resource-based perspective. In contrast to the latter's reliance on the implicit assumption that such a background embodies enabling attributes, the postulated cognitive perspective admits the possibility of counterproductive cognitive representations in the form of overconfidence. Importantly, such a perspective offers novel theoretical insights that also challenge, and extend an emerging cognition research stream in several ways.

Specifically, by focusing on a counterproductive aspect of entrepreneurs' cognition such as overconfidence, our study complements prior research that predominantly focuses on the enabling cognitive aspects of entrepreneurs (Grégoire et al., 2011). For example, Alvarez and Busenitz (2001) and Bingham et al. (2007) stress the beneficial role of entrepreneurs' cognitive resources by linking them to the discovery and enactment of opportunities. Our study also contributes by offering clues to the following inadequately addressed questions in the extant cognition research stream (Grégoire et al., 2011): What are the antecedents of cognitive representations (i.e. perceptions) in entrepreneurs? Why and how does the interplay between entrepreneurs' cognitive resources (i.e. knowledge and experience) and cognitive representations shape their behaviors and outcomes in certain environments? In relation to the first question, our findings indicate that entrepreneurs' immigrant background is a leading predictor of overconfidence in general, particularly in the context of internationalization decisions. The emerging picture is that overconfidence is a context-specific, cognitive trait in individuals (Griffin and Varey, 1996), which may undermine the valuable cognitive resources that entrepreneurs often bring to their ventures. This implies that although cognitive resources (such as prior knowledge) are important for the opportunity recognition process (e.g., Shane, 2000; Shepherd and DeTienne, 2005), cognition theorists should recognize that the value generated from this process is contingent on entrepreneurs' cognitive representations. In sum, we advance a cognitive theory of international entrepreneurship by offering an insightful theoretical account and evidence that not only draw on the fundamental pillars of the cognitive perspective (i.e. cognitive resources and cognitive representations) (Corbett, 2007; Grégoire et al., 2011), but also provide novel insights into the antecedents, role and consequences of entrepreneurial cognition in the international entrepreneurship domain.

Finally, our study has raised the level of understanding about immigrant entrepreneurship by resolving the ambiguity that surrounds the relative financial performance of immigrant exporters. As noted above, immigrant-owned businesses tend to achieve higher levels of export intensity than other businesses, but lower risk-adjusted financial returns from intensive export activity. While these results are inconsistent with prior research that evokes resource-based arguments about the role and consequences of immigrant owners in SMEs (i.e. Neville et al., 2014; Sui et al., 2015; Wang and Liu, 2015), they are consistent with a cognitive perspective that recognizes immigrant owners' susceptibility to overconfidence and its adverse performance effects in the context of internationalization decisions. By extension, this observation points to the need for more explicit cognition-related boundary conditions for a resource-based theory of international entrepreneurship in general, and immigrant entrepreneurship in particular.

6.2. Contributions to entrepreneurship practice and policy

Our study also contributes to the practice of entrepreneurship. While immigrant entrepreneurs may find comfort in the observation that their human and social capital are instrumental in their enhanced ability to spot new opportunities in international markets, they ought to be concerned that the financial returns they realize from intensive export activity may not adequately compensate them for the risks associated with such activity. We have shown that immigrant export businesses may perform poorly if their export decisions are driven by overconfidence on the part of their owners. Immigrant owners may address this issue by engaging in meaningful self-reflective exercises that help them become more aware of their own cognitive biases. Going one step further, they might benefit from the development of appropriate cognitive strategies or routines that serve as a guide for making more objective evaluations in international market settings.

We recognize that some immigrant business owners may be less capable than others when it comes to performing such metacognitive tasks on their own. However, their host country government can help by facilitating the provision of affordable advisory or counselling services. A key goal of these services should be the facilitation of self-reflective exercises and the cultivation of cognitive adaptability skills, particularly in the context of internationalization decisions. Considering the relatively strong global orientation of immigrant businesses, this form of government-sponsored business support service, combined with others (e.g., funding), could help these businesses contribute more to the global aspirations and prosperity of leading host countries such as Canada (Foreign Affairs, Trade and Development Canada, 2013; Sui and Morgan, 2014).

6.3. Limitations and areas for future study

Our study has some limitations that provide opportunities for future research. First, although we have been careful to demonstrate the context-specific nature of overconfidence in our analyses, we recognize the need for greater clarity and precision as it relates to how we define and measure this construct. In particular, we recognize that our operationalization of overconfidence as a form of over-estimation bias in export-oriented immigrant entrepreneurs could lead some readers to wonder whether we might be capturing optimism rather than overconfidence. A comprehensive delineation of these two cognitive constructs is beyond the scope of this paper. However, in contrast with the context-specific nature of overconfidence (Griffin and Varey, 1996), it seems important to note here that optimism is generally conceptualized as a disposition or personality trait that is relatively stable over time and across contexts (Sharpe et al., 2011). Taking this fundamental conceptual distinction in account, researchers may build on our work by verifying whether other psychometrically sound measures of overconfidence lead to the same qualitative results. Second, because our data does not allow us to drill down into the specific functional or operational areas where the adverse performance effects of overconfidence are pronounced in immigrant businesses, researchers may also add to our work by addressing gaps in our understanding about whether the most serious problems pertain to product or export market choices, the speed of internationalization, the scale of operations, or some combination of these factors. Third, although we have shown that less and even more established immigrant exporters financially underperform relative to their native counterparts, it is conceivable that this finding might partly reflect less obvious disadvantages associated with immigrant entrepreneurs' relatively limited firsthand institutional knowledge of their host countries. However, data limitations preclude us from fully controlling for such a potentially conflating influence. Finally, in light of a growing concern about the upward bias that may be introduced in instrumented estimates when one does not apply the most suitable instruments (Jiang, 2017), we have exercised considerable care in addressing the endogenous nature of the performance effects of export intensity. Researchers may contribute to this line of work by using different data and/or econometric approaches to investigate whether they obtain similar results.

7. Conclusion

Our study was motivated by a search for a definitive answer to the following question: Are SMEs with immigrant owners exceptional exporters? Although it provides evidence that immigrant-owned SMEs can export more intensively than other SMEs under apparently more risky conditions, it also reveals that they tend to generate and capture less value than others from doing so. One answer to this performance puzzle can be found in a cognitive perspective that clarifies why immigrant entrepreneurs may not become exceptional exporters despite their relative advantages. As it turns out, such advantages can be a double-edged sword: they could equip immigrant entrepreneurs to outperform others as exporters, and simultaneously hurt them by inducing a counterproductive cognitive bias in the form of overconfidence. Our findings generally support the view that accentuated overconfidence among immigrant owners is a major contributing factor in their relative underperformance as exporters. Specifically, they seem more predisposed than their non-immigrant counterparts to take on what seems to be excessively risky export activity with disappointing financial results. Accordingly, our study suggests that international entrepreneurship scholars should pay more attention to the interplay between the positive and negative cognitive dimensions of an immigrant background; and thus help immigrant entrepreneurs become more aware of potential overconfidence biases, and their consequences.

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Appendix A. Ruling out a necessity-entrepreneurship interpretation of the relatively high export intensity of immigrant-owned SMEs (positive effect of owners' immigrant background on SMEs' export intensity)

Table A.1
Regression results on initial export intensity: Tobit model (under necessity-entrepreneurship hypothesis).

Variables	Model 1 with IPR	Model 2 without IPR	Model 3 with university education	Model 4 without university education	Model 5 with formal finance	Model 6 without formal finance
Immigrant	0.140***	0.153***	0.200***	0.039***	0.245***	0.137***
	(0.008)	(0.006)	(0.005)	(0.008)	(0.006)	(0.007)
Company size	0.391***	0.241***	0.322***	0.266***	0.277***	0.249***
	(0.010)	(0.010)	(0.008)	(0.010)	(0.008)	(0.013)
IPR			0.443***	0.364***	0.406***	0.439***
			(0.004)	(0.006)	(0.005)	(0.006)
Formal finance	0.062***	−0.011***	0.008***	−0.047***		
	(0.006)	(0.005)	(0.004)	(0.005)		
Business experience	0.013***	0.122***	0.067***	0.020***	0.050***	0.020***
	(0.004)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)
Firm age	−0.106***	−0.038***	−0.054***	0.013***	−0.059***	0.013***
	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
University education	0.122***	0.120***			0.153***	−0.047***
	(0.008)	(0.005)			(0.005)	(0.005)
Owner's language (reference: allophone)						
English	0.086***	0.138***	0.115***	0.146***	0.115***	0.146***
	(0.010)	(0.007)	(0.006)	(0.008)	(0.006)	(0.008)
French	−0.130***	−0.204***	−0.145***	−0.054***	−0.145***	−0.054***
	(0.014)	(0.010)	(0.009)	(0.012)	(0.009)	(0.012)
Location dummy variables	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummy variables	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1868	8109	6423	3554	4340	5637
Log likelihood	−44,164	−119,017	−124,261	−78,564	−89,403	−100,086
Pseudo R^2	0.118	0.086	0.107	0.148	0.125	0.096

Note: ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels.

Appendix B. Ruling out a necessity-entrepreneurship interpretation of the underperformance of exporting SMEs with immigrant owners (negative moderating effect of owners' immigrant background on the financial performance of exporting SMEs)

Table B.1
Regression results on risk-adjusted ROA: with and without IPR (under necessity-entrepreneurship hypothesis).

Variables	Model 1 with IPR	Model 2 with IPR	Model 3 Without IPR	Model 4 without IPR
Export intensity (EI)	−0.024***	0.038***	0.086***	0.100***
	(0.009)	(0.010)	(0.005)	(0.005)
Immigrant	0.011*	−0.100***	−0.008**	−0.080***
	(0.006)	(0.009)	(0.003)	(0.010)
EI × immigrant		−0.290***		−0.076***
		(0.017)		(0.010)
Company size	0.035***	0.032***	0.048***	0.047***

	(0.011)	(0.011)	(0.008)	(0.007)
Formal finance	0.081***	0.081***	0.015***	0.015***
	(0.006)	(0.006)	(0.003)	(0.003)
Business experience	− 0.011***	− 0.012***	0.055***	0.055***
	(0.004)	(0.004)	(0.0023)	(0.0023)
Firm age	− 0.064***	− 0.061***	0.035***	0.035***
	(0.004)	(0.004)	(0.002)	(0.002)
University education	0.004	0.004	− 0.027***	− 0.027***
	(0.007)	(0.007)	(0.003)	(0.003)
Location dummy variables	Yes	Yes	Yes	Yes
Industry dummy variables	Yes	Yes	Yes	Yes
Other service	1868	1868	8109	8109
Adjusted R^2	0.346	0.384	0.179	0.181

Note: Standard errors in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels.

Table B.2
Regression results on risk-adjusted ROA: with and without university education (under necessity-entrepreneurship hypothesis).

Variables	Model 1 with university education	Model 2 with university education	Model 3 without university education	Model 4 without university education
Export intensity (EI)	0.052***	0.093***	0.151***	0.151***
	(0.005)	(0.006)	(0.005)	(0.005)
Immigrant	− 0.001	− 0.152***	0.041***	0.019*
	(0.004)	(0.008)	(0.004)	(0.011)
EI × immigrant		− 0.196***		− 0.024***
		(0.009)		(0.010)
Company size	0.053***	0.051***	0.031***	0.032***
	(0.008)	(0.008)	(0.001)	(0.001)
IPR	0.029***	0.031***	− 0.023***	− 0.023***
	(0.005)	(0.005)	(0.005)	(0.005)
Formal finance	0.018***	0.017***	− 0.016***	− 0.016***
	(0.004)	(0.004)	(0.004)	(0.004)
Business experience	0.047***	0.049***	0.066***	0.066***
	(0.003)	(0.003)	(0.003)	(0.003)
Firm age	− 0.009***	− 0.009***	0.028***	0.028***
	(0.002)	(0.002)	(0.002)	(0.002)
Location dummy variables	Yes	Yes	Yes	Yes
Industry dummy variables	Yes	Yes	Yes	Yes
Observation	6423	6423	3554	3554
Adjusted R^2	0.242	0.258	0.133	0.133

Note: Standard errors in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels.

Table B.3
Regression results on risk-adjusted ROA: with and without formal finance (under necessity-entrepreneurship hypothesis).

Variables	Model 1 with formal finance	Model 2 with formal finance	Model 3 without formal finance	Model 4 without formal finance
Export intensity (EI)	0.069***	0.086***	0.031***	0.093***
	(0.004)	(0.005)	(0.005)	(0.006)
Immigrant	− 0.031***	− 0.115***	− 0.028***	− 0.152***
	(0.003)	(0.007)	(0.004)	(0.008)
EI × immigrant		− 0.103***		− 0.166***
		(0.008)		(0.009)
Company size	0.008	0.008	0.150***	0.005***

	(0.006)	(0.006)	(0.009)	(0.000)
IPR	− 0.011***	− 0.011***	− 0.005	− 0.023***
	(0.004)	(0.004)	(0.005)	(0.005)
Business experience	− 0.006***	− 0.006***	0.021***	0.049***
	(0.002)	(0.002)	(0.003)	(0.003)
Firm age	0.050***	0.050***	0.002	− 0.009***
	(0.002)	(0.002)	(0.002)	(0.002)
University education	0.009***	0.010***	0.016***	0.010***
	(0.003)	(0.004)	(0.003)	(0.004)
Location dummy variables	Yes	Yes	Yes	Yes
Industry dummy variables	Yes	Yes	Yes	Yes
Observation	4340	4340	5637	5637
Adjusted R^2	0.268	0.273	0.137	0.149

Note: Standard errors in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels.

Table B.4
Regression results on risk-adjusted ROR: with and without IPR (under necessity-entrepreneurship hypothesis).

Variables	Model 1 with IPR	Model 2 with IPR	Model 3 without IPR	Model 4 without IPR
Export intensity (EI)	25.365***	26.993***	17.965***	19.899***
	(0.682)	(0.733)	(0.287)	(0.309)
Immigrant	− 9.176***	− 12.154***	− 0.926***	− 10.701***
	(0.449)	(0.666)	(0.210)	(0.610)
EI × immigrant		− 7.614***		− 10.248***
		(1.259)		(0.601)
Company size	− 0.074***	− 0.074***	0.061***	0.060***
	(0.008)	(0.008)	(0.005)	(0.005)
Formal finance	22.908***	22.954***	− 4.110***	− 4.120***
	(0.412)	(0.412)	(0.208)	(0.208)
Business experience	− 1.537***	− 1.576***	− 0.704***	− 0.713***
	(0.297)	(0.297)	(0.146)	(0.146)
Firm age	− 2.257***	− 2.164***	1.331***	1.331***
	(0.275)	(0.275)	(0.188)	(0.188)
University education	2.436***	2.358***	0.763***	0.768***
	(0.510)	(0.510)	(0.188)	(0.188)
Location dummy variables	Yes	Yes	Yes	Yes
Industry dummy variables	Yes	Yes	Yes	Yes
Observations	1868	1868	8109	8109
Adjusted R^2	0.117	0.117	0.349	0.358

Note: Standard errors in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels.

Table B.5
Regression results on risk-adjusted ROR: with and without university education (under necessity-entrepreneurship hypothesis).

Variables	Model 1 with university education	Model 2 with university education	Model 3 without university education	Model 4 without university education
Export intensity (EI)	19.203***	22.761***	17.180***	18.452***
	(0.343)	(0.362)	(0.296)	(0.308)
Immigrant	− 0.827***	− 14.214***	− 4.243***	− 13.050***
	(0.229)	(0.499)	(0.243)	(0.647)
EI × immigrant		− 17.196***		− 9.114***
		(0.570)		(0.621)
Company size	0.028***	0.027***	0.015***	0.019***
	(0.005)	(0.005)	(0.005)	(0.005)

IPR	− 6.552***	− 6.378***	− 6.408***	− 6.151***
	(0.289)	(0.289)	(0.311)	(0.312)
Formal finance	− 10.618***	− 10.708***	− 4.370***	− 4.281***
	(0.229)	(0.229)	(0.222)	(0.222)
Business experience	− 1.280***	− 1.198***	− 0.151	− 0.151
	(0.163)	(0.163)	(0.156)	(0.156)
Firm age	0.361***	0.272***	0.623***	0.611***
	(0.133)	(0.133)	(0.126)	(0.126)
Location dummy variables	Yes	Yes	Yes	Yes
Industry dummy variables	Yes	Yes	Yes	Yes
Observations	6423	6423	3554	3554
Adjusted R^2	0.446	0.480	0.328	0.336

Note: Standard errors in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels.

Table B.6
Regression results on risk-adjusted ROR: with and without formal finance (under necessity-entrepreneurship hypothesis).

Variables	Model 1 with formal finance	Model 2 with formal finance	Model 3 without formal finance	Model 4 without formal finance
Export intensity (EI)	19.374***	21.908***	23.060***	24.821***
	(0.306)	(0.320)	(0.358)	(0.377)
Immigrant	− 2.280***	− 15.001***	− 1.931***	− 9.991***
	(0.237)	(0.523)	(0.245)	(0.599)
EI × immigrant		− 15.420***		− 9.077***
		(0.565)		(0.616)
Company size	0.022***	0.022***	0.033***	0.036***
	(0.004)	(0.004)	(0.006)	(0.006)
IPR	− 7.370***	− 7.276***	− 3.049***	− 3.049***
	(0.290)	(0.290)	(0.341)	(0.341)
Business experience	1.206***	1.183***	− 2.188***	− 2.117***
	(0.155)	(0.154)	(0.173)	(0.173)
Firm age	0.552***	0.466***	0.109***	0.080***
	(0.127)	(0.127)	(0.142)	(0.142)
University education	2.089***	2.251***	1.980***	2.228***
	(0.208)	(0.208)	(0.229)	(0.229)
Location dummy variables	Yes	Yes	Yes	Yes
Industry dummy variables	Yes	Yes	Yes	Yes
Observation	4340	4340	5637	5637
Adjusted R^2	0.527	0.553	0.524	0.533

Note: Standard errors in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels.

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