Building the capacity of MSMEs through technology and innovation
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXECUTIVE SUMMARY</td>
<td>4</td>
</tr>
<tr>
<td>ABOUT THE ASIA PACIFIC FOUNDATION OF CANADA</td>
<td>5</td>
</tr>
<tr>
<td>METHODOLOGY</td>
<td>6</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>7</td>
</tr>
<tr>
<td>SECTION 1: COMPANY AND ENTREPRENEUR PROFILES</td>
<td>8</td>
</tr>
<tr>
<td>SECTION 2: GROWTH PLANS AND CHALLENGES TO GROWTH</td>
<td>16</td>
</tr>
<tr>
<td>SECTION 3: INNOVATION AND TECHNOLOGY</td>
<td>19</td>
</tr>
<tr>
<td>CONCLUSION</td>
<td>26</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>28</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

BASED ON THE SURVEY RESULTS of 681 entrepreneurs and micro, small, and medium enterprises (MSMEs) in Vietnam, the Asia Pacific Foundation of Canada report on the 2017 Survey of Entrepreneurs and MSMEs in Vietnam provides an analysis of business development in the region. The survey focused on company profiles: their focus on sustainable development, their growth plans, the barriers to growth that they identified, and their use of technology and innovation. The survey also probed trends related to gender, age, and industry.

Key findings from the 2017 Survey of Entrepreneurs and MSMEs in Vietnam are:

- MSMEs founded by younger entrepreneurs (aged 34 and under) are more likely to be innovative and use technology, be aware of impacts on environmental sustainability, and hire employees with post-secondary education and international experience.

- MSMEs founded by female entrepreneurs, like younger entrepreneurs, are more likely to be innovative and use technology, be aware of impacts on environmental sustainability, and hire employees with post-secondary education and international experience.

- MSMEs do not take sufficient advantage of innovation and technology. Policy efforts should focus on helping them leverage these tools. The most commonly used technologies in MSMEs are the Internet, mobile applications, and design, processing, and manufacturing technology.

- Social media use is increasingly vital for business development. The most frequently used social media platforms are Facebook and instant messaging applications.

- Although not currently a high priority among MSMEs, efforts to improve environmental sustainability may also improve access to foreign markets, heighten innovation, and foster a group of youth and gender-balanced entrepreneurs.

- MSME use of support services is limited. Increased access to support services can mitigate the most prominent barriers to growth highlighted in the survey findings. The largest barrier to growth is financial.

- Most MSMEs identify their companies as traditional, and are not seeking to innovate or have yet to innovate. The industries in which MSMEs are more likely to identify themselves as innovative are entertainment, food processing, and information or communications hardware.
ABOUT THE ASIA PACIFIC FOUNDATION OF CANADA

THE ASIA PACIFIC FOUNDATION OF CANADA is dedicated to strengthening ties between Canada and Asia with a focus on expanding economic relations through trade, investment, and innovation; promoting Canada’s expertise in offering solutions to Asia’s climate change, energy, food security, and natural resource management challenges; building Asia skills and competencies among Canadians, including young Canadians; and improving Canadians’ general understanding of Asia and its growing global influence.

The Foundation is well known for its annual national opinion polls of Canadian attitudes regarding relations with Asia, including Asian foreign investment in Canada and Canada’s trade with Asia. The Foundation places an emphasis on China, India, Japan, and South Korea while also developing expertise in emerging markets in the region, particularly economies within ASEAN.

Visit APF Canada at http://www.asiapacific.ca.
THE SURVEY OF ENTREPRENEURS was developed by The Evidence Network, in collaboration with the Asia Pacific Foundation of Canada, and was conducted in Vietnam by the Da Nang Institute for Socio-Economic Development. In total, information was collected from 681 MSME entrepreneurs (including incomplete responses) – 31 per cent located in Da Nang, 35 per cent in Ho Chi Minh City, and 32 per cent in Hanoi.
INTRODUCTION

MSMES: THE BACKBONE OF APEC ECONOMIES

Among the 21 member economies of the Asia-Pacific Economic Cooperation (APEC), micro, small, and medium enterprises (MSMEs) are the drivers of economic growth and innovation, making up over 97 per cent of total enterprises and employing over 50 per cent of the workforce across the region.¹ In the case of Vietnam, MSMEs account for 40 per cent of gross domestic product (GDP) and employ 77 per cent of the labour force.² As an emerging economy with an average 6.2 per cent projected GDP growth over the next five years, MSMEs are critical to Vietnam’s economic prosperity.

GROWING THE CAPACITIES OF DEVELOPING APEC MSMES

The Asia Pacific Foundation of Canada (APF Canada), in partnership with Global Affairs Canada, is currently implementing the APEC-Canada Growing Business Partnership project. The ultimate outcome of the project is to build the capacities of MSMEs in developing APEC economies by fostering sustainable economic growth and poverty reduction. To that end, APF Canada commissioned The Evidence Network and the Da Nang Institute for Socio-Economic Development to conduct our first national survey on the opportunities and challenges faced by MSMEs and aspiring entrepreneurs around technology and innovation in Vietnam.

The 2017 survey provides new information on companies and entrepreneurs in Vietnam, demonstrating variable industry-, age-, and gender-specific usage of technology and growth plans, as well as common support opportunities and barriers to company growth.

This is the first of four annual APEC economy-specific MSME survey projects commissioned by APF Canada, with future surveys focusing on market access in the Philippines, human capital in Indonesia, and social entrepreneurship in Peru.

² Asia-Pacific Economic Cooperation, SMEs in the APEC Region, https://www.apec.org/-/media/Files/AboutUs/Infographics/20140519_infograph_sme_hires.jpg.
SECTION 1

COMPANY AND ENTREPRENEUR PROFILES

VIETNAM’S ENTREPRENEURS: HIGHLY EDUCATED, BUT INWARD LOOKING

The survey shows entrepreneurs in MSMEs tend to be older (aged 35 and over), mostly male, highly educated, and with little international background. Sixty-four per cent of the entrepreneurs surveyed were aged 35 and above, 63 per cent were male, 78 per cent had a university or college degree, and 85 per cent had no professional or academic experience outside of Vietnam.

Profiles of entrepreneurs

Base: All respondents (n=681)

Q 1.2: What is your current age?
Q 1.3: What is your gender?
Q 1.4: What is your highest level of education?
Q 1.6: Have you studied, worked, or participated in relevant professional development experiences outside Vietnam?
The low percentage of respondents with international experience complements results from a United Nations University (UNU) study that shows that Vietnamese MSMEs are not highly active in foreign markets. In the UNU report, the lack of activity is illustrated both by low export rates and a low prevalence of internationally recognized standards. These results, combined with our survey results, may point to a need to foster international experience among Vietnam’s entrepreneurs in order to create a strong foundation from which to increase foreign market activity.

**VIETNAM’S MSMES: NEW AND SMALL**

MSMEs in Vietnam tend to be new in terms of years in operation and small in terms of number of employees. This is expected, as often newer companies have limited resources and capital to maintain and hire a large staff. While 43 per cent of MSMEs are two years old or younger, 72 per cent of the companies are only five years old or younger.

The fact that younger entrepreneurs (aged 34 and under) account for 52 per cent of the founders of companies established in 2015 or later has important implications regarding the role of youth in the formation of new businesses. These results complement those found in the 2015/16 Global Entrepreneurship Monitor survey for Vietnam, which showed that young people between 18 and 25 were more likely to take advantage of entrepreneurial opportunities, are more capable in this regard, and have higher rates of creating business startups.

---


According to our survey, a majority of companies have a small workforce to carry out operations, with 59 per cent of companies having 10 or fewer full-time paid employees. Female and younger entrepreneurs are more likely to own firms of this size compared to their counterparts. As a consequence, the latter may encounter greater constraints on their ability to grow their business.

**Companies with 10 or fewer full-time paid employees**

![Bar chart showing the distribution of companies with 10 or fewer full-time paid employees by age and gender.]

**Base: All respondents (n=591)**

Q 3.2: How many full-time employees (excluding founders) are there in your company? Full-time is defined as 37.5 or more hours per week. (Full-time paid; Full-time unpaid; Full-time partially paid)

**MSME EMPLOYEES: FEW INTERNATIONAL EXPERIENCES AND LESS EDUCATION**

When it comes to employees with study or work experience outside of Vietnam, a majority of companies have no employees with such experience (65 per cent). Female and younger entrepreneurs are more likely to employ people with international experience, but this is only a marginal difference.

The lack of international experience among employees may act as a future barrier for the MSMEs to enter the global economy. Increasing opportunities for education or work abroad for these individuals could eventually lead to greater foreign market access for the companies that employ them.

While entrepreneurs are highly educated, as indicated previously, most of their employees are not. Survey results show that 47 per cent of companies indicated that less than half of their employees have a college or university degree, compared to the 78 per cent of MSME founding entrepreneurs who have obtained a college or university degree. Findings from our survey point to gender- and age-based differences as well, with female and younger entrepreneurs being more likely to employ people with college or university degrees.
COMPANIES CLUSTERING IN FOUR INDUSTRIES

The industries that MSMEs are most involved in include professional or business services (25 per cent), construction (19 per cent), retail or wholesale (15 per cent), and materials or manufacturing (12 per cent).⁵

⁵ Note: respondents were allowed to choose more than one industry.
The top three industries that female entrepreneurs indicated working in are professional or business services (22 per cent), retail or wholesale (15 per cent), and construction (13 per cent). However, male entrepreneurs still outnumbered female entrepreneurs in terms of raw numbers and percentage of individuals across these industries, with 27 per cent of all male entrepreneurs working in professional or business services, 16 per cent working in retail or wholesale, and 24 per cent working in construction.\(^6\)

In terms of the percentage of female entrepreneurs across industries, female entrepreneurs have a higher participation rate in educational services (8 per cent) and transport and logistics (7 per cent) compared to male entrepreneurs (5 per cent and 4 per cent, respectively).

When looking at the percentage of younger entrepreneurs (aged 34 and under) across industries, they are more likely to be in professional or business services (29 per cent), educational services (9 per cent), and software (6 per cent), and less likely to be in construction (16 per cent), compared to older entrepreneurs (23 per cent, 4 per cent, 2 per cent, and 22 per cent, respectively).

\(^6\) Note: respondents were allowed to choose more than one industry.
PASSION- AND MARKET-DRIVEN MSMES FILLING A GAP

When asked about the rationale for founding their company, respondents most often pointed to passion (41 per cent) as driving their decision, followed by market need (36 per cent) and career advancement (33 per cent).\(^7\)

![Rationale for founding](image)

**Rationale for founding**

- **Passion**: 41%
- **Market Need**: 36%
- **Career Advancement**: 33%
- **Personal Prosperity**: 28%
- **Independence**: 21%
- **Affect Social Change**: 6%

*Base: All respondents (n=601)*

Q 3.6: Why did you create your company? (Please select all that apply)

However, gender differences may exist with respect to the motivations driving enterprise establishment. The 2015/16 Global Entrepreneurship Monitor survey for Vietnam found that the rate of women participating in business startup activities was higher than male participation in 2015, but the reason for participating in such activities was more often due to necessity-driven motives.\(^8\) That research later found that entrepreneurial success was a more likely outcome among those who started a business to exploit entrepreneurial opportunities rather than due to necessity.\(^9\) The data points to a question of gender equity, as the women who are starting businesses at a higher rate may be less likely to see long-term success than the men involved in startups at a lower rate.

---

\(^7\) Note: respondents were allowed to choose more than one rationale.


\(^9\) Ibid, pp 43.
Environmental sustainability is a significant factor in gauging business development, and particularly the ability of a company and industry to enter the global market. This is because companies that seek to enter international markets will need to align their business practices with international environmental standards and quality control norms. In this regard, companies that place greater importance on environmental sustainability may have more favourable prospects of heightening their company’s future activity in foreign markets.

Survey results show gender-, industry-, and age-based trends within the 49 per cent of MSMEs that consider environmental sustainability a priority, a top-three priority, or their top priority. In general, female and younger entrepreneurs are more concerned about environmental sustainability than male and older entrepreneurs.

MSMEs doing work related to the environment, finance, and arts and culture sectors are more likely to see environmental sustainability as a top priority compared to other sectors. However, overall, Vietnamese MSMEs are not prioritizing environmental sustainability.

There is a significant opportunity for Vietnam to improve its internationalization of companies through adoption of environmental standards. It has been previously shown that a significant number of MSMEs do not have quality, environmental, or international standards certification, and this has in fact been a negative trend.10

---

Percentage of companies seeing environmental sustainability as a top priority by industry

- Environment: 60%
- Finance: 50%
- Arts and culture: 44%
- Tourism: 32%
- Hotel or accommodation: 28%
- Software: 24%
- Entertainment: 22%
- Restaurant or food and beverage services: 22%
- Construction: 20%
- Agriculture: 18%
- Educational services: 14%
- Energy, mining, or forestry: 14%
- Health, medical, or biotechnology: 13%
- Information or communications hardware: 12%
- Professional or business services: 10%
- Retail or wholesale: 10%
- Materials or manufacturing: 9%
- Transportation or logistics: 8%
- Food processing: 7%

Base: All respondents (n = 681)

Q5.1 To what extent is environmental sustainability a concern for your company? (Top priority; Top three priority; Priority but not top three; Not a top priority but a concern; Not a top priority and not a concern)
GROWTH PLANS AND CHALLENGES TO GROWTH

SECTION 2

YOUNG ENTREPRENEURS AND HIGHER-GROWTH PLANS

Growth plans vary according to gender, age, and industry. Although only 19 per cent of all companies aim for high revenue growth, younger MSMEs tend to be more ambitious, with 27 per cent aiming for the more profitable – albeit risky – growth plans.

The survey results show that professional or business services, restaurant/food/beverage services, software, and tourism enterprises are more likely to adopt high-growth plans. Given that 77 per cent of all surveyed companies do not intend to export, it is most likely that respondents do not consider engagement in foreign markets as a measure to achieve high growth.

![Growth plan chart]

_Growth plan chart_

*Base: All respondents (n = 617); Aged 34 and under (n = 237); Aged 35 and over (n = 376); Female (n = 238); Male (n = 373) _

Q 2.13 What are your company’s plans for revenue growth? (High growth; Modest growth; No growth; Lower growth)
Vietnam’s female entrepreneurs are more likely to aim for high growth and low or no growth compared to male entrepreneurs, but are less likely to aim for moderate growth. This suggests that a significant group of female entrepreneurs exists on the opposite ends of business growth plans, bringing into question how this trend relates to motivations for founding an MSME, risk aversion, and other gender-differentiated findings.

**FINANCE THE MOST COMMON BARRIER TO GROWTH**

The areas that MSMEs most identified as barriers or high barriers to growth are financial (60 per cent), government regulations and procedures (44 per cent), market access (38 per cent), marketing (37 per cent), and human capital (33 per cent).

In general, a higher percentage of older entrepreneurs identified each option as a barrier or high barrier to growth compared to younger entrepreneurs, with the exception of human capital. When it comes to human capital, while 37 per cent of younger entrepreneurs identify it as a barrier or high barrier to growth, only 31 per cent of older entrepreneurs do the same.

In terms of gender differences, a higher percentage of male entrepreneurs identified each option as a barrier or high barrier to growth compared to female entrepreneurs.

**LIMITED USE OF SUPPORT SERVICES**

Support services provide opportunities to reduce the impact of barriers to growth. However, among the MSMEs surveyed, 22 per cent indicated that they do not have access to any support services. A further 16 per cent of MSMEs indicated that their company is not interested in accessing any support services.
Among the methods of support services, the most common ones that MSMEs accessed were in-person business advisory services (34 per cent), online business advisory services (21 per cent), networking services (15 per cent), and financial support services (14 per cent).\textsuperscript{11}

With Vietnam’s Law on Support for Small and Medium-sized Enterprises (SMEs), including micro enterprises, coming into effect in January 2018, more companies will gain easier access to credit, lower corporate income tax rates, simpler accounting processes, reduced land prices for some infrastructure investors, technological implementation support, market expansion support, counselling and legal support services, and information and business development support services. This is a positive step taken by the government to increase support services to MSMEs.

\textsuperscript{11} Note: respondents were allowed to choose more than one method to access support services.
Innovation and technology pose a tremendous opportunity for Vietnam’s MSMEs to increase global market access, succeed past the startup phase, aim for and achieve high growth, and better engage with international and environmental standards. Our survey results show that MSMEs in Vietnam are not yet extensively engaging with innovative and technological measures to improve business development.

**MSMEs Are Traditionalists Rather Than Innovative**

While research from the UNU study shows that innovative firms are more likely to have better firm performance on the basis of higher profits and revenues, in our survey a majority of MSMEs in Vietnam are either not seeking to innovate or have yet to innovate. This is demonstrated by the fact that 53 per cent of MSMEs identify their companies as traditional. Conversely, 34 per cent of MSMEs consider themselves innovative – either leaders or advanced compared to other companies at the local, regional, or national level. Despite female entrepreneurs being more likely to use technology (see section on Innovation and Technology for results), male and younger entrepreneurs are more likely to identify themselves as innovative.

---

**Innovative MSMEs**

- Total: 34%
- Older (aged 35 and over): 42%
- Younger (aged 34 and under): 22%
- Female: 32%
- Male: 31%

**Base:** All respondents (n = 601); Aged 34 and under (n = 417); Aged 35 and over (n = 184); Female (n = 254); Male (n = 347)

**Q1.** How innovative do you consider your company to be? (National leader; National advanced; Regional leader; Regional advanced; Local leader; Local advanced; New company; Traditional; Other)

Notes: Innovative advanced companies – Companies considering themselves as national leader, national advanced, regional leader, regional advanced, local leader, local advanced in innovation.

---

The top five industries in which MSMEs identify themselves as innovative are entertainment (60 per cent), food processing (60 per cent), information or communications hardware (56 per cent), arts and culture (50 per cent), and environment (50 per cent).

Among the MSMEs surveyed, the most commonly used advanced technologies are the Internet (62 per cent), mobile applications (40 per cent), and design/processing/manufacturing technology (38 per cent). However, trends in the use of such technologies provide valuable insight into where targeted outreach might be most needed or useful. For example, gender- and age-based trends show that 68 per cent of both female and younger entrepreneurs are more likely to use these technologies compared to male (63 per cent) and older entrepreneurs (63 per cent), suggesting that more outreach is needed to demonstrate the benefits of technologies to the latter.

Note: respondents were allowed to choose more than one technology.
Based on the results of our survey, certain advanced technologies are used more actively by specific industries.

The use of mobile applications is quite common among all industries, with 40 per cent of MSMEs utilizing the technology. However, the industries in which MSMEs indicate more prevalent use of mobile applications are software (77 per cent), information or communications hardware (74 per cent), restaurant or food and beverage services (63 per cent), and education services (58 per cent).

Bio- or nanotechnology and green or clean technology are not commonly used among Vietnam’s MSMEs, with only 4 per cent using them. Yet when it comes to agriculture-focused MSMEs, 36 per cent of them have indicated using both of these technologies – much higher than the average.
When it comes to acquiring advanced technologies, most MSMEs used free online or open-source applications (52 per cent). Other methods of acquiring technology are less common, with 15 per cent of respondents using licensed technology, 14 per cent through acquisitions of other companies, 11 per cent purchasing off-the-shelf (pre-made) technology, and 10 per cent developing their own technology.

Note: respondents were allowed to choose more than one source for acquiring technology.
There are slight differences between gender and age in terms of the sources for acquiring technology. Female (58 per cent) and younger entrepreneurs (57 per cent) are more likely to use free online or open-source technologies as compared to their male (52 per cent) and older (53 per cent) counterparts. Conversely, male entrepreneurs are more likely to develop technology (13 per cent) or acquire another company with technology (17 per cent) than female entrepreneurs (6 per cent and 11 per cent, respectively), while older entrepreneurs are more likely to use licensed technology (18 per cent) than younger entrepreneurs (12 per cent).

These results show there is an opportunity to build the capacity of MSMEs by fostering a better understanding of how they can acquire advanced technologies to grow their businesses. For example, companies that are less technical have more room to increase their usage of free online or open-source applications.

**ACQUIRING TECHNICAL KNOWLEDGE THROUGH ONLINE AND PROFESSIONAL AND PERSONAL CONNECTIONS**

Gaining access to key technical knowledge is integral for MSMEs in not only growing their business, but also training their employees. Most MSMEs indicated that their preferred sources of technical knowledge are interactions with colleagues or industry peers (59 per cent), interactions with friends or family outside the company (41 per cent), and online (34 per cent).15

15 Note: respondents were allowed to choose more than one source for acquiring technical knowledge.
Younger entrepreneurs are more likely to use online sources (42 per cent) and academic sources (23 per cent) for technical knowledge compared to older entrepreneurs (32 per cent and 10 per cent, respectively). Male entrepreneurs are more likely to acquire technical knowledge from interactions with colleagues or industry peers (64 per cent) and interactions with friends or family outside the company (45 per cent) than female entrepreneurs (57 per cent and 38 per cent, respectively).

**Sources of technical knowledge**

<table>
<thead>
<tr>
<th>Source of Technical Knowledge</th>
<th>Younger (34 and under)</th>
<th>Older (35 and over)</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interaction with colleagues or industry peers</td>
<td>61%</td>
<td>61%</td>
<td>57%</td>
<td>64%</td>
</tr>
<tr>
<td>Interactions with friends or family outside the company</td>
<td>34%</td>
<td>45%</td>
<td>31%</td>
<td>45%</td>
</tr>
<tr>
<td>Online</td>
<td>42%</td>
<td>32%</td>
<td>37%</td>
<td>35%</td>
</tr>
<tr>
<td>Professional networking (e.g., conferences or trade shows)</td>
<td>23%</td>
<td>24%</td>
<td>29%</td>
<td>23%</td>
</tr>
<tr>
<td>Specialist industry publications</td>
<td>24%</td>
<td>21%</td>
<td>21%</td>
<td>23%</td>
</tr>
<tr>
<td>General sources</td>
<td>23%</td>
<td>22%</td>
<td>21%</td>
<td>23%</td>
</tr>
<tr>
<td>Academic sources</td>
<td>23%</td>
<td>10%</td>
<td>15%</td>
<td>15%</td>
</tr>
<tr>
<td>Innovation  #s</td>
<td>9%</td>
<td>11%</td>
<td>9%</td>
<td>11%</td>
</tr>
</tbody>
</table>

Base: Aged 34 and under (n = 247); Aged 35 and over (n = 402); Female (n = 254); Male (n = 302)

Q.4.5 How do you and your company typically learn about technical advances in your industry? (Please select all that apply)

**SOCIAL MEDIA: FACEBOOK AND MESSAGING APPS**

Social media is increasingly becoming a vital tool for businesses for promoting products and services and engaging customers. The most common social media platforms used at least once a week by Vietnam’s MSMEs are Facebook (60 per cent), Zalo, a Vietnamese-created mobile messaging application (50 per cent), and Viber, a Japanese-created mobile messaging application (33 per cent). Younger entrepreneurs are more likely to use YouTube (30 per cent) and Instagram (16 per cent) weekly compared to older entrepreneurs (20 per cent and 12 per cent, respectively), whereas older entrepreneurs are more likely to use Zalo (54 per cent), Viber (37 per cent), and Twitter (13 per cent) compared to younger entrepreneurs (49 per cent, 32 per cent, and 10 per cent, respectively). Contrasting with earlier trends in technology use, in general, male entrepreneurs tend to use social media platforms on a weekly basis more than female entrepreneurs, with the exception being Instagram.
Percentage of frequent use of social media

Base: All respondents (n = 681)

Q 4.7 How frequently do you or your company use the following social media applications for business and professional networking? (More than once per day; Daily; Weekly; Monthly; Yearly; Don't use)
CONCLUSION

In an increasingly high-tech and fast-paced society, it is imperative that Vietnamese entrepreneurs and MSMEs be at the forefront of technological advancement and innovation. Our survey takes the vital first step of outlining opportunities and challenges faced by Vietnamese MSMEs from their own perspectives. These findings, within the context of quickening industrial changes and market globalization, indicate the necessity of widespread adoption of improved business development and technological capacity-building efforts in Vietnam.

SUPPORT NEEDED FOR FEMALE AND YOUNGER ENTREPRENEURS

Gaps in knowledge and training point to special areas of focus for both young entrepreneurs and female entrepreneurs. Both groups tend to have similar strengths, especially in the areas of recognizing the value of education and international experience in their employee base, prioritizing environmental sustainability, and utilizing certain areas of technology including the Internet and free online or open-source technologies. A primary weakness consistent across both groups is the tendency for female and younger entrepreneurs to own small companies. Small size constrains their ability to grow their business. Support for funding acquisitions, human capital improvement, and business development are recommended to assist these companies expand out of the startup phase.

OVERCOME GENDER-SPECIFIC BARRIERS WITH MORE SUPPORT NETWORKS FOR FEMALE ENTREPRENEURS

The survey found that female entrepreneurs experience additional barriers. Though female entrepreneurs are more likely to use technology, they are less likely to identify themselves as being innovative or to develop their own technology. Our recommendation for heightened capacity-building in this regard aligns with the APEC 2013 Policy Partnership on Women in the Economy Report, which highlights that the capacity of MSME business associations must better reach women. In particular, it explains that support networks are needed to help women more effectively use technology, respond to security concerns, gain financial literacy, and take advantage of opportunities for interaction and sharing of best practices.
TECHNOLOGICAL IMPLEMENTATION AND E-COMMERCE POTENTIAL AVENUES TO BUILD CAPACITY

Capacity-building should focus on particular barriers, with special attention to technological implementation and e-commerce adoption. Our findings demonstrate a wide range of technological use and capacity across industry, age, and gender. Particularly, older entrepreneurs are more likely to use licensed technology rather than take advantage of more accessible free or open-source options. Males are more likely to be “social” in their usage of technology by acquiring knowledge from interactions with colleagues or peers and by using social media platforms regularly. Our recommendation of fostering awareness among MSMEs as to how they can acquire advanced technologies to grow their businesses echoes the 2015 study by the University of Southern California Marshall School of Business that suggests that MSMEs that export their products through e-commerce will more likely persist through their first year of business.
REFERENCES


