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Home Peers, Business Owners' Gender, and the Export Intensity of SMEs

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Article abstract

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RESEARCH ARTICLE

Home Peers, Business Owners' Gender, and the Export Intensity of SMEs

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ABSTRACT

Small and medium-sized enterprises (SMEs) can improve their export performance by co-locating with export firms from the same industry and country. However, the export implications are yet to be addressed systematically. This study investigates when and how women-owned SMEs convert their geographic proximity to home peers through social proximity and cognitive proximity into high export intensity. We develop a nuanced knowledge spillover perspective incorporating gender mechanisms to clarify the relationship between home peers and SMEs' export intensity at the regional and national levels. To test our hypotheses, we designed quantitative research using a survey database from Statistics Canada, Survey on Financing and Growth of Small and Medium Enterprises (SFGSME), with a sample of 9,977 Canadian SMEs. Our study shows that, among other things, home peers' positive impact on SMEs' export intensity is more significant when their owners are exposed to a larger number of relatively close same-gender home peers (i.e., same-gender regional home peers). Moreover, we show that such positive home-peer effects on SMEs' export intensity are even stronger for women business owners than men business owners. We clarify our contributions by discussing the theoretical and practical implications of our findings. By demonstrating the significance of same-gender regional home peers for women owners, we contribute to the knowledge spillover perspective on exporting, emerging research streams on home peers, and women entrepreneurship research in the international entrepreneurship field. Our findings also suggest that women entrepreneurs can particularly benefit from government-funded export promotion programs when the programs are appropriately designed and promoted to women entrepreneurs.

Key Words: Export intensity; home peers; knowledge spillover perspective; SMEs; women owners

INTRODUCTION

A crucial geographic dimension of businesses is the co-location of their activities (Nazarczuk et al., 2020). Some studies suggest that less established firms, such as small- and medium-sized enterprises (SMEs), could particularly benefit from being geographically close to exporting firms from the same industry and country (e.g., Sui et al., 2019). According

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to a knowledge spillover perspective (Acs & Sanders, 2013; González-Pernía & Peña-Legazkue, 2015; Harasztosi, 2016), such home peers' strategic behaviors may convey observable cues or signals that other firms may process and learn from. This implies that the scale of SMEs' export activity, or export intensity, is partially a function of their geographic proximity to home peers (Choquette & Meinen, 2015; De Clercq et al., 2008; Felzensztein et al., 2019; Fernhaber & Li, 2010). However, prior research also indicates that the export-enabling benefits of home peers could depend on other factors, such as the gender of SME owners. For example, there is evidence that women-owned SMEs from the same country are less export-oriented than comparable men-owned SMEs (Orser et al., 2010). In addition, gender is understood and interpreted differently among nations and cultures (Michailova & Hutchings, 2016). Accordingly, gender influences exist in social structure, power, class structure, politics, and business owners' perception of themselves as entrepreneurs and their managerial choices (Orser et al., 2010). Some research points out that women-owned SMEs view exporting as a source of growth (Orser et al., 2010), enabling women to flourish and improve emotionally and professionally (Welch et al., 2008). However, so far, much theorizing has been done at the business level, and few studies fully explain the role that diverse owners play in the variations of home peers' impact on SMEs' export performance. This raises an interesting question: when will women-owned SMEs convert their geographic proximity to home peers into high export intensity?

In this study, we address this question by incorporating overlooked gendered mechanisms in a knowledge spillover perspective on the export effects of home peers. Building on the geographic proximity mechanism that underpins this perspective (e.g., Acs & Sanders, 2013; De Clercq et al., 2008; Felzensztein et al., 2019; Fernhaber & Li, 2010), we draw on other studies that emphasize these two underlying forms of proximity: (1) *social proximity*, which refers to the strength of the interpersonal relationships between focal and reference individuals or groups (Boschma, 2005; Kornberger & Clegg, 2004; Small & Adler, 2019) and (2) *cognitive proximity*, which refers to the degree to which a focal individual or group shares similar cognitive resources (i.e., prior knowledge and experiences) and representations (i.e., mental models of reality) with a reference individual or group (Knoben & Oerlemans, 2006).

When a focal group is geographically closer to a reference group, the former can require fewer social ties to reach the latter (Small & Adler, 2019). In addition to this improved social proximity, the focal group could experience closer cognitive proximity – as reflected in a more similar knowledge base (Nooteboom, 2000). A key implication is that the focal group may better access and process the external knowledge the reference group's actions convey. However, we expect these processes to vary when gendered linkages between the focal and reference groups exist.

We apply our framework to the export context by focusing on SMEs and home peers at a country's regional and national levels to capture the export effects of closer geographic proximity. However, these processes could be subject to gender influences. Given the prevalence of men-dominated business networks and homophilous patterns of social interactions (McPherson et al., 2001; Renzulli et al., 2001; Rosenbaum, 2017; Rua-Gomez et al., 2022), men and women could vary in terms of the salience and accessibility of same-gender home peers at the regional level. To test our theoretical framework, an analysis of a sample of 9,977 Canadian SMEs was conducted. The results show that, among other things, home peers' positive impact on SMEs' export intensity is more significant when their owners are exposed to a larger number of relatively close same-gender home peers (i.e., same-gender regional home peers). Moreover, we show that such positive home-peer effects on SMEs' export intensity are even stronger for women business owners than men business owners.

We make several significant contributions. First, since there is limited systematic evidence on the relationship between home peers and SMEs' scale of export activity (Choquette & Meinen, 2015; De Clercq et al., 2008), we contribute empirically by comprehensively analyzing this understudied relationship. Second, we contribute theoretically by articulating a nuanced knowledge spillover perspective on SME exporters. We clarify the social and psychological mechanisms through which geographic proximity engenders external export knowledge. In addition, we explain why the gender of business owners is a critical boundary condition. By making these contributions, we add to the knowledge spillover perspective on exporting (De Clercq et al., 2008; Felzensztein et al., 2019; Fernhaber & Li, 2010), emerging research streams on home peers (e.g., Sui et al., 2019), and women entrepreneurship research in the international entrepreneurship (IE) field (e.g., Lee et al., 2016; Orser et al., 2010; Pergelova et al., 2018; Welch et al., 2008). Finally, practicing women entrepreneurs and policymakers will likely find our evidence-based insights helpful.

THEORETICAL FRAMEWORK

A Knowledge Spillover Perspective

A knowledge spillover perspective is helpful for understanding why value-added business activities can emerge when economic actors co-locate their operations (Acs & Sanders, 2013). As a key underlying mechanism, geographic proximity is generally understood to drive knowledge diffusion and commercial opportunities among them (Cassar & Nicolini,

2008; Ghio et al., 2015). The exact mechanism could be at work when SMEs and exporters co-locate their activities (e.g., Choquette & Meinen, 2015). As home peers, exporters may unintentionally serve as knowledge providers because they cannot fully internalize and capitalize on their accumulated knowledge and, hence, may convey some of this knowledge to less established firms, such as SMEs, that can observe what they do – including which foreign markets they enter and the entry mode they use, or how they modify, price, market, and deliver their products or services when operating in foreign markets (e.g., De Clercq et al., 2008; González-Pernía & Peña-Legazkue, 2015; Harasztosi, 2016).

The export effects of geographic proximity may operate through social and cognitive proximity. People have different experiences of who interacts with whom and how much (Freeman & Webster, 1994). As previously stated, social proximity captures the strength of the interpersonal relationships (i.e., from acquaintances to close friends or relatives) between focal and reference individuals or groups (Boschma, 2005; Kornberger & Clegg, 2004; Small & Adler, 2019). In a management setting, social influence can be triggered by perceived homophily and genuine homophily (or social proximity) (Meyners et al., 2017). When geographic proximity engenders social proximity, it is possible for business owners to engage in repeated, face-to-face interactions with contacts that they trust and understand (Storper & Venables, 2004). Moreover, they may reach them through a short chain of contacts if they are not directly connected to their home peers. Thus, improved social proximity can result in better access to home peers. Consistent with this view, there is evidence that investors' spatial and social proximity predicts their access to knowledge (Agrawal et al., 2008). In addition, research tells us that US institutional investors are more likely to invest in firms from regions to which they have stronger social ties (Kuchler et al., 2022).

Closer geographic proximity may also translate into closer cognitive proximity, which we have already defined as the degree of similarity in cognitive resources and representations of focal and reference individuals or groups (Knoben & Oerlemans, 2006). Cognitive proximity makes it easier for businesses to comprehend one another and create agreements that promote reciprocity, particularly when sharing private information (i.e., information of true motives, interests, or sources of competitive advantage) (Sánchez-García et al., 2023). The chance of being cognitively close can increase with geographic proximity because of the increased potential for a shared knowledge base among co-located business owners (Nooteboom, 2000). This knowledge base could enable them to process the experience-based or tacit aspects of the external knowledge that home peers convey when they make observable strategic decisions (i.e., export goods or services to specific markets or regions). Thus, while being socially closer to home peers can make them more accessible, being cognitively closer could improve knowledge processing.

These insights are yet to be applied to explain the potential for variation in the export intensity of SMEs that co-locate with home peers at the regional and national levels. Moreover, the peer effect may manifest differently in men's and women's peer groups (Arcidiacono & Nicholson, 2005). Since women-owned SMEs can have a lower export orientation than comparable men-owned SMEs in similar places (Orser et al., 2010), it would be beneficial to understand the

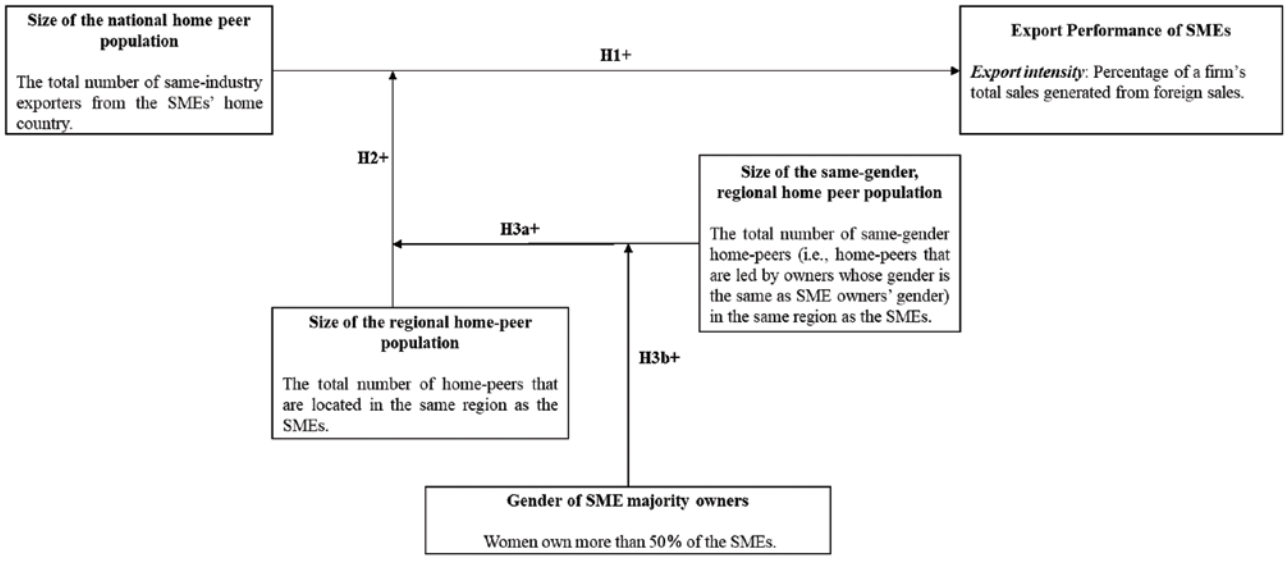

FIGURE 1 A Conceptual Model of the Linkages Between the Home-Peer Population and SMEs' Export Performance. SMEs, small- and medium-sized enterprises

consequences of gender as a contingent influence on home-peer effects. Building on the articulated insights, we propose a gendered knowledge spillover perspective to address these issues. Figure 1 illustrates our conceptual model. The main horizontal line captures the baseline relationship between the size of the national home-peer population (HPP) and SMEs' export intensity. The other lines indicate our extended model, which accounts for the influences of these contingent factors: (1) the geographic proximity of the HPP (i.e., the presence of regional home peers), (2) the gender composition of the HPP (i.e., the presence of same-gender regional home peers), and (3) the gender of SME owners [i.e., women (majority) ownership].

HYPOTHESES

Effect of the Size of the National HPP on SMEs' Export Intensity

Starting with the size of the HPP, we propose that SMEs can achieve higher export intensity when they have a larger national HPP in their home country. The larger the population of national home peers, the higher the chance of social and cognitive proximity between these home peers and focal SME owners. This can occur because these owners are likelier to find a home peer with pre-existing social ties or shared mental models. In this case, our theoretical framework associates increased social and cognitive proximity with an enhanced ability to not only reach a trusted home peer but also identify and meaningfully process the tacit information embodied in its observable, strategic behaviors (Nooteboom, 2000; Storper & Venables, 2004). Consequently, we expect focal SME owners to access and process export-relevant knowledge (e.g., product-market fit for specific export destinations) embodied in the observable strategic decisions of home peers (Choquette & Meinen, 2015; De Clercq et al., 2008). In doing so, they could be better positioned to execute home peers' export strategies. For instance, besides exporting to the same foreign markets and applying similar marketing tactics, these focal SME owners could partially replicate and justify what home peers do as exporters. Thus, having more national home peers could help SMEs increase their export activities' scale. Therefore, we propose the following baseline hypothesis:

> ***Hypothesis 1:*** *The size of SMEs' national home-peer population positively impacts their export intensity.*

Contingent Effect of Regional Home Peers

To account for the benefits of improved geographic proximity to home peers, we consider the additional export gains that could come from proximity to a regional HPP. Specifically, we propose that the positive effect of the national HPP on SMEs' export intensity depends on the prevalence of home peers in their region. Based on our framework, we associate a shift from national to regional home peers with shorter social and cognitive distances between home peers and focal SME owners. Put differently, if home peers are geographically closer to focal SME owners, the latter are more likely to find home peers with whom they have prior interactions, professional relationships, and shared beliefs about how the world works. As previously argued, we expect these conditions to improve focal SME owners' ability to access and process the export-enabling knowledge embodied in observable home peers' behaviors (cf. Boschma, 2005; Felzensztein et al., 2019; cf. Knoben & Oerlemans, 2006). The underlying knowledge transfer will enable them to expand the scale of their export activity. For example, compared to national home peers, they will be better positioned to identify and enter regional home peers' export markets or similar foreign markets at a relatively low cost. Therefore, we propose the following hypothesis:

> ***Hypothesis 2:*** *The positive effect of the home-peer population on SMEs' export intensity is larger when home-peers come from the same region (i.e., state or province) as the SMEs.*

Contingent Effect of Same-Gender Regional Home Peers

To extend our previous theoretical insights and predictions, we consider the gender composition of the regional HPP. Specifically, we propose that the positive effect of the regional HPP on SMEs' export intensity depends on the gender composition of this population. Since gender and the socially constructed or gendered roles around it represent important identity markers (Delphy, 1993; Frable, 1997; Pichevin & Hurtig, 1996), we expect gendered patterns of homophilous social interactions, coupled with men-dominated business networks (McPherson et al., 2001; Renzulli et al., 2001; Rosenbaum, 2017). Under these conditions, we expect same-gender regional home peers (i.e., home-peer owners with the same gender as the focal SME owner) to be more prominent and, hence, more salient than other regional home peers. This implies that focal SME owners could have an enhanced ability to access and process export-enabling knowledge from same-gender regional home peers compared to other regional home peers. As a result, focal SME owners could have an even more enhanced ability to derive and deploy export-enabling knowledge from same-gender regional home peers and, consequently, can even more cost-effectively support their firms' expansion into the same-gender regional home peers' export destinations or similar foreign markets. Therefore, we propose the following hypothesis:

Hypothesis 3a: *The positive effect of the regional home-peer population on SMEs' export intensity is larger when they are same-gender home peers (i.e., home peers led by owners whose gender is the same as SME owners' gender).*

Contingent Effect of Same-Gender Regional Home Peers in Women-Led SMEs

Finally, we consider the potential for women to respond more strongly to same-gender home peers than men. Specifically, we expect the positive effect of same-gender regional home peers on SMEs' export intensity to be more significant in women-led SMEs than in men-led ones. In line with our previous discussion, we recognize that women owners predominantly encounter gendered social situations that can significantly constrain their opportunity space, access to resources, and range of strategic decisions (Ahl, 2006; Balachandra et al., 2019; Bigelow et al., 2014; Kanze et al., 2018; Wheadon & Duval-Couetil, 2019; Wieland et al., 2019). They are more likely than their men counterparts to be constrained by gendered mental representations of themselves (i.e., having self-knowledge or self-definitions that imbue gender or gender categories with deep meaning), others (i.e., categorizing men as members of a traditionally dominant group), tasks (i.e., perceiving certain business functions or ventures as being less suitable for women), or the broader external environment (i.e., categorizing the external environment in terms of the subordinate position of women) (Frable, 1997; Pichevin & Hurtig, 1996; Roberts, 2005). Prior research indicates that peers may provide learning opportunities and access to essential networks (Markussen & Røed, 2017). Some scholars believe that women may benefit more than men from network or social proximity (Rua-Gomez et al., 2022). Consequently, women owners are more likely than men owners to encounter more salient and accessible information cues about same-gender regional home peers (cf. Rua-Gomez et al., 2022). Thus, we expect women owners to more consistently access and process external knowledge from same-gender regional home peers than men owners. As a result, women owners can realize a more significant gain in export-enabling knowledge when exposed to same-gender regional home peers. Consequently, they could have an enhanced ability to use such knowledge to increase the scale of their export activity – possibly through a proportionally higher increase in the sale of goods or services to the export destinations of same-gender regional home peers or similar foreign markets compared to men-owned businesses. Therefore, we propose the following hypothesis:

Hypothesis 3b: *The positive effect of the same-gender, regional home-peer population on SMEs' export intensity is larger when SMEs are led by women (majority) owners than men (majority) owners.*

METHODOLOGY

Data and Sample

To test our hypotheses, this study utilizes the 2011 Survey on Financing and Growth of Small and Medium Enterprises (SFGSME) database maintained by the Centre for Data Development and Economic Research (CDER) at Statistics Canada. The survey was conducted by Statistics Canada on behalf of Innovation, Science and Economic Development Canada, with the target population being private and for-profit Canadian SMEs with 1 to 499 employees and generating between $30,000 and $50 million in annual revenues. The Business Register maintained by Statistics Canada was used to derive the target population. The sample was randomly selected and stratified by region, industry, number of employees, age of business, and participation in the Canadian Small Business Financing Program to ensure representativeness. Extensive firm demographic data and attributes of the primary owners were collected through computer-assisted telephone interviews conducted from February 13 to June 10, 2012. The SFGME database is cross-sectional and uses 2011 as the reference period. The completion rate was 39.8%, resulting in 9,977 unique firm observations.

Dependent Variables

Our dependent variable, Export Intensity, is derived from the SFGSME survey question, "In 2011, what percentage of your total sales was made outside of Canada (export sales)?" This variable is among the most commonly used indicators of export performance, or export market presence or commitment, in the literature on SME internationalization and international new ventures (Kiss et al., 2018; Morgan et al., 2018; Sui et al., 2019; Wang & Ma, 2018).

Explanatory Variable

Consistent with established studies (i.e., Sui et al., 2019), we measure the HPP by the count of same-industry exporters in the home country. According to SFGSME, the industries are classified as accommodation and food, construction, manufacturing, agriculture/primary, retail trade, wholesale trade, transportation, professional services, and other industries. *National HPP* is measured by the count of same-industry exporters from the home country (Canada). In contrast, *Regional HPP* is measured by the count of same-industry exporters from the same region (i.e., province or states) of the home country as the SMEs. The areas in Canada are classified at the provincial level as follows: New Brunswick, Prince Edward Island, Nova Scotia, Newfoundland and Labrador, British Columbia, Ontario, Alberta, Saskatchewan, Manitoba, and Québec. In line with Orser et al. (2010), a business is classified as women-owned if its women ownership is

greater than 50%, and men-owned otherwise. Accordingly, *Same-gender Regional HPP* is measured by the count of same-gender, same-industry exporters from the same region of the home country.

Control Variables

We included several owner- and firm-specific control variables in our analysis that might impact a firm's export intensity. As mentioned earlier, *Women-owned* is a dummy variable, which equals one if the firm's women ownership is greater than 50% and zero otherwise (Orser et al., 2010). Prior research highlights the importance of owners' immigrant background on SMEs' export orientation (Sui et al., 2015; Wang & Liu, 2015). We created a dummy variable, *Immigrant*, which equals one if the firm's majority owner was born outside Canada and zero otherwise (Morgan et al., 2018; Neville et al., 2014; Sui et al., 2015). We also accounted for *Firm Size* as a measure of firm resources. It was calculated as the logarithm value of the company's number of employees plus one. This variable is critical because prior studies find that firms with more resources are more likely to export (Bonaccorsi, 1992). In their analysis of the determinants of SMEs' export intensity and its performance effects, Morgan et al. (2018) confirm the importance of innovation performance – measured by SMEs' formal intellectual property (IP), including patents. However, since few women owners in our sample formally protect their IP this way, using a standard, output-based measure of innovation can systematically understate their relative innovation performance. On the contrary, a relatively large number of Canadian SMEs, in general, and women-owned SMEs, in particular, carry out some R&D spending. Therefore, we chose this input-based measure of innovation performance over an IP-based one. More generally, it is essential to control *R&D* spending because previous research considers it an important indicator of intangible assets that contribute to firm internationalization and success (Ito & Pucik, 1993; Lefebvre et al., 1998). In addition, it measures a firm's commitment to innovation (Balkin et al., 2000). We measured *R&D* as the logarithm value of the company's research and development expenditures plus one. Prior research has suggested that more experienced business owners are more likely to export than their less experienced peers (Debrulle & Maes, 2015; Majocchi et al., 2005; Robson et al., 2012). Therefore, we account for *Business Experience*, measured by the number of years of experience the majority owner has in owning or managing a business. Interestingly, Morgan et al. (2018) show that differences in SMEs' export intensity are related to differences in their use of formal finance, as reflected in the use of either debt finance (i.e., bank loans) or equity finance (i.e., funding from business angels or venture capital funds). However, we departed from their approach by incorporating debt and equity finance as two distinct variables in our analysis. It is appropriate to do so because previous research has shown that Canadian banks do not systematically discriminate against women entrepreneurs (Fabowale et al., 1995). At the same time, there is recent evidence that private equity investors are likely to do so (i.e., Balachandra et al., 2019). This implies that gender effects are likely to be particularly pronounced in the case of equity finance. Therefore, it is reasonable to focus on equity finance, rather than formal finance, when theorizing about the separate or joint effects of women ownership and access to formal finance on SMEs' export intensity. We measured *Equity Finance* as a dummy variable, with a value of one if the company used private equity (i.e., funding from business angels) to finance its operations and zero otherwise. (We address the use of debt finance as a control variable below.) Given the limited track record of less established companies (i.e., new ventures and SMEs) and the risks they pose to traditional financial institutions (i.e., commercial banks), equity-based finance is an essential export-enabling factor because it might alleviate external financing constraints and, consequently, their potential adverse impact on SMEs' export activity (Berger & Udell, 1998; Carter & Allen, 1997). In addition, equity-based finance is also an export-enabling resource because private equity investors often provide helpful strategic advice, connections, and reputational capital to their portfolio firms (Fernhaber & McDougall-Covin, 2009).

Turning to the remaining control variables, we also accounted for *Previous Performance*, measured as a firm's ratio of profits to assets in 2010 (the previous year). In keeping with our previous discussion, we also controlled for *Debt Finance*, a dummy variable, which equals one if the company used credit from financial institutions to finance its operations. Prior research has highlighted the importance of business owners' education for SMEs' export activity (Westhead et al., 2001). For example, Morgan et al. (2018) show that SMEs' intensity is higher, on average, when their owners have a college or undergraduate level of education. However, prior research suggests that women are likely to face distinct challenges when they try to pursue higher levels of education, particularly at prestigious universities (Weeden et al., 2017) or in fields – i.e., science, technology, engineering, and mathematics – that directly support the development of globally oriented, technology-intensive ventures (Carrell et al., 2010; Hango, 2013). Therefore, we controlled for *Graduate Degree*, measured as a dummy variable that equals one if an owner's highest degree of education is at the master's level or above, and zero otherwise. In addition, we controlled *Firm Age*, measured as the number of years since inception in 2011. In line with previous related studies (e.g., Mudambi & Zahra, 2007), we controlled industry and location dummy

variables to consider macroeconomic or environmental factors. Specifically, we controlled for the following industry dummy variables: accommodation and food, construction, manufacturing, agriculture/primary, retail trade, wholesale trade, transportation, professional services, other service, and all other industries. Based on a firm's geographic location, we controlled for the following provincial regional dummy variables: New Brunswick, Prince Edward Island, Nova Scotia, Newfoundland and Labrador, British Columbia, Ontario, Alberta, Saskatchewan, Manitoba, and Québec.

Statistical Method

The Tobit model was selected to analyze censored data, a feature inherent to our dependent variable, export intensity. Since export intensity, measured as a percentage of total sales, has an upper bound of 100%, it is right-censored. The Tobit model effectively manages this type of censoring by accommodating the upper limit, making it an ideal choice for our analysis.

RESULTS

Descriptive statistics are presented in Table 1. As the results from Table 1 show, 15% of the SMEs are majority-owned by women. Table 2 presents the regression of export intensity based on a Tobit regression model and includes three different models. Model 1 examines the effects of the national HPP on export intensity and confirms that SMEs are more likely to export intensively when there are more same-industry exporters in the home country (β = 0.160, p=0.001). This result supports our first hypothesis. A one-standard-deviation increase in the national HPP is expected to increase a focal SME's export intensity by 1.19% (0.160 × 136.47/18.32), holding all other variables constant. Given that the average export intensity is 5.34% among the SMEs in our sample (Table 1), a 1.19% increase in a focal SME's export intensity is economically significant. Thus, the effect of the national HPP on SMEs' export intensity is both statistically and economically relevant. Model 2 examines the impact of the regional HPP on SMEs' export intensity and confirms that SMEs are more likely to export intensively when there are more same-industry exporters in the home country (β = 0.486, p=0.000). Comparing the size of the coefficient of the regional HPP (β = 0.486, Model 2) and that of the national HPP (β = 0.160, Model 1), we conclude that the effect of the HPP on SMEs' export intensity is larger when home peers come from the same region as SMEs. Thus, Hypothesis 2 is supported.

Model 3 shows that the effect of the same-gender regional HPP on a focal SME's export intensity is positive and significant (β = 0.527, p=0.000). Comparing Model 3 and Model 2, we conclude that the effect of the regional HPP on SMEs' export intensity is larger when home peers are led by owners with the same gender as SME owners – since the size of the coefficient of the same-gender regional HPP is larger than that of the regional HPP (0.527 vs. 0.486). Thus, Hypothesis 3a is supported.

To assess if the effect of the same-gender regional HPP on SMEs' export intensity is larger when SMEs are led by women owners, as opposed to men owners, Table 3 reports the separate regression analysis for women-owned and man-owned SMEs. Results from Table 3 suggest that the effects of the same-gender regional HPP on a focal SME's export intensity are positive and significant for both women-owned (β = 9.261, p=0.000) and man-owned (β = 0.524, p=0.000) SMEs. Comparing the size of the coefficients on export intensity, our results show that the effect of the same-gender regional HPP is larger for women-owned than for men-owned SMEs (9.261 vs. 0.524). Holding all other variables constant, a one-standard-deviation increase in the same-gender regional HPP is expected to increase a women-owned SME's export intensity by 7.07% and a man-owned SME's export intensity by 0.4%. Thus, Hypothesis 3b is supported.

Additional Robustness Check

We conducted the following additional analyses to verify the robustness of our main results. First, instead of using the number of employees as our measure of firm size, we used financial measures such as revenue and assets. Second, instead of incorporating robust standard errors clustered at the industry level, we incorporated robust standard errors clustered at the provincial level. Third, besides examining women-majority-owned SMEs (SMEs with more than 50% women ownership), we investigate SMEs with any women ownership (Table 4). The results were entirely consistent with our main results in all these variations.

DISCUSSION

We have articulated a gendered knowledge spillover perspective to explain the relationship between home peers and SMEs' export intensity, focusing on the contingent role of gender. We found a positive relationship between the size of the national HPP and SMEs' export intensity. In addition, the evidence suggests that this relationship is stronger when SME owners are exposed to more regional home peers, especially same-gender regional home peers. Compared to men-led SMEs, we also found that women-led SMEs realize a more substantial increase in their export intensity when exposed to more same-gender regional home peers. We interpret these findings to be consistent with our proposed perspective.

TABLE 1 Descriptive Statistics

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Export intensity	1															
2	National HPP	0.16*	1														
3	Regional HPP	0.16*	0.67*	1													
4	Same-gender regional HPP	0.18*	0.63*	0.93*	1												
5	Previous performance	0.00	−0.03*	−0.03*	−0.03*	1											
6	Women-owned	−0.07*	−0.07*	−0.05*	−0.24*	−0.01	1										
7	Immigrant	0.08*	0.02	0.06*	0.06*	0.01	0.02	1									
8	Business experience	0.01	0.02	0.03*	0.05*	−0.02	−0.11*	−0.02	1								
9	Graduate degree	0.09*	0.10*	0.07*	0.06*	0.04*	0.04*	0.11*	−0.05*	1							
10	Firm size	0.14*	−0.02	−0.00	0.02	0.02	−0.10	−0.03*	0.07*	0.06*	1						
11	R&D	0.21*	0.20*	0.17*	0.18*	0.01	−0.06*	0.02*	−0.01	0.09*	0.17	1					
12	Equity	0.10*	0.08*	0.02	0.04*	0.18*	−0.13*	−0.05*	0.09*	0.02	0.40*	0.10*	1				
13	Debt finance	0.04*	0.01	0.02	0.02	−0.01	−0.04*	0.01	−0.01	−0.00	0.18*	0.12	0.08	1			
14	Firm age	−00.2	0.01	0.05	0.05*	−0.07	−0.05*	−0.06*	0.28	−0.01	0.19*	−0.01	0.12*	0.02	1		
15	English	0.02	0.02	0.02	0.03*	0.04*	−0.01	−0.25*	0.04*	0.01	0.06*	0.00	0.00	0.04*	0.07*	1	
16	French	−0.06*	−0.02	−0.07*	−0.07*	−0.04*	0.01	−0.20*	−0.02	−0.05*	−0.04*	−0.01	0.03*	−0.05*	−0.03*	−0.75	1
	Mean	5.34	158.69	33.85	28.58	0.42	0.15	0.12	22.16	0.11	2.10	1.183	0.13	0.27	24.47	0.63	0.25
	SD	18.32	136.47	44.33	40.51	0.48	0.36	0.33	11.76	0.31	1.27	3.394	0.33	0.45	19.65	0.48	0.43

Note: Observations = 9,977
*p<0.01
HPP, home-peer population; SD, standard deviation

TABLE 2 Regression Results on Export Intensity: Tobit Model

	(1)	(2)	(3)
National HPP	0.160*** (0.047)		
Regional HPP		0.486*** (0.132)	
Same-gender regional HPP			0.527*** (0.123)
Previous performance	5.378 (4.915)	4.396 (5.032)	4.615 (5.126)
Women-owned	−18.489** (8.466)	−19.150** (7.973)	−15.345** (6.074)
Immigrant	14.000*** (5.178)	15.167*** (5.784)	13.939** (5.745)
Business experience	0.118 (0.176)	0.137 (0.188)	0.150 (0.185)
Graduate degree	7.547 (11.942)	8.837 (11.841)	8.769 (12.263)
Firm size	7.588** (3.323)	7.781** (3.655)	7.940** (3.642)
R&D	3.271*** (0.616)	3.464*** (0.639)	3.465*** (0.630)
Equity	0.967*** (0.370)	1.079*** (0.380)	1.125*** (0.411)
Debt finance	−0.295 (5.151)	0.371 (5.206)	0.726 (5.082)
Firm age	−0.202** (0.082)	−0.184** (0.092)	−0.180* (0.093)
English	13.556** (6.153)	13.946** (5.989)	12.789** (6.269)
French	−7.274 (8.456)	7.730 (10.783)	6.185 (10.202)
Constant	−135.726*** (21.112)	−144.308*** (23.032)	−144.453*** (20.568)
Regional dummies	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes
Sigma	65.977*** (4.253)	66.030*** (4.392)	65.97*** (4.440)
Observations	9,977	9,977	9,977

Note: In this table, a firm is considered to be women-owned if its women ownership measure is bigger than 50%
Robust standard errors in parentheses
HPP, home-peer population
*Significant at the 10% level; **Significant at the 5% level; ***Significant at the 1% level

Our article makes several significant contributions. First, we contribute empirically by providing new systematic evidence on an understudied relationship in the IE literature (e.g., Fernhaber & Li, 2010; Sui et al., 2019) – the relationship between home peers and SMEs' export performance. Specifically, we add to the sparse stock of evidence on this relationship by showing that home peers' positive impact on SMEs' export intensity is larger when their owners, in general, and women owners in particular, are exposed to geographically closer, same-gender home peers (i.e., same-gender regional home peers vs. other regional or national home peers).

Second, we contribute theoretically by presenting a nuanced knowledge spillover perspective that coherently explains and predicts how the variation in the geographic proximity of focal SME owners and home peers is related to the variation in SMEs' export intensity. Building on prior research on knowledge spillovers (i.e., Acs & Sanders, 2013), we clarify the geographic proximity mechanism

TABLE 3 Regression Results on Export Intensity: Split Sample

	Women-Owned	Men-Owned
Same-gender regional HPP	9.261*** (1.505)	0.524*** (0.144)
Previous performance	1.956 (12.140)	5.176 (5.029)
Immigrant	16.260 (17.249)	12.84** (5.852)
Business experience	0.640 (0.540)	0.110 (0.188)
Graduate degree	19.031 (17.673)	6.326 (11.935)
Firm size	1.412 (8.653)	8.646** (3.437)
R&D	2.377** (1.152)	3.462*** (0.616)
Equity	0.136 (1.330)	1.109*** (0.378)
Formal finance	−20.604 (20.333)	1.274 (4.530)
Firm age	−0.914** (0.357)	−0.129 (0.104)
English	55.156** (21.475)	8.618 (5.741)
French	43.218** (18.247)	4.977 (10.383)
Constant	65.468*** (8.945)	65.32*** (4.805)
Regional dummies	Yes	Yes
Industry dummies	Yes	Yes
Sigma	−186.330*** (24.255)	−142.563*** (23.678)
Observations	1,221	8,756

Note: Robust standard errors in parentheses
HPP, home-peer population
*Significant at the 10% level; **Significant at the 5% level; ***Significant at the 1% level

by connecting it to social and cognitive proximity in the less-studied context of SME exporters. In this setting, the export-enhancing benefits of increased geographic proximity between focal SME owners and home peers operate through closer social and cognitive proximity. This could be manifested in a superior ability to access and process external knowledge from home peers when they are both geographically close and have the same gender. Furthermore, we clarify why women-led SMEs' export intensity is more sensitive to same-gender home peers than men-led SMEs. By providing these nuanced theoretical insights and new evidence, we also contribute by adding to prior IE research on the relationship between home peers and export performance (e.g., Fernhaber & Li, 2010; Sui et al., 2019) and the relationship between business owners' gender and export performance (e.g., Lee et al., 2016; Orser et al., 2010; Pergelova et al., 2018; Welch et al., 2008).

For the first research stream, prior research primarily predicts a positive link between home peers and new ventures or SMEs' export performance – i.e., entry into foreign markets, international sales, or survival in export markets – by appealing to the conventional spillover perspective, or variants of this perspective that evoke vicarious learning-, imitation-, or legitimacy-based reasoning (e.g., Fernhaber & Li, 2010; Sui et al., 2019). However, since theorizing in these studies is primarily done at the firm level, they do not adequately explain the role that diverse owners play in the variations of home peers' impact on SMEs' export performance. In addition to filling this gap with a new mechanism and supportive evidence on the role of SME owners, our study adds to prior

TABLE 4 Robustness Test

	All SMEs	SMEs with Women Owners	SMEs Without Women Owners
Same-gender regional HPP	0.704*** (0.164)	4.400*** (1.389)	0.757*** (0.212)
Previous performance	5.059 (5.686)	1.405 (5.480)	16.188** (8.034)
Women-owned	−14.075** (6.030)		
Immigrant	14.07** (6.031)	7.241 (10.913)	19.25** (8.857)
Business experience	0.218 (0.191)	0.398* (0.218)	0.140 (0.223)
Graduate degree	10.907 (12.187)	9.203 (14.221)	10.450 (10.078)
Firm size	7.652* (3.939)	4.402 (4.444)	10.538** (4.346)
R&D	3.892*** (0.647)	3.310*** (0.485)	3.933*** (0.918)
Equity	1.298*** (0.405)	1.400*** (0.429)	0.910** (0.454)
Debt finance	0.468 (5.014)	−1.810 (9.431)	1.630 (3.865)
Firm age	−0.204* (0.107)	−0.393 (0.334)	−0.048 (0.137)
English	11.175** (5.182)	7.780 (7.937)	14.398** (6.906)
French	−2.738 (8.570)	−6.298 (14.26)	8.627 (10.364)
Constant	−136.845*** (19.884)	−134.824*** (24.820)	−154.690*** (22.838)
Regional dummies	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes
Sigma	66.965*** (4.429)	68.290*** (5.959)	64.593*** (4.094)
Observations	9,977	4,310	5,667

Note: For the purpose of this table, a company is classified as having women ownership if its measure of women ownership is greater than zero
Robust standard errors in parentheses
HPP, home-peer population; SMEs, small- and medium-sized enterprises
*Significant at the 10% level; **Significant at the 5% level; ***Significant at the 1% level

related work by pointing to potentially intertwined boundary conditions or contingent factors – namely, the geographic proximity and gender of focal SME owners and home peers.

For the second research stream, we emphasize our contribution to the inadequately studied research on the relationship between business owners' gender and export performance in SMEs. Our study can contextualize the previously reported gender gap in export orientation across SMEs (Orser et al., 2010). Precisely, since women-led SMEs' export intensity is relatively sensitive to the presence of same-gender home peers, their relatively low export orientation could partially reflect their limited access to such home peers. However, the underlying reasons for this situation are less clear. According to social and liberal feminist perspectives (Ahl, 2006; Fischer et al., 1993), women owners' disproportionately low participation in export activities could reflect a complex interplay between individual factors (i.e., gender differences in preference for exporting and other international business activities) and the situational factors (i.e., gender-specific barriers to exporting and other forms of international expansion). Our findings suggest that it is worthwhile to focus on barriers to inhibit the rise of women home peers at the regional level.

Implications for Entrepreneurs

Our study also contributes to the practice of IE. Business owners in general, and women owners in particular, could find it helpful to know that they can increase the scale of their export activity by operating close to same-gender regional home peers. According to our knowledge spillover framework, they can better access and process valuable external knowledge when they do so. We think that women entrepreneurs with global aspirations are particularly likely to find these insights helpful. Prior research tells us that many women have a positive attitude toward exporting – specifically, they perceive it as an avenue for both personal growth and business development (Welch et al., 2008). However, given the relatively few women entrepreneurs who operate export businesses (i.e., women home peers), the perceived lack of role models might discourage many women from becoming exporters, or increasing the scale of their export activity. Therefore, our study conveys a timely message by showing that women entrepreneurs can achieve better export performance when they are more consistently attentive to other women owners who operate export businesses in their region.

Implications for Policymakers

Policymakers tasked with designing export promotion initiatives for women entrepreneurs could also find our study helpful. Our theoretical insights and findings suggest that women entrepreneurs can particularly benefit from government-funded initiatives, such as export promotion programs, aimed at raising the level of women participation in international markets and promoting inclusive regional business networks. A notable initiative is the women-only SheTrades online platform, which was recently launched by the International Trade Centre (ITC). A major goal is to connect and empower women in the global marketplace and create a more inclusive business ecosystem for women (ITC, 2015; ITC/SheTrades, 2023). This form of export promotion initiative is appealing because it has the potential to significantly accelerate women entrepreneurs' rate of participation in the global marketplace. At the same time, there is considerable scope for improvement in conventional export promotion programs because they are often not properly marketed to women entrepreneurs, or appropriately designed to cost-effectively meet their distinct needs (Rosenbaum, 2019). Given the relative significance of same-gender regional home peers for women owners, we emphasize that these export promotion programs can promote the transfer of export-enabling knowledge between women owners by raising the level of awareness about women entrepreneurs who operate thriving export businesses in a region.

Limitations and Areas for Future Study

Similar to other studies, our study has limitations that provide opportunities for future research. First, we have developed a knowledge spillover perspective and documented evidence that is consistent with it. However, we recognize that there are opportunities to validate our perspective more comprehensively. Specifically, fine-grained measures or case study evidence could do so by providing deeper insights into social and cognitive proximity for entrepreneurs in general and women entrepreneurs in particular. In addition, it is worth exploring the consequences of interaction between social and cognitive proximity.

Second, our focus on gender differences in SMEs' export performance is primarily related to their export intensity level. However, prior research indicates that they may commit to international markets through direct exporting (i.e., selling directly to foreign customers) or indirect exporting (i.e., using foreign-based brokers or intermediaries) (Fletcher, 2004). It is crucial to explore these alternative approaches to exporting. A third concern is that our study has not examined whether there are systematic differences in the financial returns that women- and men-owned SMEs derive from high export intensity; hence, it leaves unaddressed the question of whether women-owned businesses are financially better off when they increase the scale of their export activity. In light of prior calls for more research on the nature and consequences of heterogeneity among women entrepreneurs (i.e., Hughes et al., 2012; Jennings & Brush, 2013), we are also mindful that our study does not address various intersectional identity markers (i.e., minority or immigrant status), or ownership team structures [i.e., women-only vs. mixed (women–men) teams], which can lead to variation in women owners' access to and processing of export- and performance-enhancing external knowledge.

Finally, we recognize that our country setting could be significantly different from other country settings where many women entrepreneurs operate. Specifically, our country setting is Canada, an advanced developed country known for its gender-egalitarian policies (Ditchburn, 2015; Global Government Forum, 2016; Government of Canada, 2017; Sangster, 2018). Even so, we are mindful that such policies may not fully translate into gender-egalitarian beliefs nationwide – possibly because of the uneven adoption of a supportive regulatory framework across Canadian provinces or municipalities. Therefore, it is conceivable that women entrepreneurs might be situated in more or less supportive social structures across Canada. Still, we expect women entrepreneurs to encounter even less supportive social structures in less developed countries, which adversely affects their international business activities and performance. For example, Pergelova et al. (2018) find that society-wide, gendered

socialization processes pre-condition women chief executive officers (CEOs) of Bulgarian SMEs to favor relatively low-risk entry modes (i.e., exporting as opposed to foreign direct investments) when internationalizing. Meanwhile, Lee et al. (2016) suggest that pervasive gendered socialization processes are at work in Korea. Since entrepreneurship is yet to be viewed as a socially acceptable career path for women in this country, women-led export businesses typically struggle to mobilize the resources they need to increase the scale of their export activity (Lee et al., 2016). Given such cross-country variations in the level or range of institutional support for women entrepreneurs, we recognize that our results might not be generalized to other countries' contexts. When women entrepreneurs operate in countries with less gender-egalitarian policies, beliefs, or social structures, they could find it particularly difficult to mobilize the resources needed to execute an intensive export strategy. Furthermore, they might lack same-gender role models at the regional level, which can be an essential source of export-enabling knowledge. Researchers can build on our work by systematically addressing the issues and concerns we have raised and empirically evaluating our theoretical insights in other country settings.

CONCLUSION

We have presented a gendered knowledge spillover perspective that can explain why home peers' impact on SMEs' export intensity depends on their owners. The variation in these owners' geographic proximity to same-gender home peers could reflect the variation in their social and cognitive proximity to them. This could mean that co-located SMEs vary in their capacity to drive export activities through improved access to and processing of export-enabling external knowledge. We show that women-led SMEs are especially sensitive to the gender of their home peers. In sum, our proposed perspective can advance the theory and practice of IE by clarifying the role of diverse owners. It shows that women entrepreneurs can achieve better export performance when they are more consistently attentive to other women owners who operate leading export businesses in their region. Our study also has policy implications by emphasizing that export promotion programs can make a difference by promoting the transfer of export-enabling knowledge between women owners.

CONFLICT OF INTEREST DISCLOSURES

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