

Innovation and Women's Entrepreneurship: An Exploration of Current Knowledge

Presented to
United Nations Conference on Trade and Development

Prepared by
Womenable

Final Draft
May 2010

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Introduction

Enterprise creation has long been known as a driver of economic growth. Ever since the groundbreaking work of Austrian economist Joseph Schumpeter in the 1930's and '40's – investigating and writing about what he termed “creative destruction”¹ – it has become well accepted that new firm formation is an indicator of a healthy and growing economy. New firms challenge the status quo with new ideas or innovative approaches to existing market needs, forcing incumbent enterprises to either improve their products and processes or be overtaken in the marketplace. In this process of economic natural selection, only the fittest firms remain, and economic growth is stimulated.

These forces do not typically work in the same way in a more centrally-controlled economy – where preserving the status quo can prevent the introduction of innovative new ideas. Even when market forces prevail, competition without a legal and policy framework (a “business-enabling environment”) can lead to a similar result. Further, it is also now increasingly recognized that one size does not fit all in terms of economic policy and enterprise support: targeted and proactive policy and programmatic support is needed to foster *small firm* formation and innovation in particular.

So, too, there is growing recognition that fostering small firm formation in general does not ensure economic self-determination and opportunity for all. Women and other socially excluded groups are often left behind if an “open for all” approach is taken to enterprise business development. Women's enterprise development is now a growing field of endeavor around the world: it is on the agenda of most international development agencies and multi-lateral organizations, and is a focus of activity in many foundations and civil society organizations.

Now – at this crossroads of increasing interest in improving business-enabling environments, fostering entrepreneurship, and ensuring the economic empowerment of women – comes a growing focus on fostering economic growth through innovation. It is at this nexus that this project was conceived: to explore what is known about women's entrepreneurship and innovation – looking at both attitudes and behavior within the firm and at the external environment – and to provide recommendations and guidance for an exploratory research study on this topic.

The aim of this report, then, is five-fold:

- To investigate and uncover current knowledge about the process of innovation from a gender perspective – in both developed and developing economies;
- To assess key questions with respect to this issue that remain under-researched or unanswered;
- To examine what impediments to innovation there may be from a structural or societal perspective – and how these impediments may vary by gender;
- To make recommendations for an upcoming research study on gender and innovation that will be conducted in 2010 in six countries; and, more broadly,
- To offer recommendations for policy and practice in the area of fostering a greater level of innovation in women-owned enterprises.

¹ While the theory was developed and discussed earlier in the century, Schumpeter's 1942 book, Capitalism, Socialism and Democracy coined the term and popularized it.

The primary focus of this study is thus on women business owners and their enterprises rather than on women in the labor force – whether in the informal economy, in small- and medium-sized enterprises (SMEs) or in large corporations – or on women who may not even be in the workforce. It is a fact that women are more likely to be found in informal sectors of the economy compared to men. They are also less likely to hold higher-level managerial positions in the formal sector and are less likely to be economically active in the first place, both of which have a dampening effect on the level of enterprise creation among women. These issues – important as they are in an overall sense for enterprise creation – will not be directly addressed in this review.

Several other issues impacting the level of innovation and enterprise creation among women *will* be mentioned however, such as persistent gender gaps in science, technology, engineering or mathematics (STEM) professions and the lower level of commercialization of technologies by women in these fields. Both of these circumstances more directly impact gender differences in the level of innovation in SMEs.

Further, while the immediate purpose of this report is to provide guidance to an upcoming survey research project, the articles and other resources uncovered and listed in the bibliography at the end of this report are a valuable resource for a broader and deeper exploration of the issues of women's economic empowerment and fostering creativity and innovation.

The structure of this report is as follows:

- Chapter 1 will summarize the current state of knowledge about women business owners and their enterprises;
- Chapter 2 will focus on innovation and entrepreneurship in general;
- Chapter 3 will relate what is known about gender and innovation;
- Chapter 4 will categorize the major gaps in knowledge about gender, entrepreneurship and innovation – and offer suggestions for the lines of inquiry that should be taken in the upcoming research study on innovation and women's entrepreneurship; and
- Chapter 5 will offer more general conclusions and recommendations for future exploration, focusing primarily on issues that fall outside the scope of this review.

Executive Summary

Growing Knowledge of Women's Entrepreneurship

There has been a significant increase in fact-based information about women business owners and their enterprises over the past 20 years, coming from research, program evaluation and other efforts. While many gaps in knowledge remain, we do know that approximately 1/4 to 1/3 of the world's formal sector enterprises are owned and operated by women and that women are less likely than men to start businesses and less likely to grow their small firms into larger enterprises.

There is also a growing body of evidence that women approach business leadership and decision-making differently from men, may respond better to targeted educational and training approaches, and bring a different vision and voice to entrepreneurship. Overall, the growing body of knowledge about women business owners and their enterprises can be described as being in one of these four general categories:

- **Counting heads:** statistics related to the number, size, type and growth of women-owned enterprises;
- **Identifying barriers:** uncovering and addressing the continued gender gap in business start-up and growth rates;
- **Motivations and mindsets:** understanding more about gender differences within firms, such as reasons for starting the business, the desire (or lack thereof) to grow, management strategies and leadership styles;
- **Developing integrated frameworks:** moving from "one-off" policies and individual projects to building more comprehensive and sustainable women's enterprise ecosystem – and understanding more about differential gender effects in enterprise policy.

Innovation and Entrepreneurship

Reviewing of how innovation effects small business development in general – and vice-versa – provides an important foundation for the introduction of gender into the equation. First, policy makers have recognized the need for an expanded definition of innovation: one that goes beyond technology and products. The 3rd edition of the Oslo Manual, published by the OECD and Eurostat in 2005, expands the definition and focus of innovation in several important ways:

- Placing greater emphasis on the symbiotic nature of innovation, emphasizing the role of linkages among players in the innovation process;
- Recognizing that innovation can and does occur in less R&D-intensive sectors; and
- Expanding the definition of innovation beyond that which is found in products and processes to also include innovative practices in organizational behavior and in marketing.

That definitional change has made it easier to frame research and policy dialogues concerning entrepreneurship, small business development and innovation.

Research on innovation and entrepreneurship is found to generally focus on one or more of these three areas:

- **Innovation within firms:** looking at an owner's motivations and management style, the structure of internal teams, and other characteristics unique to the owner or the business;
- **The importance of networks and community:** how innovation can be fostered or impeded by the physical location of a business (rural/urban, robustness of infrastructure) or by community characteristics (workforce skill-sets, local support networks, other complementary enterprises) – all of which impact how conducive the local “ecosystem” is to collaboration and innovative behavior; and
- **Enabling innovation through policy:** the framework of laws and policies that can enable innovation: whether at the local, regional, national or international level.

Current Knowledge on Gender and Innovation

While there is still much that is not known about innovation and *women's entrepreneurship*, there is an increasing amount of information about innovation and *women* – both about the positive effect that innovation can have on the lives of women, and about an underrepresentation of women in fields that frequently produce innovation. In our literature review, these four areas are found to be the most frequently studied and commented upon aspects related to gender and innovation:

- **Gender gaps in STEM:** There is a continuing gap between women and men entering into and advancing in science, technology, engineering, and mathematics professions (STEM), which leads to a gender gap in “high-tech” business creation and innovative activity. The issue is described not only in terms of the proverbial “glass ceiling” but also in terms of the pipeline springing leaks along the way, meaning that many women in the sciences leave their professions at varying stages of their careers;
- **Gender gaps in equity investing:** Several studies have looked at gender gaps in equity capital markets, and found that women are few in number on either side of equity capital deals: women are few and far between in venture capital organizations, and few women-led firms receive equity capital investments;
- **Innovation improving rural livelihoods:** There is a growing body of evidence that innovation is improving the quality of life in many developing economies – especially in rural areas – and that the primary beneficiary of many time- and labor-saving devices are women; and
- **Microfinance as an innovation:** Microfinance tools – such as peer group lending, village banks, and the delivery mechanisms offered by microfinance institutions – have undoubtedly increased the economic empowerment of women around the world. However, this innovation has its limitations, most particularly a lack of ongoing education and technical assistance as an enterprise grows, and a pervasive access to capital chasm between where microfinance leaves off and formal sources of capital pick up.

Gaps in Knowledge on Women's Entrepreneurship and Innovation

While there is a growing body of information about women business owners and their enterprises, an increasing amount of focus on entrepreneurship and innovation, and excellent recent work in the area of how innovation has improved the lives of women in general, there remains a dearth of factual information on the intersection of all three: gender, entrepreneurship and innovation.

Why so little information about innovation and women's entrepreneurship? Some researchers have suggested that, until recently, the industries studied with respect to innovation have been too narrowly defined, and included mostly male-dominated industries. And, even when all firms have been included, gender has not been a point of analysis. There has also been a compartmentalization with respect to gender-focused studies, relegating such analysis to women's rights and in social/health areas rather than entrepreneurship. Third, there has been a lack of gender-aware analysis of how policies and programs may impact women and men business owners differently. As a result, there is both a lack of information about gender differences in innovative behavior and outcomes at the firm level AND about how external factors may impact women and men business owners differently.

Recommendations for Upcoming Research

It is suggested that some of the most fruitful areas to explore in an upcoming six-country study of innovation in women- and men-owned SMEs would be:

- The relationship between an entrepreneur's growth intention, the level of creativity/innovativeness within the business, and their firm's actual growth;
- Differences in innovative activity by location: urban/ex-urban/rural; developed/developing economies; local/national support for innovation; existence/proximity of support networks;
- The effect of personal characteristics (education, age, marital/family status, level of self-confidence/efficacy) on innovative behavior, and on perceptions about what "innovation" means;
- The relationship of firm characteristics (sector, size, locus of trade activity) to type and level of innovation;
- The effect of access to external support (capital, networks, markets) on type and level of innovation; and
- The relationship of owner perceptions of policy support for innovation and entrepreneurship on level of growth aspirations and innovative activity of business owners.

And, of course, it should go without saying that all of these factors would be analyzed by the gender of the owner of the business. Questions would be developed in two formats: a quantitative questionnaire (see specific suggested question areas in Chapter 4), to be filled out by the business owners themselves, and a qualitative discussion outline for face-to-face discussions with the business owners. The topics of this conversation are recommended to include:

- How and why the respondent came to own their business – and what were their motivations?
- Goals for the business over the next three to five years
- What does the term "innovation" mean to them; how are they using innovative products/processes in their business; and have they themselves developed any innovative/creative approaches/products?
- The nature of their support system and networks, and what training and technical assistance programs they have been able to access as they have launched and grown their business
- Their views of the policy environment for small businesses in general, and support for innovation in particular, in their local community and nation

Broader Recommendations

While the main purpose of this review of current knowledge on women's entrepreneurship and innovation is to inform the design and implementation of a business owner-focused research project, other investigative needs have been uncovered. While they will not be addressed directly in the survey that will follow this literature review, the following three key issues bear further investigation by others:

- **Addressing pre-entrepreneurial gaps:** There is still a significant gender gap with respect to technical fields, and the gap grows larger as one progresses from degree to professional occupation, and from there to managerial position and/or entrepreneurial endeavor. There needs to be much more exploration of the reasons for this "leaky pipeline" of women in STEM fields, and how more of those holes can be plugged;
- **The impact of women in decision-making positions on innovation:** Another area that is under-explored is how the gender diversity of teams and the presence of women in decision-making positions impacts innovation. There have been studies that suggest that more diverse business teams lead to higher business profitability in general, as well as studies that suggest that having women on design teams lead to more "female friendly" product features. However, much more research needs to be done on how the presence of women in leadership positions – not only in the private sector but in the public sector and in civil society – impacts innovation; and
- **Engendering innovation policies and program support:** Other than occasional mention that few women are involved in innovation policy or in the management of innovation-focused programs, there has been no systematic study of the impact that women's leadership has or could have on innovation. Further, there is a lack of analysis concerning how public policies and programs – including but not limited to innovation-specific policies – could impact women-owned firms differently than men-owned firms.

1. A Growing Knowledge of Women's Entrepreneurship

There has been a sea change in the way women's entrepreneurship is viewed around the world over the past 20 years, and a rising tide of interest in and support for women's enterprise development – on the part of national economic policy-makers, international development institutions, and in civil society. Women's empowerment is increasingly viewed in economic development terms as well as in social justice terms – the lens has been widened from not only addressing inequality of circumstance to ensuring equality of opportunity. More and more policy makers are realizing that women are an under-utilized economic resource, and that getting more women into business ownership makes economic sense.

Research has improved knowledge about the number and characteristics, contributions and challenges of women-owned enterprises. While many gaps in knowledge remain – as sex-disaggregated data is still hard to come by – we do know that approximately 1/4 to 1/3 of the world's formal sector enterprises are owned and operated by women and that women are less likely than men to start businesses and less likely to grow their small firms into larger enterprises.

There is also a growing body of evidence that women approach business leadership and decision-making differently from men, may respond better to targeted educational and training approaches, and bring a different vision and voice to entrepreneurship. The issue of innovation and creativity in women-owned firms, however, is much less well known.

Overall, the growing body of knowledge about women business owners and their enterprises can be described as being in one of these four general categories²:

- Counting Heads: statistics related to the number, size, type and growth of women-owned enterprises;
- Identifying Barriers: uncovering and addressing the continued gender gap in business start-up and growth rates;
- Motivations and Mindsets: understanding more about gender differences within firms, such as reasons for starting the business, the desire (or lack thereof) to grow, management strategies and leadership styles;
- Developing Integrated Frameworks: moving from "one-off" policies and individual projects to building more comprehensive and sustainable women's enterprise ecosystem – and understanding more about differential gender effects in enterprise policy.

A brief review of the current state of knowledge with respect to women's entrepreneurship in each of these four areas follows.

² Alternatively, Carter and Shaw (2006) suggest that academic research focused on women's entrepreneurship could be categorized into six themes: defining/measuring; socio-economic contexts; social construction; non-financial entrepreneurial capital; finance; and business sustainability and performance.

Counting Heads

While sex-disaggregated business census information is still lacking in many countries, household censuses that capture economic activity as well as some large-scale research projects³ have become much more widely available over the past decade or so, thus enabling us to paint a basic portrait of women's entrepreneurial activity around the world. We can say with some degree of certainty that:

- On average, women typically own and operate somewhere between one-quarter and one-third of privately-owned firms in the formal sector of the world economy. Across OECD countries, the share ranges from 13% in Turkey to 40% in Portugal. In some other countries, it is even higher. In Ghana, for example, women own an estimated 44% of businesses.⁴ We also know, from the Global Entrepreneurship Monitor (GEM) series of reports,⁵ that the share of adult women engaged in entrepreneurial activity (either starting a new business or operating an existing one) ranges from a low of just one in 30 (3.2%) in France to a high of nearly one out of every two (45.4%) women in Thailand.
- In some countries, women-owned firms are growing in number at rates higher than the average firm in the country. In the United States, for example, the number of women-owned firms has been growing at twice the rate of all US businesses for the past 20 years.⁶ In Canada, the number of women-owned firms is reportedly increasing 60% faster than average.⁷ In Sweden, women own 22% of all businesses overall, but a larger 31% share of the new firms in the country.⁸
- Women-owned firms are growing in terms of revenue and employment. This trend is harder to quantify, given that the collection of facts and figures on women-owned firms is relatively recent and longitudinal information is not readily available in many countries. In the US, where the business census has included women-owned firms since the 1970's, it can be observed that the number of women-owned firms with 50 or more employees grew by 3.1% between 1997 and 2002, while the number of similarly-sized firms declined by 24.9% overall. Further, the number of women-owned firms with \$1 million or more in revenues increased by 18.4%, while the share in all firms with \$1 million or more in revenues remained essentially unchanged (up 0.7%).⁹

³ The [Global Entrepreneurship Monitor](#) project, now in its 11th year, and reports from the United Nations, such as its "[The World's Women](#)" series, are among the most comprehensive.

⁴ World Bank. (2008) [Doing Business: Women in Africa](#).

⁵ See especially their four reports on women and entrepreneurship at http://gemconsortium.org/files.aspx?Ca_ID=224.

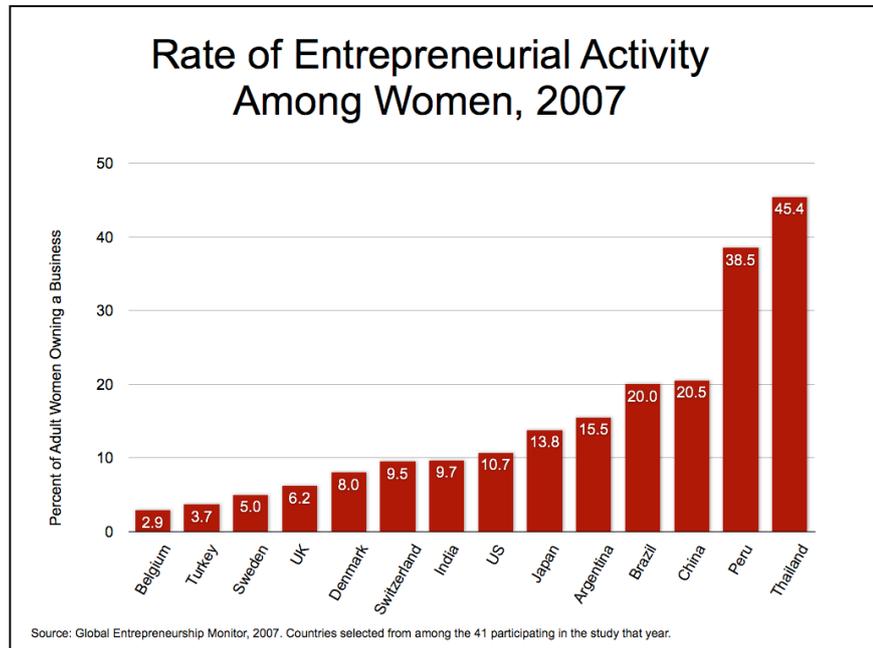
⁶ US Census Bureau, and estimates from the Center for Women's Business Research.

⁷ CIBC. (2005). [Women Entrepreneurs: Leading the Charge](#).

⁸ Swedish Agency for Economic and Regional Growth. (2009). Women's and men's enterprise in Sweden, facts and statistics.

⁹ Womenable calculations from US Census Bureau data. 1997 and 2002 are the two most recent business censuses.

- Despite the fact that there are increasing numbers of established women-owned firms in the global economy, in the aggregate women-owned firms are still much smaller than the typical small business. In the United States, for example, just 14% of women-owned firms have employees, compared to 24% of all privately-held firms. Women-owned firms in the US have, on average, 1.1 employees, compared to 2.5 employees in all privately-held firms and 4.8 employees in all firms (including publicly-traded firms).¹⁰ And, as of 2000 in Canada, revenues generated by women-owned firms were just half of those generated in men-owned firms.¹¹



- Women are also less likely than men to enter into business ownership. Again, according to the most recent Global Entrepreneurship Monitor women's entrepreneurship report,¹² in only 4 countries is the rate of entrepreneurial activity among women at or above that of men (Brazil, Japan, Peru, Thailand).

This information, however, is not available consistently in all regions of the world, nor is it always comparable from country to country. Further, government census statistics and other hard data are much less likely to be available in developing economies, and economic activity and enterprise creation and growth is nearly impossible to quantify reliably and consistently in the informal economy. That said, there can be no question that more and more women are starting and growing enterprises, that when statistical data are gathered their economic contributions are substantial and growing, but that women-owned enterprises are still fewer in number and smaller in size than their male-owned counterparts.

Identifying Barriers

There is a well-established stream of literature focused on differences between women- and men-owned businesses and on the barriers impeding the entrepreneurial progress of women. Some of the early researchers (Brush, Buttner,

¹⁰ US Census Bureau, 2002 quinquennial business census.

¹¹ Industry Canada, op. cit.

¹² Published in 2008 and based on research conducted in 2007 in 41 countries, which collectively account for 93% of the world's GDP.

Moore and others – early being in the 1980's and early 1990's) described gaps in human capital (knowledge), social capital (networks) and financial capital as barriers that make it more difficult for women business owners to grow their enterprises compared to men. Other early works also mentioned organizational differences and environmental factors – though few, at that stage, delved very deeply into legal frameworks. And, in these early years, there was little comparative work or work in developing economy contexts.

In more recent years, there has been a marked increase in both academic and practitioner research in women's entrepreneurship, and an expansion into a wider variety of contextual evaluation. Newer work has confirmed that these barriers persist, and are even more exacerbated in developing economy contexts. Additionally, there is now a much greater understanding of how legal, structural and societal barriers can also make it more difficult for women to start and grow businesses. Here is an encapsulation of what has been studied and documented with respect to barriers to women's entrepreneurship:

- Knowledge: Women business owners frequently come into ownership with lower levels of formal education than men, although this is not the case in all regions of the world, nor is it as much true today as it was 20 years ago. It is the case, though, that women enter into business ownership with less managerial experience than men, which can mean a gap in practical as opposed to theoretical knowledge. (See the work of Brush, Hisrich and O'Brien in the 1980's.) However, it is also recognized that entrepreneurs, as a group, are more similar to each other across nations and between genders than they are to non-entrepreneurial adults. Business owners, whether male or female, have higher levels of education, are more self-confident, and are more willing to take risks (or to try something unproven) than men and women who do not own their own businesses. Recent work from the GEM studies shows that women are less likely than men to say that they have "the required knowledge and skills to start a business," but those gender differences are smaller among established business owners compared to new and nascent entrepreneurs.¹³
- Networks: Women business owners often find it more difficult to gain entree to formal networks, such as business associations, and their professional contacts (fellow business owners, business advisors) are often not as "connected" with local, regional or national business and political decision-makers. Less well-developed formal and informal networks can result in a lower frequency and lesser quality of advice and guidance from colleagues and advisors. It can also mean not being present when interesting tips and contacts are shared among colleagues. Both of these deficiencies can stunt the relative growth opportunities for women business owners. (See the work of Aldrich, for example, as well as Robinson and Stubberud, 2009.) The work of Howard Aldrich and others have found gender differences in network composition in some countries (Italy and Japan among other industrialized countries), but few such differences in one small-scale study in the southeastern United States.
- Capital: Women business owners start their enterprises with lower amounts of capital, even when accounting for differences in the types of firms they start. Further, in many countries women find it more difficult to gain access to

¹³ See the Global Entrepreneurship Monitor 2007 Report on Women and Entrepreneurship, p. 36.

capital for business growth – either because of legal restrictions on the ability to sign a loan in her own name, because of lack of property or title to use as collateral, or because of discriminatory lending practices. Difficulty in accessing capital can significantly limit a small business' ability to grow; therefore, gender differences in the access to and use of capital has been identified as a key area to address from a policy and program perspective in entrepreneurial development interventions. (See Carter and Shaw's work in the UK, for example.)

It is also the case that, even when there is no external discrimination in lending, women seek lower levels of capital than men business owners in similar circumstances. While higher-growth entrepreneurs use a wider variety of financial resources than firms that are not growth-oriented, even among this empowered group of business owners women sought and obtained lower amounts of capital than their male counterparts (Center for Women's Business Research, 2001).

- Legal rights: As stated clearly and succinctly by the authors of a recent review of gender and development issues around the world, "In no region do women and men have equal social, economic and legal rights."¹⁴ Disparities in legal rights vary, with gender gaps the widest in South Asia, Sub-Saharan Africa and in the Middle East and North Africa (MENA) regions, but even in Western Europe and North America these gaps exist. The World Bank's Gender Law Library¹⁵ documents many of the ways in which legal systems treat women and men differently, which naturally has repercussions in business formation and growth.
- Family responsibilities, cultural traditions: One of the most clearly gender-based barriers that women face when starting and growing their enterprises is their need to juggle work and family responsibilities. In nearly every culture around the world, it falls to women to cook, clean, take care of children and older relatives, and to manage other household affairs. And, in many societies, a man's status in the community can be negatively impacted if a woman works outside the home or if she uses outside help for fulfilling family responsibilities. And, even if such cultural constraints are not present, the lack of child-minding services can impede a woman's ability to spend time growing her business. Thus, even after legal barriers to business ownership are addressed, many women business owners face a sometimes delicate balancing act not only in terms of time management but also of cultural acceptance.¹⁶

Motivations and Mindsets

More recent research into women's entrepreneurship has moved beyond some of the issues outlined above and into issues of motivation and management – which has implications for any investigation of gender, entrepreneurship and innovation. Do women start their businesses for the same reasons as men? Do they wish to grow to the same extent as men? How do their management strategies and business

¹⁴ The World Bank. (2001). *Engendering Development*, p. 4.

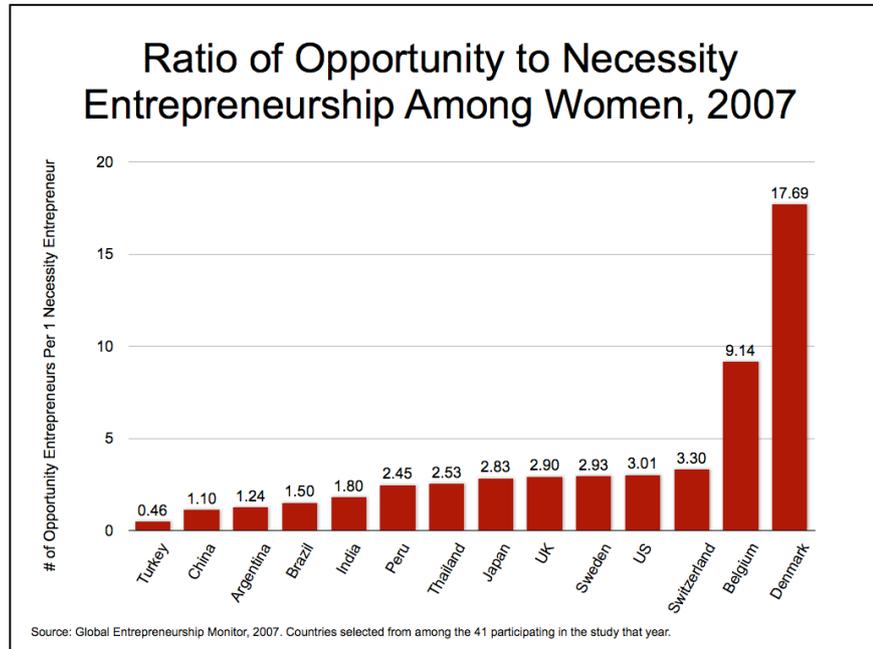
¹⁵ See <http://www.doingbusiness.org/elibrarydata/elibrary.aspx?libID=1>

¹⁶ See especially World Bank, *Engendering Development*, Chapter 3 – Social Norms, Laws and Economic Institutions.

structures compare to those employed by men, and do these differences influence growth? Here is some of what we know in this regard:

- Opportunity versus necessity: Most people – men and women alike – start a business because they see an opportunity in the marketplace. However, if necessity really is the mother of invention, then it might be assumed that women entrepreneurs were more innovative than men: for the GEM research series

continues to show that, except in Europe and Asia, women are more likely than men to start their business due to necessity rather than opportunity. The GEM studies also show



that necessity-driven entrepreneurship is a stronger factor in lower income countries than in high-income countries. In high-income countries, the ratio of opportunity to necessity entrepreneurship among women is 4:1, while among men it is nearly 6:1. In middle or lower income countries in Latin America and the Caribbean, the ratios are 1.4:1 among women and 1.7:1 among men, while in middle/low-income countries in Europe and Asia the ratios are 2:1 for women and 1.6:1 among men. In 6 countries included in the 2007 GEM gender analysis,¹⁷ the ratios were actually less than 1:1, meaning that more women were motivated to start their businesses by necessity than by opportunity.

- Leadership and decision-making: In her seminal 1982 book, *In a Different Voice*, Carol Gilligan drew new attention to how women and men differ in their decision-making styles. Gilligan found women to be much more relational than transactional in nature, placing greater importance on the effect that their decisions would have on others, and taking greater care in gathering and considering the opinions of others when making decisions. A comparison of the two styles could be described as “hub and spoke” versus “command and control” in structure. Other research has affirmed some of those key gender differences in entrepreneurial settings (see work by Judy Rosener and the Center for Women's Business Research), and management consultants and authors (Tom Peters, Daniel Pink) have gone so far as to say that a more collaborative “female” style of management and leadership is the wave of the future in corporate cultures as well. While some have thought that the “female style” of decision-making shows more vacillation (read weakness), recent

¹⁷ Serbia, Turkey, Croatia, Uruguay, Columbia, Hong Kong.

research has found that team-based decision-making in organizations leads to more creativity and innovation (Page, 2007). Further, some recent research (Kariv, 2010) has also shown that women and men use most management strategies similarly, and that gender of ownership is, in and of itself, not a significant factor in business performance.

- **Growth-orientation:** Just how “growth-oriented” a business owner is, how they voice their business goals, and how that impacts organizational behavior and business outcomes is a very complex question; and one that is fraught with gender-based assumptions – many of them inaccurate. While it is true that women, on average, own smaller businesses than men, research is mixed on whether the reason for the gap lies in their relative youth, external factors such as lack of capital, or in differences in growth intention. A recent review of several growth intention-focused studies (Aspray and McGrath Cohoon, 2007) uncovers conflicting findings in this regard. And, even among growth-oriented women business owners, the desire for growth is often included among other life goals (Weeks, 2008), leaving some outside observers to question a woman business owner's level of commitment to growth and make inaccurate assumptions. Certainly, though, it is clear that entrepreneurial intentions do play a role in the level of growth that a business achieves.

Developing Integrated Frameworks

One of the most recent activities in the women's enterprise development field is at the systemic level: widening the lens from investigating and explaining individual motivations and entrepreneurial skills, and comparing and contrasting organizational behavior and outcomes, to assessing the impact of the business-enabling environment on women's enterprise development, establishing standards of practice, and sharing knowledge across borders.

There are several recent developments of note in this regard:

- Gender-focused assessments of business environments, such as those conducted by the International Finance Corporation ([Gender and Growth Assessments](#)¹⁸), the International Labour Organization and African Development Bank (Growth-Oriented Women Entrepreneurs - GOWE assessments¹⁹) and the US Agency for International Development.²⁰
- The development of a quality standard for the establishment of women's business centers, which has been developed by Prowess in the UK and is now being piloted in Northwest England.²¹

¹⁸ See http://www.ifc.org/ifcext/sustainability.nsf/Content/Publications_QN_GGA-Uganda for one example.

¹⁹ See http://www.ilo.org/empent/Areasofwork/lang--en/WCMS_093870/index.htm for the GOWE assessment framework.

²⁰ See http://bizclir.com/cs/topics/empowering_women_in_business/overview for information on a new GenderCLIR assessment methodology that has been developed by Booz Allen Hamilton).

²¹ See wbcinternational.org for more information.

- National strategic frameworks for women's enterprise development have been undertaken in a number of countries. Examples include the United Kingdom (a Strategic Framework for Women's Enterprise was published by the government in 2003) and Canada (a Prime Minister's Task Force Report on Women's Enterprise Development was likewise published by the government in 2003). In addition, a new "[GREAT Women](#)" network has recently

been established in the Philippines focused on women's economic development, and a report outlining a "Roadmap to 2020: Fueling the Growth of Women's Enterprise Development" will

soon be published in the United States.

- Linkages among women's entrepreneurship researchers: five female academic researchers established the Diana Project in 1999, which focused on looking at access to growth capital among women business owners in the United States. This has recently expanded into an international network of researchers interested in sharing research in all areas related to women's enterprise development.²²

Key Recommendations for Women's Enterprise Support, UK	
Action priorities from the customer perspective	
Key Issues	Selected Activities
Business support provision	<ul style="list-style-type: none"> • Networks, networking • Pre-start counseling/advice • Information & sign-posting • Training • Advisory services • Mentoring/coaching
Access to finance	<ul style="list-style-type: none"> • Start-up grants, loans • Bank finance • Venture capital, angel investment
Childcare and caring responsibilities	<ul style="list-style-type: none"> • Childcare and caring allowances • Access to holistic childcare facilities • Childcare as a business
Transition from benefits to self-employment	<ul style="list-style-type: none"> • Self-employment provision within the New Deals • New Deal for Lone Parents

Source: A Strategic Framework for Women's Enterprise, UK Department of Trade and Industry (now Department for Business Innovation and Skills.)

²² See dianaproject.org for more information.

2. Innovation and Entrepreneurship

While the focus of this literature review and report is on innovation and women's entrepreneurship, a brief summary of how innovation effects entrepreneurial development in general – and vice-versa – is important, to lay a foundation for the introduction of gender into the equation. As stated earlier in this report, new firm creation is recognized as a major driver of economic growth, and smaller firms are increasingly being recognized as making significant contributions to innovation. Here is some of what has been researched and published with respect to innovation and small and medium-sized enterprises in general. Unfortunately, the vast majority of the work that has been done in entrepreneurship and innovation does not include gender as a variable of analysis – which certainly points out the need for more gender-aware work in this area.

A Broader Definition of Innovation

In the past, innovation was thought of as being largely the province of large corporations, and emanating primarily or exclusively from research and development (R&D) laboratories or departments. However, a broader view of innovation – one that goes beyond technology and products – has emerged.

First in 1992, and again in an update in 1997, the OECD and Eurostat discussed and defined innovation in this technology and R&D-tinged manner. However, in the third edition of the Oslo Manual, published in 2005, they have expanded the definition and focus of innovation in several important ways:

- By placing greater emphasis on the symbiotic nature of innovation, emphasizing the role of linkages among players in the innovation process;
- By recognizing that innovation can and does occur in less R&D-intensive sectors; and
- By expanding the definition of innovation beyond that which is found in products and processes to also include innovative practices in organizational behavior and in marketing.

This broader view is a step forward not only in terms of viewing innovation in local contexts in which they are seen (Byravan, 2008), but in addressing some of the concerns of Salazar and Holbrook (2004) and others about 'latent biases'

Innovation is Defined as ...

"... the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations.

"The minimum requirement for an innovation is that the product, process, marketing method or organisational method must be new (or significantly improved) to the firm. This includes products, processes and methods that firms are the first to develop and those that have been adopted from other firms or organisations."

Source: OECD, Eurostat. (2005). *The Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data*. 3rd edition.

(such as not even including gender as a data point to capture in surveys) in the innovation methodologies laid out in the Oslo Manual.

Innovation Within Firms

There is a growing acceptance that any business can be innovative, regardless of size or sector. However, internal structures and processes can have a significant impact on the level of innovation within firms. An owner's motivations and management style, the structure of internal teams, and other internal resources all play an important role.

Some research (Gellatly, 1999) has found that innovation is much more likely to be firm-specific than industry-specific – meaning that innovative behavior can be found in any company regardless of industry. This also means that not all firms in “innovative” industries exhibit innovative behavior. Gellatly also posits that barriers to innovation are more likely to be experiential in nature; that is, encountered by the innovators as they innovate but not by less innovative firms.

Other research has focused on owner behavior and leadership. For example, Lerner (2002) found that innovativeness is higher in growth-oriented firms, meaning that owner intent and motivation plays a role in a firm's innovative behavior.

Neither of these investigations, however, takes gender differences into consideration. Women have been found to have lower levels of self-confidence and efficacy, and – even if growth-oriented – to have different motivations than men: all of which could have an impact on innovation and creativity. So, when analyzing the role of innovation and SME development, one level of analysis should be within the enterprise.

The Importance of Networks and Community

Innovation can also be fostered – or impeded – by the physical location of a business. How does innovation differ in rural or urban environments? What is the physical infrastructure of the community in terms of roads, electricity and telecommunications? What is the educational level of the available workforce – is there a university nearby? What is the nature of support available from other local businesses, support organizations, and the government – is the local “ecosystem” conducive to collaboration and innovative behavior?

In this line of investigation, much has been made of the importance of proximity. Places like Silicon Valley became known for innovation, perhaps in large measure, because of the unique local ecosystem of nearby universities, a venture capital funding network, and entrepreneurial support networks.

In investigating the role of environment in a fast developing economy (China), Li and Mitchell (2009) conclude that proximity, specialization and competition are all favorable inducements for smaller firm innovation, but may actually have the opposite effect among larger businesses:

“For small enterprises, both industrial specialization and competition within a region are conducive to innovation and therefore support the new dynamic view of small businesses as agents of change. For large

and medium enterprises, however, increasing local competition is found to be detrimental to technologically sophisticated innovation.”

Hulsink, Elfring and Stam (2008) found that networks and innovation go together, but that more external linkages are not necessarily better, nor do such linkages all need to be local.

Maninelli and Mazzanti (2007) also found that networking and social capital networks do not, in and of themselves, produce innovative products or practices.

So, these findings indicate that while physical location – both the proximity to sources of support and talent, and the physical infrastructure – play a role in innovation, location isn't everything, and creating a true “eco-system” for innovation needs to go beyond putting complementary businesses and support structures in close physical proximity.

Fostering Innovation Through Public Policy

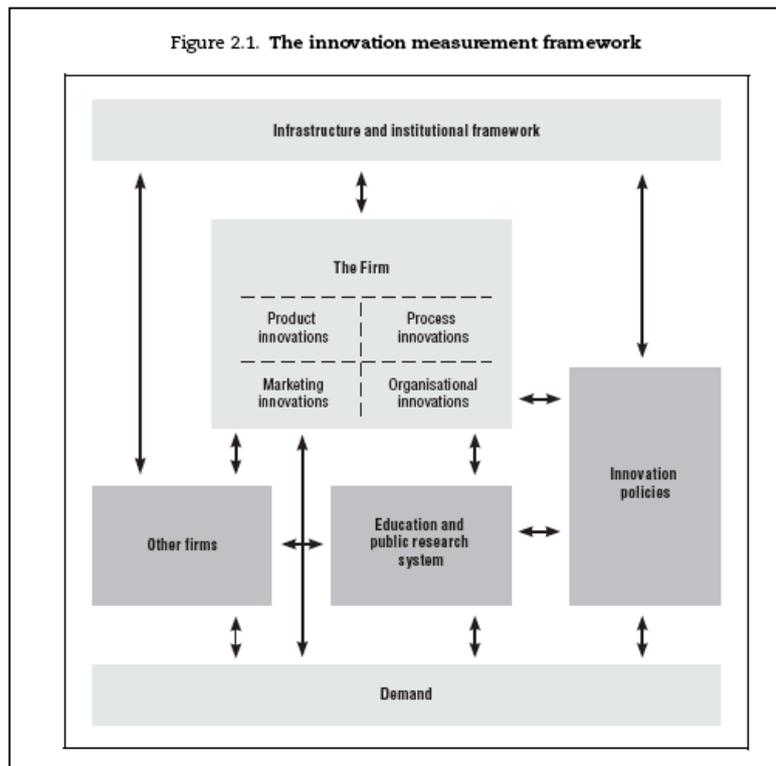
This, then, could speak to the need for not only recognizing the importance of the individual business owner and his/her business, and the community of support around those businesses, but of providing a policy framework that is supportive of business creation, growth, and innovation.

A review of innovation support practices in Chile (Goldberg, Palladini, 2008) recommended that disparate activities be coordinated by a National Innovation System, with linkages between technology investment activities, the educational system, and private business.

Government intervention may also be in the form of specific programs supporting innovation or the commercialization of technologies – such as the US government's Small Business

Innovation Research (SBIR) program. Between 1983 and 1997, the US government invested \$7 billion in the program. An analysis of program outcomes by Lerner in 1998 found that business receiving an SBIR investment grew substantially faster than a matched set of firms during a 10-year period.

The relationship between the firm, the local environment, and the policy and institutional framework with respect to innovation has been depicted in the figure at the right in the Oslo



Manual – and illustrates the symbiotic flow among all of the elements of this “innovation measurement framework.”

Such a framework may work differently in an SME context than for larger corporations. Li and Mitchell state that “an innovation policy designed to simply support the development of core industries or industry clusters may be favorable to rapid and stable innovation institutions among entrepreneurial small enterprises in the shorter term, but unfavorable to the pace of large and medium enterprise innovation over the longer run.”

While national governments are critical in the development of a culture of innovation, especially in providing the support mechanisms (laws, programs) to help that culture develop and grow, Holyrod (2007) notes that gaps between developed and developing nations could continue without additional support from international governance bodies.

A 2009 OECD review of innovation among 16 of their member economies concludes that the most effective means of fostering innovation is through “macroeconomic stability, openness to trade and investment, deep financial systems, competitive markets, and regulation that is proportionate and appropriate.” In addition, labor practices that allow for mobility, lower and flatter taxes, and intellectual property protection all positively influence innovation.

Government cooperation and collaboration can be a challenge, however – not only across different agencies at a national level but between regions. (Salem, Jarrar, 2009). Taking that notion a step further, Vass (2009) notes that regional clustering and the advantages that it can have for small firms locally can be complicated when trying to link the products and services of these smaller firms into the global value chain as suppliers to multinational corporations.

When adding gender into the equation, Morrison and Jütting (2004) find that women's enterprise development efforts alone may fail if the overall policy environment (as noted above) is not conducive to small business development. They also found that outside assistance from donor institutions have proven useful in making such policies and programs more gender-aware, and have helped to change some social customs as well.

Aside from this study, there has been very little analysis about how innovation policies and programs impact women-owned firms compared to all small businesses. However, with respect to gender and innovation in general, there have been some insights uncovered – which is the focus of the next chapter.

3. Gender and Innovation: What is Known

While there is still much that is not known about innovation and *women's entrepreneurship*, there is an increasing amount of information about innovation and *women* – both about the positive effect that innovation can have on the lives of women, and about an underrepresentation of women in fields that frequently produce innovation. In our literature review, these four areas – the lack of women in science, technology, engineering and mathematics disciplines; the lack of women granting and receiving equity investments; the positive effect of innovation on rural livelihoods, especially for women; and the innovativeness of microfinance schemes – are found to be the most frequently studied and commented upon aspects to date of gender and innovation.

Gender Gaps in STEM

There is a continuing gap between women and men entering into and advancing in science, technology, engineering, and mathematics professions (STEM), which is considered to be a pipeline issue with respect to business creation and innovative activity. In several studies, the European Commission has found a continuing gender gap in STEM fields. And, while a number of initiatives have been launched to address the gap, a review of those efforts shows that the gap has not been significantly narrowed. A 2007 OECD report on gender and information and communications technologies (ICT) also found a gap between women and men in all professions, but especially in technology-related fields. The gender gaps were even greater when looking at managerial positions in particular. The UNDP and UNIFEM also found that this science/technology gap extends, not surprisingly, into innovation-related public policy development.²³

Buré (2007) described the issue as one not only of a “glass ceiling” but also of “leaky pipes”, meaning that many women in the sciences leave their professions at many stages along the pipeline, exiting well before in addition to after they bump into the proverbial glass ceiling. She offers the following reasons for many of those early exits from scientific professions:

“Specifically, the factors found to be highly relevant include: individual encouragement and support, networking opportunities and social capital, geographic mobility, workplace structure and flexibility, and the proportion of men and women in teams. Literature on SET and entrepreneurship reveals remarkably similar conclusions across nations with respect to the importance these cultural and organizational factors, predicated on the finding that S&T and innovation are ‘masculinized’.”²⁴

This “leaky pipe” phenomenon could also explain Rosa and Dawson's (2006) finding that there is a significant gender gap in the spin-out of university-based technologies into entrepreneurial start-up companies – an important source of new, innovative enterprises.

²³ UNDP and UNIFEM, *Bridging the Gender Digital Divide*.

²⁴ Buré, C. *Gender in/and Science, Technology and Innovation Policy: An overview of current literature and findings*. p. 14.

It is also the case that even when women remain in the field, and start innovative new businesses, they can have a much more difficult time launching their enterprises. Research by McAdam and Marlow (2008), taking a look at the gender composition and the support environment in technology-based business incubators in the Republic of Ireland, found that there was a distinctly female-unfriendly environment which hindered the successful launch of women-led technology ventures.

The lack of women with relevant technical training and expertise can also perpetuate gender gaps in technology adoption when products or services are introduced into the marketplace. When put another way, it is found that when women are involved in the design, development and introduction of innovative products, there are higher adoption rates among women. This is not only the case with respect to technology, but with such items as plows or agricultural tools.²⁵

Gender Gaps in Equity Investing

Bringing innovations to market is frequently dependent on the availability of capital, and in many innovative sectors (such as technology and the life sciences), equity capital invested by venture capitalists is a critical ingredient for success. Several studies that have looked at gender gaps in equity capital markets – while not focused specifically on innovation – have found that women are few in number on either side of equity capital deals. Few women are decision-makers in venture capital firms, but where they are, a greater share of investments is made in companies containing women on their management teams.

The Center for Women's Business Research in the United States found, in a study conducted in 2000, that 67% of women venture capitalists had made an investment in a women-led firm, compared to only 40% of male venture capitalists. And, on the other side of the equation, a Diana Project study (2002) found that, in 2001, just 5% of venture capital deals involved women-led firms.

Innovation and Rural Livelihoods

Much recent work in gender and innovation has focused on the positive impact that innovation can have on women's lives. Earlier this year, Gill et al (2010) wrote an analysis for the International Center for Research on Women highlighting the effect of innovation on lives of women, especially how it can reduce the time spent on gathering water and energy, thus opening up more time for income-generating activities. Examples include foot-pedal water pumps, cellular phones, solar-powered food dryers.²⁶

²⁵ See an excellent summary of this issue in [Bridging the Gender Divide: How Technology Can Advance Women Economically](#), from the International Center for Research on Women.

²⁶ *Ibid.*, page 12.

Similarly, Carr and Hartl (2010) found that in many cases technology and innovative practices have literally 'lightened the load' for women – reducing the need to spend so much time and energy fetching wood and water or carrying goods to market by hand. One downside they found however: as innovations increased the profitability of some enterprises (such as drying/selling fish or grating cassava mechanically rather than by hand in West Africa), men either started taking over their businesses or setting up competing enterprises.

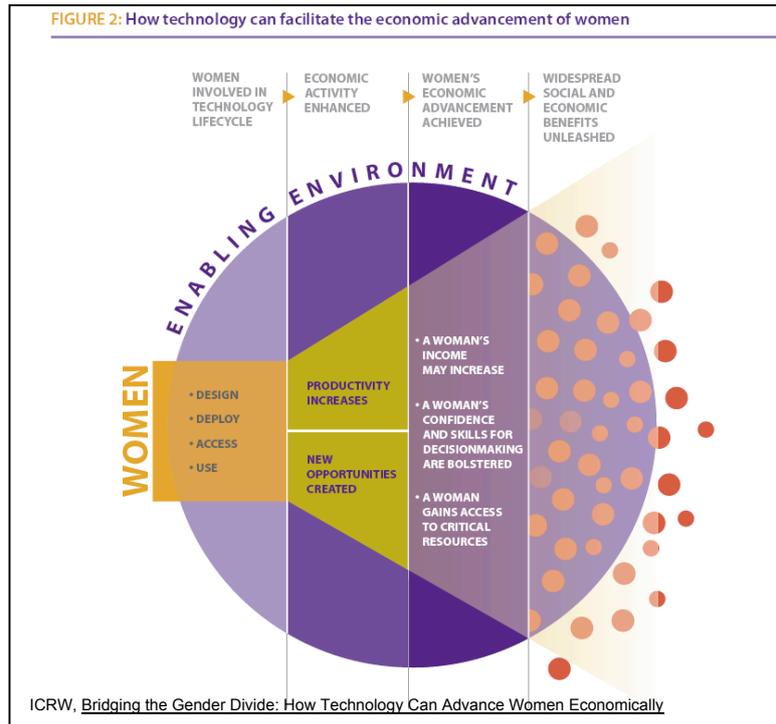
Another recent study by GSMA and the Cherie Blair Foundation highlighted numerous ways that mobile phone technology in particular has improved the lives of rural women – from personal safety and

greater independence to opening up business opportunities. The report also noted, however, that a tremendous gap in access to mobile phone technology still exists in much of the developing world, not only for the entire population but pointing out that women are far less likely than men in many countries to have access to mobile telephony.²⁷

In addition, Kwake, Ocola, and Adigun (2006) found that access to ICT alone does not improve the lives of rural women. Many difficulties with access and knowledge still remain. Similarly, Singh and Belwal (2008) suggest that a lack of technology AND the knowledge of how to use it are both significant impediments for women business owners in rural Ethiopia.

When technology and innovative practices are coupled with educational assistance and training, however, adoption improves and benefits are greater. For example, Petridou and Glaveli (2008) found that women-focused training not only improved self-confidence among women in rural Greece, but the introduction of specific skills, such as use of technology and opportunity identification, improved business success and innovative behavior.

Udén (2008) also relates that women can be rewarding targets for innovation-focused projects among indigenous populations, as in a reindeer-tracking project she describes among the Sámi peoples of northern Sweden. Udén concludes that women may be quicker to see the value of the innovation in terms of time-savings.



²⁷ Women and Mobile: A Global Opportunity. <http://www.cherieblairfoundation.org/our-work/women-and-mobile-a-global-opportunity>

Other rural education projects that have received some focus with respect to disseminating innovative products and processes are agricultural extension services and industry-specific community cooperatives.

Cooperatives have proven to not only be efficient vehicles for disseminating education and finance in rural areas, but excellent mechanisms through which women can gain self-confidence and a sense of "sisterhood." Further, these organizations not only exist in rural areas but in industry-specific atelier environments in small towns as well. (SIDA, GAP, UNDP, 2009 activity report)

Walker (1990) found that agricultural extension services have been one way in which innovative practices are disseminated in rural areas, but that there are often problems with sustainability and variability in local adoption.

The World Bank's Gender in Agriculture Sourcebook notes that support for rural livelihoods and agricultural support has evolved from extension services with traveling experts and classes to "agricultural innovation systems" that expand beyond farmer-based education to involving other local actors and to including farmers not as beneficiaries but as engaged participants. This, of course, is not always done in a gender-aware manner.

Microfinance as an Innovative Tool for Women's Empowerment

Aside from how innovation has helped the lives of women, perhaps the most prevalent topic that arises when "innovation" and "gender" are used together is in the discussion of how microfinance tools – such as peer group lending, village banks, and the delivery mechanisms offered by microfinance institutions – have increased the economic empowerment of women around the world.

Mayoux and Hartl (2009), in their review of gender and microfinance for the International Fund for Agricultural Development (IFAD), discussed the 'virtuous spirals' that can be set into motion by providing women access to small amounts of capital: a growth in personal self-esteem, improved household well-being, social and community political empowerment – and economic empowerment, including enterprise creation.

There can be no doubt that the spread of microfinance models – including lending pools, village banking, cell phone banking, and microfinance institution networks – have helped lift many women (and the clients of these services ARE mostly women) out of poverty. Popularized and brought to large-scale use by the Grameen Bank and the Bangladesh Rural Advancement Committee (BRAC), microfinance institutions (MFIs) have been pointed to as an innovative practice by many, including an expansive review conducted by the World Bank nearly a decade ago (Engendering Development, 2001). And, of course, microfinance as a tool for women's empowerment received a tremendous amount of visibility in the wake of the granting of the Nobel Peace Prize in 2006 to Muhammad Yunus and the Grameen Bank.

Yet, microfinance tools have their limitations, most particularly a lack of ongoing education and technical assistance as an enterprise grows, and a pervasive access to capital chasm between where microfinance leaves off and formal sources of capital pick up.

In a small-scale study focused on microenterprise development in Bolivia, Eversole (2004) found little overall economic improvement – and no significant increase in innovation – among women who had received micro-enterprise development assistance, including microfinance. Women were elevated from poverty to self-employment, but found no clear way forward to wealth-creation and business growth. She states: “Microenterprise development does not happen in a vacuum: women who run businesses in poor regions must work within their context, and these contexts can limit the entrepreneurs’ scope for creating change.”

Another tension that may arise in some societies, as noted by Guérin (2006) in a study of microfinance structures in Sénégal, is the tension between short-term and longer-term needs of MFI borrowers. These tensions may limit the effectiveness of direct lending; savings societies and loan pools may be more beneficial in these situations than in others.

So, what we know about innovation and gender is largely about personal empowerment and career development rather than about entrepreneurship. Where entrepreneurship enters the picture, it has typically either focused on the very small subsistence farmer or cooperative member at one end of the entrepreneurial spectrum or at the equity capital markets at the other end of the growth continuum. Secondly, there is a recognition that gender diversity in policy and practice, in design teams, and in teams in general are all beneficial, but there is very little understanding about how or why this is the case. And, finally, there is virtually no information about how women and men business owners of small and medium-sized enterprises think about or practice innovation within their companies, and what differences there may be in those firms in terms of outcomes influenced by innovation and creativity.

The next chapter, then, will turn to what we might like to know in this regard – in preparation for planning on the conduct of a quantitative and qualitative survey investigating innovation among women and men small business owners in six countries.

4. Gender, Entrepreneurship and Innovation: Gaps in Knowledge

As we have uncovered in this review of knowledge concerning gender, entrepreneurship and innovation – in the academic community, in the international development field and in the business press – there is a growing body of information about women business owners and their enterprises, an increasing amount of focus on entrepreneurship and innovation, and excellent recent work in the area of how innovation has improved the lives of women in general. However, there remains a dearth of factual information on the intersection of all three: gender, entrepreneurship and innovation.

In this chapter of the report, we will make recommendations on topics to focus on in the upcoming six-country study among women and men small business owners on the subject of innovation. In the following, final chapter of the report, we will raise other issues for consideration in future research, program or policy efforts.

Understanding Innovation, Creativity, Gender and Enterprise

Why so little information about innovation and women's entrepreneurship? There is both a lack of information about gender differences in innovative behavior and outcomes at the firm level AND about how external factors may impact women and men business owners differently.

Ljunggren et al (2010), in a newly published study investigating gender and innovation in Norway, states that the focus on innovation occurs almost exclusively in "industries dominated by men and in ways that measure outcomes in industries dominated by men. Innovation happening in 'feminine' sectors i.e. where women work: in the service sector and in public sector is scarcely studied, and hence, they have not been regarded as innovative." So, there has not been an expansive enough look at innovative practices in a variety of industries. It has also been the case, as noted earlier, that when some investigations are carried out at the firm level, gender of firm ownership has not been an area of analysis.

Samson (2006), in an extensive review of gender and innovation, stated that, "In development, the worlds of science, technology, and innovation (STI) and gender equality and women's rights are all too often separated. STI initiatives are seen as both a means and an end to economic development, and gender and women's rights are entrenched in donor goals and strategies. However, there is very little crossover between these two areas." So there is also a lack of integration between innovation at the firm level and innovation policy and program at the institutional level.

With respect to a focus on women and men small business owners and their enterprises, what questions would be the most beneficial to address? This is perhaps the most critical question to be addressed in this report, as the purpose of this review is to discover what is known, what has not been explored and, hence, what the upcoming study should focus on.

The next section of this chapter will suggest the major areas to focus on in the upcoming survey project.

Suggested Areas of Study in a Small Business Owner-Focused Survey

What don't we know, or what do we need to know more about with respect to women's entrepreneurship and innovation? Some of the most fruitful areas to explore would be:

- The relationship between an entrepreneur's growth intention, the level of creativity/innovativeness within the business, and their firm's actual growth;
- Differences in innovative activity by location: urban/ex-urban/rural; developed/developing economies; local/national support for innovation; existence/proximity of support networks;
- The effect of personal characteristics (education, age, marital/family status, level of self-confidence/efficacy) on innovative behavior, and on perceptions about what "innovation" means;
- The relationship of firm characteristics (sector, size, locus of trade activity) to type and level of innovation;
- The effect of access to external support (capital, networks, markets) on type and level of innovation; and
- The relationship of owner perceptions of policy support for innovation and enterprise development on level of growth aspirations and innovative activity of small business owners.

And, of course, it should go without saying that all of these factors would be analyzed by the gender of the owner of the business.

With respect to the types of specific questions that could be asked in the study, we would include these "quantitative" questions, which could be obtained either through a self-administered questionnaire or completion by an interviewer during a conversation that would blend quantitative and qualitative questioning:

Business Motivations/Challenges

- Primary motivation for starting the business (what share started a business because of a new idea or because they thought they could improve upon some existing product/process)
- Business goals
- Most important issues facing the business today
- Perceived barriers to business growth
- Views on effectiveness of government support for business

Reflections on Innovation

- Views on personal creativity, business focus on innovation (product, process, marketing, organization)
- Assessment of innovative practices, products, methods in business – own business and others around them
- Team structure within the business (employer firms)
- Does the firm hold any patents; have they ever met with an intellectual property attorney about protecting any aspects of their business

Business Support

- Membership in cooperatives, associations
- Number/type of training programs attended
- Proximity of sources of support
- Conferences, trade fairs attended
- Types, sources of business advice
- Access to capital, amount of capital available

Personal Characteristics

- Age of owner
- Level of education
- Field of tertiary study
- Work prior to ownership (length, type)
- Marital status
- Gender

Firm Characteristics

- Industry sector
- Level of formality of business
- Was business started, purchased, inherited (survey focused only among owner-founded firms?)
- Number of employees
- Revenues
- Number/relationship of owners
- Location of business (urban, suburban, small town/village, rural)
- Locus of business activity (local, regional, national, international)
- Number of years in business

In a more in-depth personal interview with the survey respondents, we would suggest that the following issues be explored in a more conversational manner. We would further suggest that these conversations be recorded, both so the interviewer can actively listen and not have to take extensive notes during the conversation and so that transcripts of the conversations could be made and used in subsequent keyword analysis.

- How and why the respondent came to own their business – and what were their motivations?
- Goals for the business over the next three to five years
- What does the term “innovation” mean to them; how are they using innovative products/processes in their business; and have they themselves developed any innovative/creative approaches/products?
- The nature of their support system and networks, and what training and technical assistance programs they have been able to access as they have launched and grown their business
- Their views of the policy environment for small businesses in general, and support for innovation in particular, in their local community and nation

5. Recommendations for Broader Consideration

As previously stated, this review of current knowledge, and gaps in knowledge, with respect to women's entrepreneurship and innovation was conducted primarily to inform the design and launch of a comparative survey focused specifically on small business owners.

However, during this review, other investigative needs have been uncovered on additional factors impacting of gender and innovation; several important areas remain under-explored. While they will not be addressed directly in the survey that will follow this literature review, three key topics are mentioned here for broader consideration by others.

Addressing Pre-Entrepreneurial Gaps

One key topic for which there is a growing amount of information is in the area of gender gaps in STEM fields. While the gender gap in level of formal education in general has narrowed considerably around the world over the past decade, there is still a significant gender gap with respect to technical fields, and the gap grows larger as one progresses from degree to professional occupation, and from there to managerial position and/or entrepreneurial endeavor. There needs to be much more exploration of the reasons for this "leaky pipeline" of women in STEM fields, and how more of those holes can be plugged. Addressing such disparities could have a significant positive impact on women's entrepreneurship and innovation.

The Impact of Women in Decision-making Positions on Innovation

Another area that is under-explored is that of the relationship between the gender diversity of teams and the prevalence of women in decision-making positions on innovation. There have been studies that suggest that more diverse business teams (both in terms of gender and ethnicity) lead to higher business profitability in general, as well as studies that suggest that having women on design teams lead to more "female friendly" product features (smaller, lighter, more reflective of women's needs). However, much more research needs to be done on how the presence of women in leadership positions impacts innovation – not only in the private sector but in the public sector and in civil society.

Engendered Innovation Policies and Program Support

Thirdly, much of the research reviewed for this report has touched upon the lack of involvement of women in innovation policy-making and program development. Other than occasional mention that few women are involved in innovation policy or in the management of innovation-focused programs, there has been no systematic study of the impact that women's leadership has or could have on innovation.

Further, there is a lack of analysis of the potentially differentiated impact of broader policies and programs – including but not limited to innovation-specific policies – on the growth and innovativeness of women-owned businesses. For example, Korinek

(2005) found that trade liberalization can have a differential impact on women's empowerment and entrepreneurship – helping in some cases but leaving women behind in others due to differences in industry distribution and in women's relative lack of access to some networks and markets.

Ljunggren (2010) also suggests that there should be a more concerted effort to share and learn from other nations' good practices and lessons learned, saying:

“The Norwegian discourse on innovation and gender could also benefit from studies of other nations' innovation and gender equality efforts, on how equality efforts are integrated in innovation policies, results from these efforts and transferability to the Norwegian context.”

In conclusion, there is a need for gender viewpoints and considerations to be more proactively included not only in the areas of individual empowerment, firm behavior, and innovation policy, but in the broader areas of education, leadership and economic policy. Finally, a more integrative view of the way these pieces move in concert with and are inextricably woven with one another is also warranted.

In a recent study of innovation and women's empowerment internationally, Malhotra et al (2009) suggests seven important “levers” that could heighten the impact that innovative practices have on women's equality and empowerment. While this study was focused more broadly on gender equality than on economic empowerment, Malhotra's conclusions and recommendations for action seem to be quite apropos in an entrepreneurial development context as well. They are:

- Breaking traditional boundaries to form strategic partnerships
- Engaging women in design and diffusion
- Cultivating important “champions”
- Creating “buzz” to make it “stick” (decidedly nouveau terminology for getting the word out in an attention-getting manner)
- Capitalizing on opportune timing and context
- Targeting efforts to reach the poorest women
- Combining both top-down and bottom-up approaches

Glossary of Terms/Acronyms

Term/Acronym	Definition
GEM	Global Entrepreneurship Monitor
ICT	Information and Communication Technologies
ILO/OIT	International Labour Organization / Organisation Internationale du Travail
Innovation	As defined and elaborated by the OECD and Eurostat in the Oslo Manual , innovation as used in this report is defined very broadly – to go well beyond an R&D-fostered invention to include improvements and new methods related to products, processes, marketing or organizations. (See this page on oecd.org for a more thorough definition of innovation.)
MFI	Microfinance Institution
OECD/OCDE	Organization for Economic Cooperation and Development / Organisation de Coopération et de Développement Économique
SET	Science, engineering and technology
SMEs	Small and medium-sized enterprise(s)
STEM	Science, technology, engineering and mathematics
STI	Science, technology and innovation
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Program
UNIFEM	United Nations Development Fund for Women

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Organizations/Web Sites

<u>Name</u>	<u>URL</u>
Anita Borg Institute for Women and Technology	http://anitaborg.org/
Belgian Portal for Research and Innovation	http://www.research.be/ListURL/list.asp?KeyID=10018&up=518
BeWiSe: Belgian Women in Science	http://bewise.naturalsciences.be/
Commonwealth Secretariat: Gender and Trade	http://www.genderandtrade.org/
Commonwealth Secretariat: Gender publications	http://publications.thecommonwealth.org/gender-33-c.aspx
European Platform of Women Scientists	http://www.epws.org/index.php
Food, Agriculture and Natural Resources Policy Analysis Network	http://www.fanrpan.org/
Global Women Inventor and Innovators Network	http://www.gwiin.com/
Government Innovators Network, Ash Center for Democratic Governance and Innovation, Harvard University	http://www.innovations.harvard.edu/
Helsinki Group on Women and Science	http://ec.europa.eu/research/science-society/index.cfm?fuseaction=public.to pic&id=124&lang=1&CFID=3675170&C FOKEN=47b7d94df0ea198a-1B317C32-CB3F-D669-11E2C45FC5FB09F9&jsessionid=b101e8ba63fc3eea13e8466a830142c755b2TR
Innovation Ireland: Innovation Task Force	http://www.taoiseach.gov.ie/eng/Innovation_Taskforce/
International Center for Research on Women	http://www.icrw.org/
International Fund for Agricultural Development, Gender work	http://www.ifad.org/gender/index.htm
International Labour Organization: Women's Entrepreneurship Development	http://www.ilo.org/empent/Areasofwork/lang--en/WCMS_093870/index.htm
Kauffman Foundation: Women scientists in innovation	http://www.kauffman.org/advancing-innovation/women-scientists-in-innovation.aspx
National Center for Women and Information Technology	http://www.ncwit.org/
The Next Women: Business Magazine for Female Internet Heroes	http://thenextwomen.com/?s=africa.com
OECD/OCDE: Gender Institutions and Development database	http://www.oecd.org/document/16/0,3343,en_2649_33731_39323280_1_1_1_1,00.html
_____: Research publications on gender by area	http://www.oecd.org/document/59/0,3343,en_21571361_38039199_38172347_1_1_1_1,00.html
Participatory Research and Gender Analysis (PRGA)	http://www.prgaprogram.org/

<u>Name</u>	<u>URL</u>
Rural Poverty Portal: Resources on women	http://www.ruralpovertyportal.org/web/guest/topic/resources/tags/gender
United Nations: UN Development Fund for Women (UNIFEM)	http://www.unifem.org/
_____: The World's Women statistical reports	http://unstats.un.org/unsd/demographic/products/indwm/
WikiGender	http://www.wikigender.org/index.php/News_Home
Women of Innovation social networking site	http://womenofinnovation.ning.com/
(& Girls of Innovation social networking site)	http://girlsinnovate.ning.com/
World Bank: Gender Action Plan	http://go.worldbank.org/31BG3VTF40
_____: Gender and Development	http://www.worldbank.org/gender
_____: Gender Law Library	http://www.doingbusiness.org/elibrary/data/elibrary.aspx?libID=1
_____: Online bibliography of gender and ICT	http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTGENDER/EXTICTTOOLKIT/0,,contentMDK:20273352~jsCURL:Y~menuPK:578394~pagePK:64168445~piPK:64168309~theSitePK:542820,00.html
World Summit on the Information Society	http://www.itu.int/wsis/index.html