The Gender Global Entrepreneurship and Development Index (GEDI)

A 30-country analysis of the conditions that foster high-potential female entrepreneurship

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Full Report of Findings

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Abbreviations

GEDI: Global Entrepreneurship and Development Index
GEM: Global Entrepreneurship Monitor
GGGI-WEF: Global Gender Gap, World Economic Forum
GID-OECD: Gender, Institutions and Development
ILO: International Labor Organization
IMF: International Monetary Fund
OECD: Organization for Economic Co-operation and Development
TEA: Total Entrepreneurship Activity – the percentage of the working age (18-64) population that are either a nascent entrepreneur or owner-manager of a new business (no more than 42 months old)
UNESCO: United Nations Educational, Scientific and Cultural Organization
WB: World Bank
WBL: Women Business and the Law Database, World Bank
WEF: World Economic Forum
WEO- EIU: Women's Economic Opportunity, Economist Intelligence Unit

Key Findings

In the 2014 Gender GEDI Index, the number of countries analyzed increased from 17 to 30. Built upon the same theoretical framework as the 2013 Gender-GEDI – measuring entrepreneurial environment, ecosystem and individual aspirations, and scoring nations on a scale ranging from 0 to 100 – our analysis this year uncovers the following key findings:

- The United States (with a score of 83), Australia (80) and Sweden (73) are the top ranking countries in the 2014 Gender-GEDI. They are followed by France and Germany (tied at 67), Chile (55), the United Kingdom (54) and Poland (51) which all received an overall score of 50 or more.

- Twenty-two countries received an overall Gender-GEDI score of less than 50 out of 100, indicating that many of the fundamental conditions for high potential female entrepreneurship development are generally lacking in the majority of countries.

- The Gender-GEDI Index identifies strengths and weaknesses at all score levels. Top performers who rank in 1st through 8th place tend to have good overall business environments and would benefit from supporting programs to activate and accelerate the growth of high-potential women entrepreneurs.

- Fourteen countries ranked from 9th to 22nd place in the Gender-GEDI Index make up the 'Moderate Performers' group. The areas that mid-ranking economies could focus on to move them into the highest-ranking tier would be both to implement current women's enterprise development interventions and support as well as make basic improvements in the business-enabling environment.

- In the lowest tier are eight economies ranked 23rd to 30th place in the Gender-GEDI Index. They include Nigeria (29), Morocco and Ghana (both 27), India (26), Uganda and Egypt (both 19), Bangladesh (17), and Pakistan (11). The areas that need improvement for the lowest-performing economies include basic legal rights and education for women and acceptance of women's social and economic empowerment, in addition to specific women's enterprise development support and the overall business environment in terms of regulations, R&D investments and capital markets.

- Among the 17 countries included in both the 2013 and 2014 Gender GEDI Index reports, four increased their ranking and four declined. Japan improved the most, up three places from 12th to 9th. Brazil jumped two places, from 14th to 12th. India and the United Kingdom each moved up one place in the rankings. The biggest decline was seen in Malaysia, which dropped four ranks, from 9th to 13th. Egypt, Mexico and Morocco each dropped one place on the comparative 2013-14 ranking.

Introduction

Globally, women and men are not on a level playing field in terms of access to resources, which continues to impact women's ability to start and grow businesses. The Gender-GEDI focuses specifically on identifying and assessing the gendered nature of factors that, if addressed, could allow high potential female entrepreneurs an equal chance to flourish.

There is increasing awareness of a gender dimension to entrepreneurship and an increasing realization among policy makers and practitioners alike, that gender-blind business support measures do not support women's enterprise development to the extent that they support its male equivalent. Focusing efforts specifically on women's enterprise development, and measuring their impact, is paramount. The Gender-GEDI Index results distill the most important issues for policy makers, governmental officials and other decision makers interested in improving the conditions for high potential female entrepreneurship development.

The Gender-GEDI identifies high potential female entrepreneurs as women who own and operate businesses that are innovative, market expanding and export oriented. Through their entrepreneurial activities, high-potential female entrepreneurs not only contribute to improving their own economic welfare but to the economic and social fabric of society through job creation, innovative products, processes, and services, and cross border trade. By focusing on the gender differentiated conditions that often affect high potential female entrepreneurship development, the Gender-GEDI provides a new systematic approach that allows for cross-country comparison and benchmarking.

The Gender-GEDI is the world's first diagnostic tool that comprehensively identifies and analyzes the conditions that foster high potential female entrepreneurship development. As such, the Gender-GEDI does not simply provide a measurement of the quantity of female entrepreneurs, rather it focuses on identifying a country's strengths and weaknesses in terms of providing favorable conditions that could lead to high potential female entrepreneurship development. Launched in 2013, the initial pilot study provided a comparative analysis for 17 developed and developing economies spanning several regions and levels of national economic development.

The 2014 Gender-GEDI has been improved in a number of key ways. First, we have added 13 countries[1] to the original 17 countries,[2] which provides increased regional coverage in Africa, Asia, Europe and Latin America and the Caribbean. These 30 countries combined represent 66% of the world's female population and 75% of the world's GDP. In addition to expanding geographic coverage, we have also created and adapted nine indicators that result in an even richer analysis. To frame these content innovations, the 2014 Gender-GEDI also reflects a context innovation: a new research perspective based on a female entrepreneurship continuum. This shift in perspective places more emphasis on areas where there is the greatest potential for impact: public policy initiatives targeting Promising and Potential Entrepreneurs, which can most significantly increase the pool of high potential female entrepreneurs.

Chapter 1. Finding the Answers

The approaches taken to studying female entrepreneurship have often been based on very limited perspectives on the influences for female entrepreneurship development. Frequently, female entrepreneurs have been assessed in terms of their individual characteristics as compared to their male counterparts – ranging from basic characteristics such as age and level of education to attitudes and perceptions such as aversion to risk, desire for growth or self-efficacy. Though important, focusing solely on individual attributes – sometimes called the 'Individualistic Fallacy' – is based on the notion that the wider social systems do not exhibit any characteristics beyond those played out by individuals[3].

To date, much research on female entrepreneurship development has focused on individual female entrepreneurship characteristics even though it is clear that individual characteristics are not the main determinants for female entrepreneurship development. At the same time, basic issues such as access to technology, capital and education have gone overlooked in country comparisons.

Additional factors related to the institutional environment, such as equal legal rights, access to education, networks, technology and capital play a critical role in female entrepreneurship development, as do social norms, values and expectations. Also the overall business environment in terms of laws, regulations and business stability will affect the ability for businesses to thrive and grow.

A major impediment to comparative research on female entrepreneurship has been the dearth of reliable data. Thankfully, new datasets like the World Bank's Global Findex Database and the World Bank's Women, Business and the Law provide gender specific data on previously under-researched areas such as access to basic financial resources (i.e. 'access to a bank account') and equal legal rights. In addition, since 1999, the Global Entrepreneurship Monitor (GEM) has been compiling comparative data on male and female entrepreneurs collected by national teams globally. However, many data gaps still exist in key areas.

Another impediment is how to define 'female entrepreneurship'. Many studies take a broad approach; including all female entrepreneurs, ranging from informal petty traders and shopkeepers to high-tech startups. Though all forms of female entrepreneurship are important, higher levels of business sophistication often require additional resources, skills and aspirations.

High impact, high growth or high potential female entrepreneurship: Does it matter?

High impact or high growth entrepreneurs constitute a sub-segment of entrepreneurs who are characterized by rapidly growing businesses. But only a small fraction of all entrepreneurs want to scale their businesses. According to an Ernst and Young 2011 study in which 80,000 adults in 60 countries were surveyed, only 3 out of every 1,000 respondents achieved high growth[4]. These high impact entrepreneurs, defined in terms of their growth aspirations[5], tended to be college educated and had internationally-oriented businesses. Thus 'high growth' entrepreneurs make up only a small fraction of all entrepreneurs.

It is not easy to pick which entrepreneurs will successfully grow their businesses exponentially. In a study of rapidly growing firms in the US, Acs and Mueller (2008) find positive short term employment increases but negative employment effects two years after startup and then later, pronounced positive long-term employment effects. In other words, rapidly growing firms (often called 'gazelles') demonstrate their major employment effects only after they have been in business for at least five years or up to twenty-five years after startup (2008:96). This study illustrates the difficulty in identifying business gazelles, since it can take a number of years for them to emerge. Instead of focusing solely on potential 'gazelles' it may be a more productive strategy to promote a healthy entrepreneurial eco-system that supports a diverse array of female owned firms from which gazelles can grow.

Given the difficulty in identifying gazelles and the small fraction they represent of all entrepreneurs, we feel it is more beneficial to broaden our focus to 'high potential' female entrepreneurs. We define 'high potential' female entrepreneurs as those who exhibit characteristics associated with high growth outcomes but which may currently be an aspiration rather than an achievement. Thus, high potential female entrepreneurs are 'market expanding, export oriented, innovative' entrepreneurs[6].

When a country is not utilizing its full potential, the economy as a whole suffers. Fewer 'high potential' female entrepreneurs result in fewer ideas being realized, less innovation, less export potential and fewer jobs created. Through their entrepreneurial activities, high-potential female entrepreneurs not only contribute to increasing their own economic welfare but to improving the economic and social fabric of society through job creation, innovative products, processes, and services, and cross border trade. Moreover, as women, female entrepreneurs have unique capabilities to reach out to female customers[7]. These innovations do not have to follow the expected high-tech route to reach phenomenal success. Take, for example, US-based Sara Blakely, who at age 42 became the world's youngest self-made female billionaire based on the success of her high growth business, Spanx, which manufactures shapewear targeting an exclusively female clientele[8].

The 'Melting Middle' and the continuum of Female Entrepreneurship Development[9]

There are many types of female entrepreneurship. For the Gender-GEDI, we adopt the 'Melting Middle' perspective[10] to identify the female entrepreneurs that would benefit the most from public policy interventions. This perspective classifies female entrepreneurship according to six groups along a continuum.

These six groups include

- Privileged Entrepreneurs
- Die-Hard Entrepreneurs
- Promising Entrepreneurs
- Potential Entrepreneurs
- Reluctant Entrepreneurs
- Resistant Non-Entrepreneurs

The Gender-GEDI Index results are focused on fostering conditions for Promising and Potential Entrepreneurs. This is also the group for which public policy interventions would have the greatest impact. The two opposing ends of the continuum are less affected by public policy.

Public Policy initiatives would have less impact on **Privileged Entrepreneurs.** These are entrepreneurs that enjoy network and resource advantages due to their elite social status and family connections. They are privileged in the sense that they operate above the normal limitations in a given environment. In contrast, **Die-hard Entrepreneurs** will start businesses regardless of prevailing conditions. These entrepreneurs are often considered born entrepreneurs since they often started to engage in entrepreneurship at a young age. Public policy will also have little effect on these types of startups but could favorably influence growth potential for Die-hard entrepreneurs.

Promising and Potential Entrepreneurs occupy the middle of the continuum. Potential Entrepreneurs are individuals who could be entrepreneurs in terms of their attitudes, skills, interests, education or experience, yet have not engaged in any start-up activity. For some individuals, specific skill areas may need to be strengthened or developed. Promising Entrepreneurs are entrepreneurs at the startup phase or with an existing business. For these entrepreneurs, some conditions prevent their business from growing. These two groups occupy the continuum's middle section referred to as the 'Melting Middle': entrepreneurs who are very sensitive to conditions—self-

reinforcing in institutions, markets or attitudes/social norms. The pool of Promising and Potential Entrepreneurs seems to appear or disappear in response to prevailing conditions and it is the area for which public policy is best positioned to deliver impact. In some countries, the impediments for most forms of promising and potential female entrepreneurship are so extreme that this type of entrepreneurship may not seem to exist at all. In most countries, there are bottlenecks that limit the emergence of these two groups which result in the tendency for lower overall rates of female entrepreneurs.

The final two groups of entrepreneurs are Reluctant Entrepreneurs and Resistant Non- Entrepreneurs. **Reluctant Entrepreneurs** are individuals who engage in business activities in order to generate an income when other options are lacking or nonexistent[11]. In contrast, **Resistant Non-Entrepreneurs** have no interest in entrepreneurship. Unlike Reluctant Entrepreneurs who only engage in entrepreneurial activity when needed, Resistant Non-Entrepreneurs do not perceive entrepreneurship as a viable option. In the short run, Reluctant Entrepreneurs may benefit from public policy initiatives such as access to credit or skills training programs. However, since these individuals started businesses reluctantly, they tend to cease their business operations if another more attractive means to earn a living becomes available.

This report is structured as follows. The following chapter presents the changes made to the 2014 index. Chapter three describes the process of data selection and index construction. Chapter four presents our results, including an analysis of three performance levels and regional highlights. Chapter five provides a comparison of the 2014 Gender-GEDI results with the three main indices measuring a country's business environment and competitiveness. Chapter 6 includes a conclusion and discussion of future steps and data gaps.

The three appendices included at the end of this report provide extensive insights into country specific results, country comparative results and additional country level data. Appendix 1 contains a visual overview of individual country performance highlighting high and low scoring variables. Appendix 2 shows the range of results for each variable and is useful as a country comparative overview. Appendix 3 provides additional data that we feel is useful as country background information such as GDP per capita, the percentage of the total population involved in startup activity, if a country has ratified CEDAW[12] and if women have equal access to leadership positions. In addition, two gendered measures are presented where the data was too limited to allow us to include it more fully in the Index. These are (1) The existence of gender-specific public procurement policies and (2) If the country has an active Global Banking Alliance for Women bank branch.

Chapter 2. Changes to the 2014 Index

The 2014 Gender-GEDI index contains a number of innovations and improvements upon the 2013 pilot version. At the variable level, we have created the indicator Labor Force Parity (Pillar 10), compiled two new indicators: LinkedIn Users (Pillar 4) and Female Executive Status (Pillar 5), refined two indicators: Equal Legal Rights (Pillar 1) and 1st tier financing (Pillar 15) and introduced four new indicators: Market Size (Pillar 1), Secondary Education (Pillar 2), Technology Absorption (Pillar 7) and 3rd tier Financing: Depth of Capital Markets (Pillar 15). For Pillar 10 we changed the pillar name from Voice and Agency to Gender Gaps to better reflect the new institutional variable 'Labor Force Parity'. Both of the variables contained in this pillar (Entrepreneurship Ratio and Labor Force Parity) are now based on measuring the gaps or ratios between female and male participation (for the Gender-GEDI framework, see figure 3.2 on page 12).

A further description of the new variables together with a brief rationale for the change is provided below. In addition we include a presentation of two variables we would have liked to have included in the 2014 index.

Pillar 1: Opportunity Perception: Equal Legal Rights & Market size

The 2013 'Equal Legal Rights' is based on data from the World Bank's Women, Business and the Law. In 2013 we consolidated the responses to 27 different dimensions in order to create the Gender-GEDI variable, but for the 2014 Index we reduced the number of issues included to 16. This was done in conjunction with consultations with researchers at Women Business and the Law in an effort to focus our variable to three issues that affect a woman's ability to start and grow a business: access to legal rights, resources and employment.

In addition, for the 2014 Index we combined 'Equal Legal Rights' with an institutional measure for 'Market size'. 'Market size' indicates the size and scope of the domestic market and is based on two dimensions: the domestic market size and urbanization. Urbanization is the percentage of the population living in urban areas based on data from the Population Division of the United Nations. Domestic market size is the sum of gross domestic product plus value of imports of goods and services, minus value of exports of goods and services. This data is from the World Economic Forum. By combining equal legal rights with market size, we believe that this pillar now better reflects the ability of the female population to act on perceived business opportunities based on both legal rights and domestic market characteristics.

Pillar 2: Startup Skills: Secondary Education

We removed the 'Women's Post-Secondary Education' which measured the enrolment of women in tertiary education and replaced it with 'Secondary education'. Secondary education provides the percentage of the female population (ages 25 or older) with at least some secondary education. The rationale for switching this indicator is twofold: first, the tertiary education variable used in 2013 was a male/female ratio and did not give us insights for the total portion of the female population with tertiary education. Second, access to secondary education better reflects women's overall access to education. Studies have shown that once girls gain access to basic levels of education, there is a high likelihood that they will continue onto higher levels of education.

Pillar 4: Networking: Female LinkedIn Profiles

Pillar 4 measures women's access to networks. In the 2013 index it included access to both personal and virtual networks. In the 2014 index we combine access to virtual networks measured as the percentage of female internet users with women's use of professional social networking platforms. To measure the use of social networking platforms we use the percentage of women with LinkedIn profiles, since it is the main professional social networking

platform used in most of our 30 country sample. Moreover, there exists no obvious barrier to the use of LinkedIn since it is free of charge and widely available. Facebook is a social media platform which tends to be more frequently used by women than men. However, while Facebook can be successfully used by entrepreneurs, it is generally used for personal purposes. LinkedIn, on the other hand, is specifically geared towards building professional networks. We are aware that in some countries, other professional social networking platforms are as popular as or even more popular than LinkedIn. Xing is an example of a LinkedIn competitor used in many German speaking countries. However, there is no indication that the gender composition would be any different in terms of individual profiles on competitor platforms.

Pillar 5: Cultural Support: Female Executive Status

In the 2013 Index we used the variable 'Entrepreneur Perception' which measures the female population who say that entrepreneurship is a good career choice and entrepreneurs enjoy high status. Unfortunately, since this variable does not indicate whether the 'entrepreneur' is male or female, the results could be misleading with respect to perceptions of *female* entrepreneurs. Research has shown that both men and women associate a male image with being an 'entrepreneur' more readily than with a female image[13]. For this reason, there is a high likelihood that even though the question does not specify entrepreneur gender, the indicator measures female attitudes towards male entrepreneurs and not towards female entrepreneurs. In the 2014 Index we decided to switch out this variable in favor of a slightly different measure that provides greater insights into the acceptance of 'high potential' female entrepreneurs. We use data from the World Values Survey on the percentage of the female population that do not believe that "men make better business executives than women do." These responses provide a better reflection of women's attitudes towards and acceptance of women in leadership and decision-making positions, such as those held by successful 'high potential' female entrepreneurs.

Pillar 7: Technology Sector: Technology Absorption

We did not include a measure for technology absorption in the 2013 index but feel it is an important addition to the 2014 index. In the 2013 index we used a variable for 'female science graduates'. However, after closer examination, we realized that the measure for female science graduates was not as relevant a measure as we had hoped. It included too wide a range of science-related degrees, and in a number of countries women achieve high relative percentages of degrees but do not actually use them. Therefore, in the 2014 Index we switched 'female science graduates' out for the measure 'Technology Absorption'. Technology Absorption is a gender neutral variable that measures the firm-level technology absorption capability. Combined with the percentage of female startups in the tech sector, Technology Absorption provides us with a better indication of a country's capacity to provide the conditions to sustain female tech startups.

Pillar 10: Gender Gaps: Female Labor Force Parity

In the 2013 Index we included a measure for female labor force participation. Female labor force participation provides a good indication of the ability of women to be take part in formal economic activities, important for paving the way for women's greater economic visibility as 'high potential' female entrepreneurship. However an often cited issue for female entrepreneurship development is the fact that these businesses tend to be clustered in highly competitive, female-dominated sectors where profit margins are small. Not surprisingly, the business sectors where women entrepreneurs start their businesses tend to mirror the sectors where women work. Therefore, occupational crowding of women is further reflected in the sectors where women start businesses. This underlying cause needs to be addressed in order to diversify the sectors where female entrepreneurship occurs. For this reason, we included the Labor Force Parity indicator in the 2014 Gender-GEDI, which measures gender balance in labor force sectors. Sectors who are gender-balanced have a female:male ratio between 40:60 and 60:40.

Pillar 15: External Financing: 1st tier financing & 3rd tier financing

1st tier Financing

In the 2014 version of this pillar we include the percentage of women who have a bank account for business purposes in addition to the two other measures used in the 2013 index: the percentage of women with a bank account and women's access to finance programs. The addition of bank accounts *for business purposes* allows us to compare countries along this important dimension.

3rd tier Financing
Depth of Capital Market

The Depth of Capital Market indicator measures access to equity capital for high growth entrepreneurs. Countries with better-developed equity markets provide risk capital, an exit strategy for investors and financial rewards for successful entrepreneurs, all of which do not exist in countries that have a bank-centered capital market (this variety of capital markets tends to be much more conservative). Unfortunately, comparative data on female entrepreneurs' access to equity financing is non-existent. However, the presence of well-developed stock markets is a necessary pre-condition for the development of female-entrepreneur-friendly VC and investor financing. This measure takes the place of 'female business investors' which averaged the amount of informal business investments made by women. Though interesting, the informal business investment measure was difficult to interpret, since it did not tell us if female investors were investing in female entrepreneurs.

Additional Variables not included in the Index

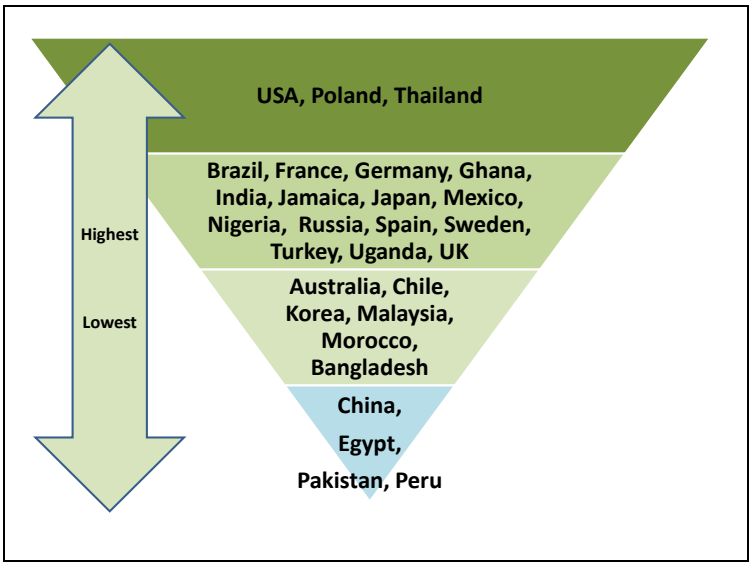
In this section, we present the two variables: Female ICT Role Models and the Creative Class, which we would have liked to include in the index but due to data limitations, were not able to. The discussion below provides insights into the merits of these two measures and the possibilities of including them in the future.

The Female ICT Role Models

We would have liked to include a variable measuring the extent of female ICT role models in the Gender-GEDI Index. This variable is collected by the Web Foundation and covers 29 of the 30 countries from our Index. Based on an expert survey, this variable provides insights not only to the presence of women in the ICT sector but more specifically ranks countries according to three additional conditions: 1) If women occupy senior positions in IT sector firms; 2) If women are in senior government positions and have an impact on or govern the sciences or information technology; and, 3) If female voices are prominent across the IT sector landscape. Countries are then ranked in terms of their fulfillment of these three criteria.

Unfortunately, the Web Foundation has decided not to continue to include this variable in their annual survey. Therefore we have removed it from the Gender-GEDI Index. Figure 2.1 shows the Female ICT Role Models results for the 2014 Gender-GEDI countries. For our 30 country sample, the US, Poland and Thailand fulfill all three conditions while China, Egypt, Pakistan and Peru do not fulfill any of them.

Figure 2.1: Female ICT Role Models: Highest to Lowest ranking countries



Source: Web Foundation – 2012 data
No data is available for Panama

The Creative Class

As part of refining and improving the 2014 Gender-GEDI Index, we explored options for better capturing female entrepreneurs' participation in dynamic and innovative sectors beyond our current measure for female startups in the tech sector. The creative class seemed a useful concept on which to base the development of a new measure. The creative class is a socioeconomic class coined in 2002 by Richard Florida,[14] an American economist and professor. According to Florida, the creative class is a key driving force for economic development of post-industrial cities in the United States. The economic benefits conferred by the Creative Class include outcomes in new ideas, high-tech industry and regional growth. The underlying assumption of the creative class is that it will revitalize urban centers creating new wealth, innovation and prosperity. Since women make up the majority of creative class workers, it would seem that the gains of promoting the creative class development would flow to women. However, increasingly, criticism has emerged regarding the inequalities inherent in the creative class model. In 2013, Florida himself has conceded the limits of the creative class especially for women who continue to experience a persistent earnings gap[15]. The creative class categories include both knowledge intensive sectors as well as supportive service sectors, the arts and also crafts. After some initial experimentation of including several measures for the creative class, we concluded that the current measures are flawed and considerable effort is needed to create more accurate measures that take the role of women in the creative class into account. In the future, we hope to develop a measure that reflects the participation of female startups in a broader range of dynamic sectors.

Chapter 3. Methodology and Data

3.1 Introduction

In this chapter, we present the methodology and data used to construct the Gender-GEDI Index. We begin by introducing the Gender-GEDI model and framework in section 2.2. In section 2.3, we describe the Penalty for Bottleneck Methodology which we use for the Gender-GEDI to highlight the lowest index values or pillar 'bottleneck' for each individual country in our sample. The construction of the index is discussed in section 2.4 and the data selection is presented in the following section 2.5. The final section 2.6 provides detailed descriptions of the variables used in the Gender-GEDI.

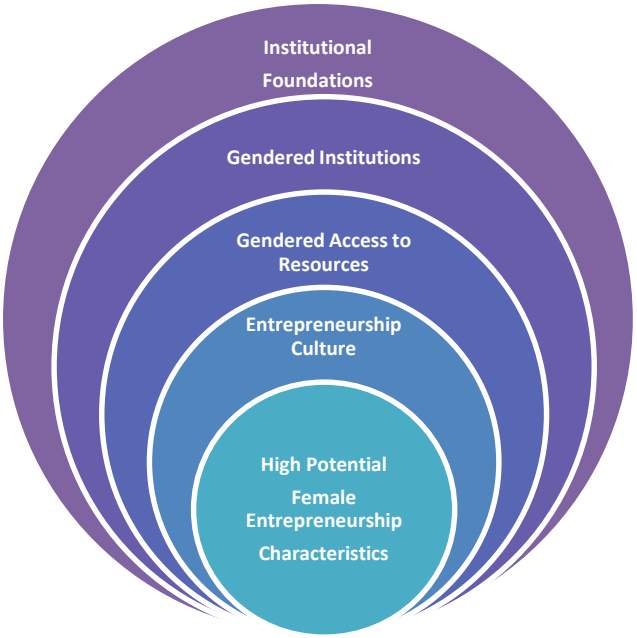
3.2 Methodology and Data

The conditions and characteristics that lead to 'high potential' female entrepreneurship occur on multiple levels. Female entrepreneurs, like their male counterparts, are influenced by the general business environment in which they live. If the general business environment is unstable, if the procedures for starting, running or exiting a business are highly regulated or bureaucratic, this would form a disincentive for male and female startups alike. But in some cases, formal institutions or cultural conditions exist that create additional barriers for women that make it more difficult to start or grow a business enterprise. Such conditions can include diminished legal rights (either for all women or with respect to rights that women may give up at marriage) or restrictions to women's activities outside of the home or their ability to travel within their communities, outside their communities, or outside the country. In addition, this combination of gendered attitudes, social norms and beliefs can result in more limited access to resources critical for 'high potential' female entrepreneurship development such as education, skills and finance.

Attitudes also play a crucial role in forming a country's 'entrepreneurial culture,' meaning how the general population views entrepreneurial endeavors, tolerates risk, and judges business ownership as a viable career option. This cultural environment in turn influences individual opportunity recognition and willingness to take the risk to start a new venture.

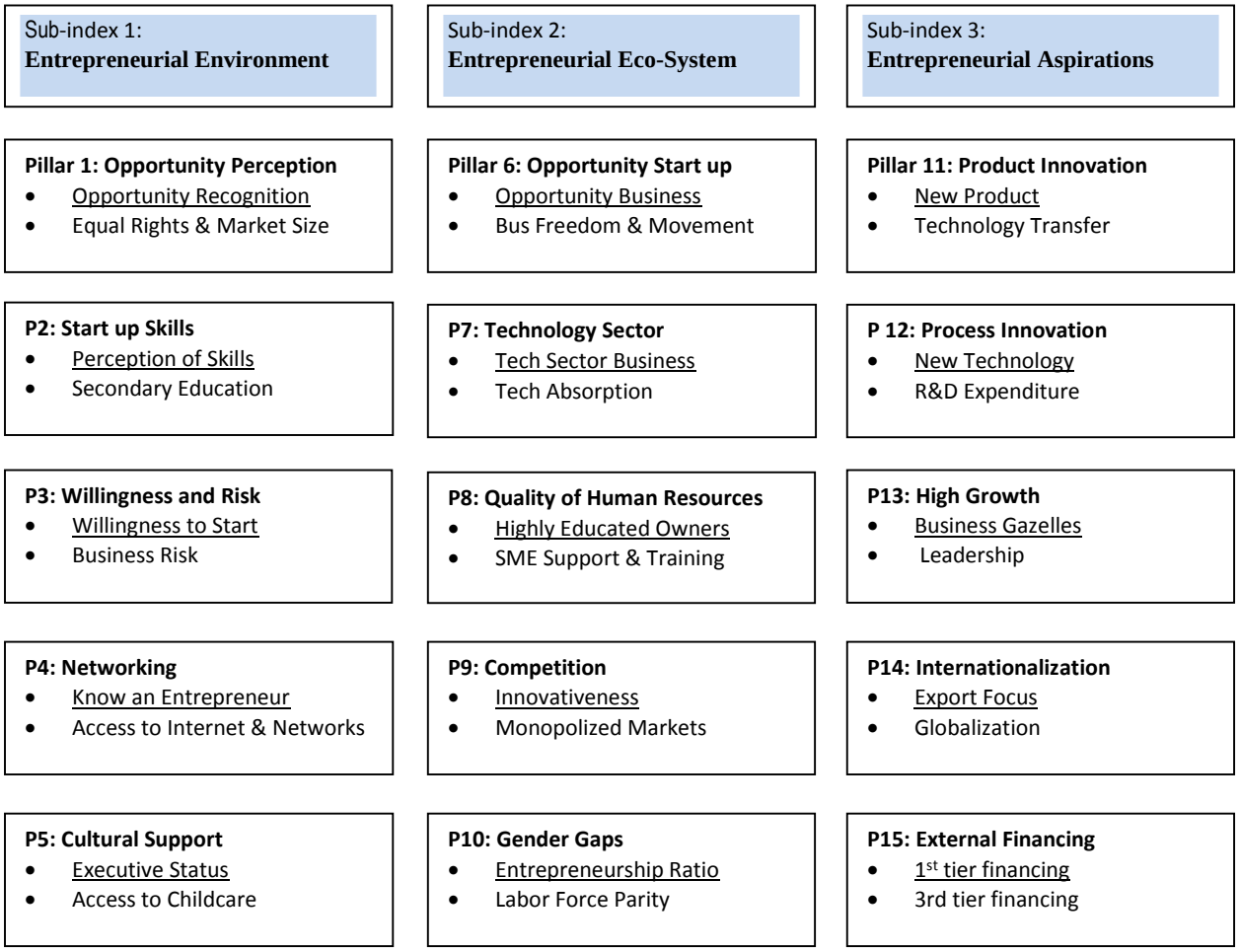
The institutional foundations including gendered institutions, access to resources and the entrepreneurship culture form the context from which female startups emerge. In focusing on 'high potential' female entrepreneurship, we are specifically interested in female startups that exhibit characteristics that are related to 'high impact entrepreneurship' which we define as market expanding, innovative and exporting businesses. The interaction between these five layers is captured in the Gender-GEDI model shown in figure 3.1.

Figure 3.1 The Gender-GEDI Model



In order to facilitate our analysis, we incorporate the five-level approach presented in the Gender-GEDI model into the Gender-GEDI framework. Each of level of this model is captured within one of the three sub-indices of the Gender-GEDI. These three sub-indices are: Entrepreneurial Environment, Entrepreneurial Eco-System and Entrepreneurial Aspirations. Broadly speaking, Entrepreneurial Environment focuses on assessing the 'entrepreneurial spirit and culture' of a given society as well as the presence of institutions to support entrepreneurial startups. The Entrepreneurial Eco-System contains variables that capture the access to resources and institutions needed for female business development. The final sub-index, Entrepreneurial Aspirations, focuses on the individual entrepreneurial characteristics as well as resource availability needed for 'high potential' female entrepreneurship to prosper and contribute to economic growth. These three sub-indices stand on 15 pillars, each of which contains an individual and an institutional variable that corresponds to the micro- and the macro-level aspects of entrepreneurship. Unlike other indices that incorporate only institutional or individual variables, the pillars of the Gender-GEDI include *both* individual and institutional variables. These pillars attempt to capture the open-ended nature of entrepreneurship; analyzing them can provide an in-depth view of the strengths and weaknesses of those listed in the index. The Gender-GEDI Framework is shown in Figure 3.2 and the 15 pillars are described in detail below.

Figure 3.2: The 2014 Gender-GEDI Framework



Note: Each pillar contains an individual level indicator (underlined) and an institutional level indicator.

The five pillars of the Entrepreneurial Environment sub-index described

Pillar 1: OPPORTUNITY PERCEPTION. This pillar captures two aspects of opportunity: the first is the awareness of opportunity and the second is the ability to act on opportunity. Research has shown that a population's opportunity perception is an essential ingredient of entrepreneurial startups[16]. But if women are socialized differently than men are, they will perceive opportunities in a different way[17]. This pillar includes an individual variable that measures the percentage of the female population that can identify good opportunities to start a business in the area where they live. However, the desire to act on these opportunities for some women is constrained legally, since in a number of countries worldwide women do not share the same legal rights as men. The 'Equal Legal Rights' variable measures the parity of laws for women and men in 17 key areas including capacity, property rights and employment. Opportunity is also affected by a country's market size. The Market Size variable is an institutional variable that captures both urbanization and the domestic market size which both contribute to creating conditions for business development. For this pillar, we combine 'Equal Legal Rights' with 'Market Size' to form the institutional level variable.

Pillar 2: STARTUP SKILLS. Launching a successful venture requires the potential entrepreneur to have the necessary startup skills[18]. The individual variable, 'Perception of Skills' measures the percentage of the female

population who believe they have adequate startup skills to start a business. The results of the Global Entrepreneurship and Development Index (GEDI) have shown that higher percentages of both men and women in developing countries believe they have the necessary skills to start a business, but in reality, they often lack a more complex level of skills needed to grow a business to the next level of size and sophistication. Hence, education plays a vital role in teaching and developing entrepreneurial skills and building networks. We use the percentage of the female population who has completed secondary education as the institutional variable since it better reflects women's overall access to education. Studies have shown that once women get access to basic levels of education, there is a high likelihood that they seek higher levels of education. Therefore the initial access for women to basic levels of education is essential.

Pillar 3: WILLINGNESS AND RISK. Of the personal entrepreneurial traits, fear of failure is one of the most important obstacles to the startup process[19]. Women have often been viewed as more 'risk averse' than men but more recent research has indicated that the main difference lies in the way in which men and women perceive themselves and their environments[20]. This pillar includes the variable 'Willingness to Start' which measures the percentage of the female population who do not believe that fear of failure would prevent them from starting a business. For a more macro view, we combine 'Willingness to Start' with the institutional variable 'Business Risk', which reflects the availability and reliability of corporate financial information, the protection of creditors by law, and the institutional support of inter-company transactions.

Pillar 4: NETWORKING. Networking is critical for entrepreneurs. Entrepreneurs who have better networks are more successful, can identify more viable opportunities, and access more and better resources[21]. The Networking pillar combines two strong indicators for networking. The first, individual-level indicator 'Know an Entrepreneur' shows the percentage of the female population who personally know an entrepreneur who started a business within the last two years. The second, institutional-level indicator measures the percentage of female Internet users together with the percentage of women with LinkedIn profiles. The Internet opens up new opportunities for entrepreneurial networking that eliminate temporal, geographic as well as gendered social constraints that have in many cases limited women's access to information and resources. The percentage of women with LinkedIn profiles provides us with insights into women's use of professional social networking platforms. There is no obvious impediment to the use of professional social networking platforms such as LinkedIn since it is free of charge and widely available. We are aware that in some countries, other professional social networking platforms are as popular as, or even more popular than LinkedIn. Xing is a LinkedIn competitor used in many German speaking countries. However, there is no indication that the gender composition of individual profiles would be any different on competitor platforms.

Pillar 5: CULTURAL SUPPORT. This pillar combines the female population's attitudes towards women in executive roles with an indicator measuring access to childcare. Entrepreneurship is a socially constructed phenomenon[22] and the views toward entrepreneurship vary and are socially embedded[23]. In other words, without strong cultural support, the best and brightest may not decide to apply their skills towards entrepreneurship (Baumol 1990). For the individual level variable, we use the World Values Survey data which measures the percent of women that respond with 'disagree' or 'strongly disagree' to the question 'Do Men Make Better Business Executives than Women?' The responses provide an indication of women's attitudes towards women in leadership and decision-making positions such as those held by successful female entrepreneurs. The associated institutional variable measures access to childcare that is both affordable and of high-quality. It also includes the role of the extended family in providing childcare. Social norms as well as personal 'internalized' gendered beliefs worldwide result in women being the primary care-takers for their children. Access to affordable and high-quality childcare expands mothers' opportunities to pursue entrepreneurial activities.

The five pillars of the Entrepreneurial Eco-System sub-index described

Pillar 6: OPPORTUNITY STARTUP. This pillar combines the level of female opportunity-motivated startup activity with regulatory constraints as well as gendered constraints to participate fully in business activities. An entrepreneur's motivation for starting a business is an important signal of quality. Opportunity entrepreneurs are believed to be better prepared, to have superior skills, and to earn more than what we call necessity entrepreneurs. The individual level variable 'Opportunity Business' provides the percentage of female Total Entrepreneurial Activity (TEA)[24] businesses started to exploit a good opportunity, to increase income, or to fulfill personal aims; in contrast to businesses started by women because they had no other options for work. The institutional variable combines both an overall measure of the business environment with a specific gendered measure that affects business activity. 'Business Freedom' captures overall burden of regulation, as well as the regulatory efficiency of the government in influencing startups and operating businesses. This is combined with 'Freedom of Movement', a gendered institutional variable that measures legal restrictions or discriminatory practices affecting women's access to public space, which impacts a women's ability to start and or expand a business.

Pillar 7: TECHNOLOGY SECTOR. Currently, technology-based businesses play a critical role in innovation, economic development and growth. The individual level variable for this pillar 'Tech Sector Business' measures the percentage of female TEA businesses that are active in the medium or high technology sectors. The institutional variable 'Tech Absorption' measures the firm-level technology absorption capability in a country.

Pillar 8: QUALITY OF HUMAN RESOURCES. The prevalence of high-quality human capital is vitally important for ventures that are highly innovative and require an educated, experienced, and healthy workforce to continue to grow. A critical feature of a startup with high growth potential is the entrepreneur's level of education (Bates 1990). The 'Highly Educated Owners' variable captures the quality of entrepreneurs' academic preparation; it is widely held that entrepreneurs with higher education degrees are more capable and willing to start and manage high-growth businesses. The quality of employees also has an impact on business development, innovation, and growth potential. In addition, female entrepreneurs having a higher degree may not be the only advantage in education as graduate school may open up access to key networks and networking channels that help female entrepreneurs in their businesses (Morris 2012). The institutional variable 'SME Support and Training' measures another important aspect for business skill development through SME support and training. It considers not only the availability (including geographic availability), accessibility and affordability of the programs, but also additional gendered factors such as the length of the program (taking into account women's time burdens) as well as if the program is culturally appropriate for women to participate in.

Pillar 9: COMPETITION. Competition is a measure of the level of a business' product or market uniqueness, combined with the market power of existing businesses and business groups. 'Innovativeness' is defined as the percentage of female businesses that have only a few competitors that offer the same product or service. However, market entry can also be prevented or made more difficult if there are powerful business groups dominating the market. The extent of market dominance by a few business groups is measured by the institutional level variable 'Monopolized Markets'. Lower degrees of monopolized markets should facilitate new business entry.

Pillar 10: GENDER GAPS. This pillar measures two important aspects of gender parity: In entrepreneurship and in the labor force. In essence it captures the ability of women to be active and participate on par with men in economic activities. The first variable 'Entrepreneurship Ratio' measures the ratio of female to male TEA. This percentage includes both opportunity and necessity driven entrepreneurs and makes no distinction between formal or informal entrepreneurial activity. It therefore measures the total engagement of women and men in startup and early stage entrepreneurial activity. The second variable 'Labor Force Parity' measures the ratio of female to male labor force

participation in a country's main sectors of employment. Female labor force parity provides a good indication of a country's ability to exploit its innovative and entrepreneurial potential. Research shows that business startups follow gendered employment patterns. Balanced representation of men and women in the labor force in a country can cultivate a pool of male and female entrepreneurs that can transform previously non-dynamic sectors.

The five pillars of the Entrepreneurial Aspirations sub-index described

Pillar 11: PRODUCT INNOVATION. New product innovation plays a crucial role for 'high potential' female entrepreneurship success. The individual variable 'New Product' is a measure female TEA entrepreneurs who are offering new products to their customers or adopting existing products. The corresponding institutional variable is 'Technology Transfer', which is a measure combining important aspects of technology transfer such as investment in R&D by the private sector; the presence of high-quality research institutions; active collaboration in research between universities and industry and intellectual property rights protection.

Pillar 12: PROCESS INNOVATION. This pillar highlights the important role played by applying and/or creating new technology for high potential female entrepreneurs by including micro and macro dimensions supporting innovation. The individual variable 'New Technology' is defined as the percentage of TEA female businesses whose principal underlying technology is less than five years old. The institutional variable used here relates to research and development (R&D) on a macro scale. R&D Expenditure is the R&D percentage of Gross Domestic Product (GDP) as reported by OECD. While R&D alone does not guarantee successful growth, it is clear that without systematic research activity, new product development—and therefore future growth—will be inhibited (Stam & Wennberg 2009).

Pillar 13: HIGH GROWTH. This pillar combines the percentage of high-growth TEA female businesses that intend to employ at least ten people and plan to grow more than 50 percent in five years (Business Gazelles) with a variable measuring the percentage of female managers (Female Leadership). Though the 'Business Gazelle' variable measures expected growth and not actual growth, there is evidence that attitudes towards growth are good indications of future entrepreneurial activity (Aidis & Mickiewicz 2006). We include the percentage of female managers as the institutional variable, since higher rates of female managers are important for 'high potential' female entrepreneurs for a number of reasons. Most importantly, female managers often embody the 'education, skills and experience needed for successful 'high potential' female entrepreneurship and as such form a pool of potential candidates.' Also the percentage of female managers provides a good indication of a country's overall acceptance of women in positions of leadership and decision-making.

Pillar 14: INTERNATIONALIZATION. A widely applied proxy for internationalization and growth is exporting, since exporting demands capabilities beyond those needed by businesses that produce only for domestic markets. An individual variable measuring the percentage of female TEA businesses exporting (Export Focus) is included as a defining characteristic of high potential female entrepreneurs. The institutional variable used is Globalization, which captures the degree to which a country's entrepreneurs are internationalized, as measured by businesses' exporting potential, controlling for the extent to which the country is economically globalized.

Pillar 15: EXTERNAL FINANCING. The availability of external financing, particularly equity rather than debt, is an essential precondition for fulfilling entrepreneurial aspirations that are beyond an individual entrepreneur's personal financial resources[25]. In general, women-owned businesses start with both lower levels of overall capitalization and lower ratios of debt financing than men-owned businesses[26]. Anecdotal evidence suggests that sex discrimination may be an influence, which leads researchers to state the need to accumulate more knowledge in this area[27]. In this pillar, we capture the 1st and 3rd financing tiers. The 1st tier financing relates to debt capital and financial literacy and includes the combined percentage of women with a bank account at a formal institution, the percentage of women with a bank account for business purposes and women's access to finance programs. The 3rd tier of financing measures the 'Depth of Capital Markets'. It measures access to equity capital for high growth entrepreneurs. Countries with better developed equity markets provide risk capital, an exit strategy for investors and provide

financial rewards for successful entrepreneurs that do not exist in countries that have bank-centered capital markets. 2nd tier financing data measuring access to credit is unfortunately not available.

The GEDI Penalty for Bottleneck methodology is applied to the pillar scores so that the 'bottleneck' (i.e. the pillar with the lowest score) penalizes the final country ranking. This allows for the inter-related nature of the pillars to affect the final scores. This approach encourages countries to address their weakest areas first, since that improvement will have the greatest effect on their final score. Without this procedure, countries could put additional resources in areas of relative strength in order to improve their final score, yet this would not lead improvement for 'high potential female entrepreneurs'. Since the variables inter-relate to one another, their balance is important. This is similar to baking a cake. For example, increasing your score in education will not lead to further increases in weak areas such as the availability of informal finance. The same is true for baking. If you don't have enough eggs, adding more flour or sugar will not solve the problem of missing eggs. A more detailed description of the Penalty for Bottleneck Methodology is given in the following section.

3.3 Penalty for Bottleneck Methodology

In the 'Penalty for Bottleneck (PFB) Methodology', a bottleneck is defined as the worst performing link or a binding constraint in the system. With respect to entrepreneurship and the Gender-GEDI, a bottleneck indicates a shortage or the lowest level of a particular entrepreneurial pillar, relative to other pillars. This notion of a bottleneck is important for policy purposes. The PFB suggests that pillars interact; if they are out of balance, 'high potential' female entrepreneurship is inhibited. The pillar values should thus be adjusted in a way that takes into account this notion of balance.

The PFB is applied as follows: after normalizing the scores of all the pillars, the value of each pillar of a country is penalized by an amount proportional to the deficit of the weakest performing pillar in that country. This simulates the notion of a bottleneck; if the weakest pillar were improved, ultimately the whole GEDI would show a significant improvement. Moreover, the penalty should be higher if imbalance is greater. The application of this adjustment implies that stable and efficient configurations (sets of pillar scores) are those that are balanced (have about the same level) in all pillars.

Equation (1) describes the PFB methodology:

$$h_{(i),j} = min\, y_{(i),j} + (1 - e^{-(y_{(i)j} - min\, y_{(i),j})}) \quad (1)$$

where $h_{i,j}$ is the modified, post-penalty value of pillar j in country i

$y_{i,j}$ is the normalized value of index component j in country i

y_{min} is the lowest value of $y_{i,j}$ for country i.

i = 1, 2,……n = the number of countries

j= 1, 2,…….15= the number of pillars

For each pillar, the bottleneck is calculated by adding one, plus an expression that depends on the difference between that pillar's country value and the value for that country's weakest pillar. *Thus, improving the score of the weakest pillar will have a greater effect on the index than improving the score of stronger pillars.* For example, assume the normalized score of a particular pillar in a country is 0.60 and the lowest pillar value is 0.19. The difference is 0.41. The natural logarithm of 1.41 is 0.34. Therefore the final adjusted value of the pillar is 0.19 + 0.34 = 0.53 instead of 0.60. The largest potential difference between two pillars can be 1, when a particular country has the highest value in one pillar and the lowest value in another. In this case the maximum penalty is 0.368, and the final adjusted value is 1-0.368= 0.632 instead of 1.

We suggest that this dynamic index construction is particularly useful for enhancing female entrepreneurship since it facilitates pinpointing the specific area or areas that need improvement. Dynamic index construction highlights the importance of more balanced pillar scores since the penalty for bottleneck will have the least effect on the overall country ranking when the difference between the pillar scores is negligible.

In general, a country's policy efforts should be focused on the lowest ranking pillar in order to improve its overall ranking. However, if a country is characterized by the extremes: a combination of both very low and very high pillar scores, then focusing simply on the lowest scoring pillar may not lead to noticeable improvement in a country's overall score since another weak pillar score will form the next bottleneck. In this instance, it is useful for a country to focus its efforts on several weakly performing pillars at once. Thus the policy message is to address the weakest performing pillar (or pillars) first, since it exerts a negative effect on all the other pillars.

3.4 Index Construction

The construction of the Gender-GEDI Index was an eight step process:

1. The selection of variables: We chose variables that we could access from original, internationally recognized data sources. Altogether we use 15 individual and 15 institutional variables. Wherever possible, we used data from 2011, and individual data are calculated based on a 2009-2011 pooled data set, except India where we have relied on the 2008 individual data.

2. The construction of the pillars: The pillars are calculated using the interaction variable method, that is, by multiplying the individual variable with the corresponding institutional variable.

3. Normalization: The next step in constructing the Gender-GEDI Index is to normalize the pillar values to range from 0 to 1. This form of normalization is compatible with the PFB method (shown below)

$$x_{i,j} = \frac{z_{i,j}}{\max z_{i,j}} \qquad (1)$$

for all j= 1 ... k, the number of pillars

where $x_{i,j}$ is the normalized score value for country i and pillar j

$z_{i,j}$ is the original pillar value for country i and pillar j

$max\ z_{i,j}$ is the maximum value for pillar j

4. Capping: Since extreme values or outliers could distort the normalized scores, we selected the 95th percentile score adjustment, meaning that any observed values higher than the 95th percentile were lowered to the 95th percentile. The rationale for this approach is to ensure reasonable benchmarks for all the other countries. The selected benchmark should not be the result of extraordinary effort or conditions but rather an attainable benchmark for all other countries.

5. Average pillar adjustment: The different averages of the normalized values of the pillars imply that reaching the same indicator values requires different effort and resources. Since we want to apply the Gender-GEDI for public policy purposes, the additional resources for the same marginal improvement of the indicator values should be the same for all indicators. Therefore, we need a transformation to equate the average values of the components. Equation 2 shows the calculation of the average value of a pillar $\bar{x}$

$$\bar{x} = \frac{\sum_{i=1}^{n} x_i}{n}. \qquad (2)$$

We want to transform the $x_{i,j}$ values such that the potential minimum value is 0 and the maximum value is 1:

$$y_{i,j} = x_{i,j}^{k} \qquad (3)$$

where k is the "strength of adjustment", the k -th moment of X_j is exactly the needed average, $\bar{y}_j$. We have to find the root of the following equation for k

$$\sum_{i=1}^{n} x_{i,j}^{k} - n\bar{y}_j = 0 \qquad (4)$$

It is easy to see based on previous conditions and derivatives that the function is decreasing and convex which means it can be quickly solved using the well-known Newton-Raphson method with an initial guess of 0. After obtaining k , the computations are straightforward. Note that if

$$\begin{aligned} \bar{x}_j < \bar{y}_j \quad & k < 1 \\ \bar{x}_j = \bar{y}_j \quad & k = 1 \\ \bar{x}_j > \bar{y}_j \quad & k > 1 \end{aligned}$$

that is k be thought of as the strength (and direction) of adjustment

6. Penalizing: After these transformations, the Penalty for Bottleneck (PFB) methodology is used to create indicator-adjusted PFB values. We define our penalty function as follows:

$$h_{(i),j} = min\, y_{(i),j} + (1 - e^{-(y_{(i)j} - min\, y_{(i),j})}) \quad (5)$$

where $h_{i,j}$ is the modified, post-penalty value of pillar j in country i

$y_{i,j}$ is the normalized value of index component j in country i

y_{min} is the lowest value of $y_{i,j}$ for country i.

i = 1, 2,……n = the number of countries

j= 1, 2,…….m= the number of pillars

7. Sub-index values: The pillars are the basic building blocks of the sub-index: entrepreneurial environment, entrepreneurial eco-system, and entrepreneurial aspiration. The value of a sub-index for any country is the arithmetic average of its PFB-adjusted pillars for that sub-index multiplied by a 100. The maximum value of the sub-indices is 100 and the potential minimum is 0, both of which reflect the relative position of a country in a particular sub-index.

$$ATT_i = 100 \sum_{j=1}^{5} h_j \quad (6a)$$

$$ABT_i = 100 \sum_{j=6}^{10} h_j \quad (6b)$$

$$ASP_i = 100 \sum_{j=11}^{15} h_j \quad (6c)$$

where $h_{i,j}$ is the modified, post-penalty value of pillar j in country i

i = 1, 2,……n = the number of countries

j= 1, 2,…….14= the number of pillars

8. Gender-GEDI point calculation: Finally, the Gender-GEDI index is calculated as the simple arithmetic average of the three sub-indices. Since 100 represents the theoretically available limit for total number of Gender-GEDI points possible, it can also be interpreted as a measure of entrepreneurship resource efficiency for high potential female entrepreneurship development.

$$GEDI_i = \frac{1}{3}(ATT_i + ABT_i + ASP_i) \quad (7)$$

Though the results of the Gender-GEDI index presented here are based on 30 countries, the index calculation process included additional countries to provide more accurate benchmarking.

3.5 Data Selection and sources

The data used for the Gender-GEDI index is comprised of both individual level and institutional level data. The individual level data is compiled from the Global Entrepreneurship Monitor dataset. We specifically use pooled data from the 2009-2011 Adult Population Survey.

All five of the individual-level variables that make up the Entrepreneurial Environment sub-index are based on attitudes and perceptions that focus on responses from the adult female population (aged 18-64). These responses make up the 'entrepreneurship culture level of the Gender-GEDI model and are presented in table form below (Table 3.1). The other nine individual variables that make up the Entrepreneurial Environment and Entrepreneurial Aspirations sub-indices are based on the responses of female entrepreneurs engaged in what GEM calls 'Total Entrepreneurship Activity' which is defined as individuals involved in the startup process whose businesses are not older than 42 months and/or those that have not paid a salary for longer than three months. These variables make up the innermost level of the Gender-GEDI model called 'Female Entrepreneurship Individual Characteristics'.

One of the novelties of the GEDI index framework, adopted by the Gender-GEDI, is the matching of an individual-level variable with an institutional-level variable at the pillar level in order to capture the interplay between both these factors that affect outcomes.

For our index, we selected institutional level variables that would represent the three additional levels of our Gender-GEDI model. The first is comprised of the institutional foundations that affect all entrepreneurs, regardless of whether they are male or female. These include the Business Freedom (compiled by the Heritage Foundation and based on the World Bank's 'Ease of Doing Business Index'), Business Risk (Coface) , Market Monopolization and Market Size (World Economic Forum – WEF), Technology Transfer and Technology Absorption (WEF), R&D Expenditure (UNESCO) and Globalization (KOF Swiss Economic Institute).

The second level of analysis is comprised of gendered institutions, which captures the areas where women do not share the same rights as men. We include two indicators: Equal Legal Rights which is a composite indicator we compiled based on 17 separate measures from the Women, Business and the Law database (World Bank). The second indicator is 'Freedom of Movement' from the Gender, Institutions and Development Database (OECD). In most countries in our sample there are no restrictions on women's access to public spaces, yet we found it important to highlight the cases where these restrictions (legal or discriminatory practices) exist since it affects a woman's ability to independently start and grow her business. Since 'Freedom of Movement' is only relevant in a limited number of cases, we merged this variable with the more general measure 'Business Freedom' in order to create the 'Business Freedom and Movement' variable.

The third level includes variables that identify areas where women's access to resources may be more limited than men's. These include access to education as measured by percentage of women with secondary education (GII, UNDP); the percentage of female internet users was sourced from the International Telecommunication Union (ITU); Access to SME support and training programs for women, access and availability of childcare are based on data from the Economist Intelligence Unit's (EIU) Women and Economic Opportunity Index. In order to capture the gendered crowding of the labor force, we created the Labor Market Parity variable based on data from the International Labor Organization (ILO). For most countries, the percentage of female managers is obtained from the Global Gender Gap Index (World Economic Forum) and supplemented by data from the UN World's Women database. For 1st tier financial access, we combined three measures: The percentage of women with a bank account in a formal institution and the percentage of women with a bank account for business purposes using data from the Financial Inclusion database (Findex, World Bank) and Women's Access to Finance Programs compiled by the EIU for the Women's Economic Opportunity Index.

A potential criticism of our index might be the arbitrary selection of institutional variables and the neglect of other important factors. We aimed to collect the best possible indicators informed by current research on female entrepreneurship. However, our variable choices were often constrained by the limited availability of comparative and

representative data for the 30 countries included in study. The lack of adequate comparative data on female entrepreneurship in general and the factors that influence its development plagues the field of female entrepreneurship research and severely constrains the ability to conduct robust quantitative analysis.

3.5.1 Missing data and estimations

When working with large data sets, it is not always possible to find data for all indicators for the countries represented in the sample. There are many different techniques for estimating data, ranging from statistical methods such as the expectation maximization algorithm or the hot-deck method. For the Gender-GEDI index, we carefully choose the most appropriate method for each estimation variety of methods based on similar country values or regional averages. This approach better reflected the specific country characteristics that we know exist through our research. In total 5 variables were missing data and the following estimations where made. For Pillar 2: Secondary Education, the value for Nigeria was estimated. For Pillar 4: Internet users, the value for Bangladesh, Pakistan and Nigeria were estimated. For Pillar 5: Female Executive Status, estimated values were used for Bangladesh, Egypt, Jamaica, Nigeria, Pakistan, Panama and Uganda. For Pillar 6: Freedom of Movement, the values for all OECD countries were missing from the Gender Institutions and Development (GID) Index and so the 12 OECD countries included in the Gender-GEDI Index were give a value indicating no restrictions. Finally, for Pillar 10: Labor Force Parity values were estimated for Australia, Bangladesh, China, Ghana, Jamaica, Nigeria and Uganda.

Table 3.1: Gender-GEDI Model with variables

	Institutional-level variables			**Individual-level variables**	
Pillar	**Institutional Foundations**	**Gendered Institutions/ Attitudes**	**Gendered Access to Resources**	**Entrepreneurship Culture**	**Female Entrepreneurship Individual Characteristics**
1	Market Size	Equal Legal Rights		Opportunity Recognition	
2			Secondary Education	Startup Skills	
3	Business Risk			Willingness to Start	
4			Internet/Linked In Users	Know an entrepreneur	
5		Female Executive Status	Access to Childcare		
6	Business Freedom	Access to Public Spaces			Opportunity Business
7	Tech Absorption				Technology Sector Startup
8			SME support and training		Highly educated owner
9	Market Monopolization				Innovativeness
10			Labor Force Parity		Entrepreneurship Ratio
11	Technology Transfer				New Product
12	R&D Expenditure				New Technology use
13			Female Leadership		Business Gazelles
14	Globalization				Export Focus
15			1st tier Financing Banking & Financial Literacy		3rd tier Financing Depth of Capital Markets

3.6 Description of Variables

Sub Index I: Entrepreneurial Environment

Pillar 1: Opportunity Perception	
Individual level variable	Institutional level variable
Opportunity Recognition (GEM) *This variable measures the "opportunity perception" of a population, defined as the female percentage of the 18-64 aged population that can identify good opportunities to start a business in the area where they live.*	**Equal Rights and Market Size** *This variables is a combined measure of Equal Legal Rights and Market Size. It is calculated as Equal Legal Rights *Market Size.* **Equal Rights (WBL – WB)** *16 Indicators grouped as follows:* *1) If customary law is a valid source of law, is it considered invalid if it violates constitutional provisions on discrimination or equality. (Yes = 1; No = 0)* *2) If personal law is a valid source of law, is it considered invalid if it violates constitutional provisions on discrimination or equality? (Yes = 1; No = 0)* *3) Can an unmarried woman be "head of household" or "head of family" in the same way as a man? (Yes = 1; No = 0)* *4) Can a married woman be "head of household" or "head of family" in the same way as a man? (Yes = 1; No = 0)* *5) Are married women required by law to obey their husbands? (NOTE Yes = 0; No = 1)* *6) Are there special provisions governing the marital home? (Yes = 1; No = 0)* *7) Does the law provide for valuation of 1nmonetary contributions during marriage? (Yes = 1; No = 0)* *8) Do unmarried men and unmarried women have equal ownership rights to property? (Yes = 1; No = 0)* *9) Do married men and married women have equal ownership rights to property? (Yes = 1; No = 0)* *10) Do sons and daughters have equal inheritance rights to property? (Yes = 1; No = 0)* *11) Do female and male surviving spouses have equal inheritance rights to property? (Yes = 1; No = 0)* *12) Can pregnant and nursing women do the same jobs as men? (Yes = 1; No = 0)* *13) Can pregnant and nursing women work the same night hours as men? (Yes = 1; No = 0)* *14) Are there laws mandating discrimination based on gender in hiring? (Yes = 1; No = 0)* *15) Does a woman's testimony carry the same evidentiary weight in court as a man's? (Yes = 1; No = 0)* *16) Is there a governmental office tasked with addressing sexual harassment? (Yes = 1; No = 0)* *The final scoring is based on the total score for the 16 separate indicators. For each indicator*

	0 = unequal while 1 = equal under the law; total scoring: 0 – 16 with highest score: 16 **Market Size (UN & WEF) :** This measure is based on two variables: the domestic market size and urbanization. It is calculated as Domestic market*Urbanization Urbanization (UN) that is the percentage of the population living in urban areas. Domestic market size (WEF) is the sum of gross domestic product plus value of imports of goods and services, minus value of exports of goods and services, normalized on a 1–7 (best) scale.
Source: 2009 – 2011 pooled data, weighted average Based on recalculated GEM data by the Gender-GEDI team http://www.gemconsortium.org	**Source:** Word Bank's Women Business and the Law Database, 2013 data Source: http://wbl.worldbank.org/data United Nations Population Division, 2010 estimate. http://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS/countries World Economic Forum - The Global Competitiveness Report 2011-2012, p. 498

Pillar 2: Start up Skills	
Individual level variable	Institutional level variable
Perception of Skills (GEM) *This variable measures the percentage of the 18-64 aged female population who believe they have proper skills to successfully launch a business.*	**Secondary education (UNDP-GII)** *This variable is defined as the percentage of women 25 or older who have completed at least some secondary education.*
Source: 2009 – 2011 pooled data, weighted average Based on recalculated GEM data by the Gender-GEDI team http://www.gemconsortium.org	**Source: UNDP Gender Inequality Index** **Data from most recent year 2006 – 2010** http://hdr.undp.org/en/statistics/gii

Pillar 3: Willingness and Risk	
Individual level variable	Institutional level variable
Willingness to Start (GEM) *This variable is defined as the percentage of the 18-64 aged female population who do not believe that fear of failure would prevent them from starting a business*	**Business Risk (Coface)** *The business climate rate "assesses the overall business environment quality in a country… It reflects whether corporate financial information is available and reliable, whether the legal system provides fair and efficient creditor protection, and whether a country's institutional framework is favorable to intercompany transactions." It is a part of the Country Risk Rate. Seven point Likert scale used: 7 (highest score) = A1 rating; 1(lowest score) = D rating.*
Source: 2009 – 2011 pooled data, weighted average Based on recalculated GEM data by the Gender-GEDI team http://www.gemconsortium.org	**Source: Coface** http://www.coface.com/

Pillar 4: Networking	
Individual level variable	Institutional level variable
Know an Entrepreneur (GEM) *The percentage of the 18-64 aged female adult population who personally know an entrepreneur who started a business in the past two years. This variable is a proxy for networking, which has been found to improve entrepreneurship through increased access to opportunities and better resources.*	**Access to Internet and Networks (ITU & Comscore/LinkedIn** *This variables is a combined measure of Internet Users and LinkedIn Profiles. It is calculated as Internet Users * LinkedIn Profiles.* **Internet Users, (ITU)** *Number of female Internet Users per 100 inhabitants. 2012 data used whenever possible.* **LinkedIn Profiles (Comscore/LinkedIn)** *Percentages of female LinkedIn profiles per country of origin.*
Source: 2009 – 2011 pooled data, weighted average Based on recalculated GEM data by the Gender-GEDI team http://www.gemconsortium.org	**Source:** **International Telecommunications Union** http://www.itu.int/ITU-D/ict/statistics/ IndividualsUsingInternet_00-10.xls **LinkedIn Profiles** LinkedIn database

Pillar 5: Cultural Support	
Individual level variable	Institutional level variable
Executive Status (World Values Survey) *The World Values Survey data used measures the percent of women that respond with "disagree" or "strongly disagree" to the question "Do Men Make Better Business Executives than Women?"*	**Access to Childcare (WEO-EIU)** *This indicator considers the availability, affordability (including the price of childcare as a percent of average wages) and quality of childcare services. This indicator also includes the role of the extended family in providing childcare.* *Scoring as follows:* *1 = professional childcare is expensive, available for only a small minority and of low quality; or the extended family is unwilling to provide childcare, owing to strong and widely prevalent societal/cultural barriers to women working.* *2= Professional childcare has two of the three following conditions: it is expensive, difficult to obtain or of low quality or extended family generally unwilling to provide childcare, owing to societal/cultural barriers to women working. The extended family may find it difficult to provide childcare if they themselves work or due to distance.* *3 = Professional childcare is moderately affordable, often available and of reasonable quality; or the extended family is willing to provide childcare but may be able to do so only occasionally because they themselves work or due to distance.* *4 = Professional childcare meets two of the three following conditions: it is affordable, easily available and of high quality or the extended family is willing to provide childcare and is able to do so with only some difficulty.* *5 = Professional childcare is affordable, easily and widely available, and of high quality; or the extended family is willing and able to provide childcare.* *The scoring is based on a 1- 5 Likert scale. 5 = most favorable.*
Source: World Values Survey http://www.worldvaluessurvey.org	**Source: Women's Economic Opportunity Report, EIU, 2010 data** http://graphics.eiu.com/upload/WEO_June_2010_final.xls

Sub-Index II: Entrepreneurial Eco-system

Pillar 6: Opportunity Start up	
Individual level variable	Institutional level variable
Opportunity Business (GEM) *This variable is defined as the percentage of female Total Early Phase Entrepreneurial Activity (TEA) businesses started to: exploit a good opportunity, increase income, or fulfill personal aims, in contrast to those businesses started by individuals who have no other employment options.* Note: *Total Early Phase Entrepreneurial Activity* is the percentage of 18-64 population who are either a nascent entrepreneur or owner-manager of a new business (no more than 42 months old)	**Business Freedom and Movement (Heritage Foundation & OECD- GID)** *This variables is a combined measure of Business Freedom and Freedom of Movement.* **Business Freedom (Heritage Foundation)** *is a quantitative measure of the ability to start, operate and close a business that represents the overall burden of regulation, as well as the efficiency of government in the regulatory process. This variable includes 10 factors based on the World Bank's 'Doing Business Study'. Each factor receives a maximum of 10 points (all equally weighted) and the indicator's total score is between 0-100.* **Freedom of Movement (OECD-GID)** *measures the legal restrictions or discriminatory practices affecting women's access to public space, for example the restrictions on women's choice of domicile, restricted ability to visit family and friends, requirements for husband's approval apply for a passport or widespread threats of political violence.* *Value based on the following scale:* *0: No legal restrictions and no discriminatory practice is reported.* *0.5: No legal restrictions, but discriminatory practices widely reported.* *1: There are legal restrictions or discriminatory practices are widespread.*
Source: 2009 – 2011 pooled data, weighted average Based on recalculated GEM data by the Gender-GEDI team http://www.gemconsortium.org	**Source:** **Business Freedom:** 2011 data http://www.heritage.org/index/explore **Freedom of Movement:** 2012 data http://stats.oecd.org/Index.aspx?DatasetCode=GID2

Pillar 7: Technology Sector	
Individual level variable	Institutional level variable
Tech Sector Business (GEM) *This variable measures the percentage of TEA businesses that are active in the medium or high technology sectors since activities in these sectors play a crucial role in economic development.*	**Tech Absorption (WEF)** *This variable measures the firm-level technology absorption capability on a 7 point Likert scale. "Companies in your country are (1 = not able to absorb new technology, 7 = aggressive in absorbing new technology)"*
Source: 2009 – 2011 pooled data, weighted average Based on recalculated GEM data by the Gender-GEDI team http://www.gemconsortium.org	**Source:** **Tech Absorption:** 2012 Data The Global Competitiveness Report 2012-2013, p. 20; www.weforum.org

Pillar 8: Quality of Human Resources	
Individual level variable	Institutional level variable
Highly Educated Owners (GEM) *This variable is defined as the percentage of TEA female business owners who have participated in some form of post-secondary education*.	**SME Support and Training (WEO) (2010 data)** *This indicator considers if training has a wide geographic availability, is accessible to women as well as men, affordable for the majority of intended beneficiaries, if the length of training takes into account women's time burdens, and if it is culturally appropriate*. The results are scored according to a 6 point Likert scale. *0= Training programs do not meet any of the following fi ve conditions: they have wide geographic availability, are accessible to women as well as men, affordable for the majority of intended beneficiaries, culturally appropriate, and the length of training takes into account women's time burdens* *1= Training programs meet one or of the following five conditions: they have wide geographic availability, are accessible to women as well as men, affordable for the majority of intended beneficiaries, culturally appropriate, and the length of training takes into account women's time burdens* *2= Training programs meet two of the following five conditions: they have wide geographic availability, are accessible to women as well as men, affordable for the majority of beneficiaries, culturally appropriate, and the length of training takes into account women's time burdens* *3= Training programs meet three of the following five conditions: they have wide geographic availability, are accessible to women as well as men, affordable for the majority of beneficiaries, culturally appropriate, and the length of training takes into account women's time burdens*

	4= Training programs meet four of the following five conditions: they have wide geographic availability, are accessible to women as well as men, affordable for the majority of beneficiaries, culturally appropriate, and the length of training takes into account women's time burdens *5= Training programs have wide geographic availability, are accessible to women as well as men, affordable for the majority of beneficiaries, culturally appropriate, and the length of training takes into account women's time burdens* *The maximum score a country can receive is 5, where 5= most favorable.*
Source: 2009 – 2011 pooled data, weighted average Based on recalculated GEM data by the Gender-GEDI team http://www.gemconsortium.org	**Source: Women's Economic Opportunity Report (Economist Intelligence Unit) 2010 data** http://graphics.eiu.com/upload/WEO_June_2010_final.xls

Pillar 9: Competition	
Individual level variable	Institutional level variable
Innovativeness (GEM) *This variable is defined as the percentage of female TEA businesses that have only a few competitors that offer the same product or service. Fewer competitors is indicative of a business's unique product or service.*	**Monopolized Markets (WEF)** *This variable measures the extent of market dominance by a few business groups. If only a few business groups dominate the market then business startup and market entry is likely to be constrained or entirely prevented. Results are given according a 1 – 7 scale: 7 (highest and best score) market spread among many firms; 1 (lowest and worst score) market is dominated by a few business groups.*
Source: 2009 – 2011 pooled data, weighted average Based on recalculated GEM data by the Gender-GEDI team http://www.gemconsortium.org	**Source: World Economic Forum,** 2012 data http://www.weforum.org/issues/competitiveness-0/gci2012-data-platform/

Pillar 10: Gender Gaps	
Individual level variable	Institutional level variable
Entrepreneurship Ratio (GEM) *The female/male ratio of Total Early Phase Entrepreneurship Activity (TEA) rates.* *Based on the ideal ratio of 1:1*	**Labor Force Parity (ILO)** *This indicator measures the percent of reported employment sectors that have a female:male ratio between 40:60 and 60:40. Only sectors that employ at least 1% of the labor force are counted.*
Source: 2009 – 2011 pooled data, weighted average	**Source: International Labor Organization (ILO),** Most recent data year available for 2005-2012

Based on recalculated GEM data by the Gender-GEDI team http://www.gemconsortium.org	www.ilo.org

Sub-Index III: Entrepreneurial Aspirations

Pillar 11: Product Innovation	
Individual level variable	Institutional level variable
New Product (GEM) *This variable is defined as the percentage of those female TEA businesses offering products or services that are new to at least some customers.*	**Technology Transfer (WEF)** *These are the innovation index points from the Global Competitiveness Index (GCI): a complex measure of innovation including investment in research and development (R&D) by the private sector, the presence of high-quality scientific research institutions, the collaboration in research between universities and industry, and the protection of intellectual property rights. Scores according to a 1 – 7 scale where 7 is the best score.*
Source: 2009 – 2011 pooled data, weighted average Based on recalculated GEM data by the Gender-GEDI team http://www.gemconsortium.org	**Source: World Economic Forum,** 2012 data http://www.weforum.org/issues/competitiveness-0/gci2012-data-platform/

Pillar 12: Process Innovation	
Individual level variable	Institutional level variable
New Technology (GEM) *This variable is defined as the percentage of female TEA businesses whose principal underlying technology is less than five years old.*	**R&D Expenditure (UNESCO)** *Gross domestic expenditure on Research & Development as a percentage of GDP.*
Source: 2009 – 2011 pooled data, weighted average Based on recalculated GEM data by the Gender-GEDI team http://www.gemconsortium.org	**Source: UNESCO,** 2011 data http://stats.uis.unesco.org/unesco/

Pillar 13: High Growth	
Individual level variable	Institutional level variable
Business Gazelles (GEM) *This variable measures the percentage of female TEA businesses that intend to employ at least ten people and plan to grow more than 50 percent in five years.*	**Leadership (GGGI – WEF, updated with current ILO data) (GGGI data)** *This variable measures the ratio of female legislators, senior officials and managers over male value*
Source: 2009 – 2011 pooled data, weighted average	**Source: Global Gender Gap Index -World Economic Forum,** 2011 data Source: http://reports.weforum.org/global-gender-gap-report-2012/

Based on recalculated GEM data by the Gender-GEDI team http://www.gemconsortium.org	*International Labor Organization, ILOStat online database, 2010 or latest data available; United Nations Development Program, Human Development Report 2009, the most recent year available between 1999 and 200. Updated data is from ILOStat, 2010-2012 (most recent available)* **when not found in the GGGI Index, UN World's Women database was used:** http://unstats.un.org/unsd/demographic/products/indwm/default.htm

Pillar 14: Internationalization	
Individual level variable	Institutional level variable
Export Focus (GEM) *This variable is defined as the percentage of female TEA businesses where more than 1% of customers are outside of the home country.*	**Globalization (KOF)** *A part of the Globalization Index measuring the economic dimension of globalization. The variable involves the actual flows of trade, Foreign Direct Investment, portfolio investment and income payments to foreign nationals as well as restrictions of hidden import barriers, mean tariff rate, taxes on international trade and capital account. Values range from 0 – 100.*
Source: 2009 – 2011 pooled data, weighted average Based on recalculated GEM data by the Gender-GEDI team http://www.gemconsortium.org	**Source: KOF**, 2010 data http://globalization.kof.ethz.ch/globalization_2011b_long.xls

Pillar 15: External Financing	
Individual level variable	Institutional level variable
1st tier Financing: Banking and Financial training (WB Findex & EIU – WEO) *This variables is a combined measure of Access to Banks and Women's Access to Financial Training Programs. It is calculated as Access to Banks * Women's Access to Financial Training Programs* **Access to Banks and finance programs (WB – Findex) (2011 data) & (WEO-EIU 2010 data)** **<u>Access to Banks: This variable is the arithmetic average for two separate measures:</u>** *(1) the percentage of women who have a bank account at a formal financial institution; and (2) the percentage of women who have a bank account for business purposes at a formal financial institution.*	**3rd tier Financing: Depth of Capital Markets (VC & PE Index)** *This variable is based on the 'Depth of Capital Market' variable included in the VC & PE Index. It is a complex measure of the size and liquidity of the stock market, level of IPO, M&A, and debt and credit market activity. Countries with better developed equity markets provide risk capital, an exit strategy for investors and provide financial rewards for successful entrepreneurs that do not exist in countries that have bank centered capital market which tend to be much more conservative. The depth of capital market data originates from one of the six sub-indices of the Venture Capital and Private Equity Index. Values range from 0 – 100.*

<u>Women's access to finance programs</u> **(WEO-EIU)** *This question assesses three types of programs:* *1) Initiatives to provide financial accounts to women* *2) Outreach efforts aimed at improving women entrepreneur's access to credit/loans/lines of credit, etc.* *3) Provision of financial literacy and/or risk management programs for women.* *Scoring is according to a 5 point Likert scale:* *1 = none of the programs are available;* *2 = only one of the three programs is available but is it limited in scope (less than 20% of the women in the formal sector have access);* *3 = two of the three programs are available, but they are modest in scope (about 50% of women in the formal sector have access) or only one of the three programs is available but it is reasonably broad in scope (about 70% of women in the formal sector have access);* *4= Two of the three programs are available, and are reasonably broad in scope(about 70% of women in the formal sector have access) or women's access to financial services is already very broad, so these programs are largely unnecessary;* *5 = All three programs are available, they are comprehensive in scope/ or women's access to financial services is already widespread, so these programs are unnecessary.*	
Source: **World Bank's Findex Data**, 2011 data http://datatopics.worldbank.org/financialinclusion/ **Women's Economic Opportunity Report Economist Intelligence Unit,** 2010 data http://graphics.eiu.com/upload/WEO_June_2010_final.xls	**Source:** Groh, A, H. Liechtenstein and K. Lieser. (2012). The Global Venture Capital and Private Equity Country Attractiveness Index 2012, 2012 data http://blog.iese.edu/vcpeindex/about/

Table 3.2 : Gender-GEDI individual variables sourced from GEM: Country data years

Year	2009		2010		2011		
Country	All	Female	All	Female	All	Female	Total female
Australia					1626	808	808
Bangladesh					1932	950	950
Brazil	2000	1023	1997	1021	1999	1023	3067
Chile	4307	2223	6236	3166	6215	3148	8536
China	3608	1758	3677	1848	3689	1854	5459
Egypt			2769	1362			1362
France	1631	816	1607	846	1607	819	2481
Germany	6032	2960	5552	2745	4260	2106	7811
Ghana			2446	1233			1233
India*	2032	980					980
Jamaica	1877	954	2290	1165	2047	1075	3195
Japan	1600	794	1906	946	2004	996	2736
Malaysia	2002	999	2010	988	2053	1023	3010
Mexico			2529	1322	2511	1306	2629
Morocco	1500	767					767
Nigeria					2057	997	997
Pakistan					2002	968	968
Panama	2000	993			2001	996	1989
Peru	2021	1027	2108	1075	2010	1022	3124
Russia	1695	882	1736	906	7500	3917	5705
South Africa	2807	1392	2800	1385	2724	1354	4131
Spain	28888	14225	26386	13009	17500	8646	35880

Sweden			2271	1117	2143	1060	2177
Thailand					2000	1022	1022
Trinidad & Tobago			1826	907	1813	917	1824
Turkey			2401	1194	2401	1199	2392
Uganda	2095	1110	2265	1194			2303
United Kingdom	22881	11300	2341	1173	1650	821	13294
United States	3412	1706	2880	1453	4699	2374	5534

Chapter 4. Gender-GEDI Results

4.1 Introduction

An index is an ideal tool for simplifying highly complex relationships and distilling them down to a final rank, a set of scores and for benchmarking progress. As such, the Gender-GEDI index serves as a barometer of a country's current situation relative to a group of other countries with respect to the conditions present that will fuel high potential female entrepreneurship development. In this way, it can be a powerful tool for policy makers and other decision makers in terms of identifying the areas that need improvement in order to foster high potential female entrepreneurship development. However, an index and overall score cannot substitute for a thorough understanding and analysis of a given country's context. In the results section, we provide country and regional comparisons as well as a more detailed discussion of five additional specific issues regarding women in leadership positions, women's rights and access to resources, access to capital, entrepreneurship crowding and professional social media networks.

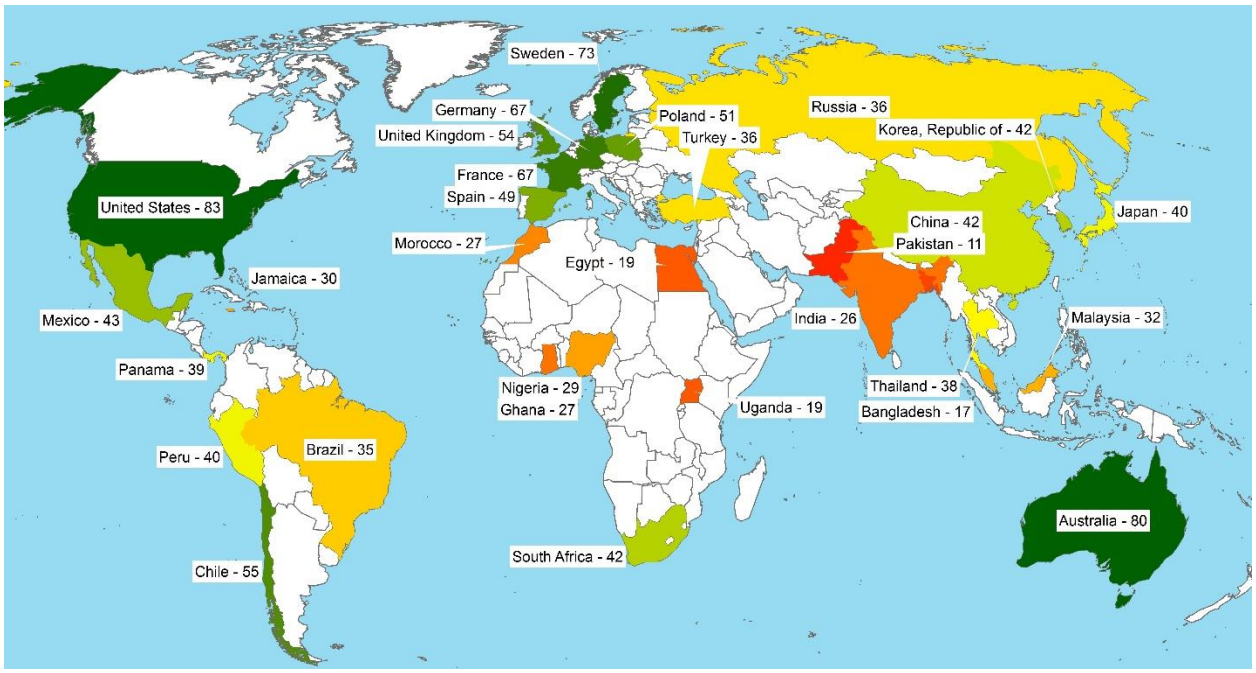
Being ranked #1 in the Gender-GEDI index does not mean there is no further need for improvement. The Gender-GEDI calculates relative country scores and there is room for improvement at all rank levels. Higher-ranking countries also display weaknesses, often in areas where lower ranking countries excel, since despite their overall ranks, every country is characterized by its unique set of strengths and weaknesses. By identifying its strengths and weaknesses, a country can chart a course for improvement, in many cases using another country's exemplary performance as a starting point for discussion and analysis. Obtaining a top rank is not a static position, and is subject to the relative performance of other countries. Only countries that are actively cultivating gender parity in terms of access to resources and institutions as well as their institutional foundations and entrepreneurial spirit retain their top positions.

This chapter begins by presenting the Gender-GEDI rankings for our 30-country sample. This is followed by a further analysis of the Gender-GEDI rankings which is divided into two main parts: the first section presents country scores and compares them to the 2013 Gender-GEDI Index rankings as well as to the GEDI Index rankings. This section also presents an analysis based on three performance groups and regional highlights. The second section presents a comparative analysis of five focus areas. This chapter ends with policy conclusions and future steps.

4.2 The Gender-GEDI rankings

A color coded world map of the 2014 Gender-GEDI Index scores is shown in figure 4.1. Countries with the highest scores are shown in dark green while countries with mid range scores are colored yellow and the lowest scoring countries are shown in dark orange. Table 4.1 provides both the Gender-GEDI ranks and scores.

Figure 4.1: Gender-GEDI 2014 scores



Key: Color coding ranges from dark green for the highest scoring countries to yellow for mid level scoring countries to deep orange for the lowest scoring countries.

The 2014 index includes six instances where up to three countries received the same overall Gender-GEDI Index scores and so their rankings are tied. This occurred for France and Germany, tied for 4th place and both receiving a score of 67. South Africa, South Korea and China all had a final score of 42 and are tied for 11th place. Peru and Japan both receive a score of 40 and are tied for fourteenth place, while Turkey and Russia are tied for 18th place with a score of 36. Morocco and Ghana tied for 24th place with a score of 27 and Uganda is tied with Egypt for 27th place with an overall score of 19.

Table 4.1: Gender-GEDI 2014 Ranks and Scores

Rank	Country	Score
1	United States	83
2	Australia	80
3	Sweden	73
4-5	France	67
4-5	Germany	67
6	Chile	55
7	United Kingdom	54
8	Poland	51
9	Spain	49
10	Mexico	43
11-13	South Africa	42
11-13	South Korea	42
11-13	China	42
14-15	Peru	40
14-15	Japan	40

Rank	Country	Score
16	Panama	39
17	Thailand	38
18-19	Turkey	36
18-19	Russia	36
20	Brazil	35
21	Malaysia	32
22	Jamaica	30
23	Nigeria	29
24-25	Morocco	27
24-25	Ghana	27
26	India	26
27-28	Uganda	19
27-28	Egypt	19
29	Bangladesh	17
30	Pakistan	11

It is important to note that each country in the Gender-GEDI Index is characterized by strengths and weaknesses and that there is room for improvement at all score levels. Even top scoring countries such as the United States which receives a final score of 83 on a 100-point scale have areas that can be improved. In addition, even among the ten top-ranked countries there is a distinct gap between the top three countries scoring between 83 and 73 and the next five countries scoring between 67 and 51. A closer look at a country's 30 variable scores provides additional country specific insights. Individual country results at the variable level are in detail in Appendix 1 and 2.

4.3 Charting the differences: Gender-GEDI and GEDI comparisons

In this section, we compare country ranks with respect to their 2014 Gender-GEDI ranking and their 2014 Global Entrepreneurship and Development Index (GEDI)[29] ranking in order to gain insights into the possible gendered differences for rankings and scores at the country level. Both the Gender-GEDI and the GEDI Index are based on the same framework and share a number of the same variables. However, the Gender-GEDI includes 23 gender-specific variables focusing on female entrepreneurs, but the GEDI Index includes only two variables in one gender-related pillar[30]. For this exercise we have simulated GEDI and Gender-GEDI rankings based on our sample of 30 countries in the 2014 Gender-GEDI. The simulated GEDI ranks thus preserve the order of countries in the full index, eliminating countries that were not included in the Gender-GEDI to produce a list of how countries would have ranked in the GEDI if that index included only the 30 Gender-GEDI countries.

As figure 4.2 shows, the following changes in rank occurred:

- Ten countries rank better in the Gender-GEDI Index with respect to high potential women's entrepreneurial development than for general entrepreneurial conditions;
- Eight countries rank worse in the Gender-GEDI Index than in the GEDI Index;
- Twelve countries including the three top ranked countries, the United States (#1), Australia (#2) and Sweden (#3) maintain their relative ranks in both the Gender-GEDI and the GEDI Index.

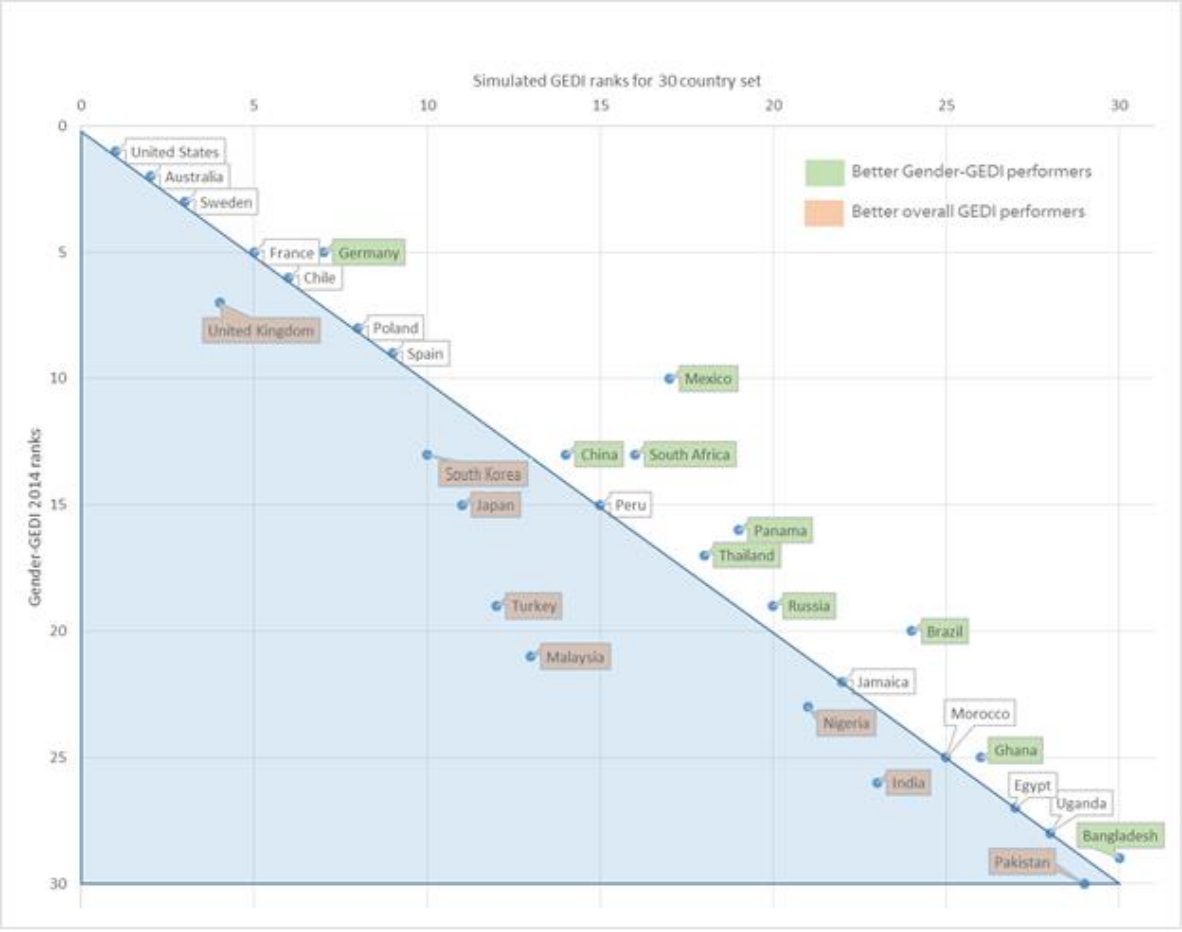
It is striking that the ranks of 60% of the 30 countries included in the Gender-GEDI Index are affected by focusing on the factors affecting high potential female entrepreneurship development. Specifically, the following two countries rank much better in the Gender-GEDI Index:

- Mexico (10th place in the Gender-GEDI Index but only 17th place in the GEDI)
- South Africa (11th place in the Gender-GEDI Index but only 16th place in the GEDI Index);

While the following countries rank better in the GEDI Index than in the Gender-GEDI Index:

- Malaysia is ranked in 13th place in the GEDI Index but only in 21st place in the Gender-GEDI Index;
- Turkey's relative ranking is also better in the GEDI Index (12th) compared to 18th place in the Gender-GEDI;
- The United Kingdom's relative ranking is high at 4th place in the GEDI Index but its rank in the Gender-GEDI Index is worse at 7th place;
- For the lowest ranked countries, Pakistan and Bangladesh traded places: Bangladesh was ranked 30th place in the GEDI Index and Pakistan was ranked 30th in the Gender-GEDI Index.

Figure 4.2: Including gendered variables affects 60% of rankings



Source: Gender-GEDI (2014)

It is also interesting to see if there have been any changes to countries' ranks when comparing the 2013 Gender-GEDI Index and the 2014 Gender-GEDI Index. Since the 2013 Gender-GEDI Index included only 17 countries, we

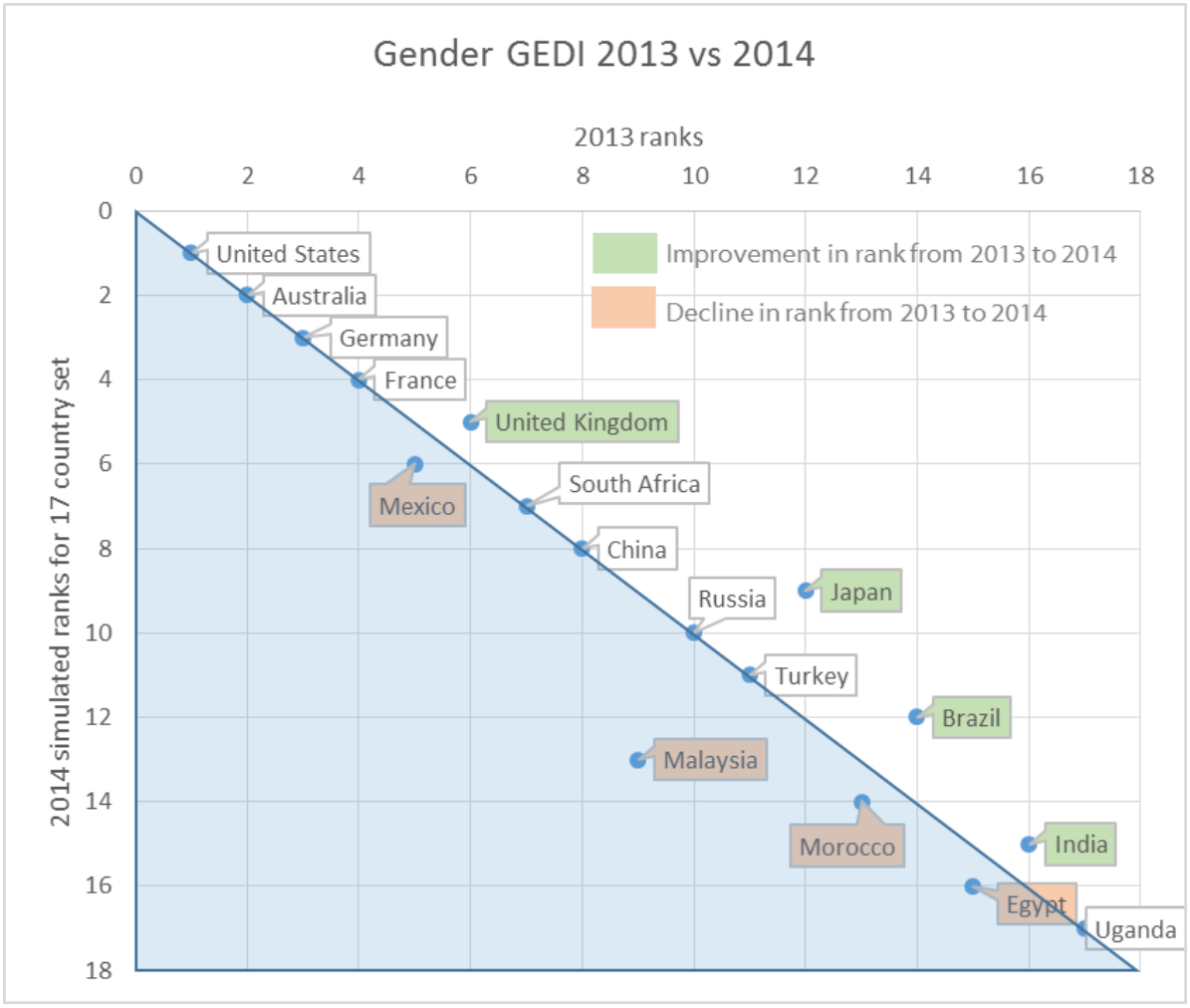
only used these same 17 countries for our comparative analysis and simulated their rankings to also be based on the same 1 to 17 rank scale. The results as shown in figure 4.3 indicate that:

- Four countries increased in rank;
- Four countries declined in rank;
- Nine countries maintained a similar rank level in both the Gender-GEDI 2013 and 2014 indices.

Specifically, Brazil's 2014 score charted an increasing percentage of growth oriented, exporting and market expanding female startups. These increased scores improved Brazil's overall rank by two spots from 14th to 12th place (based on the 2013 Gender-GEDI Index 17 country sample). Japan also saw its overall rank increase due to increasing numbers of female startups and a larger percentage of female startups that export their goods or services. Based on the original Gender-GEDI Index 17 country sample, its rank improved three places from 12th to 9th. The United Kingdom and India also improved their scores by one rank place.

The greatest decline in rank occurred for Malaysia. This result is based on a decreasing score for growth-oriented female startups and lower levels of female leadership (as measured by the percentage of women in leadership positions). Based on the original 2013 Gender-GEDI Index 17 country sample, its rank declined four places from 9th to 13th place. Egypt's rank decline is influenced by not only decreasing numbers of opportunity motivated female startups but also fewer growth-oriented or exporting female startups and lower levels of female business owners who are highly educated. Also, there has been a deterioration of women's freedom of movement and a decline in the overall business environment in terms of business risk. Based on the original 17 countries, its rank declined one spot from 15th to 16th place. Mexico and Morocco also declined by one rank.

Figure 4.3: Charting progress: The Gender-GEDI 2013 vs the Gender-GEDI 2014 rankings compared



Source: Gender-GEDI (2014)
Key: The 17 original Gender-GEDI 2013 countries include: Australia, Brazil, China, Egypt, France, Germany, India, Japan, Malaysia, Mexico, Morocco, Russia, South Africa, Turkey, Uganda, United Kingdom and the United States.

4.4 Three-Tier Analysis of the Gender-GEDI 2014 Rankings and Scores

The Gender-GEDI rankings can be divided into three tiers in order to better understand the general trends between the top, moderate and low performing countries. These three tiers are shown in table 4.2 and discussed in greater detail below. Each tier is described in terms of general strengths and weaknesses exhibited by the countries included followed by policy recommendations on how to improve the existing conditions to foster high potential female entrepreneurship development.

Table 4.2: The Gender-GEDI 2014 results divided into three performance tiers

Top Performers			Moderate Performers			Low Performers		
Rank	**Country**	**Score**	**Rank**	**Country**	**Score**	**Rank**	**Country**	**Score**
1	United States	83	9	Spain	49	23	Nigeria	29
2	Australia	80	10	Mexico	43	24-25	Morocco	27
3	Sweden	73	11-13	South Africa	42	24-25	Ghana	27
4-5	France	67	11-13	South Korea	42	26	India	26
4-5	Germany	67	11-13	China	42	27-28	Uganda	19
6	Chile	55	14-15	Peru	40	27-28	Egypt	19
7	United Kingdom	54	14-15	Japan	40	29	Bangladesh	17
8	Poland	51	16	Panama	39	30	Pakistan	11
			17	Thailand	38			
			18-19	Turkey	36			
			18-19	Russia	36			
			20	Brazil	35			
			21	Malaysia	32			
			22	Jamaica	30			

1st tier Top Performers: Ranked 1 – 8

The top performers in the Gender-GEDI Index are all OECD member countries with highly developed economies. These countries are primarily in the European region but also include the United States, Australia and the highest ranking Latin American country, Chile.

This category can further be divided into two subgroups: The first group made up of the United States, Australia and Sweden which all receive a score higher than 70 and the second group made up of the remaining five countries (France, Germany, Chile, the United Kingdom and Poland) with scores between 50 and 70. In general, the top performers in the Gender-GEDI Index provide a good enabling environment for female entrepreneurship development both in terms of the business context as well as equal legal rights, access to resources such as SME training programs, access to leadership roles, and favorable attitudes towards women as executives. However, even under these favorable conditions, growth oriented female entrepreneurship is still low, and female startups in the tech sector are extremely low. Further, there are weaknesses in the female entrepreneurial environment as seen in the low levels of exposure to entrepreneurs, and less than optimal performance in terms of opportunity perception and startup skills.

<u>Public Policy: Opportunities for improvement</u>
The main area in need of improvement for these countries is to activate and accelerate high potential female entrepreneurship through gender smart policies. Gender smart policies focus on tweaking the existing enabling environment through (1) Adapting and transforming cultural norms that continue to inhibit Promising and Potential Entrepreneurs; (2) Adjusting existing supposedly gender-neutral programs so that women are fully integrated as participants and recipients, and (3) Integrating women into traditionally male dominated labor sectors in order to open up these sectors to female entrepreneurship.

The low level of female startups in the tech sector is not limited to top performing countries but characterizes the majority of countries at all performance levels. It points to a broader underlying issue: the educational and labor force crowding of women is further reflected in the sectors where women start businesses. This underlying cause needs to be addressed in order to diversify the sectors where female entrepreneurship occurs. For this reason, we included the Labor Force Parity indicator in the Gender-GEDI 2014, which measures gender balance in labor force sectors (see also section 5).

2nd Tier Moderate Performers: Ranked 9 – 22.

The fourteen countries in this category include both OECD countries and emerging economies predominantly in Latin America and East Asia but also in Eurasia and Africa.

The main strength seen in these countries is their balanced results: this tier performs moderately well across most pillars, rather than exceptionally well in just a few areas. In most cases, there is a reasonably good business environment and fairly good access to resources. These countries also tend to do well in in that women are willing to take the risk of starting a business and are not deterred by failure. These countries do reasonably well for access to finance and female startup activity rates. A noticeable weakness is the lower level of female leadership. Other weak areas tend to be the same as for top performers: low levels of tech startups and low levels of growth-oriented female entrepreneurs.

Public Policy: Opportunities for improvement
The main focus area for these countries lies in improving from a reasonable level to a favorable level. For this to occur, fundamental business enabling issues need to be addressed such as (1) Breaking up monopolies in the business environment that crowd out newcomers; and, (2) Improving the use of and investment in new technologies. In addition, it is critical to (3) Increase opportunities for and shift attitudes towards women in senior management and decision making positions. Finally, this tier could benefit from efforts to (4) Develop and support programs that promote female entrepreneurs' equal access to finance and the resources to grow.

3rd Tier Low Performers: Ranked 23 – 30

The eight countries that make up the third category tend to be culturally conservative emerging economies that adhere to traditional women's roles in society. They include countries from Africa, Asia, and MENA region.

These countries tend to show strengths in their entrepreneurship culture: a relatively large percentage of the female population feels that they have the skills to start a business. Female startups in these countries also tend to be active in new markets, which indicates a level of innovativeness. However, these countries are characterized by a weak enabling environment both in terms of the overall business climate (such as business freedom, business risk and very low levels of R&D expenditure and low development of capital markets) as well as women's equal legal rights, women's access to public spaces and women's access to banking. Women's access to education is a critical issue for many of these countries, both in terms of low rates of secondary education and low education levels among female business owners.

Public Policy: Opportunities for improvement
The specific areas for these countries to improve are the fundamental weaknesses in (1) Women's access to education; (2) Equal legal rights; and, (3) Women's access to bank accounts. Ensuring women equal rights is a first

step towards improving attitudes towards high potential female entrepreneurs and women in executive positions. Beyond providing the basics to foster female entrepreneurship, these countries need to improve women's access to SME training programs, access to finance and access to resources such as the internet. But in order for businesses to prosper, these countries must also concentrate efforts on (4) Improving the overall business environment.

4.4.1 Comparing the United States, Japan and Pakistan

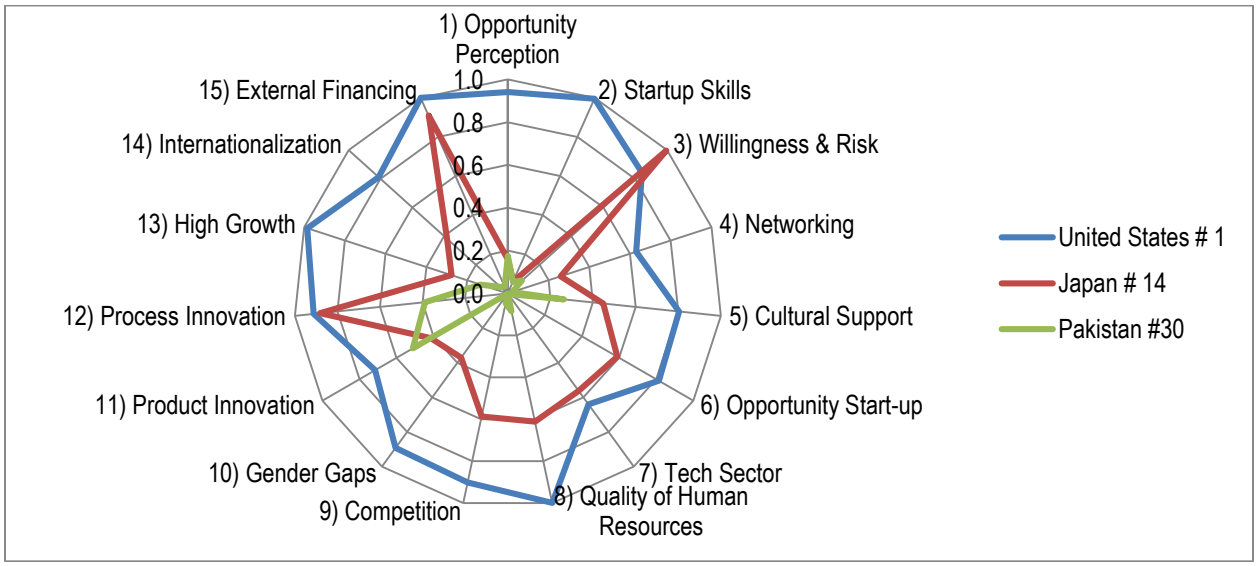
In order to better understand how the strengths and weaknesses of the three tiers compare with one another, figure 4.5 shows the Gender-GEDI Index results at the pillar level for three countries representing each of the performance tiers: the United States as a top performing country ranked #1, Japan as a moderate performing country ranked #14 (tied with Peru) and Pakistan as a low performing country ranked #30.

In the spider chart, the large and generally round shape of the pillar results for the United States indicates its strong relative performance for most of the 15 pillars included in the index. But it also shows that certain pillar scores could be improved. Specifically, the scores for Pillars 3 (Willingness and Risk), 4 (Networking) and 5 (Cultural Support), that make up the female Entrepreneurial Environment sub index are lower than the rest. The United States also receives relatively low scores for Pillar 7 (Tech Sector) driven mainly by a very low level of female tech startups.

Japan's pillar scores follow the trend of many other moderate performers in terms of lower but balanced pillar scores for Pillars 5 through 11 and relatively good scores for Pillar 3 (Willingness & Risk) and Pillar 15 (External Financing). However, Japan also exhibits some unique characteristics. Its scores are much higher than other moderate performers for Pillar 3 (Willingness & Risk) and Pillar 15 (External Financing) but are much lower for Pillars 1, 2 and 4. The results for Japan show a well-developed financial sector and low levels of business risk but also indicate that women in Japan are less likely to see opportunities to start businesses or feel they have the skills to start a business. Also, the acceptance of women in executive positions is low.

Pakistan is in the low performer group and exemplifies many of the characteristics of this group. Its overall scores are low on most Pillars with the exception of a relatively high score for Pillar 11 (Product Innovation) where its score is higher than that of Japan. This result is driven by a high level of female startups introducing new products or services to the market. Pakistan also shows a relatively high score for Pillar 12 (Process Innovation) which indicates that female startups in Pakistan are adopting new technologies. However, as the severely contracted shape located close to the center of the spider chart shows, Pakistan is characterized by low overall pillar scores. Like other low-performing countries, Pakistan needs to focus on improving fundamental issues such as women's rights, women's access to resources such as education and bank accounts, women's access to broader labor force sectors as well as improving the business regulatory environment.

Figure 4.4: Three tier performance categories compared: The United States, Japan and Pakistan



Source: Gender-GEDI (2014)

4.5 Regional Highlights

The Gender-GEDI sample can be divided into six regions: Africa, East Asia, South Asia, Europe, Latin America and the Caribbean (LAC) and Middle East and North Africa (MENA). A closer look at the regional level averages allows us to identify some general regional strengths and weaknesses.

The **Africa** region represented by Ghana, Nigeria, South Africa and Uganda is characterized by a high level of female entrepreneurial drive, particularly in the case of Opportunity Perception, with an average of 69% of the female population identifying opportunities to start a business. The female startup activity rate is also high at 8.6 female startups for every 10 male startups. Also, the Africa region has on average good female representation in leadership: 39% of managers and senior officials are female. The region's weaknesses are mainly related to low educational attainment amongst women in general and female entrepreneurs in particular. Of the African countries in our sample, only 46% of the adult female population has completed secondary education and only 13% of female business owners have a college education. Also, there is little availability of equity finance. The highest ranking country in the Africa region is South Africa, ranked #11 (tied with South Korea and China).

The **East Asia** region is comprised of China, Japan, South Korea, Malaysia and Thailand. South Korea and China are the highest ranking countries in East Asia and are tied with South Africa for 11th place. Most of these countries are moderate performers in the index. They are generally characterized by a good business environment with low business risk and with the highest regional average for R&D expenditure at 1.9% of GDP. Also, there is generally wide availability of equity capital. The East Asia regional weaknesses are mainly concentrated in the female Entrepreneurial Environment sub-index with (on average) only 26% of the female population identifying business opportunities (Opportunity Perception) and 26% of the female population believing they have the skills to start a business (Startup Skills). Also this region is characterized by a low level of female leadership. On average only 17% of managers and senior officials are female.

Table 4.3: Regional Highlights

Region	Strengths	Weaknesses
Africa	• Female Startup Rate • Female Leadership	• Access to Education • Access to Capital
East Asia	• Access to Capital • Business Environment	• Opportunity Identification • Startup Skills
South Asia	• Willingness to Start	• Equal Rights • Access to Education
Europe	• Equal Rights • Good Business Environment	• Opportunity Identification • Access to Networks
Latin America & Caribbean	• Female Startup Rate • Market Expanding Startups	• High Growth startups • Access to Childcare
MENA	• New Technology use by Startups	• Equal Rights • Attitudes towards Female Executives

Source: Gender-GEDI (2014)
Note: The United States, Australia and Russia are not included in the regional analysis since they do not fit well in terms of both geography and characteristics into the six regional groups.

The **South Asia** region includes Bangladesh, India and Pakistan. These countries are all Low Performers in the index with India ranked highest at #26. Though most score averages are low, one of the strengths in this region is the relatively higher score for the female Entrepreneurial Environment sub-index, as on average 65% of the female population is willing to start a business. The region's weaknesses are related to the lack of women's equal rights, higher levels of female labor crowding and low general educational attainment amongst women. On average only 25% of adult females have some secondary education in the South Asia region. Also, this region exhibits the lowest female startup activity rates at just 2.8 female startups for every 10 male startups.

The **European region** is made up of six countries: Sweden, France, Germany, Poland, Spain and the United Kingdom. All six countries are High Performers in the index. Sweden is the highest ranking country in the European region and is ranked in third place overall. The European region scores well for women's equal rights and for low levels of female labor crowding. It is also characterized by favorable attitudes towards women in executive positions. Access to childcare is at a good level, as is access to education. On average 49% of female business owners have college degrees. The European region also has a favorable business environment and provides a large amount of SME training programs geared towards women. Access to financing (which measures access to bank accounts and financial training programs) is generally good, especially at the 1st tier level. The regional weaknesses are concentrated in the female Entrepreneurial Environment sub-index, especially the female population's recognition of business opportunities (31%) and relatively low percentages of women who know an entrepreneur (31%).

The **Latin American and Caribbean region** includes Brazil, Chile, Jamaica, Mexico, Panama and Peru. These countries represent High Performers, Moderate Performers and also Low Performers. The highest ranking country in the region is Chile, ranked #6 in the index. The strengths in the Latin American and Caribbean region include a relatively high female startup activity rate at 8.4 female startups for every 10 male startups. Also, this region exhibits a high level of female startups in markets with little competition which indicates that market expanding and often

innovative activities are occurring in this region. The regional weaknesses include a low level of high-growth female startups, on average only 7% of all female startups. There is also relatively little access to high quality and affordable childcare. The region is also characterized by a low level of R&D expenditure with a regional average of only 0.4% of GDP.

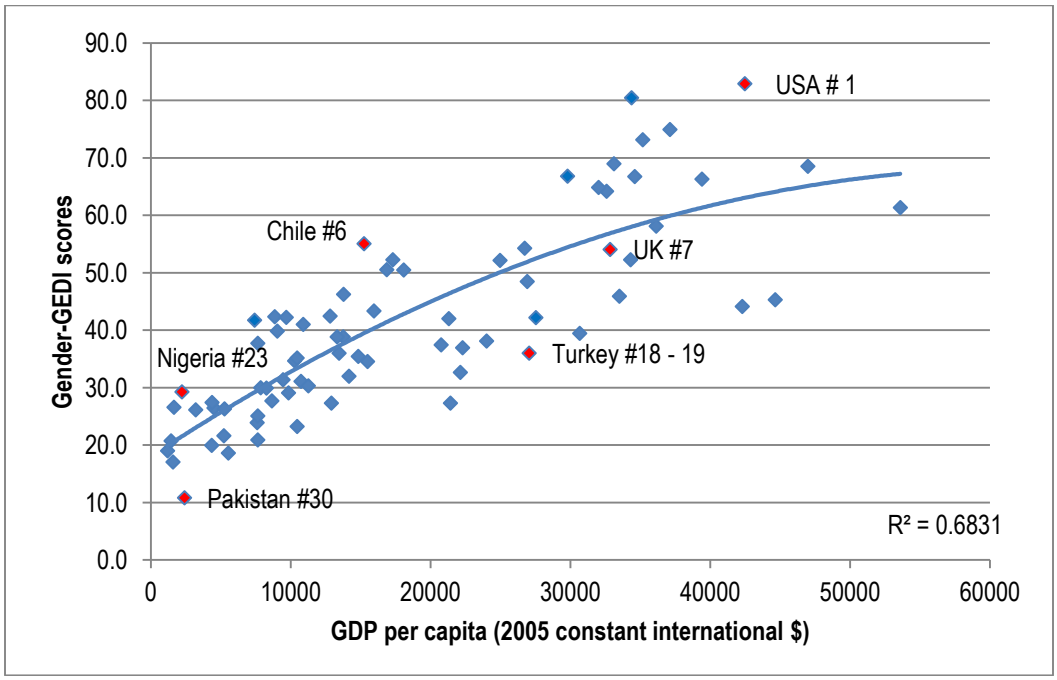
The **Middle East and North Africa** region is comprised of Egypt, Morocco and Turkey. The highest-ranking country in this region is Turkey, which is a Moderate Performer ranked #18 in the index (and tied with Russia). Both Egypt and Morocco are Low Performers. A relative regional strength is the percentage of female startups using new technology (39%). The main weaknesses in the MENA region are the low levels of women's equal rights, less favorable attitudes towards women in executive positions and fewer women in leadership positions. On average only 11% of the managers and senior officials in these countries are women. Access to high quality, affordable childcare is also relatively low.

4.6 Focus Areas: Key issues that affect Gender-GEDI rankings

At first glance, the Gender-GEDI results may seem directly linked to a country's economic development and GDP levels. As shown in figure 4.5, the relationship between a country's per capita GDP and the Gender-GEDI scores is strong, with an R-squared value of 0.68, which means that variation in GDP per capita explains 68% of the variation in Gender-GEDI scores.

However as is evident from the data points located both above and below the trend line, a number of countries do not fit this pattern. For example the United States (#1) , Chile (#6), and Nigeria (#23) have relatively higher scores on the Gender-GEDI in relation to their per capita GDP while the United Kingdom (#7), Turkey (#18) and Pakistan (#30) have a relatively lower Gender-GEDI score with relation to their level of per capita GDP.

Figure 4.5: Higher per capita GDP does not mean higher Gender-GEDI 2014 scores GDP[31]



Source: Gender-GEDI (2014)

Though GDP plays a role in creating favorable conditions for female entrepreneurship development, other issues also have an impact. Specifically, our results show that the conditions for high potential female entrepreneurship development are hampered in the following ways for our 30 country sample: 73% countries exhibit female labor crowding; 73% countries limit legal rights for married women; 27% of countries limit women's access to property; 23% countries restrict women's access to public spaces and in 23% of countries at least half of the female population is unbanked.

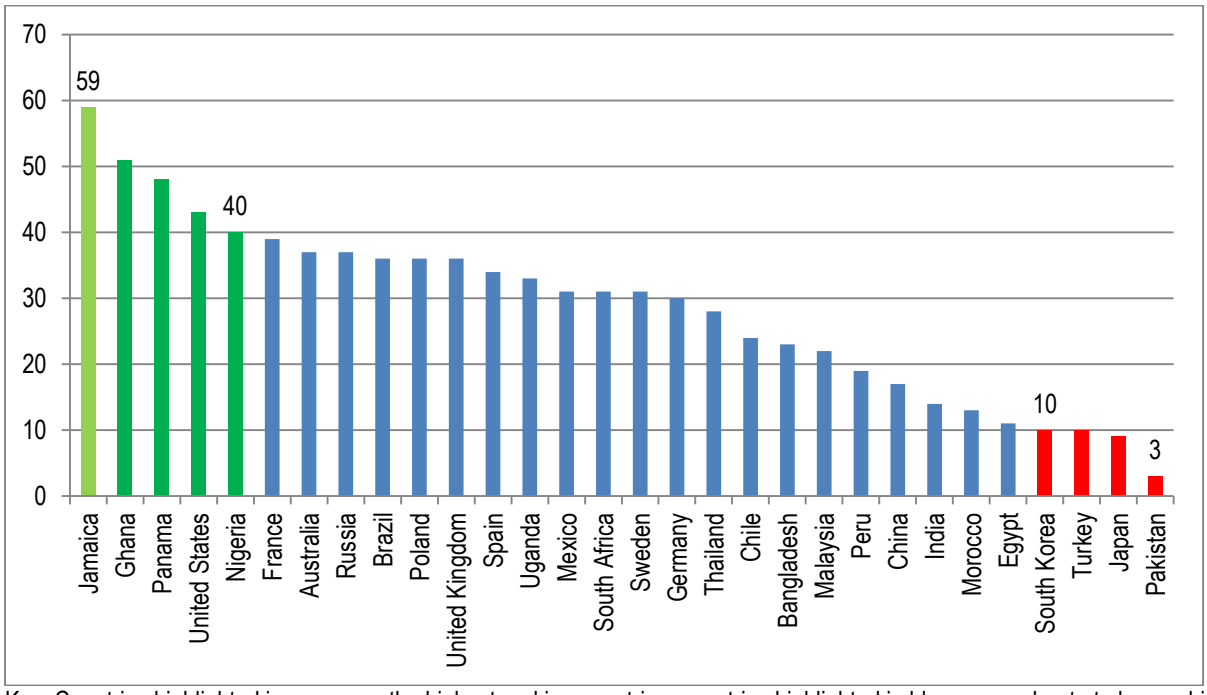
In addition, regardless of GDP levels, the Gender-GEDI Index results indicate low levels of high growth oriented female startups and female tech sector startups throughout the 30 countries in our sample. Unfortunately the data to unravel the influences on a country comparative basis simply does not exist. However, a number of the variables that are currently included provide an indication as to the underlying causes for Potential Entrepreneurs choosing not to grow their businesses and Promising Entrepreneurs choosing to opt out of starting businesses. Five areas which are likely to impact these results are discussed in further detail in the following sections. Some of the five areas such as female labor crowding, equal legal rights and access to capital affect most countries in our sample. Others, like acceptance of women in leadership positions, affect a portion of our sample and provide a further glimpse into the favorability of a country's environment for potential entrepreneurs to grow their businesses. Finally, access to public spaces or bank accounts are widely available in most countries but severely limited in a small group of countries.

1. Acceptance of Women in Leadership Positions

Social norms impact female entrepreneurship in two critical ways: First, they impact the general societal support for women as entrepreneurs, which can affect an individual woman's decision to take the risk to become an entrepreneur as is the case for Promising Entrepreneurs. Second, social norms also impact the access women have to experiences as decision-makers and leaders as well as to the range of occupations women have – all of which may act to either impede or encourage the development of high growth female entrepreneurs.

With respect to pre-entrepreneurial career development, in 83% of our sample countries, female managers[32] make up less than 40% of total managers. Only five countries have 40% or more female managers. Jamaica leads with the highest percentage of female managers (59%), followed by Ghana, Panama, the United States and Nigeria. Access to higher levels of education forms the foundation for high potential female entrepreneurship, but management experience provides women with additional skills, experience and networks that facilitate female entrepreneurship success. However, for the vast majority of countries, women are not strongly represented in management positions. In addition, for four countries, the percentage of women in management is 10% or less: South Korea (10%), Turkey (10%), Japan (9%) and Pakistan (3%).

Figure 4.6: Percentage of Female Managers

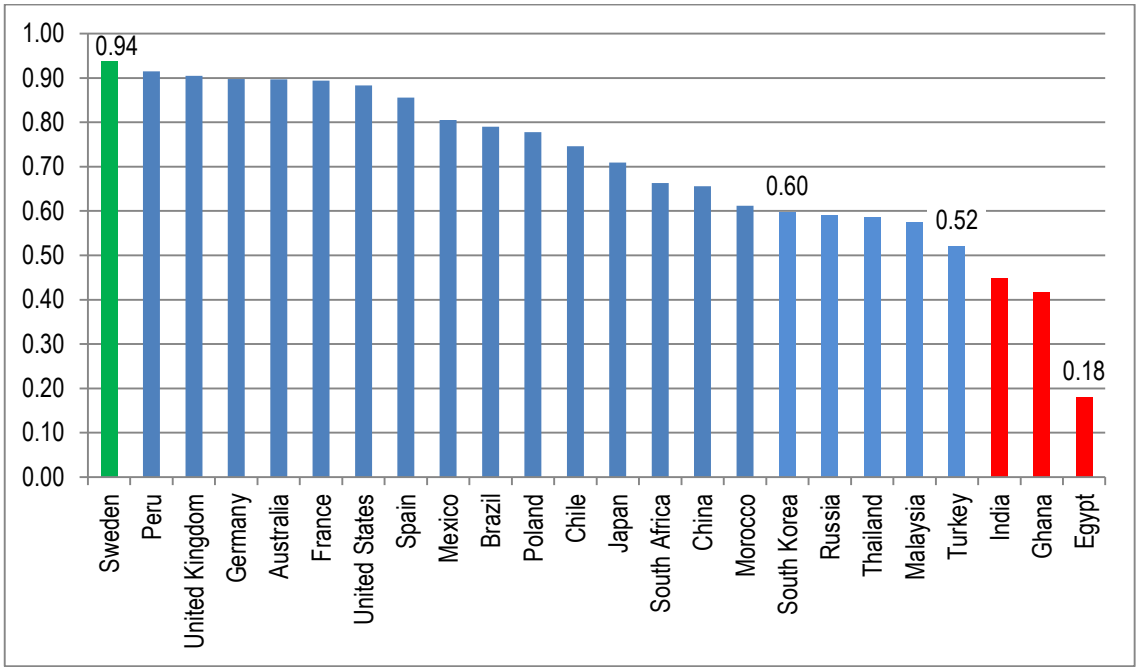


Key: Countries highlighted in green are the highest ranking countries, countries highlighted in blue are moderate to low ranking countries; countries highlighted in red are the lowest ranking countries.
Source: GGGI (2011)[33]

Attitudes towards women in executive positions can have a strong effect on women choosing to take on these higher roles and responsibilities in entrepreneurship. Successful high potential female entrepreneurs are similar to female executives in terms of their visible leadership roles in the private sector. Figure 4.7 shows the female responses to a survey that asked respondents whether male business executives are better than female business executives. The variation between countries is striking. The results are given in terms of the percentage of women that do not think there is a difference. Sweden has the highest percentage (94%) which indicates that the majority of women do not feel there is any difference between male and female business executives. However, in eight countries, 60% or less of female respondents believed there was no difference: South Korea (60%), Russia (59%), Thailand (59%), Malaysia (57%), Turkey (52%), India (45%) and Ghana (42%). In Egypt only 18% of the female respondents felt that there was no difference.

When such a strong opinion is expressed in a hypothetical case (where the actual capabilities of the male and female executive are unknown), it is reasonable to expect that attitudes towards women in other positions demanding decision-making and leadership capabilities such as high potential female entrepreneurs would encounter a similar bias. This may have a detrimental effect on Potential Entrepreneurs choice to grow or not grow their business operations.

Figure 4.7: Favorable Perceptions of Female Executive Status[34]



Key: Countries highlighted in green are the highest ranking countries, countries highlighted in blue are moderate to low ranking countries; countries highlighted in red are the lowest ranking countries.
Source: World Values Survey (various years).

2. Women's rights and access to resources are still legally restricted

Equal legal rights form the foundation for the development of 'high potential' female entrepreneurship, yet in many countries women's rights are more limited. This difference in rights is particularly evident with regards to married women, access to property and employment. In 22 countries included in our sample, married women do not enjoy the same legal rights as married men, and in eight countries included in our sample, women do not enjoy the same legal access to property as men[35]. Moreover, in 21 countries women do not enjoy the same access to employment as men. A number of countries also limit women's access to public spaces[36]. In three countries (Egypt, Nigeria and Pakistan) there are legal restrictions to women's access to public spaces while in four additional countries (Bangladesh, Jamaica, Malaysia and Uganda) discriminatory practices limit this access. When legal rights are restricted, it can become more difficult or even impossible for women to perform the activities necessary to grow female businesses, thus hampering the development of Promising and Potential Entrepreneurs.

3. Access to Capital

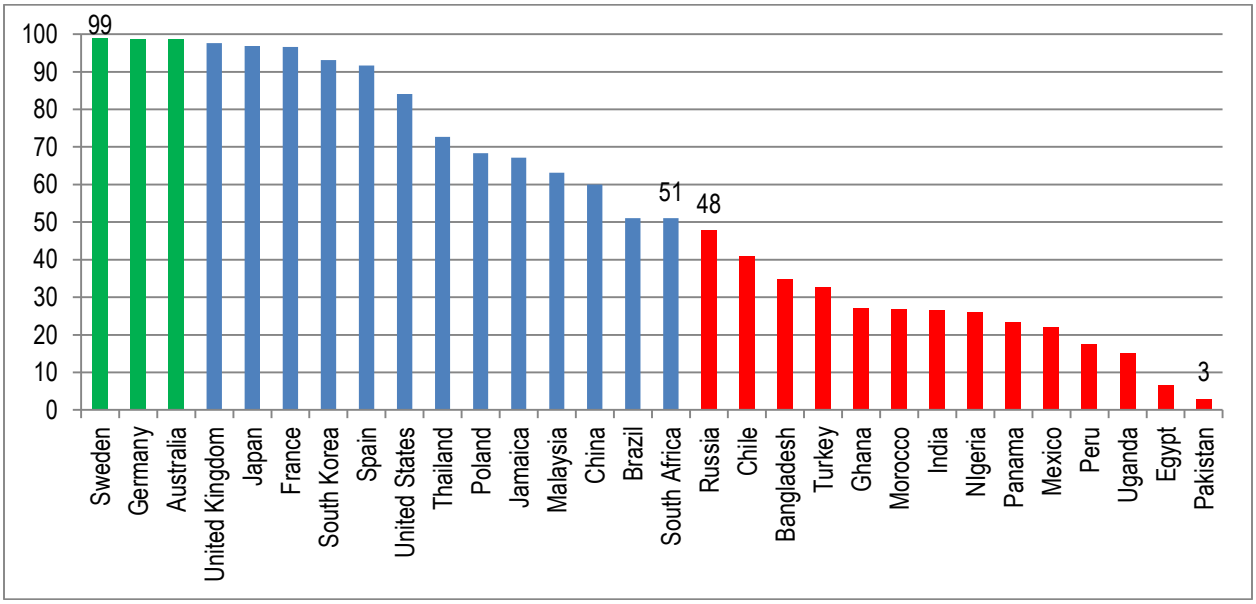
Access to a formal bank account is critical for high potential female entrepreneurs, especially since it is a necessary precursor to financing—bank loans, credit lines, etc.—that fuels business growth. But in 14 of the 30 countries included in the Index, 50% or more of the female population is unbanked[37]. These countries are Russia, Chile, Bangladesh, Turkey, Ghana, Morocco, India, Nigeria, Panama, Mexico, Peru, Uganda, Egypt and Pakistan. Gender disparities between men and women with bank accounts are highest in Turkey, where half as many women as men have bank accounts. In the following six countries there exists a 10% or greater male/female difference: Brazil (10%), Mexico (11%), Uganda (11%), Pakistan (14%), India (17%) and Morocco (25%).

In contrast, five countries not only have the highest levels of women with bank accounts (over 90%), all five have higher percentages of women than men with bank accounts (albeit the differences are very small). These five countries are: Sweden (99%), Germany (99%), United Kingdom (98%), Japan (97%) and South Korea (93%).

Formal financing is especially important for female entrepreneurs, who tend to have less personal capital to invest in their businesses. This lack of formal financing thus limits the ability of female Potential Entrepreneurs to grow their businesses. In many countries where the percentages of women with formal bank accounts is low, many female entrepreneurs are operating in the informal economy. Yet business growth depends on formalization, the lack of which often stunts business development. However, improving access to formal financing is not a cure-all: in cases such as Japan women enjoy almost universal access to bank accounts, but other issues (such as social norms) need to be addressed in order for high potential female entrepreneurship to develop.

Access to bank accounts forms the baseline measure for an entrepreneur's access to capital. Access to credit constitutes an important 'next level' or 2nd tier of financing. Unfortunately there is only anecdotal evidence of more limited access for female entrepreneurs to credit, as non-proprietary, comparative data is not currently available.

Figure 4.8: Percentage of Women with a Bank Account at a Formal Institution

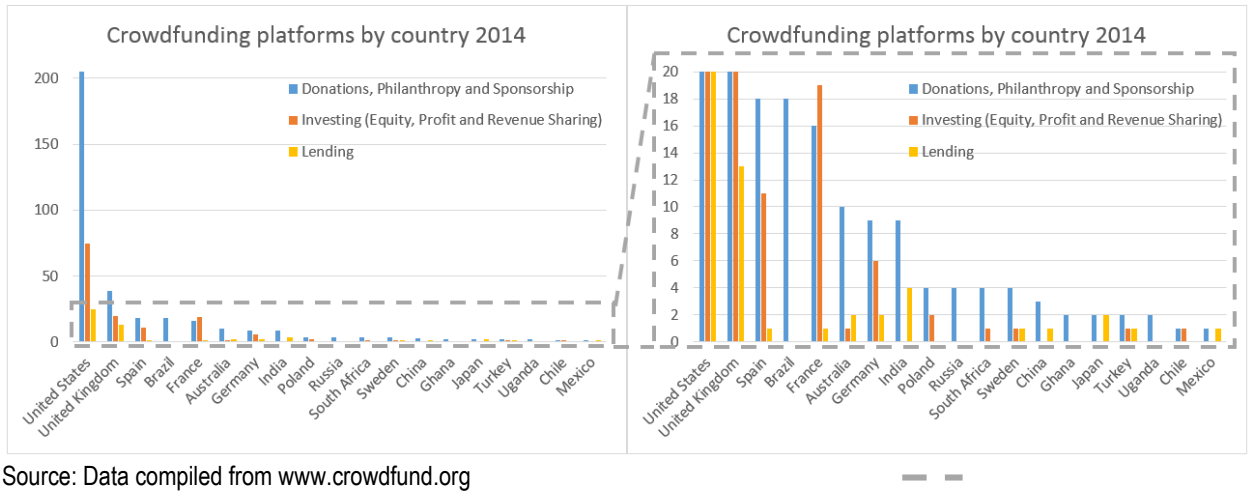


Key: Countries highlighted in green are the highest ranking countries, countries highlighted in blue are moderate to low ranking countries; countries highlighted in red are the lowest ranking countries. Source: World Bank Findex Database (2011)

The 3rd tier of financing is access to equity capital. Worldwide, women receive less outside funding for their businesses than men, but the gap becomes even more apparent at the highest level of capital needs—high potential female entrepreneurs in need of greater amounts of risk capital typically provided by Venture Capital (VC). Comparative, sex-disaggregated data on VC funding is not widely available. In the United States where limited data is available, female entrepreneurs are increasingly receiving VC funding. According to Pitchbook, in the first half of 2013 13% of all VC deals went to women-founded companies, which constitutes a 9% increase since 2004[38]. In addition, a 2013 United States based study found a positive and significant relationship between current or prior investments in women-led businesses[39] with future investments in other women-led businesses[40]—those who invest in women once tend to invest in women again. Taken together, these results indicate the likelihood of an increasing trend for VC funding for female entrepreneurs. But a large funding gap still remains and other funding options are needed.

Crowdfunding is a new and developing alternative source of seed and growth financing for entrepreneurs. Research on female entrepreneurs has revealed that crowdfunding may be significantly easier for women to access than conventional forms of business debt or equity financing[41]. Forty-seven percent of all successful campaigns on Indiegogo, one of the main crowdfunding platforms in the United States, are run by women[42]. As Indiegogo co-founder Danea Ringelmann notes 'women are nearly four times more successful when crowdfunding than raising capital through traditional means... this is a great example of how democratizing finance helps ensure women are on a completely level playing field with men'[43]. But even in crowdfunding, gender preferences persist. Investors are more likely to fund entrepreneurs of the same gender. This preference is stronger among men than women[44]. As figure 4.9 shows, crowdfunding is still limited in most countries included in our sample.

Figure 4.9: Availability of Crowdfunding



Source: Data compiled from www.crowdfund.org
Note: The following 11 countries are not shown: Jamaica, Malaysia, Nigeria and Pakistan which have only one investing platform per country; Bangladesh and Morocco have no crowdfunding platforms listed and data was not available for Egypt, Korea, Panama and Thailand.

4. Entrepreneurship Crowding as a consequence of Female Labor Crowding[45]

For 73% of our country sample, female labor crowding exists

Research indicates that female entrepreneurs tend to be concentrated in the service sector and in businesses that conform to conventional female roles - such as beauty parlors, food vending and sewing[46]. In addition, women tend to work in sectors, industries, occupations and jobs with lower average (labor) productivity, which explains a large fraction of the gender gap in productivity and earnings[47]. Productivity differences between female-owned and male-owned businesses are often explained by differences in access to and use of productive resources, where these differences are primarily a function of the business size and sector of operation rather than a gender-specific factor[48]. There is evidence to suggest that women are as efficient as men in production when given access to the same inputs and resources[49]. If women are inherently no less productive than men, why do women concentrate in certain sectors?

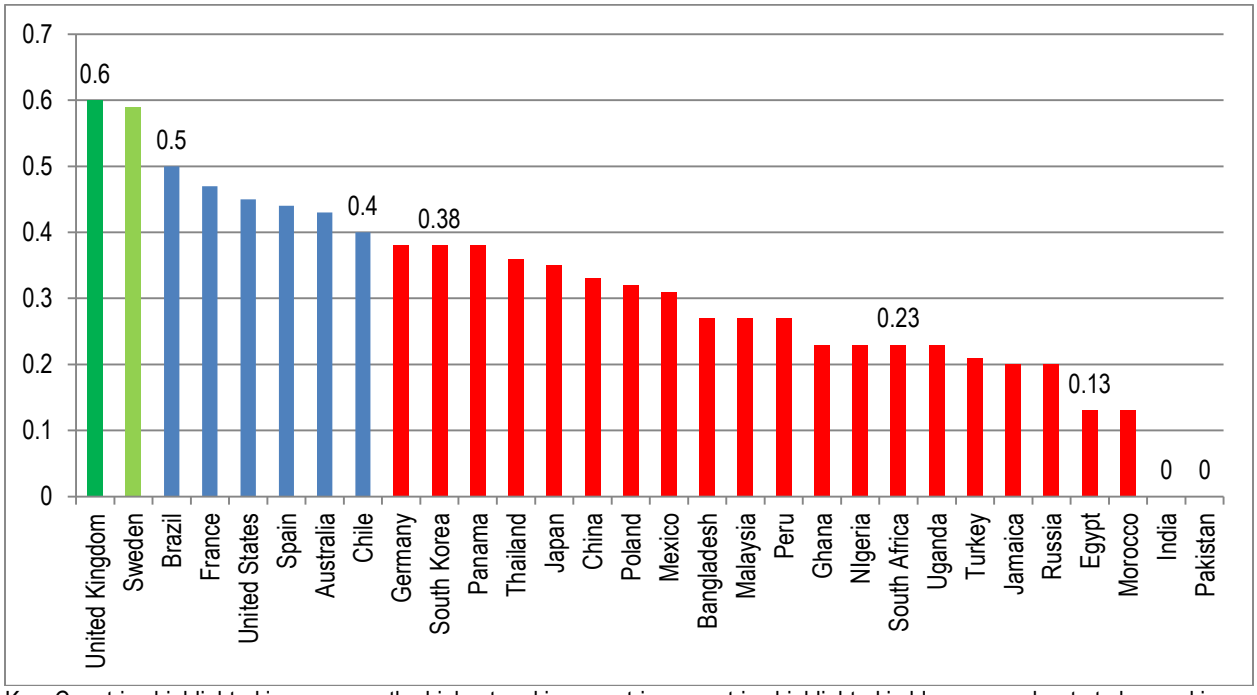
Female entrepreneurs do not exist in a vacuum but are influenced by previous work experience and networks so it is no wonder that women's entrepreneurial activity tends to be concentrated in specific sectors. In that sense occupation crowding in terms of jobs being considered 'male' or 'female' jobs influences entrepreneurship crowding in terms of female entrepreneurial activities being concentrated in a small number of sectors.

Empirical evidence of the effects of occupation crowding[50] indicates that crowding benefits some specific groups by reducing competition for the most desirable occupations. In fact, United States based estimates indicate that 12% – 37% of the United States gender wage gap is attributable to crowding[51]—there are too many women competing for jobs in a few sectors, driving wages down, while other sectors lack female competition, resulting in higher wages for a smaller pool of primarily male competitors.

The 2014 Gender-GEDI Index includes a variable to measure labor force parity which is the female to male balance in terms of formal labor force participation according to a ratio of 60:40 or 40:60. Out of 30 countries, only eight countries are characterized by at least 40% of their labor force sectors within the ideal 60:40 or 40:60 ratio. Moreover, for two countries (India and Pakistan) all employment sectors are highly sex segregated so that no employment sectors are balanced.

What is the possible link of occupation crowding to the low levels of tech female startups in the Gender-GEDI Index? The Center for Talent Innovation's 2014 report on women in Science, Engineering and Technology (SET) careers in the United States, Brazil, China and India sheds light on the dynamics that inhibit women's participation in these three male dominated fields. Two factors stand out: (1) Women are marginalized by the often 'macho' culture predominant in the lab-coat, hard-hat, and hoodie workplace cultures; and (2) Women feel excluded from 'buddy networks' among their peers and lack female role models[52].

Figure 4.10: Measuring Labor Force Parity



Key: Countries highlighted in green are the highest ranking countries, countries highlighted in blue are moderate to low ranking countries; countries highlighted in red are the lowest ranking countries. India and Pakistan have no sectors exhibiting Labor Force Parity and their average score is 0.
Source: International Labor Organization – most recent data available (2005 – 2012)[53]

The two top scoring countries for labor force parity, Sweden and the United Kingdom, are both involved in initiatives to further integrate traditionally male dominated sectors. In Sweden, the Swedish metals mining company Boliden's has set a goal to increase the participation of women to at least 20% by the end of 2018. In addition, a new Swedish campaign 'From Macho to Modern' in the forestry sector focuses in developing strategies to integrate women this traditionally male dominated sector. New initiatives in the United Kingdom are targeting the construction sector:

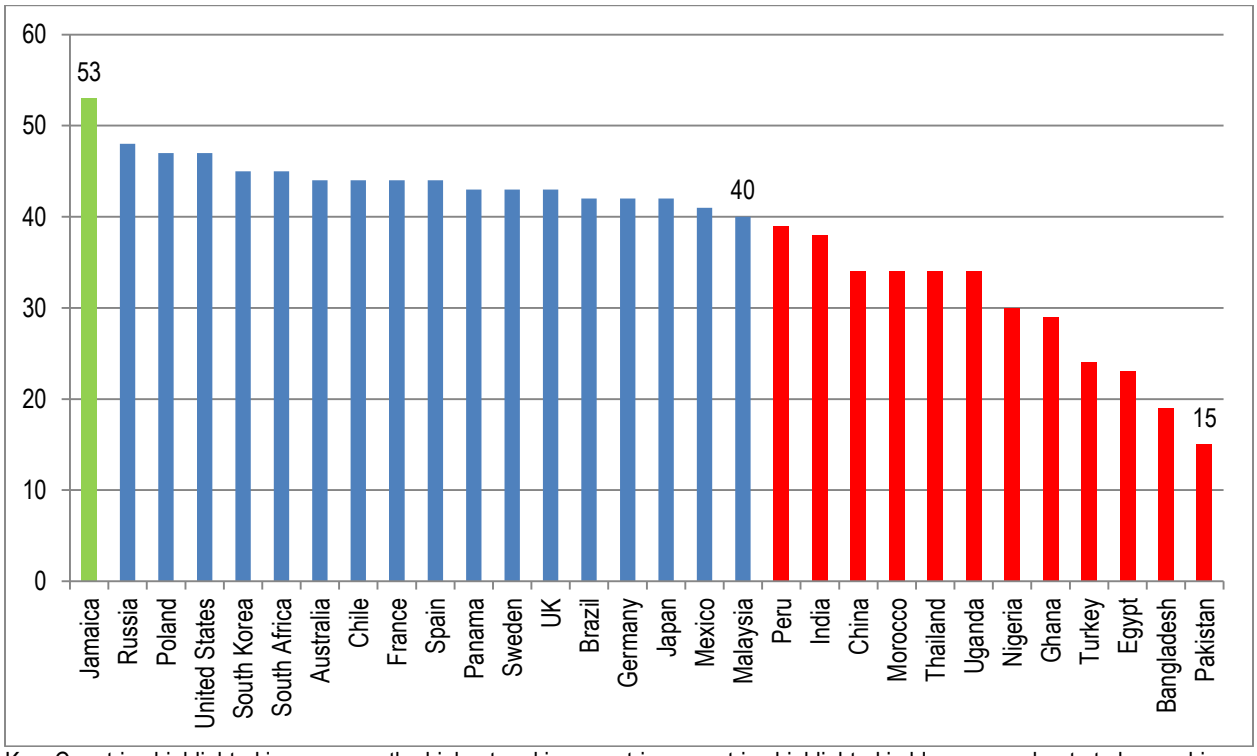
Though United Kingdom's construction sector is a major employer and is short of skilled labor, women account for only 11% of the workforce and only 1% in manual trades[54]. Positive initiatives are not restricted to top scoring countries as evidenced by South Africa's 10% female participation target for the male dominated mining industry. This percentage is likely to increase to 20% by 2018[55].

5. Professional Social Media platforms

For 37% of our country sample, women are not taking advantage of professional social media platforms

Professional social networking platforms help entrepreneurs in a number of ways: increasing the visibility and profile of the entrepreneur to a broader audience; facilitating referrals; expanding contacts in professional groups; increasing access to existing and potential customers; and, as a forum to advertise new business related developments.

Figure 4.11: Percentage of Women with LinkedIn profiles



Key: Countries highlighted in green are the highest ranking countries, countries highlighted in blue are moderate to low ranking countries; countries highlighted in red are the lowest ranking countries.
Source: Comscore, 2013 data.

Facebook is a social media platform which tends to be more frequently used by women than men. However, while Facebook can be successfully used by entrepreneurs, it is generally used for personal purposes. LinkedIn, on the other hand, is specifically geared towards building professional networks. Though LinkedIn is present in all 30 countries of our sample, other professional social networking platforms are as popular as or even more popular than LinkedIn. Xing is an example of a LinkedIn competitor used in many German speaking countries. However, there is no indication that the gender composition would be any different in terms of individual profiles on competitor platforms.

The percentage of women with LinkedIn profiles provides us with insights into women's use of professional social networking platforms. There is no obvious impediment to the use of professional social networking platforms such as LinkedIn since it is free of charge and widely available. Yet as shown in figure 4.11, in 37% of our 30 country sample, less than 40% of women had LinkedIn profiles.

Chapter 5. Comparison of the Gender-GEDI results

What is the effect of including gendered variables in addition to variables that measure the general business environment? In order to answer this question, we compared the Gender-GEDI Index rankings to the rankings in the three main business environment related indices: The World Bank's Ease of Doing Business, The World Economic Forum's Global Competitiveness Index and the Heritage Foundation's Economic Freedom Index. The results are shown in figure 5.1. The color coding for each index indicates the level of each country's rank. As we can see, compared to the Gender-GEDI Index rank, a small amount of shifting taking place for the top ranking countries considerably more shifting for mid ranking countries and little change for the top ranking or lowest ranking countries. For the top ranking countries, France and Chile both rank higher on the Gender-GEDI Index. For mid ranking countries, China, Nigeria and Russia all receive higher relative ranks in the Gender-GEDI in the Gender-GEDI. All three do much better in the Gender-GEDI than in the Economic Freedom Index. In contrast, a number of Asian countries receive lower relative ranks in the Gender-GEDI than in the other three indices. Malaysia's rank is much lower in the Gender-GEDI and to a lesser extent the relative rank of Japan, Korea and Thailand. This comparative analysis illustrates that gender does have an effect on country rankings beyond measurement of the overall business environment for enterprise development and competitiveness.

Figure 5.1: Comparison of the Gender-GEDI rankings to four other index results

Country	Gender-GEDI Score	Gender-GEDI Rank	WB Doing Business Index	WEF Global Competitiveness Index	Economic Freedom index
United States	83	1	4	5	12
Australia	80	2	11	21	3
Sweden	73	3	14	6	20
France	67	4	38	23	70
Germany	67	5	21	4	18
Chile	55	6	34	34	7
United Kingdom	54	7	10	10	14
Poland	51	8	45	42	50
Spain	49	9	52	35	49
Peru	45	10	42	61	47
Mexico	44	11	53	55	55
South Africa	43	12	41	53	75
Panama	42	13	55	40	71
China	40	14	96	29	137
Thailand	40	15	18	37	72

Country	Gender-GEDI Score	Gender-GEDI Rank	WB Doing Business Index	WEF Global Competitiveness Index	Economic Freedom index
Korea	39	16	7	25	31
Japan	38	17	27	9	25
Turkey	38	18	69	44	64
Russia	36	19	92	64	140
Nigeria	35	20	147	120	129
Brazil	34	21	116	56	114
Jamaica	33	22	94	94	56
Malaysia	32	23	6	24	37
Morocco	28	24	87	77	103
Ghana	27	25	67	114	66
India	26	26	134	60	120
Egypt	21	27	128	118	135
Uganda	19	28	132	129	91
Bangladesh	17	29	130	110	131
Pakistan	14	30	110	133	126

Chapter 6. Conclusion, Limitations and Future Steps

The 2014 Gender-GEDI Index takes a holistic approach to analyzing the conditions that foster high potential female entrepreneurship development by combining individual and institutional characteristics that can act as drivers or inhibitors to the process. An enabling environment that supports businesses' development cycles in terms of startup, growth and exit, is an important foundation. But so are the attitudes, norms, values and legal environment that support women's access to resources such as education, accept women in leadership positions and allow them to gain work experience in all sectors. Without these fundamental building blocks in place women cannot be expected to take the risk to start new businesses and then scale those businesses to the next level. Taken together, these building blocks constitute a country's ability to both foster and support the female entrepreneurship process.

In this report, we analyzed the regional and performance category trends for our 30 country sample. Top ranking countries are not necessarily the countries with the highest GDP levels, rather they are countries that are characterized by an enabling environment for female entrepreneurship development. But even amongst these countries, lower numbers of growth oriented startups are common. In addition, the percentages of women choosing to start businesses in the tech sector remain critically low.

The main strength for the moderate performing countries is their balanced results: this tier performs moderately well across most pillars, rather than exceptionally well in just a few areas. In most cases, there is a reasonably good business environment and fairly good access to resources. A noticeable weakness is the lower level of women in leadership positions. Other weak areas tend to be the same as for top performers: low levels of tech startups and low levels of growth-oriented female entrepreneurs. These countries need to tackle improvements on all fronts in order to increase the aspirations of the female population to start businesses as well as to grow existing businesses.

Top performers do well in providing an enabling environment for entrepreneurship development. Education levels are generally high amongst women and they are represented in leadership positions. Yet these seemingly fertile business environments are still characterized by low levels of growth oriented female entrepreneurs. Also, many exhibit a weaker female entrepreneurial environment in terms of identifying not only the opportunities for business startup but also having the skills, drive and networks to support business development. For these countries, targeted improvements that remove subtle yet powerful cultural inhibitors that define high growth entrepreneurship as male are needed.

Without improvements targeting the areas most needed, we will continue to see female Die Hard, Privileged and Reluctant Entrepreneurs but very few Promising or Potential Entrepreneurs.

Many gaps still exist in data critical to the analysis of female entrepreneurship. New datasets like the World Bank's Global Findex Database and the World Bank's Women, Business and the Law provide gender specific data on previously under-researched areas such as access to basic financial resources and equal legal rights. However, many data gaps still exist in key areas. These areas are discussed in more detail in the following section.

In closing, we invite comments and suggestions since we are eager to continue to refine and improve the Gender-GEDI Index. Please send to ruta@thegedi.org

Limitations and Future Steps

The Gender-GEDI uses existing data from reliable, internationally recognized datasets and as such, is limited by the data that is currently available. In the process of building the Gender-GEDI index, we identified a number of critical gaps where sex-disaggregated data is missing yet paramount for understanding high potential female entrepreneurship development. Important areas where data is needed include comparable data on female entrepreneurship rates that differentiate between part-time and full-time business owners, home-based businesses and intensity of business operations. Sex disaggregated data on access to finance differentiated according to the three main types of financing: debt financing, credit and equity capital would allow for a better categorization of countries than gender-neutral data which provides a general impression but does not reveal the underlying gendered realities. In many instances when sex-disaggregated data is available, such as labor force data, the sector categories currently used do not allow us to differentiate the sectors we find most important such as the technology sector, a sector characterized by extremely low levels of female startups.

In addition, though much emphasis has been placed on the importance of increasing the numbers of women with STEM (Science, Technology, Engineering and Mathematics) education and experience, we were not able to include this area in our analysis due to dearth of comparable data. Access to networking is another area where more in depth information is needed since research indicates that women's networks are more limited yet we do not have the quantitative data to measure this. Similarly, access to technology is very important for high potential female entrepreneurship development, but data is lacking in this area as well.

The subtle but detrimental effect of social norms and attitudes towards women on entrepreneurial outcomes continues to present challenges for inclusion in the index. We rely on proxies for favorable attitudes towards female executives yet entrepreneurship specific data would lead to richer results. Anecdotal evidence continues to emphasize the importance of social norms on entrepreneurial outcomes yet no comparative data is currently available.

Currently, a number of high quality reports exist at the individual and multi country level on female entrepreneurship. However, they do not allow for further comparative analysis and in most cases, the data is not updated annually so that benchmarking progress is not possible. There is a tremendous opportunity to improve our understanding of female entrepreneurship development globally by filling these data gaps.

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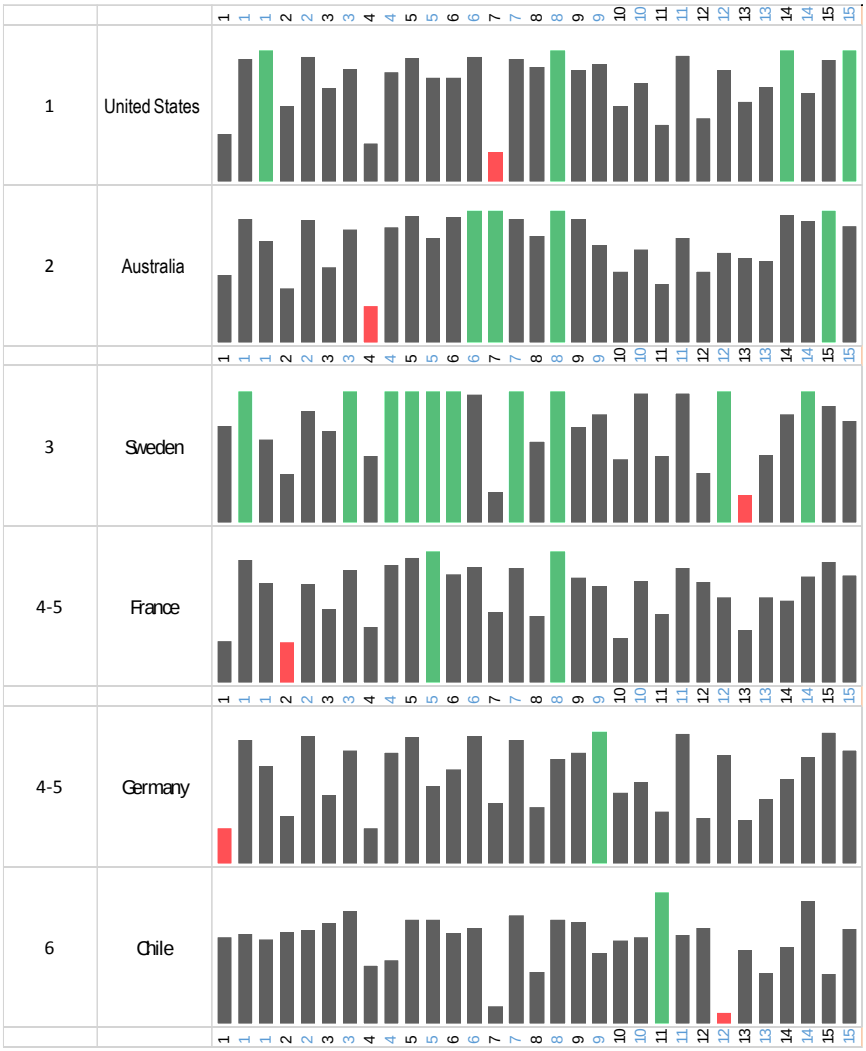
Appendix 1: Gender-GEDI Results by Country

Note: The bar charts on the following pages are designed to give a quick, visual overview of country performance for comparative purposes. The scale of the bars has been adjusted to range from slightly below zero to the highest observed value so that countries that score a zero for a given variable still have a visible bar (we added the same small amount to all values to achieve this).

Pillar	Indicator	Pillar	Indicator	Pillar	Indicator	Pillar	Indicator
1	Opportunity Recognition	4	Know an Entrepreneur	8	Highly Educated Owners	12	New Technology
1	Equal Rights	4	Internet and Networks	8	SME support and training	12	R&D Expenditure
1	Market Size	5	Executive Status	9	Innovativeness	13	Business Gazelles
2	Perc. Of Skills	5	Access to Childcare	9	Monopolized Markets	13	Female Leadership
2	Secondary Education	6	Opportunity Business	10	Entrepreneurship Ratio	14	Export Focus
3	Willingness to Start	6	Bus Freedom & Movement	10	Labor Force Parity	14	Globalization
3	Business Risk	7	Tech Sector Business	11	New Product	15	1st tier financing
		7	Tech Absorption	11	Technology Transfer	15	3rd tier financing

Individual level indicators are listed in black, Institutional level indicators are listed in blue

Highest score Lowest score



Gender-GEDI Results by Country

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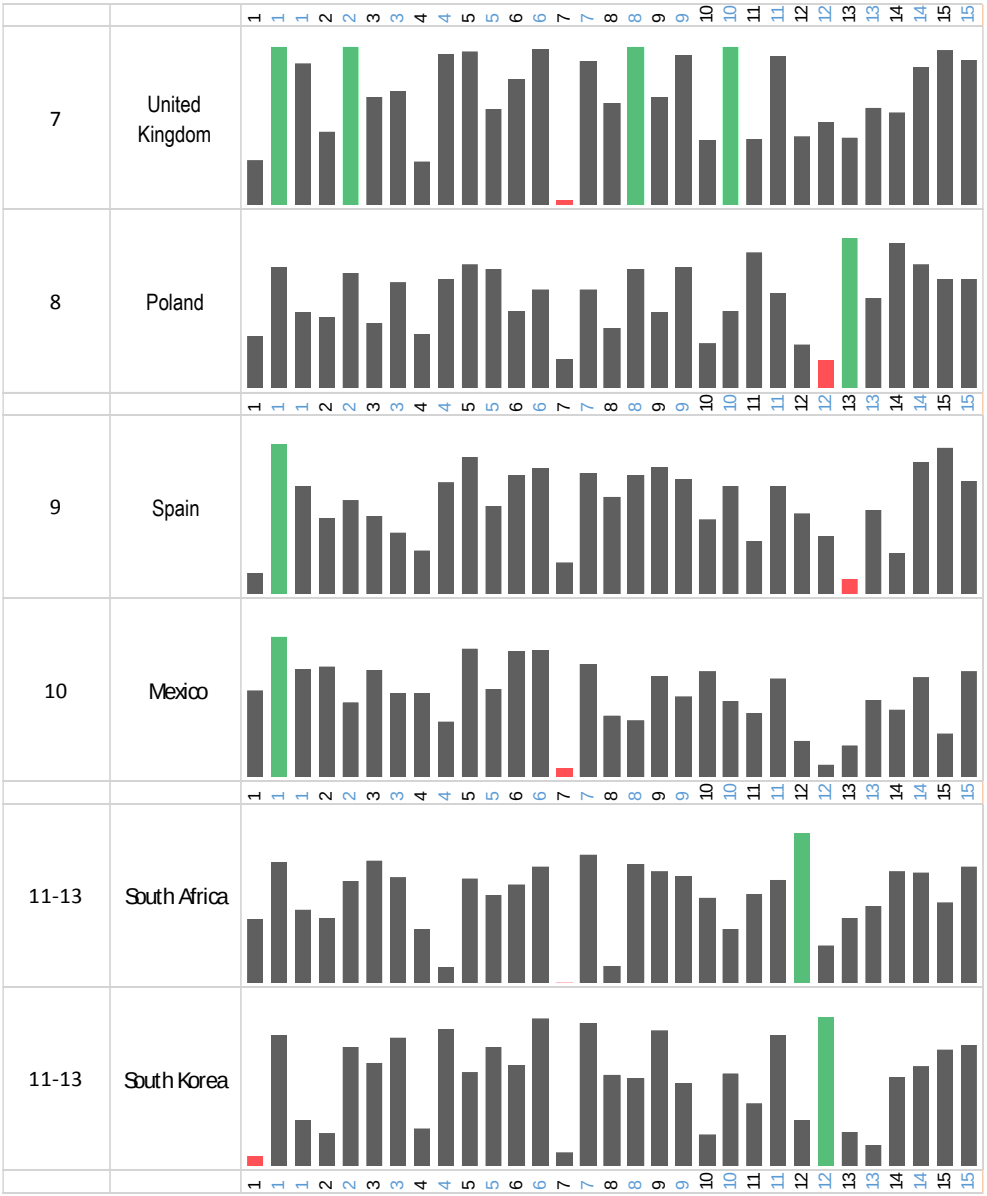

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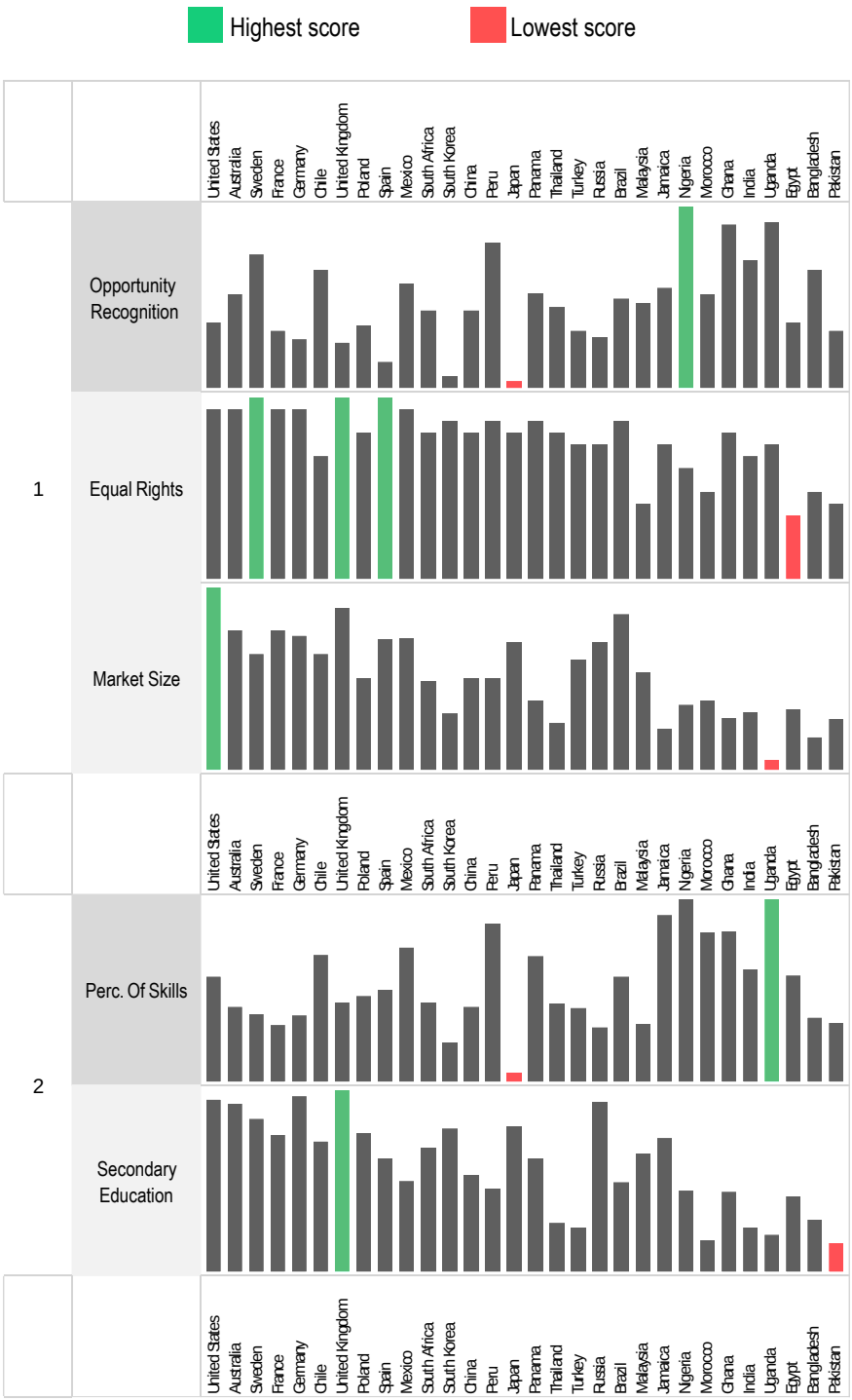
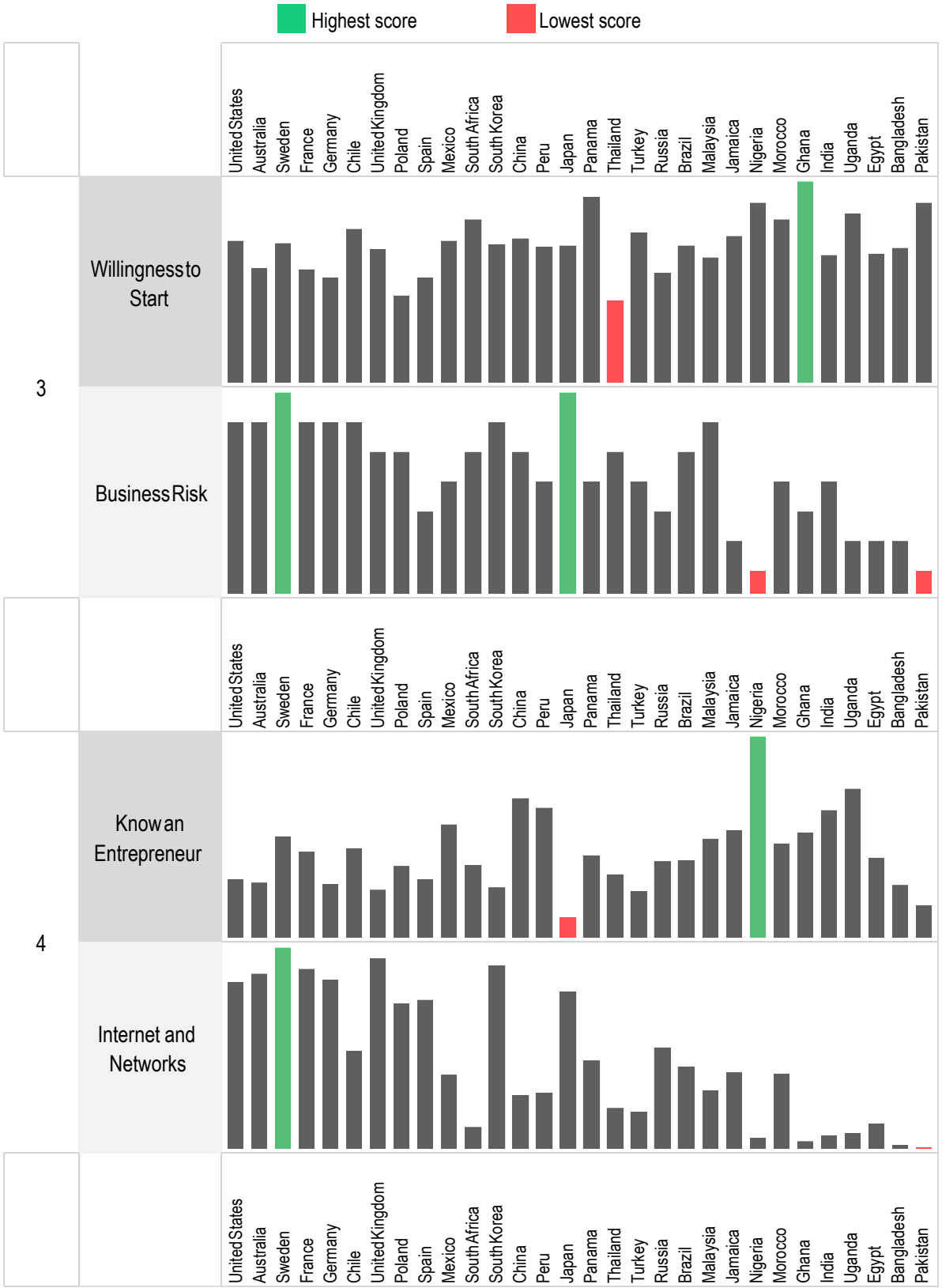
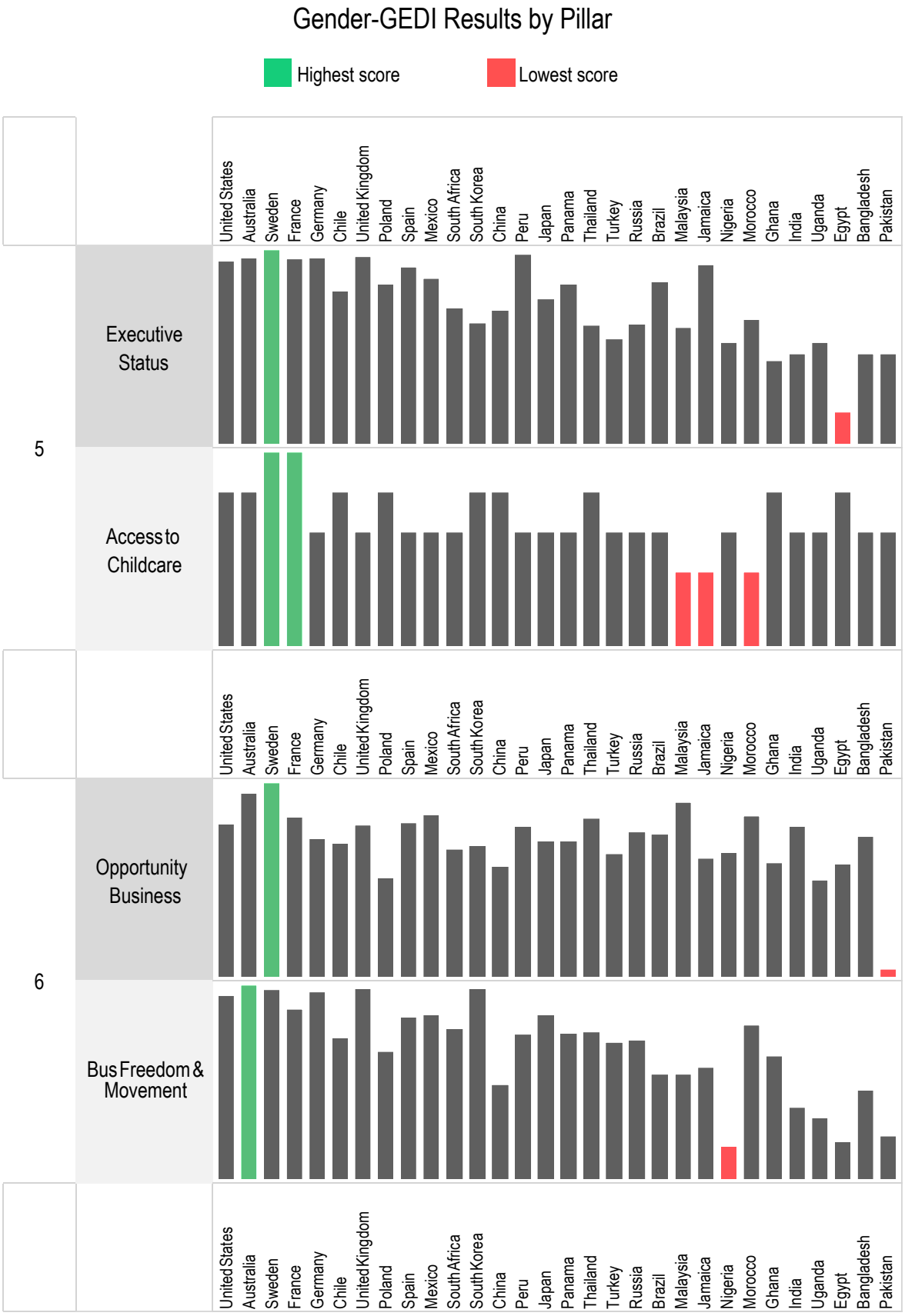


Gender-GEDI Results by Pillar




Gender-GEDI Results by Pillar
Highest score
Lowest score
5
Executive Status
Access to Childcare
6
Opportunity Business
Bus Freedom & Movement
United States
Australia
Sweden
France
Germany
Chile
United Kingdom
Poland
Spain
Mexico
South Africa
South Korea
China
Peru
Japan
Panama
Thailand
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Jamaica
Nigeria
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Ghana
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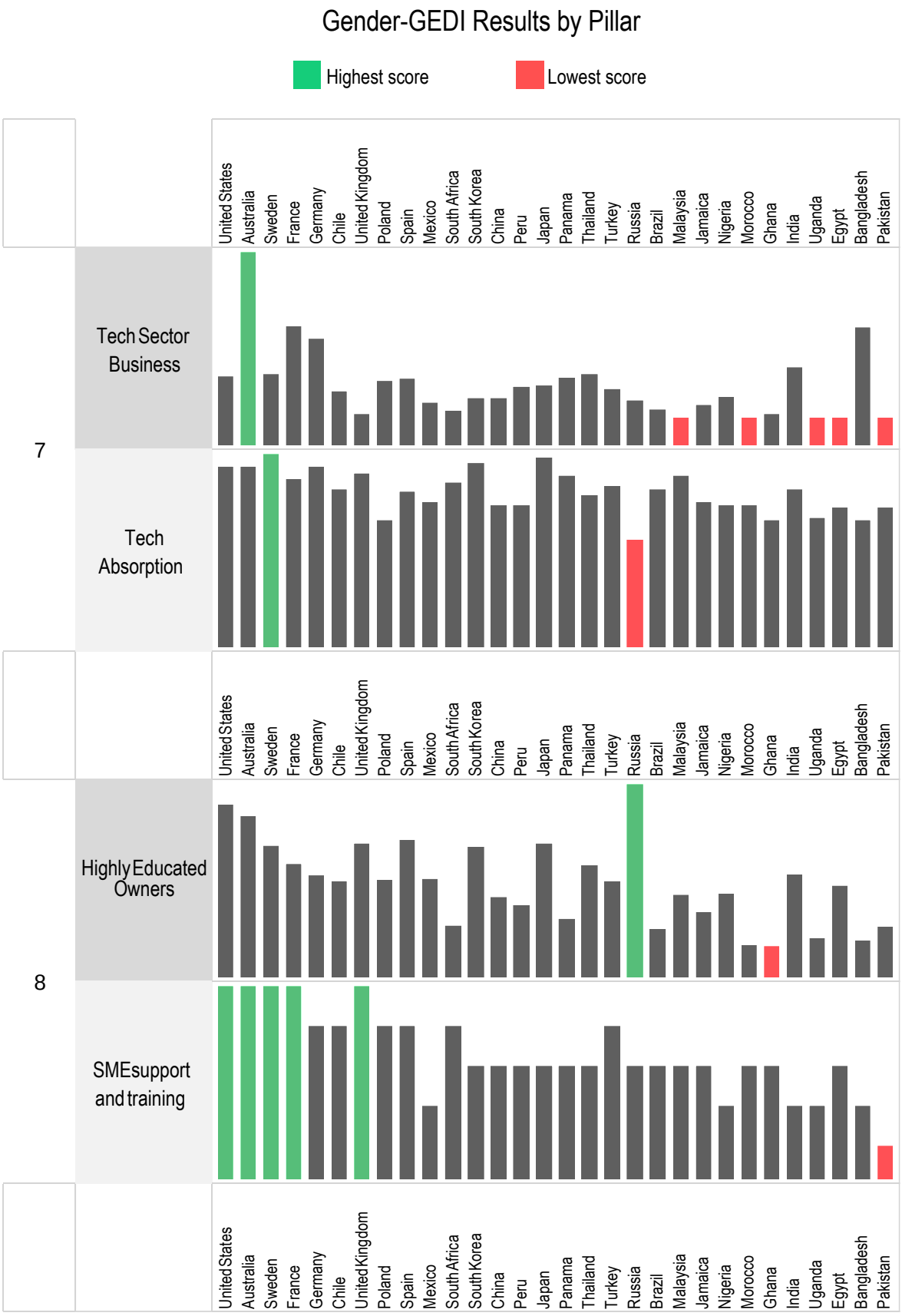
Uganda
Egypt
Bangladesh
Pakistan


Gender-GEDI Results by Pillar
Highest score
Lowest score
7
Tech Sector Business
Tech Absorption
8
Highly Educated Owners
SME support and training
United States
Australia
Sweden
France
Germany
Chile
United Kingdom
Poland
Spain
Mexico
South Africa
South Korea
China
Peru
Japan
Panama
Thailand
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Nigeria
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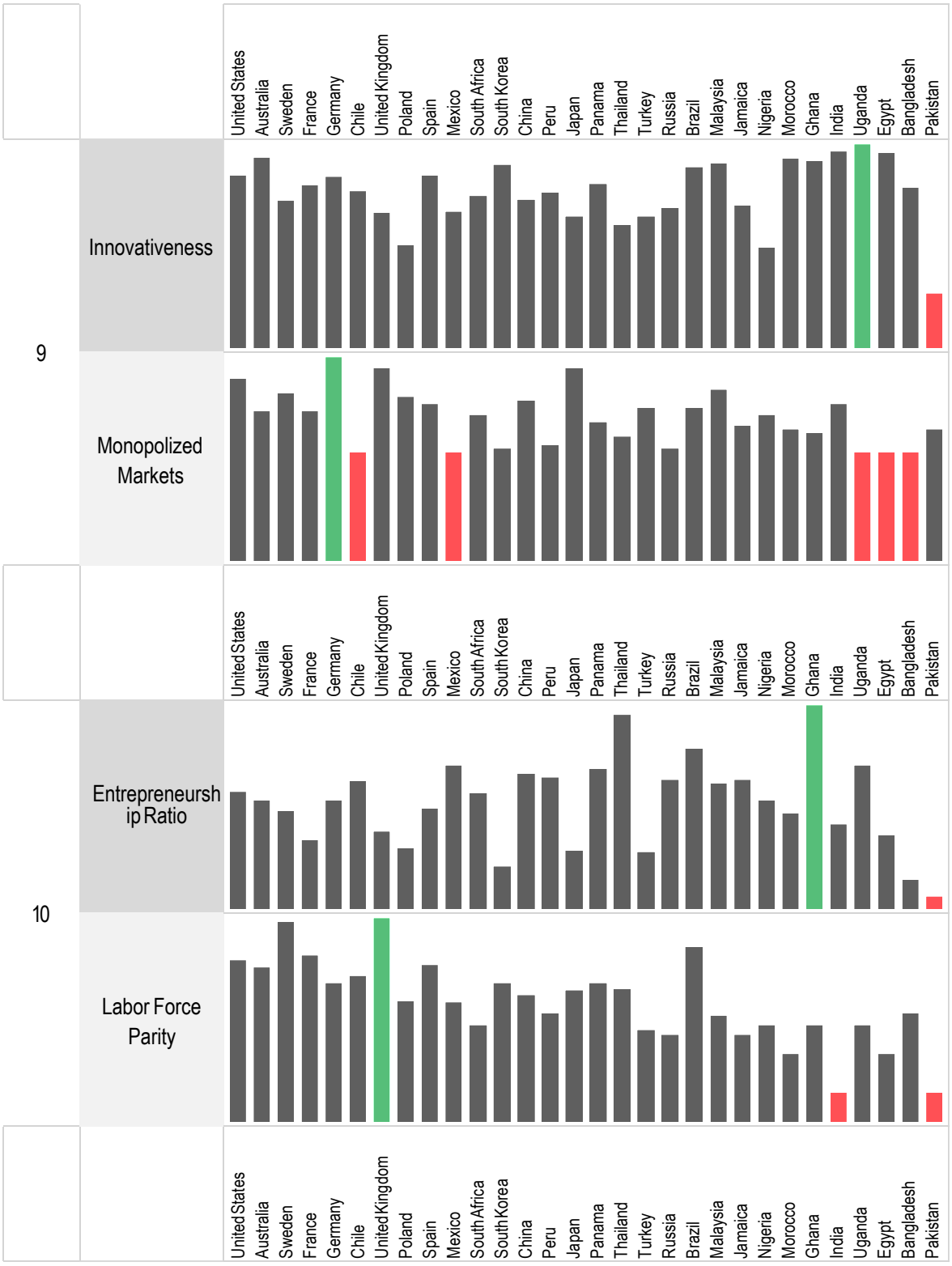
Ghana
India
Uganda
Egypt
Bangladesh
Pakistan


Gender-GEDI Results by Pillar
Highest score
Lowest score
9
Innovativeness
Monopolized Markets
10
Entrepreneurship Ratio
Labor Force Parity
United States
Australia
Sweden
France
Germany
Chile
United Kingdom
Poland
Spain
Mexico
South Africa
South Korea
China
Peru
Japan
Panama
Thailand
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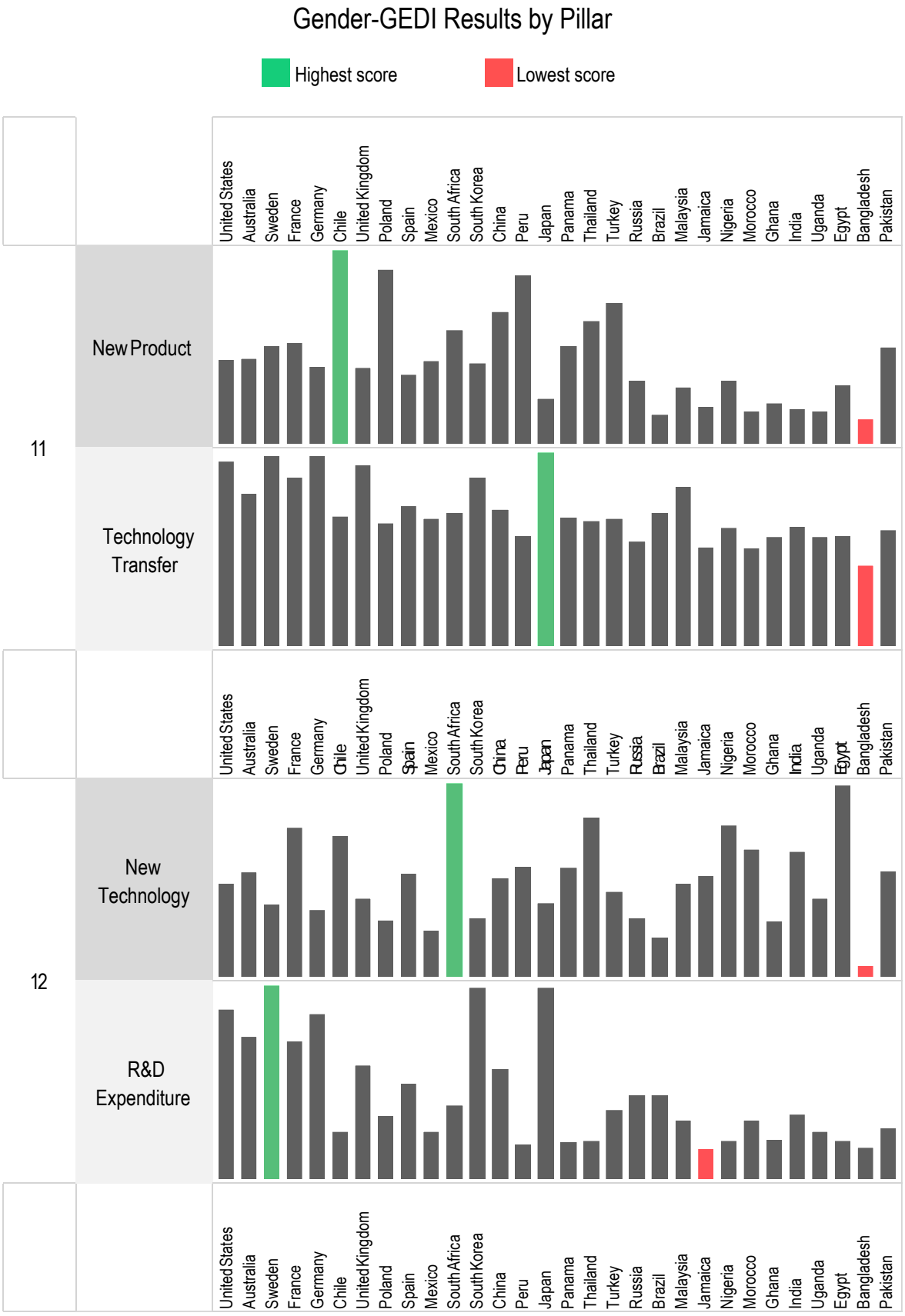
Egypt
Bangladesh
Pakistan


Gender-GEDI Results by Pillar
Highest score
Lowest score
11
New Product
Technology Transfer
12
New Technology
R&D Expenditure
United States
Australia
Sweden
France
Germany
Chile
United Kingdom
Poland
Spain
Mexico
South Africa
South Korea
China
Peru
Japan
Panama
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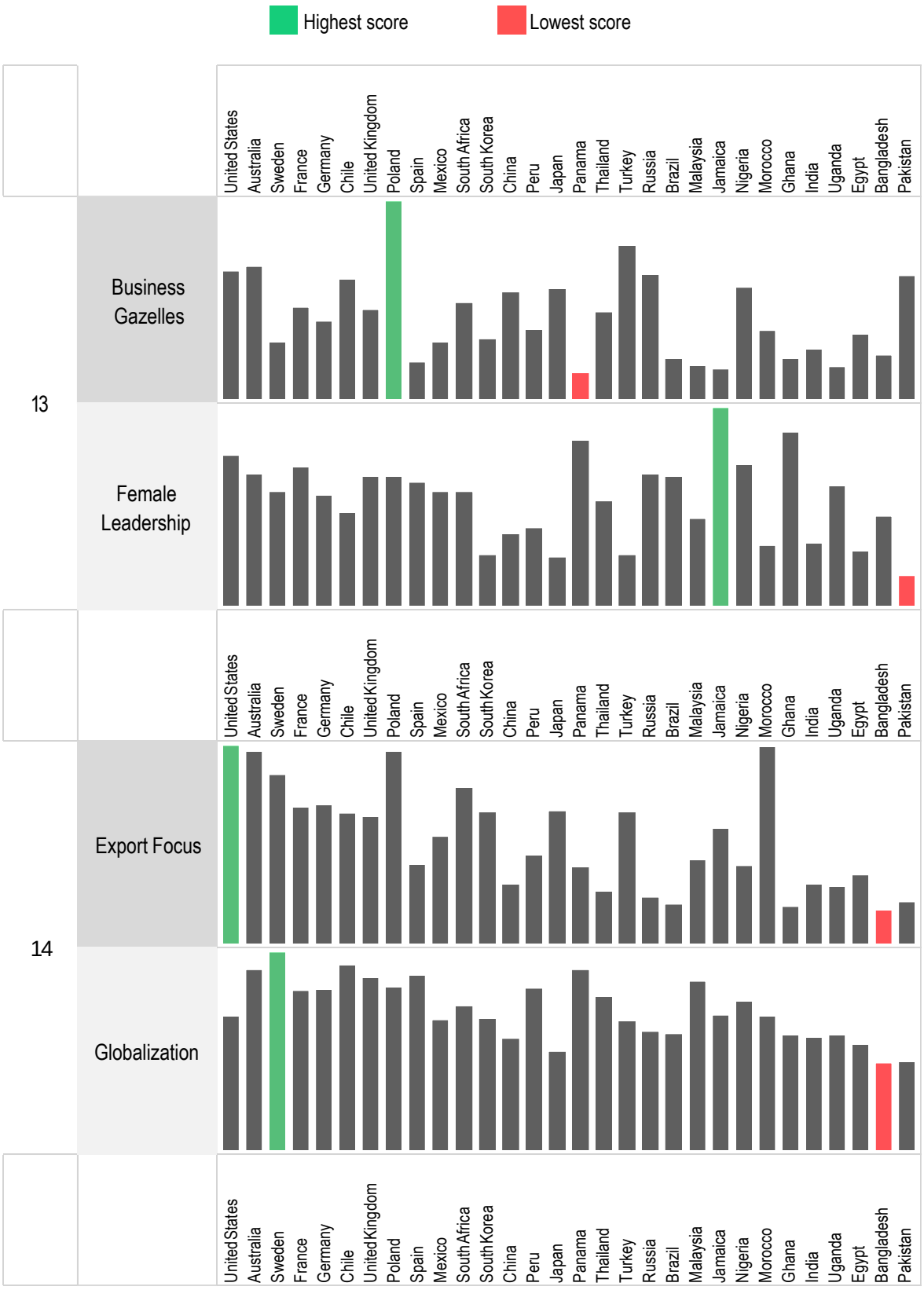
Pakistan


Gender-GEDI Results by Pillar
Highest score
Lowest score
13
Business Gazelles
Female Leadership
14
Export Focus
Globalization
United States
Australia
Sweden
France
Germany
Chile
United Kingdom
Poland
Spain
Mexico
South Africa
South Korea
China
Peru
Japan
Panama
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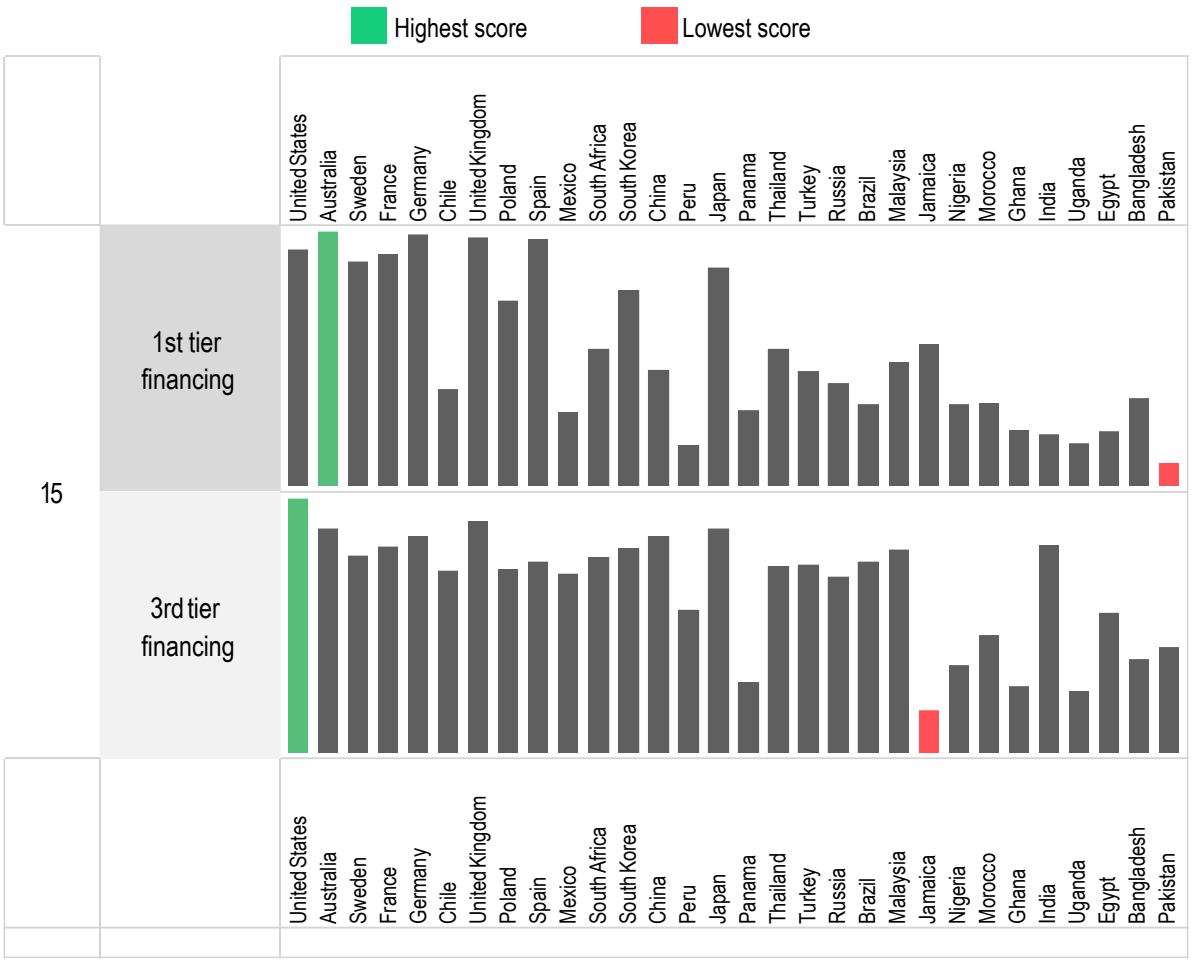
Gender-GEDI Results by Pillar
Highest score
Lowest score
15
1st tier financing
3rd tier financing
United States
Australia
Sweden
France
Germany
Chile
United Kingdom
Poland
Spain
Mexico
South Africa
South Korea
China
Peru
Japan
Panama
Thailand
Turkey
Russia
Brazil
Malaysia
Jamaica
Nigeria
Morocco
Ghana
India
Uganda
Egypt
Bangladesh
Pakistan

Appendix 3: Additional Country Data

Economy and demographics[1]

GDP per capita PPP (constant 2005 intl $): (World Bank, 2011)

Percent of population involved in Entrepreneurship Startups: Global Entrepreneurship Monitor (GEM) Adult Population Survey (2011) Based on GEM's Total Entrepreneurship Activity which is the percentage of 18-64 population (both male and female) who are either a nascent entrepreneur or owner-manager of a new business (no more than 42 months old) (www.gemconsortium.org)

CEDAW ratification (5 point scale): From the Women's Economic Opportunity Index by the Economist Intelligence Unit (2012) data from 2010 (http://graphics.eiu.com/upload/WEO_June_2010_final.xls).
The scoring for this indicator is as follows:

1= CEDAW has not been ratified by the country under consideration
2= CEDAW has been ratified by the country under consideration, but has reservations with CEDAW articles, other than Article 29. The country has not signed the Optional Protocol
3= CEDAW has been ratified by the country under consideration, but has reservations with CEDAW Article 29 only. The country has not signed the Optional Protocol
4= CEDAW has been ratified by the country under consideration without reservations, but has not signed the Optional Protocol
5= CEDAW has been ratified by the country under consideration without reservations, and has signed the Optional Protocol

Under Article 29 of CEDAW, two or more State parties can refer disputes about the interpretation and Implementation of CEDAW to arbitration, and if the dispute is not settled, it can be referred to the International Court of Justice. CEDAW's Optional Protocol allows the Committee on the Elimination of Discrimination against Women to hear complaints from individuals or groups of women into violations of their rights, and to conduct inquiries into grave violations of the Convention.

The maximum score a country can receive is 5, where 5= most favorable.

Do women have equal access to leadership positions (1-7 scale) Based on national expert surveys, Global Gender Gap Index, World Economic Forum, Data from 2011 (http://reports.weforum.org/global-gender-gap-report-2012/)

Business Support

Gender-specific Public Procurement Policies: This data is incomplete, but where a gender-specific public procurement policy is known of it is indicated. Yes/No or n.d. = unknown. Compiled by authors from various sources.

Global Banking Alliance for Women bank branches: The GBAW is a network of banks that have signed on to "build innovative, comprehensive programs that provide women entrepreneurs with vital access to capital, markets, education, and training". The number here indicates how many banks have at least one branch in the country: the total number of GBAW *branches*, therefore, may be much higher. Yes/No or n.d. = unknown. Compiled by authors from various sources.

[1] Note: Throughout the country pages, missing data is indicated with "n.d." for no data.

 **Australia**	**Rank:** 2 of 30
Region: N/A **Income group:** High income: OECD	**Score:** 80 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$34,396
Percent of population involved in Entrepreneurship Startups	10.5%
CEDAW ratification (5 point scale)	2 / 5
Do women have equal access to leadership positions? (1-7 scale)	5 / 7
Business support	
Gender-specific Public Procurement Policies?	n.d.
Global Banking Alliance for Women bank branches?	Yes

 **Bangladesh**	**Rank:** 29 of 30
Region: South Asia **Income group:** Low income	**Score:** 17 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$ 1,569
Percent of population involved in Entrepreneurship Startups	12.8%
CEDAW ratification (5 point scale)	2 / 5
Do women have equal access to leadership positions? (1-7 scale)	4 / 7
Business support	
Gender-specific Public Procurement Policies?	n.d.
Global Banking Alliance for Women bank branches?	n.d.

 **Brazil**	**Rank:** 20 of 30
Region: Americas **Income group:** Upper middle income	**Score:** 35 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$10,279
Percent of population involved in Entrepreneurship Startups	14.9%
CEDAW ratification (5 point scale)	3 / 5
Do women have equal access to leadership positions? (1-7 scale)	4 / 7
Business support	
Gender-specific Public Procurement Policies?	Indirect
Global Banking Alliance for Women bank branches?	Yes

 **Chile**	**Rank:** 6 of 30
Region: Americas **Income group:** High income: OECD	**Score:** 55 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$15,251
Percent of population involved in Entrepreneurship Startups	23.7%
CEDAW ratification (5 point scale)	4 / 5
Do women have equal access to leadership positions? (1-7 scale)	4 / 7
Business support	
Gender-specific Public Procurement Policies?	n.d.
Global Banking Alliance for Women bank branches?	Yes

 **China**	**Rank:** 11-13 of 30
Region: East Asia & Pacific **Income group:** Upper middle income	**Score:** 42 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$ 7,418
Percent of population involved in Entrepreneurship Startups	24.0%
CEDAW ratification (5 point scale)	2 / 5
Do women have equal access to leadership positions? (1-7 scale)	5 / 7
Business support	
Gender-specific Public Procurement Policies?	n.d.
Global Banking Alliance for Women bank branches?	Yes

 **Egypt**	**Rank:** 27-28 of 30
Region: Middle East & North Africa **Income group:** Lower middle income	**Score:** 19 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$ 5,547
Percent of population involved in Entrepreneurship Startups	7.0%
CEDAW ratification (5 point scale)	1 / 5
Do women have equal access to leadership positions? (1-7 scale)	4 / 7
Business support	
Gender-specific Public Procurement Policies?	n.d.
Global Banking Alliance for Women bank branches?	Yes

 **France**	**Rank:** 4-5 of 30
Region: Europe & Eurasia **Income group:** High income: OECD	**Score:** 67 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$29,819
Percent of population involved in Entrepreneurship Startups	5.7%
CEDAW ratification (5 point scale)	2 / 5
Do women have equal access to leadership positions? (1-7 scale)	3 / 7
Business support	
Gender-specific Public Procurement Policies?	n.d.
Global Banking Alliance for Women bank branches?	Yes

 **Germany**	**Rank:** 4-5 of 30
Region: Europe & Eurasia **Income group:** High income: OECD	**Score:** 67 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$34,603
Percent of population involved in Entrepreneurship Startups	5.6%
CEDAW ratification (5 point scale)	4 / 5
Do women have equal access to leadership positions? (1-7 scale)	4 / 7
Business support	
Gender-specific Public Procurement Policies?	n.d.
Global Banking Alliance for Women bank branches?	n.d.

 **Ghana**	**Rank:** 24-25 of 30
Region: Africa **Income group:** Lower middle income	**Score:** 27 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$ 1,652
Percent of population involved in Entrepreneurship Startups	34.0%
CEDAW ratification (5 point scale)	4 / 5
Do women have equal access to leadership positions? (1-7 scale)	5 / 7
Business support	
Gender-specific Public Procurement Policies?	n.d.
Global Banking Alliance for Women bank branches?	Yes

 **India**	**Rank:** 26 of 30
Region: South Asia **Income group:** Lower middle income	**Score:** 26 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$ 3,203
Percent of population involved in Entrepreneurship Startups	11.5%
CEDAW ratification (5 point scale)	2 / 5
Do women have equal access to leadership positions? (1-7 scale)	4 / 7
Business support	
Gender-specific Public Procurement Policies?	n.d.
Global Banking Alliance for Women bank branches?	n.d.

 **Jamaica**	**Rank:** 22 of 30
Region: Americas **Income group:** Upper middle income	**Score:** 30 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$ 7,839
Percent of population involved in Entrepreneurship Startups	13.7%
CEDAW ratification (5 point scale)	2 / 5
Do women have equal access to leadership positions? (1-7 scale)	5 / 7
Business support	
Gender-specific Public Procurement Policies?	n.d.
Global Banking Alliance for Women bank branches?	n.d.

 **Japan**	**Rank:** 14-15 of 30
Region: East Asia & Pacific **Income group:** High income: OECD	**Score:** 40 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$30,660
Percent of population involved in Entrepreneurship Startups	5.2%
CEDAW ratification (5 point scale)	3 / 5
Do women have equal access to leadership positions? (1-7 scale)	4 / 7
Business support	
Gender-specific Public Procurement Policies?	n.d.
Global Banking Alliance for Women bank branches?	Yes

Malaysia	Rank: 21 of 30
Region: East Asia & Pacific **Income group:** Upper middle income	**Score:** 32 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$14,174
Percent of population involved in Entrepreneurship Startups	4.9%
CEDAW ratification (5 point scale)	1 / 5
Do women have equal access to leadership positions? (1-7 scale)	6 / 7
Business support	
Gender-specific Public Procurement Policies?	n.d.
Global Banking Alliance for Women bank branches?	Yes

Mexico	Rank: 10 of 30
Region: Americas **Income group:** Upper middle income	**Score:** 42 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$12,814
Percent of population involved in Entrepreneurship Startups	9.6%
CEDAW ratification (5 point scale)	4 / 5
Do women have equal access to leadership positions? (1-7 scale)	4 / 7
Business support	
Gender-specific Public Procurement Policies?	Indirect
Global Banking Alliance for Women bank branches?	n.d.

Morocco	Rank: 24-25 of 30
Region: Middle East & North Africa **Income group:** Lower middle income	**Score:** 27 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$ 4,373
Percent of population involved in Entrepreneurship Startups	15.7%
CEDAW ratification (5 point scale)	1 / 5
Do women have equal access to leadership positions? (1-7 scale)	5 / 7
Business support	
Gender-specific Public Procurement Policies?	n.d.
Global Banking Alliance for Women bank branches?	n.d.

Nigeria	Rank: 23 of 30
Region: Africa **Income group:** Lower middle income	**Score:** 29 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$ 2,237
Percent of population involved in Entrepreneurship Startups	8.2%
CEDAW ratification (5 point scale)	4 / 5
Do women have equal access to leadership positions? (1-7 scale)	5 / 7
Business support	
Gender-specific Public Procurement Policies?	n.d.
Global Banking Alliance for Women bank branches?	Yes

Pakistan	Rank: 30 of 30
Region: South Asia **Income group:** Lower middle income	**Score:** 11 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$ 2,424
Percent of population involved in Entrepreneurship Startups	9.1%
CEDAW ratification (5 point scale)	2 / 5
Do women have equal access to leadership positions? (1-7 scale)	4 / 7
Business support	
Gender-specific Public Procurement Policies?	n.d.
Global Banking Alliance for Women bank branches?	n.d.

Panama	Rank: 16 of 30
Region: Americas **Income group:** Upper middle income	**Score:** 39 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$13,766
Percent of population involved in Entrepreneurship Startups	20.8%
CEDAW ratification (5 point scale)	4 / 5
Do women have equal access to leadership positions? (1-7 scale)	5 / 7
Business support	
Gender-specific Public Procurement Policies?	n.d.
Global Banking Alliance for Women bank branches?	Yes

 **Peru**	**Rank:** 14-15 of 30
Region: Americas **Income group:** Upper middle income	**Score:** 40 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$ 9,037
Percent of population involved in Entrepreneurship Startups	22.9%
CEDAW ratification (5 point scale)	4 / 5
Do women have equal access to leadership positions? (1-7 scale)	4 / 7
Business support	
Gender-specific Public Procurement Policies?	n.d.
Global Banking Alliance for Women bank branches?	Yes

 **Russia**	**Rank:** 18-19 of 30
Region: N/A **Income group:** High income: nonOECD	**Score:** 36 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$14,821
Percent of population involved in Entrepreneurship Startups	4.6%
CEDAW ratification (5 point scale)	4 / 5
Do women have equal access to leadership positions? (1-7 scale)	4 / 7
Business support	
Gender-specific Public Procurement Policies?	n.d.
Global Banking Alliance for Women bank branches?	Yes

 **South Korea**	**Rank:** 11-13 of 30
Region: East Asia & Pacific **Income group:** High income: OECD	**Score:** 42 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$27,541
Percent of population involved in Entrepreneurship Startups	9.1%
CEDAW ratification (5 point scale)	4 / 5
Do women have equal access to leadership positions? (1-7 scale)	5 / 7
Business support	
Gender-specific Public Procurement Policies?	Yes
Global Banking Alliance for Women bank branches?	n.d.

 **Poland**	**Rank:** 8 of 30
Region: Europe & Eurasia **Income group:** High income: OECD	**Score:** 51 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$18,087
Percent of population involved in Entrepreneurship Startups	9.0%
CEDAW ratification (5 point scale)	4 / 5
Do women have equal access to leadership positions? (1-7 scale)	4 / 7
Business support	
Gender-specific Public Procurement Policies?	n.d.
Global Banking Alliance for Women bank branches?	n.d.

 **South Africa**	**Rank:** 11-13 of 30
Region: Africa **Income group:** Upper middle income	**Score:** 42 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$ 9,678
Percent of population involved in Entrepreneurship Startups	9.1%
CEDAW ratification (5 point scale)	4 / 5
Do women have equal access to leadership positions? (1-7 scale)	5 / 7
Business support	
Gender-specific Public Procurement Policies?	Yes
Global Banking Alliance for Women bank branches?	Yes

 **Spain**	**Rank:** 9 of 30
Region: Europe & Eurasia **Income group:** High income: OECD	**Score:** 49 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$26,917
Percent of population involved in Entrepreneurship Startups	5.8%
CEDAW ratification (5 point scale)	4 / 5
Do women have equal access to leadership positions? (1-7 scale)	4 / 7
Business support	
Gender-specific Public Procurement Policies?	n.d.
Global Banking Alliance for Women bank branches?	Yes

 **Sweden**	**Rank:** 3 of 30
Region: Europe & Eurasia **Income group:** High income: OECD	**Score:** 73 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$35,170
Percent of population involved in Entrepreneurship Startups	5.8%
CEDAW ratification (5 point scale)	4 / 5
Do women have equal access to leadership positions? (1-7 scale)	5 / 7
Business support	
Gender-specific Public Procurement Policies?	n.d.
Global Banking Alliance for Women bank branches?	n.d.

 **Thailand**	**Rank:** 17 of 30
Region: East Asia & Pacific **Income group:** Upper middle income	**Score:** 38 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$ 7,635
Percent of population involved in Entrepreneurship Startups	19.5%
CEDAW ratification (5 point scale)	2 / 5
Do women have equal access to leadership positions? (1-7 scale)	5 / 7
Business support	
Gender-specific Public Procurement Policies?	n.d.
Global Banking Alliance for Women bank branches?	Yes

 **Turkey**	**Rank:** 18-19 of 30
Region: Middle East & North Africa **Income group:** Upper middle income	**Score:** 36 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$13,468
Percent of population involved in Entrepreneurship Startups	11.9%
CEDAW ratification (5 point scale)	3 / 5
Do women have equal access to leadership positions? (1-7 scale)	4 / 7
Business support	
Gender-specific Public Procurement Policies?	n.d.
Global Banking Alliance for Women bank branches?	Yes

 **Uganda**	**Rank:** 27-28 of 30
Region: Africa **Income group:** Low income	**Score:** 19 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$ 1,188
Percent of population involved in Entrepreneurship Startups	31.3%
CEDAW ratification (5 point scale)	3 / 5
Do women have equal access to leadership positions? (1-7 scale)	6 / 7
Business support	
Gender-specific Public Procurement Policies?	n.d.
Global Banking Alliance for Women bank branches?	Yes

 **United Kingdom**	**Rank:** 7 of 30
Region: Europe & Eurasia **Income group:** High income: OECD	**Score:** 54 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$32,863
Percent of population involved in Entrepreneurship Startups	7.3%
CEDAW ratification (5 point scale)	2 / 5
Do women have equal access to leadership positions? (1-7 scale)	5 / 7
Business support	
Gender-specific Public Procurement Policies?	Indirect
Global Banking Alliance for Women bank branches?	Yes

 **United States**	**Rank:** 1 of 30
Region: N/A **Income group:** High income: OECD	**Score:** 83 of 100
Economy and demographics	
GDP per capita (constant 2005 intl. $)	$42,486
Percent of population involved in Entrepreneurship Startups	7.3%
CEDAW ratification (5 point scale)	0 / 5
Do women have equal access to leadership positions? (1-7 scale)	5 / 7
Business support	
Gender-specific Public Procurement Policies?	Yes
Global Banking Alliance for Women bank branches?	Yes

Notes

[1] The 13 new countries include: Bangladesh, Chile, Ghana, Jamaica, South Korea, Nigeria, Panama, Pakistan, Peru, Poland, Spain, Sweden and Thailand.
[2] The 17 original countries include: Australia, Brazil, China, Egypt, France, Germany, India, Japan, Malaysia, Mexico, Morocco, Russia, South Africa, Turkey, Uganda, United Kingdom and the United States.
[3] Acs, Autio, Szerb 2012; Hofstede 2001:21; Seligson 2002:273.
[4] Morris 2012.
[5] Expecting to increase the number of employees by 5+ in the next five years.
[6] This definition is based on the definition for 'productive' entrepreneurship suggested by the Global Entrepreneurship and Development Index 2012 (Acs & Szerb, 2012).
[7] As Mrs. Roney, co-founder of the US-based highly successful web-based businesses 'The Knot' and 'XO group' noted: 'Women are going to come up with the best ideas for women, who are driving our economy' (Seligson 2012).
[8] Spanx has recently introduced a male line of shapewear but Sara made her initial millions off of designing shapewear for women.
[9] Excerpt from Aidis, R. (2014) The Melting Middle: Institutions, Entrepreneurship and Public Policy, paper. By author's permission.
[10] Aidis (2014).
[11] It should be noted that in the Reluctant Entrepreneur category, some individuals may transition from Reluctant to Potential Entrepreneurs. The purpose of these six categories is to identify the general trends.
[12] Convention to Eliminate all forms of Discrimination Against Women.
[13] Nelson and Duffy (2010).
[14] R.Florida (2002).
[15] R. Florida (2013).
[16] Sorensen & Sorenson (2003).
[17] DeTienne & Chandler (2007).
[18] Papagiannidis & Li (2005).
[19] Caliendo et al. (2009).
[20] Langowitz & Minniti (2007).
[21] Shane & Cable (2003).
[22] Welter (2008).
[23] Davidsson 2003; Steyaert & Katz (2004).
[24] *Total Entrepreneurship Activity* is the percentage of 18-64 population who are either a nascent entrepreneur or
[25] Gompers & Lerner (2004).
[26] Carter & Allen (1997); Coleman (2000).
[27] Brush et al. (2004).
[28] Source: GEM; www.gemconsortium.org.
[29] For the full report, see Acs and Szerb (2014).
[30] The 2014 GEDI Index contains a new gender pillar based on two dimensions: the percentage of female start-ups combined with a measure for equal economic participation and opportunity. For further information see www.thegedi.org.
[31] Additional countries were included for this analysis beyond the 30 country sample in order to allow for more robust comparison and benchmarking.
[32] Female managers also includes legislators and senior officials.
[33] Additional sources also used. Please refer to the Methodology section in Gender-GEDI Report of Findings (2014) for full description.
[34] Favorable attitudes towards female business executives measures the percentage of the female population that disagree with the statement: Do men make better business executives than women. Scores for six countries were estimated and are excluded from the figure: Bangladesh, Jamaica, Nigeria, Panama, Pakistan and Uganda.
[35] Based on an analysis of 17 indicators using 2013 data sourced from the World Bank's Women, Business and the Law database. These 17 indicators make up the 'Equal Legal Rights' variable used in Pillar 1 of the Gender-GEDI Index (for a more detailed description of this indicators please refer to the 2014 Gender-GEDI Report of Findings www.dell.com/dwen.
[36] 2012 data sourced from the OECD's Gender, Institutions and Development (GID) Database.

[37] Data from the Global Financiial Inclusion (Findex) Database: www.worldbank.org/glbalfindex.
[38] Fogel (2013).
[39] defined as a business with at least one woman in senior management.
[40] SBA (2013).
[41] Robb and Sade (2014).
[42] Macloed (2014).
[43] Ibid.
[44] Stengel (2014): 64.
[45] Excerpt from Aidis, R. and A. Lloyd (2014) 'Measuring Occupation Crowding and its potential effects on entrepreneurship crowding', paper. By author's permission.
[46] Bates (1995); Hallward-Driemeier (2011); Verheul et al (2006).
[47] World Bank (2012:207).
[48] Sabarwal, et al (2009); Hallward-Driemeier (2011).
[49] World Bank (2012:204).
[50] Bergmann (1974).
[51] Darity (2008).
[52] Hewlett and Sherbin (2014).
[53] For a further description of Labor Force Parity calculations see Aidis and Lloyd (2014).
[54] Hackett (2014).
[55] Nicole Hall quoted in Buthelezi (2013).