GEM

Global Entrepreneurship Monitor
2012 Global Report

Siri Roland Xavier, Donna Kelley, Jacqui Kew, Mike Herrington, Arne Vorderwülbecke

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Contents

List of Tables

List of Figures

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True to the spirit and enterprising drive of its founders, the **Universidad del Desarrollo** is today one of the top three prestigious universities in Chile. The project started 22 years ago in Conception, a southern city of Chile with 100 business administration students. Two decades later, the facts speak for themselves. Its rapid growth has become an expression of the university's main facet: entrepreneurship. The UDD MBA program is rated one of the best in Latin America and also the best in entrepreneurship education, according to America Economia magazine, an achievement that once again represents the "entrepreneurial" seal that is embedded in the spirit of the university. Today the university has more than 12,500 undergraduates, 2,500 postgraduates and over 8,500 graduates from 24 careers that cover all areas of human knowledge. UDD also has 17 research centres in many disciplines. Over 94% of the graduating students are employed within 6 months of completing their course.

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Thus UNIRAZAK founded The Bank Rakyat School of Business and Entrepreneurship (BRSBE) a unique school, dedicated to providing quality education in entrepreneurial and business leadership in Malaysia. BRSBE was formed with the view that entrepreneurial activity is one of the pillars of a strong and vibrant economy. Although big business is extremely vital for economic health and prosperity, a strong cadre of SMIs and SMEs is also essential to ensure a diverse economy and to provide the required support to big business companies and the community. In fact the dramatic economic development in Asia over the past two decades highlights the importance of understanding entrepreneurship in the region. In this regard UNIRAZAK through BRSBE is ideally poised to play both a national and regional role in developing entrepreneurship and meeting challenges unique to Asia.

For information visit www.unirazak.edu.my

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Jacqui Kew is a senior lecturer in the College of Accounting at the University of Cape Town. She has been involved at the UCT Centre for Innovation and Entrepreneurship at the Graduate Scholl of Business on a consultancy basis since 2003. She has contributed to various GEM reports and has been part of the GEM South Africa team for a number of years. She is active in various small business development programs and is also involved in executive education short courses at the Graduate School of Business where she specialises in finance for non-financial managers in both corporate and small businesses

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Arne Vorderwülbecke

Arne Vorderwülbecke is research fellow and doctoral candidate at the Institute of Economic and Cultural Geography at Leibniz Universität Hannover (Germany). He holds a Master's degree in economic geography. Arne Vorderwülbecke joined GEM-team Germany in 2010 and contributed to several national-reports. His research interests evolve around regional effects and determinants of individual's entrepreneurial activity. In this respect he focuses on two topics: Determinants and effects of migrant entrepreneurial behavior as well as regional knowledge- and technology-transfer via university spin-off companies and academic entrepreneurship.

EXECUTIVE Summary

Throughout the world, shifts in population demographics, technological change, fluctuating economies and other dynamic forces have transformed societies as never before, bringing new challenges and opportunities to the forefront. Among the responses to these shifting forces is an increased emphasis on entrepreneurship by governments, organizations and the public. While entrepreneurship may not be a panacea, it can surely be part of the solution. Yet, growth for growth's sake alone is not enough. Economic growth through entrepreneurship needs to address issues of inclusiveness and ensure these efforts advance societal well-being.

The GEM study is uniquely positioned to advance understanding about entrepreneurship and facilitate decisions and initiatives that promote these endeavours. Each year, GEM provides a broad array of data on societal attitudes, participation levels of individuals at different stages of the entrepreneurship process and the characteristics of entrepreneurs and their businesses. This information can enable comparisons within and across individual economies, geographic regions, and economic development levels.

With ambitious objectives, GEM aims to facilitate understanding about the influence of entrepreneurship on economic growth, and to assist in the identification of factors that encourage and/or hinder this activity. GEM provides data for researchers, knowledge on global entrepreneurship for educators and practitioners, and information to guide policy makers in formulating effective and targeted policies and programs to stimulate and support the efforts of entrepreneurs.

In the late spring and early summer of 2012, more than 198,000 adults in 69 economies took part in the GEM survey. With the largest sample to date, this group of economies represented an estimated 74% of the world's population and 87% of the world's GDP. GEM research teams in each economy administered this annual survey to at least 2,000 adults. They also polled selected national experts about the conditions influencing the nature and level of entrepreneurship in their economies. This report reveals results on GEM's annual measures and provides insights on immigrant entrepreneurship: a special topic focus in 2012.

Key Overall Findings

Attitudes

Positive attitudes about entrepreneurship in an economy can indicate the propensity for people to engage in this activity. In addition, attitudes can signify the extent to which a society may provide cultural and financial support and generate potential stakeholders that could enhance and assist the efforts of entrepreneurs. GEM measures individual perceptions about opportunities, capabilities, fear of failure, and intent to start a business. Many of the economies also included questions relating to societal beliefs about entrepreneurship as a career, and the status and media attention of entrepreneurs.

Perceived Opportunities and Capabilities
On average, individuals in Sub-Saharan African economies had high perceptions about the presence of good opportunities for starting a business in the next six months (70% of all respondents) as well as beliefs they have the skills and knowledge necessary to start a business (76%). Sub-Saharan Africa, with mostly factor-driven economies (the earliest stage of economic development), also reported high entrepreneurship rates, consistent with their positive attitudes. However, their motivations and the types of businesses in which they commonly engaged differs from the more developed economies; this highlights the value of GEM's distinctions with regard to necessity versus opportunity motives, industry participation and growth orientation.

Latin America showed a much higher level on these attitude measures than the non-European Union (non-EU). Both of these regions fall primarily in the middle-stage efficiency-driven economies; this result illustrates that factors other than economic development level impact attitudes. The Asia Pacific/South Asia region, on the other hand, demonstrates that geographic factors don't completely determine attitudes. The wealthier economies in this region – Japan, Republic of Korea and Singapore – show lower than average opportunity and capability perceptions while earlier development-stage economies like China, Pakistan and Thailand were above average. Generally, though, perceived opportunities and capabilities tended to decline with greater development levels. These measures were almost twice as high in factor-driven economies than in the innovation-driven group.

Fear of Failure
Economies in Sub-Saharan Africa exhibited the lowest levels of fear of failure, with only 24% of all respondents indicating that fear of failure would prevent them from starting a business. Latin American and Caribbean economies (28%) also had low average levels on this measure. Fear of failure generally increases as one moves from early-stage to advanced development levels. Malawi (12%) displayed the lowest fear of failure rate in the sample. Greece (61%) and Italy (58%) showed the highest levels on this measure.

Entrepreneurial Intentions
The results by economic development level show that entrepreneurial intentions are highest, on average, in factor-driven economies (48%), decreasing significantly in the efficiency-driven stage (26%) and again in the innovation–driven group (11%). Sub-Saharan Africa reported the highest intentions of any geographic region (53%), which is consistent with their positive perceptions about opportunities and capabilities. Favorable perceptions with respect to opportunities may not necessarily lead to intentions to start a business. However, in the Asia Pacific/South Asia region, for example, an estimated 30% of the population saw opportunities for entrepreneurship but only 17% intended to start a business in the next three years. Intentions were also low in the non-EU (18%) and EU (11%) regions.

Beliefs About Entrepreneurship
In Latin America/Caribbean, the Middle East/North Africa (MENA) and Sub-Saharan Africa regions, over three-quarters of the respondents considered entrepreneurship to be a good career choice. It is notable that fewer people in Latin America/Caribbean attached high status to entrepreneurs and fewer believed there was positive media attention for this endeavor. This suggests that perhaps entrepreneurship has practical appeal but less status and visibility in many of these economies.

The EU exhibited lower levels on all three measures. Only about half the respondents agreed that entrepreneurship was a good career choice and received positive media attention, while two-thirds attributed high status to this activity. It is probable that more employment alternatives with established institutions (e.g. working for corporations or governments) could account for at least some of this result in these developed economies.

Activity

Total Entrepreneurial Activity (TEA) is a key indicator of GEM. It measures the percentage of adults (aged 18–64) in an economy who are nascent and new entrepreneurs. In economies with low GDP per capita, TEA rates tend to be high, with a correspondingly higher proportion of necessity-motivated entrepreneurship. Conversely, high

GDP economies show lower levels of entrepreneurship, but a higher proportion of those with opportunity-motivations. To at least some extent then, development levels are associated with particular patterns in the level and type of entrepreneurial activity.

The highest average TEA rates were found in Sub-Saharan Africa and Latin America/Caribbean. Zambia (41%) and Ecuador (27%) reported the highest rates in these regions. The Asia Pacific/South Asia region showed a mix of TEA levels with Thailand (19%) and China (13%) recording the highest rates.

While TEA rates were typically higher than established business rates in factor-driven economies, the gap narrows in the innovation-driven economies, with some showing more established business owners than entrepreneurs. For example, Greece, Spain, Switzerland, Ireland and Finland in the EU and Japan, Republic of Korea and Taiwan in Asia show at least one-third more established business owners than entrepreneurs. When viewed geographically, non-EU and MENA regions have low rates of both TEA and established business ownership while Sub-Saharan Africa has high rates of both, although TEA rates are much higher – twice as high on average compared with established business ownership.

Differences across regions can also be seen in the reasons for business discontinuance. For example, financing was identified as the key issue in business discontinuance in Sub-Saharan Africa, but was less an issue in Asia. In the USA and the European Union, individuals cited other jobs or business opportunities more often than those in other regions as a reason for business discontinuance—these are generally considered more positive causes.

Necessity- and Opportunity-Driven Entrepreneurs
GEM defines necessity-driven entrepreneurs as those who are pushed into starting businesses because they have no other work options and need a source of income. Opportunity-motivated entrepreneurs, on the other hand, are those entering this activity primarily to pursue an opportunity. The latter are further distinguished as improvement-driven opportunity motivated if they additionally seek to improve their income or independence through entrepreneurship.

Necessity-driven motives tend to be highest in the factor-driven economies. With greater economic development levels, the proportion of entrepreneurs with necessity motives generally declines, while improvement-driven opportunity increasingly accounts for a great proportion of motives. Geographic differences exist, however, even at the same economic development level. For instance, the Latin

America/Caribbean region, generally containing efficiency-driven economies, reported twice as many entrepreneurs with improvement–driven opportunity motives than those with necessity motivations. In contrast, the non-EU region, also with mainly efficiency-driven economies, reported almost equal levels of either motive.

Age Distribution
Economies in all geographic regions showed bell-shaped age distributions with the highest entrepreneurship rates generally occurring among 25–34 year olds. High participation levels also occurred in the next oldest age group: 35–44 years. Together, these two age categories made up close to 50% or more of all entrepreneurs. In Chile, Republic of Korea, Singapore, Netherlands, UK and the USA, the 35–44 year olds had the highest level of participation in entrepreneurship among the age groups.

Entrepreneurship was prevalent among youth in the non-EU economies, where half of the entrepreneurs were between 18–34 years of age. China was also distinct in having a high proportion of young entrepreneurs, with 57% between 18 and 34 years of age, and less than one quarter falling into the older age groups (45–64 years). In certain economies, there was a flattening out of the bell-shaped curve, where similar participation levels were reported across all or most of the age ranges. Examples of this pattern include Palestine, Japan, Pakistan, Hungary and Bosnia/Herzegovina.

Gender Differences
GEM findings have consistently reported greater involvement in entrepreneurship among men than women in most economies. The ratio of male to female participation in early-stage entrepreneurial activity varied considerably across the sample. Participation among men and women was almost equal in most Sub-Sahara Africa economies, while men were 2.8 times as likely to start a business than women in the MENA region. In Egypt, Palestine and Republic of Korea, less than one-fifth of all entrepreneurs were women. More notably, only 5% of the entrepreneurs in Pakistan were women. The only economies where the female TEA rate was higher than that of their male counterparts was in Ecuador and Panama in Latin America, Ghana and Nigeria in Sub-Saharan Africa and Thailand in Asia.

Growth Expectations

While TEA rates indicate how many entrepreneurs there are in each economy, growth expectations represent a quality measure of this activity. Entrepreneurs differ in their growth ambitions, and this can have significant potential impact on the employment growth and competitive advantage of their economies.

The non-EU, despite its low TEA rate, showed nearly a fifth of its entrepreneurs with projected growth of 20 or more employees. The USA exhibited a high proportion of 20+ growth projections in addition to a high TEA rate for an innovation-driven economy, demonstrating both the prevalence and impact of entrepreneurship. Turkey, Latvia, Singapore, China and Colombia also displayed both high TEA and high proportions of 20+ growth entrepreneurs relative to other economies in their regions.

National Experts' Survey

The National Experts' Survey (NES) provides insights from experts in each economy on nine Entrepreneurial Framework Conditions (EFC): factors that can influence the climate for entrepreneurship and the level and nature of this activity. Overall, physical infrastructure was identified as a positive factor in all or nearly every economy in each region. Internal market dynamics (the level of change in markets) was cited as positive by most of the Sub-Saharan Africa, MENA, Asia Pacific/South Asia, and Non-EU economies, but less often in Latin America/Caribbean, the EU, and the USA.

Most of the Latin America/Caribbean economies rated entrepreneurship education positively for post-school training, yet most of the economies in this region, as well as all the other regions, rated this factor negatively for primary and secondary school entrepreneurship education. Entrepreneurial finance was another condition frequently cited as negative in Latin America/Caribbean. Although the other regions had comparatively fewer economies identifying finance as one of the most negative conditions, it was rarely cited as a positive factor.

Experts in the USA saw cultural and social norms as positive, while only one EU economy identified this condition favorably. Instead the EU- and non-EU regions identified commercial infrastructure as positive in most economies. The USA also rated R&D transfer positively, while most of the Sub-Saharan African economies saw this condition as negative with many of the economies in the other regions also rating this factor unfavorably.

Entrepreneurship and Migration

In 2012, GEM added questions to its survey around the special topic of international migration. With currently more than 210 million international migrants and further increases predicted within the next decade[1], migrant entrepreneurship has the potential to contribute substantially to both receiving and home economies through knowledge and information transfer, global trade, job creation and other benefits. In innovation- and factor-driven economies, migrants exhibited a higher rate of

entrepreneurship than non-migrants. The efficiency-driven economies showed the opposite pattern: a lower TEA-rate among migrants compared with non-migrants.

The results highlight the potential impact of migrant entrepreneurs, especially relative to growth orientation and international sales. The proportion of migrant entrepreneurs expecting to create 10 or more jobs was 25% in efficiency-driven economies (non-migrants 16%), 23% in factor-driven economies (non-migrants 9%) and 20% in innovation-driven economies (non-migrants 14%).

While more than half of the migrant entrepreneurs indicated they sell products and services outside their host economy, this was the case for only a third of non-migrant entrepreneurs. This pattern was similar in innovation-driven economies, with a smaller difference between migrants and non-migrants, but a higher absolute proportion of migrants selling internationally. In the factor-driven economies, however, migrants were not more likely than non-migrants to sell internationally.

Summary of Implications and Recommendations

Positive attitudes reflect entrepreneurial ambitions and societal support. They are needed at a widespread level as some economies develop and as others face periodic difficulties. The GEM results on attitudes lend merit to efforts that take the pulse of societal attitudes about entrepreneurship and promote educational and other programs that target and assess changes in attitudes, as well as skill building. In addition, attitudes and support can focus toward higher potential businesses, particularly in the factor and efficiency-driven economies.

Policies promoting societal attitude changes about women, and that train, support and encourage women entrepreneurs will promote inclusiveness and fuel economic growth. Additionally, societies can benefit from entrepreneurs of all ages, with unique orientations and resources that may include the fresh ideas, risk tolerance and technology savvy of the young, and the experience, networks and credibility that comes with maturity. Entrepreneurs of different ages, however, will likely require particular support mechanisms and programs.

The wealth of experience that comes from discontinued businesses can be recognized and leveraged as former entrepreneurs re-engage in entrepreneurial activity, perhaps even in established organizations, or support other entrepreneurs in a variety of stakeholder roles. Attention could therefore turn toward re-engaging former

entrepreneurs, whether they have discontinued for positive or negative reasons.

A high-growth oriented approach to entrepreneurship will create jobs and, in tandem, grow economies. Broad-based efforts to improve the labor market, increase the internal market, and provide access to international markets can be more specifically addressed toward meeting the specific needs of entrepreneurs.

With unemployment and a growing youth population as a key issue in regions such as Sub-Saharan Africa, identifying and successfully implementing policies that both encourage youth to start businesses and support businesses with high employee growth expectations will be critical to creating jobs and ensuring economic growth and societal stability.

The persistent poor ratings on entrepreneurship education in primary and secondary schools in the national expert survey indicates a need for both national and global efforts to encourage this factor. With regard to other entrepreneurial framework conditions, each region has particular strengths but also areas to improve. While policies that work in one economy are not guaranteed success in others, there may be merit in studying and discussing what works (and doesn't) within and across regions.

Research using GEM data emphasizes that if an economy's government fails to enforce a strong rule of law, the quality of entrepreneurial entries will suffer – and consequently, the economic impact of entrepreneurship will diminish. Another study suggests that intellectual property protection encourages specialisation among potential entrepreneurs and supports conditions where individuals can choose the course of action that best fits their innate strengths. These findings highlight the importance of the legal framework in developing a context in which entrepreneurship can thrive.

Finally, policy makers in receiving economies can recognize the value migrants can provide in creating jobs and globalizing the business environment. In tandem, economies of origin should make every effort to build and support connections to those that have emigrated to other parts of the world.

A key purpose of GEM is to inform academics, educators, policy makers and practitioners about the frequency and nature of entrepreneurship in and among economies worldwide. With this aim, GEM can encourage better understanding about entrepreneurship and guide decision making that can lead to better support and conditions that allow this endeavor to thrive.

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1   United Nations Population Division: http://esa.un.org/migration/index.asp?panel=1

INTRODUCTION and Background

1.1 The GEM Research Project

Many policy makers agree that entrepreneurs, and the new businesses they establish, play a critical role in the development and well-being of their societies. The purpose of GEM is to explore and assess the role of entrepreneurship in national economic growth. GEM defines entrepreneurship as "any attempt at new business or new venture creation, such as self-employment, a new business organisation, or the expansion of an existing business, by an individual, a team of individuals, or an established business" (Bosma, Wennekers & Amorós, 2012, p.9). GEM's individual-level, multi-phase focus enables a more comprehensive account of business activity compared with measures of formally registered businesses (i.e. GEM captures both informal and formal activity that encompasses those in the process of starting as well as those running new and established businesses).

Traditional analyses of economic development and growth have historically focused on large corporations, based on the assumption that these firms are the main drivers of economic growth in modern economies. Academics and policy makers are now increasingly appreciating and accounting for the role played by new and small businesses in the economy. GEM contributes to this recognition with a comprehensive analysis of entrepreneurial attitudes and

The Global Entrepreneurship Monitor (GEM) research program was initiated in 1997 as a joint venture between academics at London Business School in the UK and Babson College in the United States. From its first survey in 1999, GEM has grown into a consortium of more than 400 researchers from 99 economies over its 14 year history. In 2012, 69 economies participated in GEM, providing insights on entrepreneurship across the largest sample of economies to date, spanning a diversity of geographic regions and economic development levels.

activity across the globe. As such, GEM works toward the following objectives:

- to allow for comparisons with regard to the level and characteristics of entrepreneurial activity among different economies;
- to determine the extent to which entrepreneurial activity influences economic growth within individual economies;
- to identify factors which encourage and/or hinder entrepreneurial activity; and
- to guide the formulation of effective and targeted policies aimed at stimulating entrepreneurship.

The first GEM survey, comprising only ten developed economies, was conducted in 1999. Now, fourteen years later, GEM has measured entrepreneurship in 99 economies, and

has gained widespread recognition as the most authoritative longitudinal study of entrepreneurship in the world. In 2012, more than 198,000 people in 69 economies participated in the study, collectively representing all regions of the world and a broad range of economic development levels. Based on this survey, the GEM study covered an estimated 74% of the world's population and 87% of the world's total GDP. In addition to its annual measures of entrepreneurial attitudes and activity, GEM analyzed immigration as a special topic focus in 2012.

GEM provides a comprehensive view of entrepreneurship across the globe by measuring the attitudes of a population, and the activities and characteristics of individuals involved in various phases and types of entrepreneurial activity. Research teams in each participating economy administer an Adult Population Survey (APS) of at least 2,000 adults annually. Complementing the APS is a National Expert Survey (NES), which provides in-depth opinions from selected national experts on the factors that impact the nature and level of entrepreneurship in each economy.

1.2 The GEM Conceptual Model

The Phases of Entrepreneurship

The GEM project views entrepreneurship as a process comprising different phases, from intending to start, to just starting, to running new or established enterprises and even discontinuing a business. Given that the context and conditions that affect entrepreneurship in different economies are diverse and complex, it is not possible to conclude that one phase inevitably leads to the next. For example, an economy may have a large number of potential entrepreneurs but this may not necessarily translate into a high rate of entrepreneurial activity. Therefore, the arrows that connect the different phases are not straight lines,

suggesting the tentative nature of the relationship between the different phases. The entrepreneurship process and GEM's operational definitions are illustrated in **Figure 1.1**.

GEM's conceptualization of entrepreneurship as a multiphase process is useful for assessing the state of entrepreneurship at different points. This process starts with the involvement of *potential entrepreneurs* – those individuals who believe they possess the capabilities to start businesses, who see opportunities for entrepreneurship, and who would not be dissuaded from doing so by fear of failing. For some potential entrepreneurs, their intentions to start businesses are underpinned by the perceptions society holds of entrepreneurs, the status these individuals enjoy in their society, and whether the media positively represents entrepreneurs.

The next phase is *nascent entrepreneurial activity* – i.e. those starting new enterprises less than three months old. Given the challenges associated with starting a new business, many fledgling businesses fail in the first few months, hence not all nascent entrepreneurs' progress to the next stage. New business owners are defined as those former nascent entrepreneurs who have been in business for more than three months, but less than three and a half years. Nascent and new business owners together account for the total early-stage entrepreneurial activity (TEA) in an economy, a key measure of GEM.

Established businesses are those that have been in existence for more than three and a half years. It is important to consider both established business owners as well as entrepreneurs who have discontinued or exited businesses because these two categories represent a key resource for other entrepreneurs (for example, by providing financing, mentorship, advice or other types of support). In addition, former entrepreneurs may re-enter entrepreneurship (serving as serial entrepreneurs)
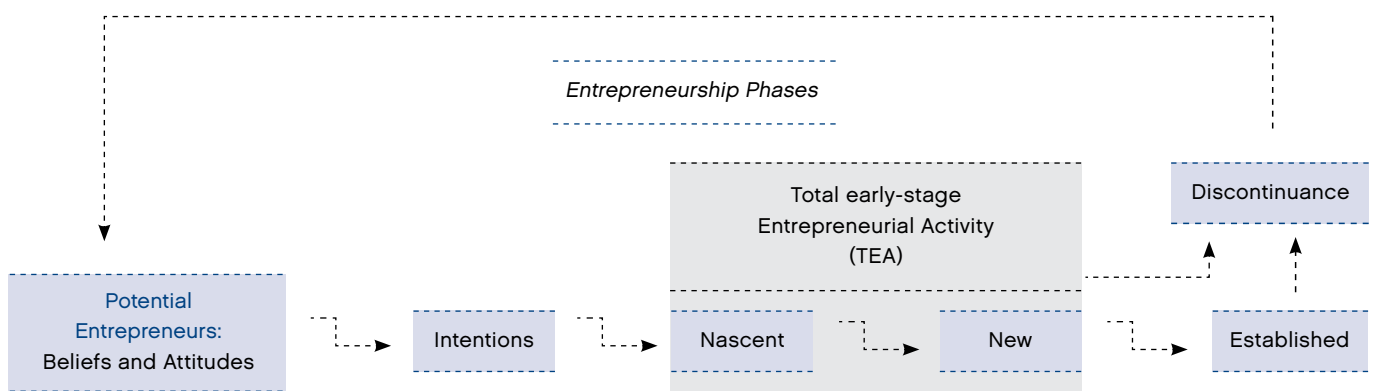
Source: GEM Global Report, 2011

Figure 1.1: The Entrepreneurship Process

or they may join established companies and enact their entrepreneurial ambitions as employees.

The GEM model, shown in **Figure 1.2** (opposite), illustrates the institutional environment, the effect it has on entrepreneurship and in turn, economic development. According to this model, two sets of conditions, namely basic requirements and efficiency enhancers, impact societies more broadly as well as entrepreneurial activity within these societies. Additionally, nine entrepreneurship framework conditions influence individuals' decisions to pursue entrepreneurial initiatives and the rate and profile of entrepreneurship in different economies. This figure also acknowledges the efforts of employee entrepreneurs, those who develop and lead new business activities for their employers; this type of entrepreneurship was a special topic focus in 2011 (see 2011 GEM Global Executive Report and 2011 GEM Global Extended Report, as well as the forthcoming special report on employee entrepreneurship by Bosma et al., 2012).

GEM classifies the economies that participate in the study as factor-driven, efficiency-driven, or innovation-driven.

These categories are based on the World Economic Forum's (WEF) *Global Competitiveness Report*, which identifies three phases of economic development based on GDP per capita and the share of exports comprising primary goods.

According to the WEF classification, the *factor-driven* phase is dominated by subsistence agriculture and extraction businesses, with a heavy reliance on (unskilled) labour and natural resources. The focus of development efforts tends toward building a sufficient foundation of basic requirements.

In the *efficiency-driven* phase, an economy has become more competitive with further development accompanied by industrialisation and an increased reliance on economies of scale, with capital-intensive large organisations more dominant. This phase is generally accompanied by improved (and improving) basic requirements, and attention is then directed toward developing the efficiency enhancers.

As development advances into the *innovation-driven* phase, businesses are more knowledge-intensive, and the service sector expands. While entrepreneurship and innovation factors are more dominant in this phase, it must be noted that these conditions rely on a healthy set of basic requirements and efficiency enhancers.

1.3 How GEM Measures Entrepreneurship

GEM takes a comprehensive snapshot of entrepreneurs around the world, measuring the attitudes of a population and the activities and attributes of individuals participating in various phases of this activity. The study also considers the aspirations of these entrepreneurs regarding their businesses, along with other key features of their ventures.

The primary measure of entrepreneurship used by GEM is the Total Early-stage Entrepreneurial Activity (TEA) Index, which gauges the level of dynamic entrepreneurial activity in an economy by considering the incidence of start-up businesses (nascent entrepreneurs) and new firms (up to 3.5 years old) in the adult population (i.e. individuals aged 18–64 years).

Another important feature of GEM is the distinction it makes between different types of entrepreneurship and how these contribute to economic growth and job creation. Individuals who start businesses in response to a lack of other options for earning an income are deemed to be necessity entrepreneurs, while those who start businesses with the intention to exploit an opportunity are identified as opportunity entrepreneurs. The latter may include individuals who aim to maintain or improve their income, or to enhance their independence.
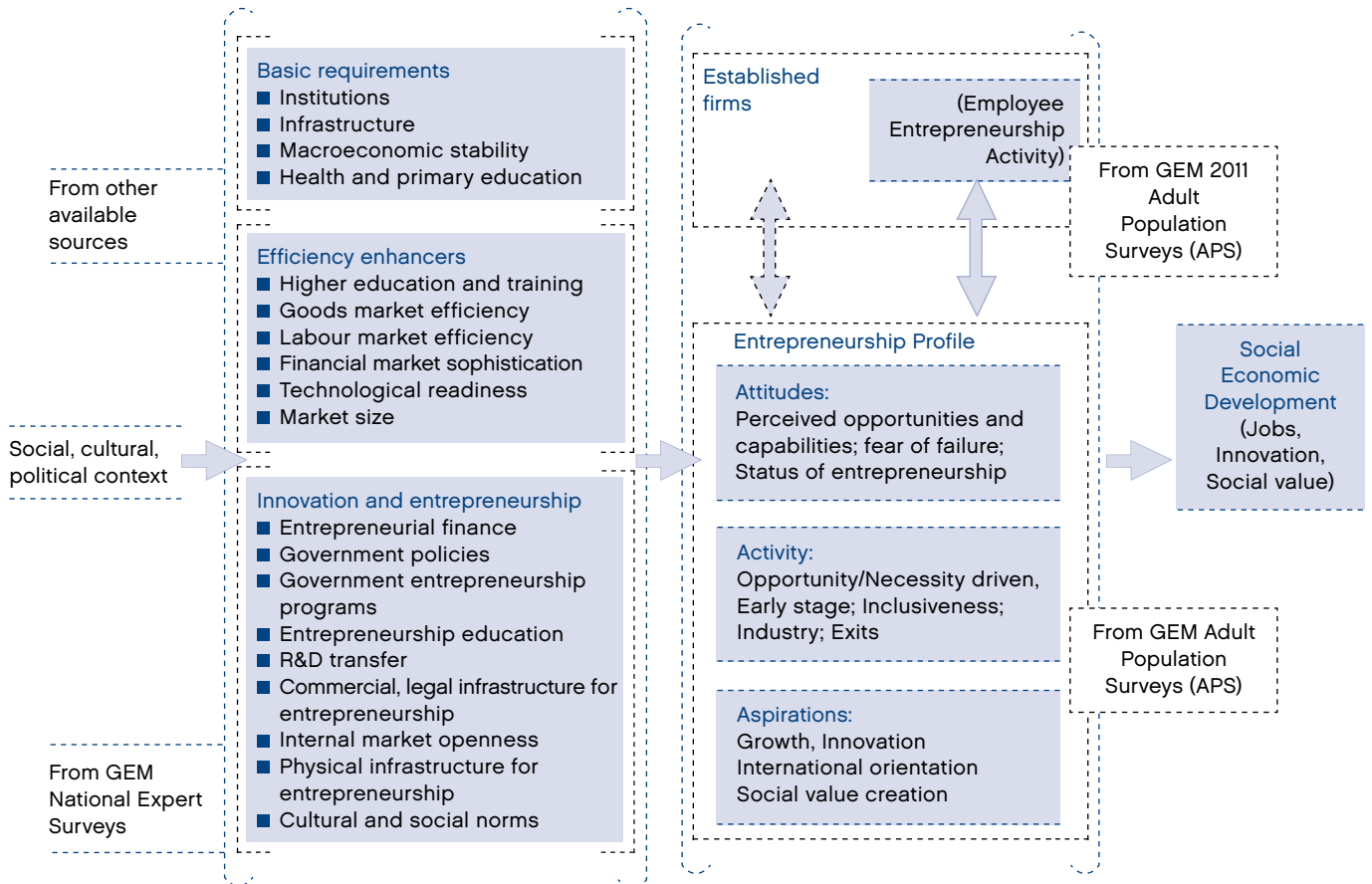
Source: GEM Global Report, 2011

Figure 1.2: The GEM Model

1.4 GEM Methodology

One of the key purposes of GEM is to provide reliable data on entrepreneurship that will be useful in making meaningful comparisons, both internally and between economies, over time. For this reason, all participating economies make use of standard research instruments. The GEM data is gathered annually and is derived from two main sources, namely:

Adult Population Survey (APS)

Each participating economy conducts a survey of a random representative sample of at least 2,000 adults (aged 18 – 64 years). The surveys are conducted at the same time of year (generally between April and June), using a standardised questionnaire developed by the GEM consortium. The APS is generally conducted by an independent research vendor, chosen by each economy's GEM team based on the evaluation of the vendor's research proposal. The raw data is sent directly to the GEM data team for inspection and uniform statistical calculations before being made available to the participating economies.

National Experts Survey (NES)

The NES provides insights into the entrepreneurial start-up environment in each economy with regard to the nine entrepreneurial framework conditions, namely:

- financing
- governmental policies
- governmental programmes
- education and training
- research and development transfer
- commercial infrastructure
- internal market openness
- physical infrastructure
- cultural and social norms.

The NES sample comprises a minimum of 36 respondents, with four experts drawn from each of the entrepreneurial framework condition categories. Out of this sample, a minimum of 25% must be entrepreneurs or business owners, and 50% must be professionals.

Additional aspects such as geographical distribution, gender, the public versus private sector, and level of experience are also taken into account in selecting the sample.

In addition to the APS and NES, GEM reports also make use of standardised national data from international data sources such as the World Bank, the International Monetary Fund and the United Nations.

This information is used to add context to the report, and to explain the relationship between entrepreneurial activity and national economic growth.

Research Papers by GEM Scholars

Levie, J., & Autio, E. 2011. Regulatory burden, rule of law, and entry of strategic entrepreneurs: An international panel study. *Journal of Management Studies*, 48(6): 1392–1419

Research Issue

Researchers have long since recognised the importance of institutional factors such as regulations of entry and the rule of law on the entry of new entrepreneurs in national economies. However, little is known about the extent to which the *quality* of entrepreneurial entry is affected by such factors. This is an important gap, because not all entrepreneurial entries contribute equally to economic dynamism. Indeed, the majority of new firm entries never employ more than 1–2 persons per firm, meaning that they contribute little to job creation. In most economies, it is the relatively small percentage of strategic, or high-growth entrepreneurs who generate the bulk of new jobs attributable to new firm entries. In their study, Jonathan Levie and Erkko Autio explored the influence of two national-level institutional factors on high-growth entrepreneurship: regulatory burden and the rule of law.

Theory and Method

Levie and Autio drew on signalling theory to predict that regulatory burden and weak rule of law should deter the entry of high-aspiration entrepreneurs in the economy. They also predicted a joint effect – i.e., that low regulatory burden (i.e., light regulation of entry) only encourages the entry of high-aspiration entrepreneurs if the country's rule of law is strong. In other words, absence of red tape will not encourage high-aspiration entrepreneurs if entry regulations are not enforced.

Levie and Autio combined GEM data with World Bank's Governance Indicators and Ease of Doing Business datasets to conduct an economy-level panel regression test of their hypotheses. They analysed data from years 2004 to 2008, covering a total of 54 economies.

Findings

Consistent with expectations, Levie and Autio found that regulatory burden was associated with both low-growth and high-growth entrepreneurial entry rates, with lighter regulatory burden associated with greater levels of entry into entrepreneurship. They also found that in economies where regulation of entry was light, a greater proportion of new entrepreneurs expected to hire at least 20 employees within five years' time.

Importantly, rule of law moderated the above effect – but for high-aspiration entrepreneurs only. In economies where the rule of law was strong, light regulation of entry encouraged more high-aspiration entrepreneurs, both in absolute terms and as a proportion of all entrepreneurial entries. A similar effect was not observed for low-aspiration entrepreneurship.

Implications

Jonathan Levie's and Erkko Autio's study is one of the first to show that regulation of entry and rule of law matter for the *quality* of entrepreneurship in a given economy. This is important evidence, since, in entrepreneurship, quality matters. If entrepreneurs do not seek growth, they will not create jobs. Levie and Autio showed that policy-makers can encourage the entry of entrepreneurs by alleviating the amount of red tape that entrepreneurs have to deal with when starting their firms. However, high-aspiration entrepreneurs are also sensitive to the rule of law: if the rule of law is weak, entry regulations will still increase the number of new entrepreneurs, but fewer of these will seek growth. Therefore, if an economy's government only pretends to support entrepreneurship by making entry regulations easier but not enforcing a strong rule of law, the quality of entrepreneurial entries will suffer – and consequently, the economic impact of entrepreneurship will be diminished.

> The entrepreneurship process is a complex endeavor that is affected by many factors including the prevailing attitudes within a society, the rate of activity and the kind of opportunities available, and the growth aspirations of entrepreneurs.

A GLOBAL PERSPECTIVE
on Entrepreneurship: 2012

2.1 Attitudes

The entrepreneurship process is a complex endeavor carried out by people living in specific cultural and social conditions. For this reason, the positive or negative perceptions that society has about entrepreneurship can strongly influence the motivations of people to enter entrepreneurship. Societies benefit from people who are able to recognise valuable business opportunities and who perceive they have the required skills to exploit them. If the economy in general has a positive attitude towards entrepreneurship, this can generate cultural and social support, financial and business assistance, and networking benefits that will encourage and facilitate potential and existing entrepreneurs.

The GEM survey includes the following indicators of attitudes about starting a business:

Individual Self-perceptions
- Awareness about good opportunities for starting a business in one's area
- Belief in one's skills and experience to start a business
- Attitude towards failure

Societal Impressions (Optional Survey Items)
- Whether starting a business is considered a good career choice
- Opinion about the association of entrepreneurship with high status
- Awareness of positive media attention for entrepreneurship

Since 2008, GEM Global reports have categorized the participating economies by economic development level, namely factor-, efficiency- and innovation-driven economies. Yet as GEM has continued to grow, its geographic coverage has expanded, particularly in 2012. This presents an opportunity to compare results within and across geographic regions of the world. This report will therefore analyze the findings from a geographic regional level, but will also discuss and display results by economic development level.

Table 2.1 shows the participating economies by geographic region and economic development level. Latin America and the Caribbean, as a region, comprise efficiency-driven economies. The Middle East/North Africa (MENA) contain predominantly factor-driven economies with the only exceptions of Tunisia, an efficiency-driven economy and Israel, an innovation-driven one. Sub-Saharan Africa also has mostly factor-driven economies with the only exceptions being Namibia and South Africa, both efficiency-driven economies.

Table 2.1: GEM Economies by Geographic Region and Economic Development Level

	Factor-Driven Economies	Efficiency-Driven Economies	Innovation-Driven Economies
Latin-America & Caribbean		Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Mexico, Panama, Peru, Trinidad & Tobago, Uruguay	
Middle East & North Africa	Algeria, Egypt, Iran, Palestine	Tunisia	Israel
Sub-Saharan Africa	Angola, Botswana, Ethiopia, Ghana, Malawi, Nigeria, Uganda, Zambia	Namibia, South Africa	
Asia Pacific & South Asia	Pakistan	China, Malaysia, Thailand	Japan, Republic of Korea, Singapore, Taiwan
European Union		Estonia, Hungary, Latvia, Lithuania, Poland, Romania	Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Slovakia, Slovenia, Spain, Sweden, United Kingdom
Non-European Union		Bosnia and Herzegovina, Croatia, Macedonia, Russia, Turkey	Norway, Switzerland
United States			United States

The Asia Pacific and South Asia region includes a combination of all three levels of economic development levels: Pakistan in the factor-driven group, China, Malaysia and Thailand in the efficiency-driven group, and Japan, Republic of Korea, Singapore, and Taiwan in the innovation-driven group.

The European Union (EU) is predominantly innovation-driven with only six of the 22 countries in this region being classified as efficiency-driven economies. The non-European Union (non-EU) is largely efficiency-driven, with the exception of Switzerland and Norway, both innovation-driven economies.

In 2012 a record number of 69 countries participated in the GEM cycle. However, the results from India and Jamaica are not included in the first release due to technical problems uncovered in the inspection by GEM's central data team. While these problems could not be resolved before the publishing deadline for this report, their information will be published later in a pdf version.

Table 2.2 shows results on entrepreneurial attitudes for the 69 participating economies, organized by geographic region. Appendix 1, Table 1 shows attitudes grouped by stage of economic development and Figure 2.1 charts averages for the three levels.

Table 2.2: Entrepreneurial Attitudes and Perceptions in the GEM Countries in 2012 by Geographic Region

Economy	Perceived opportunities	Perceived capabilities	Fear of failure*	Entrepreneurial intentions **	Entrepreneurship as a good career choice+	High status to successful entrepreneurs+	Media attention for entrepreneurship+
LATIN AMERICA & CARRIBEAN							
Argentina	50	63	27	29	74	67	63
Barbados	47	70	17	23	-	-	-
Brazil	52	54	31	36	89	86	86
Chile	65	60	28	43	70	68	66
Colombia	72	57	32	57	89	75	69
Costa Rica	47	63	35	33	72	72	79
Ecuador	59	72	33	51	88	84	79
El Salvador	43	59	42	40	73	72	62
Mexico	45	62	26	18	56	54	38
Panama	38	43	17	12	-	-	-
Peru	57	65	30	45	77	73	76
Trinidad & Tobago	59	76	17	37	78	76	64
Uruguay	51	58	27	20	61	59	51
Average (unweighted)	53	62	28	34	75	71	67
MIDDLE EAST & NORTH AFRICA							
Algeria	46	54	35	21	79	81	47
Egypt	54	59	33	42	83	87	64
Iran	39	54	41	23	60	73	61
Israel	31	29	47	13	59	72	47
Palestine	46	59	40	36	85	80	71
Tunisia	33	62	15	22	88	94	48
Average (unweighted)	41	53	35	26	76	81	56
SUB-SAHARAN AFRICA							
Angola	66	72	38	70	-	-	-
Botswana	67	71	25	72	76	73	79
Ethiopia	65	69	33	24	76	92	73
Ghana	79	86	18	60	84	91	82
Malawi	74	85	12	70	-	-	-
Namibia	75	74	35	45	73	76	82
Nigeria	82	88	21	44	82	76	78
South Africa	35	39	31	12	74	74	73
Uganda	81	88	15	79	-	-	-
Zambia	78	84	17	55	67	79	72
Average (unweighted)	70	76	24	53	76	80	77
ASIA PACIFIC & SOUTH ASIA							
China	32	38	36	20	72	76	80
Japan	6	9	53	2	30	55	53
Republic of Korea	13	27	43	13	59	70	68
Malaysia	36	31	36	13	46	51	62
Pakistan	46	49	31	25	66	68	51

Economy	Perceived opportunities	Perceived capabilities	Fear of failure*	Entrepreneurial intentions **	Entrepreneurship as a good career choice+	High status to successful entrepreneurs+	Media attention for entrepreneurship+
Singapore	23	27	42	16	50	63	77
Taiwan	39	26	38	25	70	63	83
Thailand	45	46	50	19	76	79	84
Average (unweighted)	30	32	41	17	59	65	70
EUROPEAN UNION							
Austria	49	50	36	9	46	76	
Belgium	33	37	41	9	62	57	54
Denmark	44	31	39	7	-	-	-
Estonia	45	43	34	16	55	63	41
Finland	55	34	37	8	45	83	68
France	38	36	43	17	65	77	41
Germany	36	37	42	6	49	76	49
Greece	13	50	61	10	64	68	33
Hungary	11	40	34	13	41	74	29
Ireland	26	45	35	5	45	81	61
Italy	20	30	58	11	67	70	51
Latvia	33	44	37	22	60	53	53
Lithuania	30	40	36	18	63	53	37
Netherlands	34	42	30	9	79	65	58
Poland	20	54	43	22	68	57	56
Portugal	16	47	42	14			
Romania	37	38	41	27	71	74	55
Slovakia	18	50	38	12	50	74	59
Slovenia	20	51	27	13	53	71	51
Spain	14	50	42	11	64	64	47
Sweden	66	37	33	11	-	-	-
United Kingdom	33	47	36	10	50	77	47
Average (unweighted)	31	42	39	13	58	69	50
NON-EUROPEAN UNION							
Bosnia and Herzegovina	20	49	27	22	81	72	39
Croatia	17	44	36	19	64	42	40
Macedonia	31	55	39	28	70	67	64
Norway	64	34	39	5	50	80	59
Russia	20	24	47	2	60	63	45
Switzerland	36	37	32	7	44	63	57
Turkey	40	49	30	15	67	76	57
Average (unweighted)	33	42	36	14	62	66	52
UNITED STATES							
United States	43	56	32	13	-	-	-

* Fear of failure assessed for those seeing opportunities

** Intentions assessed among nonentrepreneur population

+ These questions were optional and therefore not included by all economies

Factor-driven Economies
Efficiency-driven Economies
Innovation-driven Economies
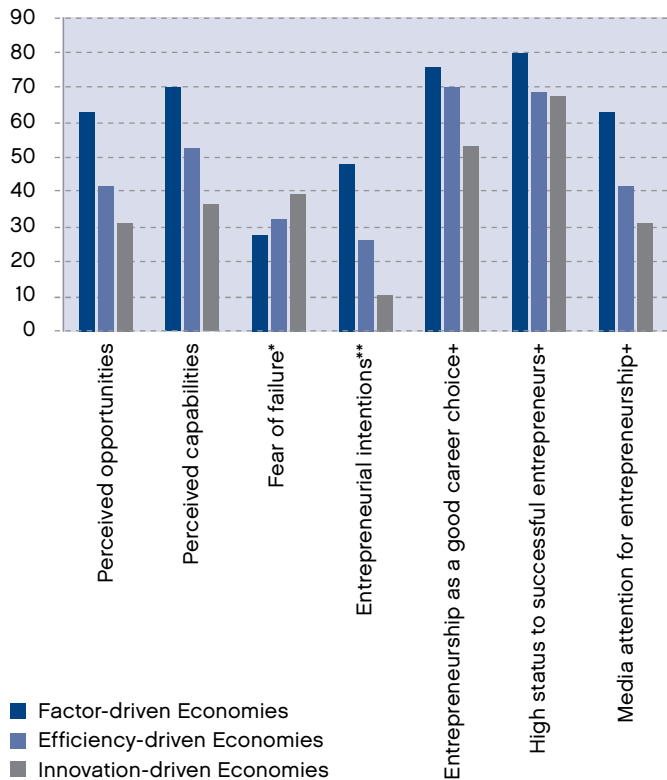
*   Fear of failure assessed for those seeing opportunities
** Intentions assessed among nonentrepreneur population
\+   These questions were optional and therefore not included by all economies

Figure 2.1: Entrepreneurial Attitude Averages by Economic Development Level

Perceived Opportunities and Capabilities

The first step in the entrepreneurship process occurs when people perceive favourable business opportunities in their area. These individuals may or may not have considered becoming an entrepreneur before identifying an opportunity. People may also be encouraged by the belief they have the necessary capabilities to successfully start a venture. Yet even if they perceive opportunities and believe they have the skills necessary for entrepreneurship, fear of failure may prevent them from actually starting a business.

Figure 2.1 shows that perceived opportunities and capabilities tend to decline with greater development levels. These measures are almost twice as high in factor-driven economies, 63% and 71% respectively, than in innovation-driven economies: 31% and 36% respectively. It is important to note, however, that these perceptions may reflect different businesses one generally has in mind, showing the value of GEM measures of necessity versus opportunity motives, industry participation, growth orientation, and so forth.

On average, individuals in Sub-Saharan African countries have a very high perception about the presence of good opportunities for starting businesses in the next six months (70% of all respondents). They are also likely to believe they have the skills and knowledge necessary to start businesses (76%). Except for South Africa and Namibia, Sub-Saharan Africa consists of factor-driven economies, where entrepreneurship rates tend to be high, suggesting that people are willing to act on the opportunities they see and that they believe they are capable of starting a business.

The non-EU and Latin America, regions primarily falling in the middle-stage efficiency-driven economies, show a divide in these attitude measures, suggesting that factors other than economic development level impact attitudes. The Asia Pacific and South Asia region, on the other hand, demonstrate that geographic factors don't necessarily determine attitudes. The wealthier economies like Japan, Republic of Korea, and Singapore show lower than average opportunity and capability perceptions while earlier development-stage economies like China, Pakistan, and Thailand are above average.

The EU economies exhibit an interesting distinction between the southern and northern regions. Nordic countries (for example, Denmark, Estonia, Finland, Norway and Sweden) have high opportunity perceptions, yet generally show lower than average beliefs about capabilities. Some economies in Southern Europe (for example, Greece, Hungary, Italy, Portugal and Spain), on the other hand, tend toward low perceived opportunity ratings, despite mostly above average views about capabilities.

Figure 2.2 shows a longitudinal analysis of three Nordic (Denmark, Finland, and Norway) and three Southern European (Greece, Hungary and Spain), economies that have participated in GEM in the past five years. As this figure shows, the Nordic countries have consistently higher levels of opportunity perceptions, and while Denmark and Finland showed a decline in this measure in 2009, they rebounded in 2010. In 2012, Finland and Norway were at or above their 2008 levels.

The Southern European countries show not only a consistently lower level of opportunity perceptions compared with the Nordic countries, but they have mostly showed declines. This leaves them, in 2012, at lower levels than they were in 2008. Given the continued negative impact of the financial crisis in southern Europe, the austerity measures required of these countries, and the continued debate regarding bail-out terms in this region, the low and declining opportunity perceptions in the region is unsurprising.
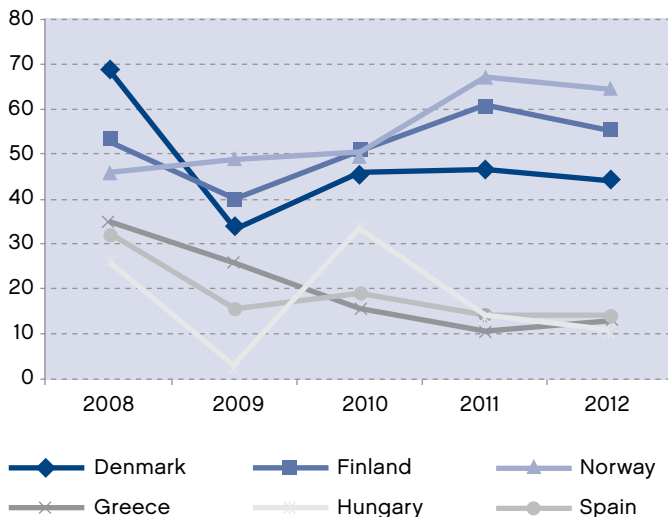
Figure 2.2: Opportunity Perceptions in Nordic versus Southern European Economies, 2008-2012

Fear of Failure

Risk-taking can pose considerable challenges for potential entrepreneurs. Universities and business schools around the world can generally teach the basics of entrepreneurship, boosting peoples' abilities to perceive opportunities and their skills for starting businesses. A key stumbling block, however, is one's inherent fear of failure. This can counteract the drive to start a business, even when the expected returns from entrepreneurship have better prospects than the next best alternative. People may have differing levels of fear of failure and conditions in the institutional environment, such as bankruptcy legislation, which could deter would-be entrepreneurs.

The level of fear of failure, in general, increases as one moves from early-stage to advanced development levels. Greece (61%) and Italy (58%) exhibited the highest fear of failure rates in 2012, consistent with the low reported opportunity perceptions in these economies. Malawi (12%), a factor-driven economy, showed the lowest fear of failure rate.

Across the geographic regions, fear of failure rates show less distinction than do opportunity and capability perceptions. Economies in Sub-Saharan Africa tend to show the lowest levels, with only 25% of all respondents indicating that fear of failure would prevent them from starting a business. Latin American and Caribbean economies (28%) also have low levels of this measure with one exception: El Salvador shows a relatively high rate at 42% (**Table 2.2**).

Entrepreneurial Intentions

The next stage in the entrepreneurship process takes place when a potential entrepreneur expresses the intention to start a new business in the foreseeable future. The results by economic development level show that entrepreneurial intentions are highest in factor-driven economies (48%), decreasing significantly in the efficiency-driven stage (26%) and again in the innovation–driven (11%) group.

It is important to recognise that, even though individuals have favourable perceptions with respect to business opportunities, they may not have the intentions to start a business. This is certainly the case for the Asia region, where an estimated 30% of the population see opportunities for entrepreneurship but only 17% intend to start a business in the next three years. Intentions were also low in the non-EU (18%) and EU (13%). Sub-Saharan Africa reported the highest intentions of any geographic region (53%), which is consistent with their positive perceptions about opportunities and their belief in their capabilities (**Table 2.2**).

Societal Beliefs

The last three attitude measures assess societal impressions about entrepreneurship as a career choice and whether entrepreneurs are afforded high status and receive positive media attention. These perceptions assess the visibility and attractiveness of entrepreneurship. Positive views on these measures can influence the willingness of individuals to become entrepreneurs, but also the likelihood that others in society will support their efforts, with some possibly becoming stakeholders such as investors, suppliers, customers and advisors.

In Latin America and the Caribbean, the MENA region, and Sub-Saharan Africa, over three-quarters of the respondents consider entrepreneurship a good career choice. It is notable that fewer people in Latin America and the Caribbean attach high status to entrepreneurs (71%) and believe there is positive media attention for this endeavour (67%). This suggests that perhaps entrepreneurship has practical appeal but less status and visibility in many of these economies. In Sub-Saharan Africa, on the other hand, entrepreneurship is not only considered a good career choice by over three-fourths (76%) of the respondents, but the same or greater amount see high status (80%) and positive media attention (77%) for entrepreneurs.

The EU is distinct in exhibiting low levels on all three of these measures. About half of the respondents consider entrepreneurship to be a good career choice and a similar

Table 2.3: Entrepreneurial Activity in the 69 GEM Countries in 2012, by Geographic Region

Country	Nascent entrepreneurship rate	New business ownership	Early-stage entrepreneurial activity (TEA)	Established business ownership rate	Discontinuation of businesses	Necessity-driven (% of TEA)	Improvement-driven opportunity (% of TEA)
LATIN AMERICA & CARRIBEAN							
Argentina	12	7	19	10	5	35	47
Barbados	10	7	17	12	3	12	63
Brazil	4	11	15	15	5	30	59
Chile	15	8	23	8	5	17	69
Colombia	14	7	20	7	7	12	48
Costa Rica	10	5	15	3	3	20	48
Ecuador	17	12	27	19	8	36	30
El Salvador	8	8	15	9	8	35	39
Mexico	8	4	12	5	4	13	52
Panama	7	3	9	2	2	19	57
Peru	15	6	20	5	7	23	53
Trinidad & Tobago	9	7	15	7	5	15	60
Uruguay	10	5	15	5	5	18	40
Average (unweighted)	11	7	17	8	5	22	51
MIDDLE EAST & NORTH AFRICA							
Algeria	2	7	9	3	7	30	47
Egypt	3	5	8	4	5	34	23
Iran	4	6	11	10	5	42	36
Israel	3	3	7	4	4	19	46
Palestine	6	4	10	3	8	42	27
Tunisia	2	2	5	4	4	35	42
Average (unweighted)	4	5	8	5	6	34	37
SUB-SAHARAN AFRICA							
Angola	15	19	32	9	26	24	38
Botswana	17	12	28	6	16	33	48
Ethiopia	6	9	15	10	3	20	69
Ghana	15	23	37	38	16	28	51
Malawi	18	20	36	11	29	42	43
Namibia	11	7	18	3	12	37	37
Nigeria	22	14	35	16	8	35	53
South Africa	4	3	7	2	5	32	40
Uganda	10	28	36	31	26	46	42
Zambia	27	15	41	4	20	32	46
Average (unweighted)	15	15	28	13	16	33	47
ASIA PACIFIC & SOUTH ASIA							
China	5	7	13	12	4	37	39
Japan	2	2	4	6	1	21	66
Republic of Korea	3	4	7	10	3	35	46
Malaysia	3	4	7	7	2	13	61
Pakistan	8	3	12	4	3	53	24
Singapore	8	4	12	3	4	15	54

Country	Nascent entrepreneurship rate	New business ownership	Early-stage entrepreneurial activity (TEA)	Established business ownership rate	Discontinuation of businesses	Necessity-driven (% of TEA)	Improvement-driven opportunity (% of TEA)
Taiwan	3	4	8	10	6	18	43
Thailand	9	11	19	30	3	17	67
Average (unweighted)	5	5	10	10	3	26	50
EUROPEAN UNION							
Austria	7	3	10	8	4	11	38
Belgium	3	2	5	5	2	18	62
Denmark	3	2	5	3	1	8	71
Estonia	9	5	14	7	4	18	49
Finland	3	3	6	8	2	17	60
France	4	2	5	3	2	18	59
Germany	4	2	5	5	2	22	51
Greece	4	3	7	12	4	30	32
Hungary	6	4	9	8	4	31	35
Ireland	4	2	6	8	2	28	41
Italy	2	2	4	3	2	16	22
Latvia	9	5	13	8	3	25	46
Lithuania	3	4	7	8	2	25	51
Netherlands	4	6	10	9	2	8	66
Poland	5	5	9	6	4	41	30
Portugal	4	4	8	6	3	18	53
Romania	6	4	9	4	4	24	38
Slovakia	7	4	10	6	5	36	43
Slovenia	3	3	5	6	2	7	64
Spain	3	2	6	9	2	26	33
Sweden	5	2	6	5	2	7	49
United Kingdom	5	4	9	6	2	18	43
Average (unweighted)	5	3	8	7	3	21	47
NON-EUROPEAN UNION							
Bosnia and Herzegovina	5	3	8	6	7	58	20
Croatia	6	2	8	3	4	34	36
Macedonia	4	3	7	7	4	52	29
Norway	4	3	7	6	1	7	70
Russia	3	2	4	2	1	36	31
Switzerland	3	3	6	8	2	18	57
Turkey	7	5	12	9	5	31	55
Average (unweighted)	4	3	7	6	4	34	43
UNITED STATES							
United States	9	4	13	9	4	21	59

amount believe that entrepreneurs receive positive media attention. Two-thirds attribute high status to this activity. Given the high economic development level of this region, it is probable that people find other employment alternatives attractive, like work for corporations, government or other entities, where entrepreneurial activity can also take place. *Refer to the forthcoming special report by Bosma et al. (2012) for a discussion of entrepreneurship in organizations.*

2.2 Activity

Total Early-Stage Entrepreneurial Activity (TEA)

The central measure of GEM is the Total Entrepreneurial Activity (TEA) rate, which consists of the percentage of individuals aged 18 – 64 years in an economy who are in the process of starting or are already running new businesses. The TEA rate therefore includes both nascent and new entrepreneurs. GEM also measures established business activity and discontinuance. **Table 2.3** shows the percentage of adults who are engaged in these different phases of entrepreneurship, as well as the percentage of entrepreneurs (TEA) that are motivated by necessity and improvement-driven opportunity. **Appendix 1, Table 2** shows the same information but by phase of economic development.

The highest entrepreneurship rates can be found in Sub-Saharan Africa (with Zambia the highest at 41%), and the Latin America/Caribbean regions. South Africa (7%) and Panama (9%) are the only economies in these regions with

TEA rates below 10%. **Figure 2.3** shows TEA rates across the 69 economies, organised into the three economic levels and exhibited within each economic development level from the lowest to the highest TEA rates.

GEM research has consistently revealed a particular pattern in the association between GDP per capita and the level and nature of entrepreneurial activity in an economy. Bosma et al. (2008) provide a detailed explanation of this relationship in the 2008 GEM Executive Report. In economies with low GDP per capita, TEA rates tend to be high with a relatively high proportion of necessity-motivated entrepreneurship. As per capita income increases, larger established firms play an increasingly important role in the economy. This provides an option for stable employment for a growing number of people, serving as a viable alternative to starting a business. High-income economies are also characterised by a greater availability of resources and more affluent markets, which may stimulate an increase in opportunity-motivated entrepreneurship. To some extent, then, the GDP per capita of an economy allows us make predictions
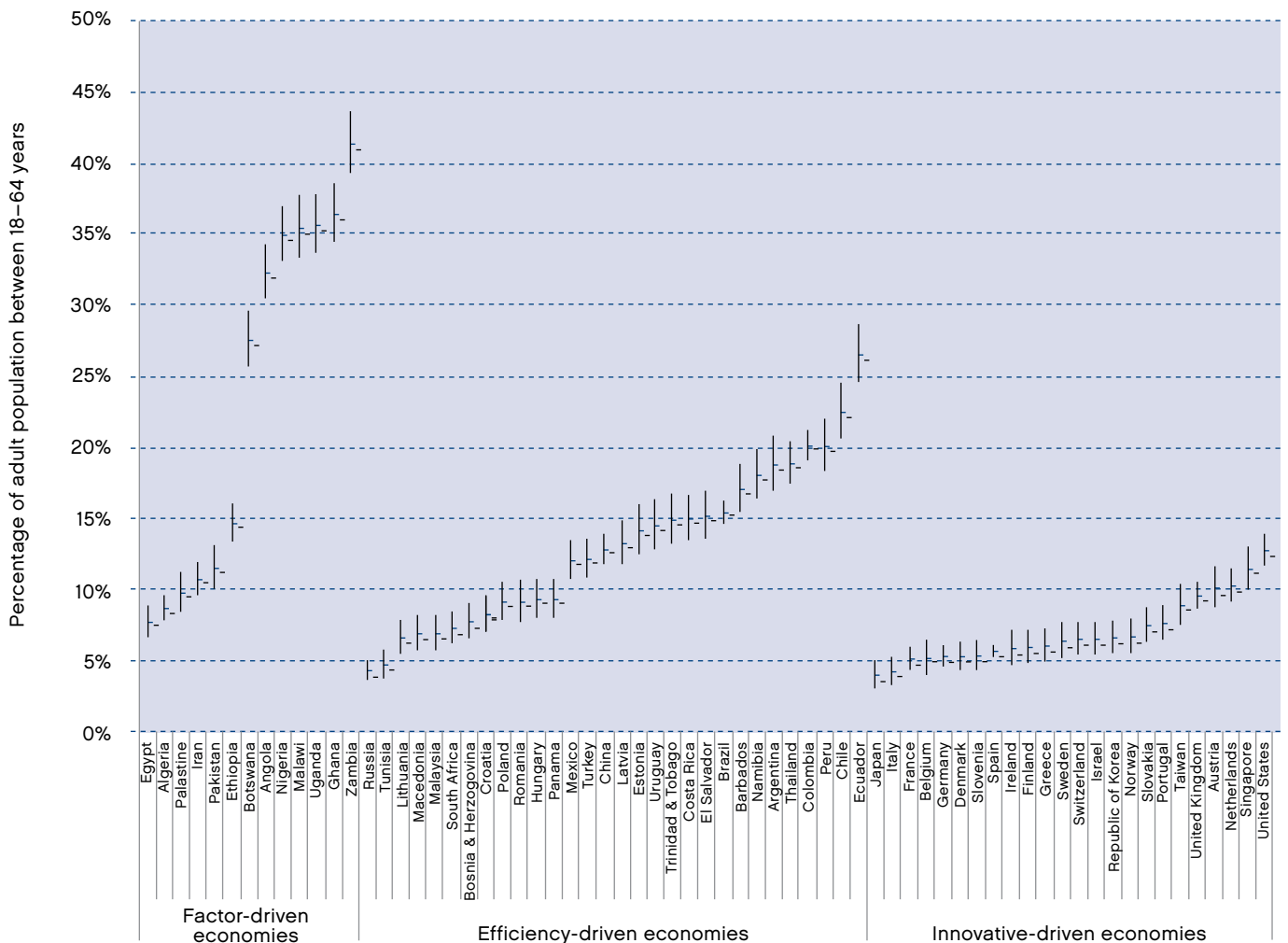
Figure 2.3: **TEA Rates for Participating Countries in 2012, by Phase of Economic Development**

about the level and type of entrepreneurial activity likely to be prevalent in that economy.

An analysis of established business ownership rates can provide some indication about the sustainability of entrepreneurship in an economy. Businesses surviving beyond the nascent and new phases can continue to contribute to their economies, for example, with new products and services, as well as stable employment. TEA rates tend to be high in emerging economies, but established business activity is often low. The opposite pattern tends to dominate the innovation-driven economies. Two factors may contribute to this result. First, as mentioned previously, there are more employment alternatives in societies where industrialization and institutionalization have taken hold; more people may choose employment over starting businesses in the more developed economies, accounting for lower TEA rates. Second, where there are sophisticated ecosystems for business, people that do start businesses are more able to sustain them because of more favourable conditions, such as access to finance, a highly educated workforce, rule of law, and so on.

The GEM results show substantial regional differences in established business ownership rates, particularly when compared with TEA rates. The non-EU and the MENA regions have low rates of both TEA and established business ownership, while Sub-Saharan Africa has high rates of both. Sub-Saharan Africa, however, along with Latin America, have far more entrepreneurs – over twice as many – than established business owners. In Asia and the EU, there are about equal numbers in each phase.

Established business ownership rate also varies at the individual economy level within regions. For example, in Sub-Saharan Africa, Ghana has an established business ownership rate of 38%, nearly equal to its TEA rate. South Africa's established business ownership rate, on the other hand, languishes at 2%, less than a third of its TEA rate, which itself is much lower than that of its neighbours. This reveals that relatively few people are starting businesses in South Africa and even fewer are sustaining them.

Perhaps more concerning is the observation that Zambia, besides having the highest entrepreneurship rate across the entire sample, has less than one-tenth this level of established business owners, leaving questions about why so many people are entering entrepreneurship while there are rarely any running businesses beyond these early stages. With Sub-Saharan Africa facing a growing youth population, limited formal opportunities and the need for commercial stability to encourage foreign

direct investment, the high rate of entrepreneurship is a positive trend. However, there are some indicators of unsustainability, which may need particular attention.

Thailand shows the opposite effect: a relatively high TEA rate, but an even higher established business rate: the highest in the sample (30%). This pattern of high established business ownership relative to TEA is more prevalent in the innovation-driven economies, however. Greece, Spain, Switzerland, Ireland, and Finland in Europe, and Japan, the Republic of Korea and Taiwan in Asia show at least one-third more established business owners than entrepreneurs.

Business Discontinuance

The rate of business discontinuance generally declines as economic development increases. Factor-driven economies have higher levels of entrepreneurship activity, so it would make sense that this would be accompanied by more discontinuance. However, when TEA rate is taken into account, there is still a higher discontinuance rate per entrepreneur in the factor-driven economies. In the Sub-Saharan Africa and MENA regions, which show the highest and lowest regional TEA rates respectively, there are high rates of discontinuance relative to TEA in both regions.

There are a number of reasons for discontinuing a business; the most prevalent among all geographic regions relate to problems obtaining financing and the business not being profitable. Compared to other regions, problems with financing was less an issue in Asia. However, it was identified as the key issue in business stops in Sub-Saharan Africa. In the USA and EU, individuals cited other jobs or business opportunities more often than those in other regions as a reason for business discontinuance – these are generally considered more positive causes.
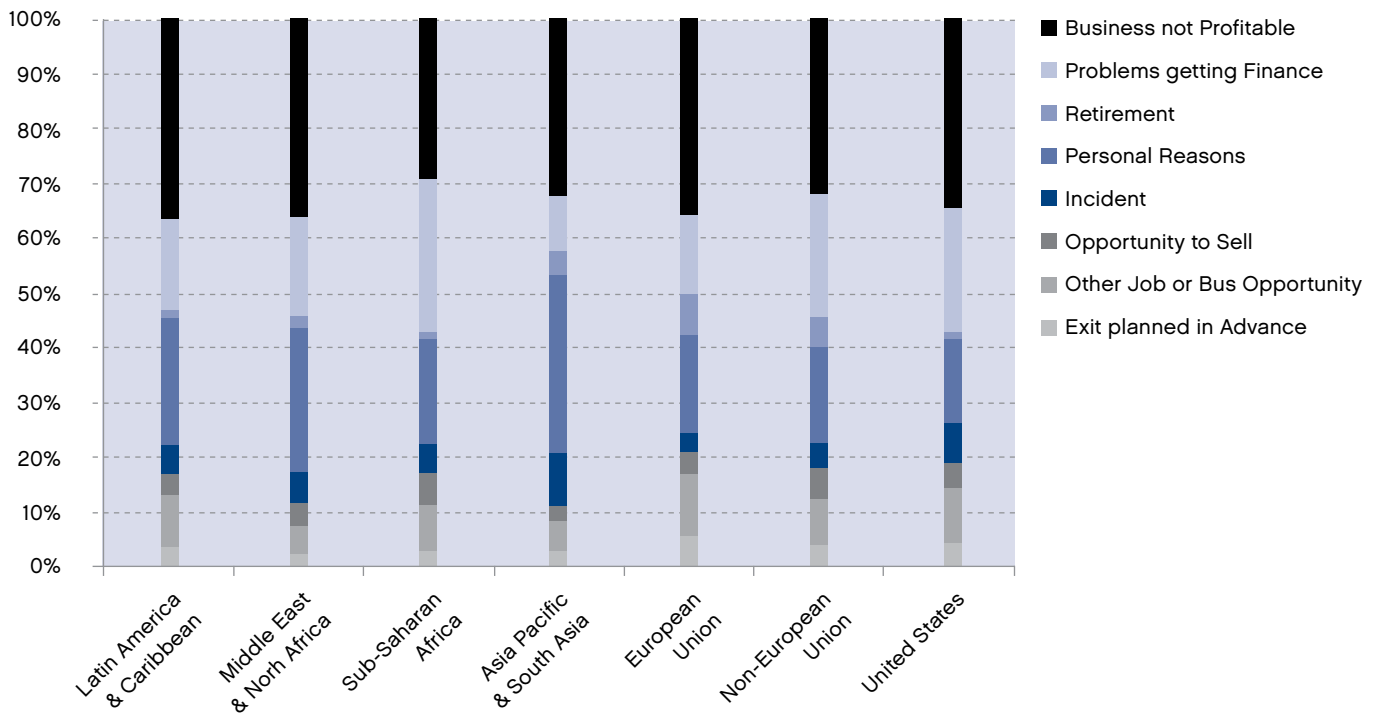
Figure 2.4: Reasons for Business Discontinuance Across 69 Countries

Necessity- and Opportunity-Driven Entrepreneurs

GEM recognizes that entrepreneurs may have different motivations for starting a business: in essence, they may be pushed or pulled into entrepreneurship. Some people may be pushed into starting a business because they have no other work options and need a source of income. GEM classifies these entrepreneurs as necessity-driven. Others enter this activity primarily to pursue an opportunity; they are pulled into entrepreneurship by the prospect of opportunity. GEM identifies these as opportunity–driven entrepreneurs; furthermore, these individuals may desire greater independence in their work or seek to maintain or improve their income. GEM distinguishes those that pursue independence or increased income as improvement-driven opportunity entrepreneurs.

The relative prevalence of opportunity-motivated versus necessity-motivated entrepreneurial activity can provide useful insights into the quality of early-stage entrepreneurial activity in a given economy. GEM research has consistently shown that the economic contribution of opportunity-motivated firms is higher than for necessity-driven enterprises. The *GEM 2010 Global Report* (Kelley et al., 2010) highlights a number of factors which can have a marked impact on the level of improvement-driven opportunity motivation within an economy.

In 2012, entrepreneurs in the EU were an average of 2.7 times more likely to be an improvement-driven opportunity entrepreneur than a necessity-driven one. This ratio was around 2 to 1 in Latin America and Asia, with one exception in each region: Ecuador and Pakistan had more necessity than opportunity-driven entrepreneurs.

Entrepreneurs in Sub-Saharan Africa were, on average, 1.4 times more likely to be improvement-driven opportunity entrepreneurs. Uganda was the only economy in this region with a greater rate of necessity than improvement-driven opportunity entrepreneurs. While it is encouraging that more Sub-Saharan African entrepreneurs entered this activity out of opportunity rather than need, it should be noted that this ratio is still about half that of the USA and EU. Yet with Sub-Saharan Africa's high TEA rates, there are certainly a lot of entrepreneurs with either motive.

Entrepreneurs from the non-EU and the MENA regions were almost equally likely to have either motive. Given that TEA rates are low in both regions, it may be surmised that there is a lack of opportunity motivating people to start businesses. In other words, the problem may be less about too much push, than about not enough pull.

Age Distribution

The GEM results emphasize that entrepreneurial endeavors can be started at any time in a person's life, although this activity is mostly prevalent among those 25–34 years of age. These individuals are likely to have had some time to develop their skills and knowledge

through higher education and work experience. They may have developed networks and have access to financial resources. These resources will continue to develop with age, yet their deployment for entrepreneurship will compete with career advancement, salary increases, and other benefits associated with work as an employee, as well as the need to protect personal assets and provide for families.

Economies in all geographic regions show bell-shaped distributions with the highest entrepreneurship rates generally occurring among the 25–34 year olds. The second highest participation occurs in the next oldest age group

(35–44 years). Together, these two age categories make up close to 50% or more of all entrepreneurs. In Chile, Republic of Korea, Singapore, Netherlands, the UK and USA, the 35–44 year olds have the highest level of participation in entrepreneurship among the age groups.

Latin America/Caribbean and Sub-Saharan Africa exhibit an emphasis on older entrepreneurs, with one-third falling into the 45–64 age range. Within these regions, there is some variation, however. For example, Uganda has a high rate of youth entrepreneurs while Zambia exhibits high entrepreneurship levels among the oldest age category (54–65).
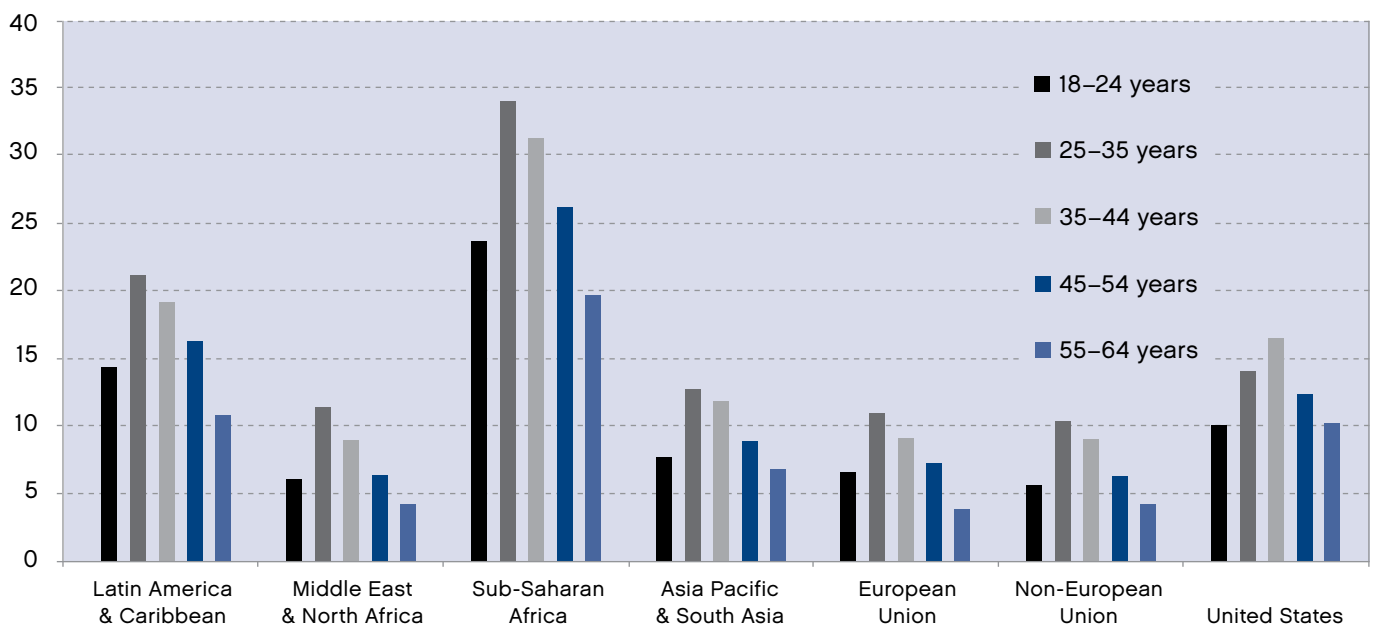
Figure 2.5: TEA by Age for Geographic Regions
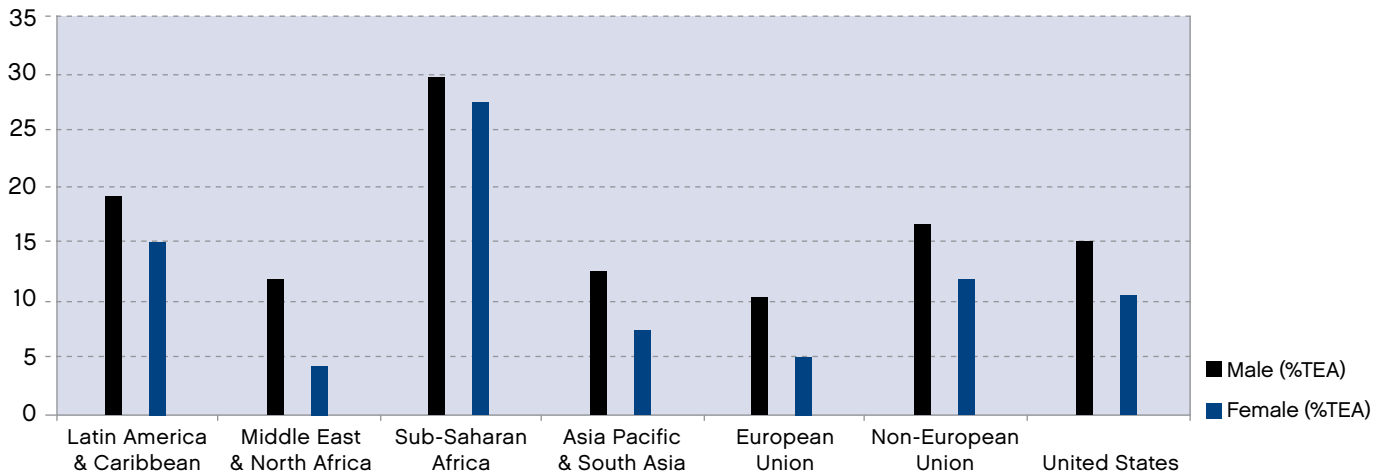
Figure 2.6: TEA by Gender for Geographic Regions

Entrepreneurship is prevalent among youth in the non-EU economies, where half of the entrepreneurs are between 18–34 years of age. China is also distinct in having a high proportion of young entrepreneurs, with 57% between 18 and 34 years of age, and less than one quarter falling into the older age groups (45–64 years). In certain economies, there is a flattening out of the bell-shaped curve, where similar participation levels are reported across all or most of the age ranges. Examples of this pattern include Palestine, Japan, Pakistan, Hungary and Bosnia/Herzegovina.

Gender Differences

GEM has consistently shown that the ratio of male to female participation in early-stage entrepreneurial activity varies considerably across different economies, possibly reflecting differences in culture and customs regarding women's participation in the economy: for example, societal views about women's role in the workplace and in business more specifically. Women enter entrepreneurship for many of the same reasons as men, such as to support themselves and their families, to enrich their lives with careers as well as attain financial independence. Yet aside from different participation rates, women show marked differences from men in characteristics such as their attitudes about entrepreneurship, the industries they operate in, and their ambitions for growth, as the most recent GEM women's report shows (Kelley, et al., 2011).

Figure 2.6 shows the percentage of male and female respondents who are involved in early-stage entrepreneurship in the geographic regions. Individual results by economy, including the proportion of necessity and opportunity-driven entrepreneurs by gender, can be found in **Appendix 1**, **Table 3**. In 2012, the rates vary from almost equal participation in Sub-Sahara Africa (with the exception of South Africa, where men are 1.6 times more

likely than women to start a business) to the Middle East and North Africa where men are 2.8 times more likely to start a business than women (with the exception of Israel, where men are 1.4 times more likely than women to start a business).

In Ecuador and Panama in Latin America, and Ghana and Nigeria in Sub-Saharan Africa, as well as Thailand, there are slightly more women than men engaged in entrepreneurship. On the other hand, in Egypt, Palestine, and Republic of Korea, women compose less than one-fifth of all entrepreneurs. More notably, only 5% of the entrepreneurs in Pakistan are women.

An analysis of opportunity and necessity motives shows that men in Latin America and Sub-Saharan Africa are more likely opportunity-motivated, while women have higher necessity motives. This is interesting, given that these regions have fewer differences between the sexes in TEA rates. In other words, although relatively more women participate in entrepreneurship in these regions, they are more likely necessity-motivated.

In contrast, women in Asia are proportionately more likely opportunity-motivated, with men showing comparatively greater necessity motivations. With low entrepreneurship rates among women in this region, however, there are still fewer opportunity-motivated women than men entrepreneurs in the population; yet there are even fewer with necessity motives. This result may indicate that, although there are high push motives in this region, necessity drives more men than women to enter this activity.

Two regions with comparatively similar motives between the sexes can be seen in the MENA and EU regions; both also show among the highest regional-level gender disparities. While it appears that women are pushed into
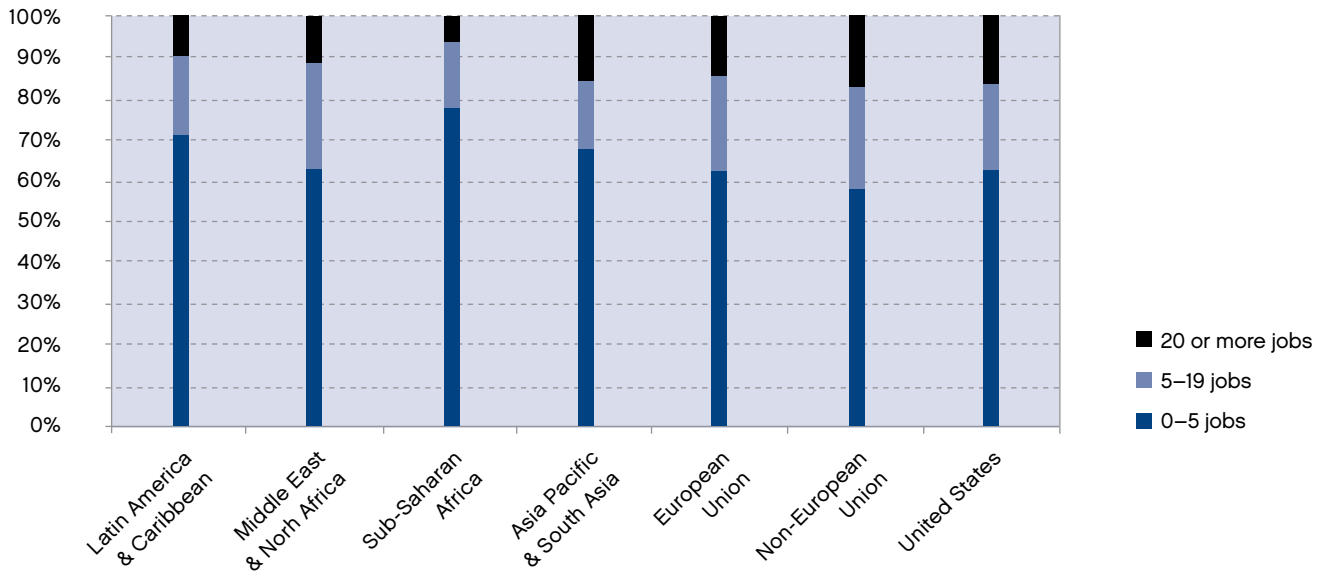
Figure 2.7: Job Growth Expectations for Early-Stage Entrepreneurship Activity by Geographic Region

entrepreneurship out of necessity more often than men in Latin America and Sub-Saharan Africa, a lower sense of necessity may help account for the lower levels of female participation in Asia, MENA and the EU.

2.3 Growth Aspirations

Growth expectations are an important measure in GEM for two main reasons. First, they illustrate that not all business startup activity is the same. An economy might have a lot of entrepreneurs, but mostly those employing one or a few people while another might have fewer entrepreneurs, but with a large proportion of these pursuing high growth.

By tracking growth perceptions, GEM enhances the TEA measure of the prevalence of entrepreneurship with an indication of the differential impact entrepreneurs can have on their economies. Second, growth expectations relate to job creation potential, which is an important policy concern for nearly every government, particularly in the aftermath of the global financial crisis and the accompanying upswing in unemployment rates.

GEM asks early-stage entrepreneurs how many employees (other than the owners) they currently have and expect to have in the next five years. The difference between current and expected employees indicates growth expectations. This measure relates to the entrepreneurs' expectations about the potential for their businesses, but also about their own ambitions to grow their ventures. Stated differently, entrepreneurs may either perceive their business has high growth potential or they simply endeavor to pursue growth.

Figure 2.7 shows growth expectations as a percentage of TEA for each geographic region. Results for individual economies can be found in **Appendix 1**, **Table 4**. Three levels of growth are shown here: the proportion of entrepreneurs projecting low (0–5 new employees in five years), medium (6–19 new employees), or high (20+ new employees) growth in their businesses.

The results show that Sub-Saharan Africa generally exhibits limited growth aspirations, with 80% of the entrepreneurs indicating they expect to add less than five employees within the next five years and only 6% projecting 20 or more new jobs. This is notable, given that there are a high number of entrepreneurs in this region, and illustrating that a simple count of entrepreneurs does not tell the whole story. Overall, Sub-Saharan Africa contains a high level of employment in entrepreneurial businesses, but these take place in many enterprises with little growth prospects.

In contrast, the Non-EU, despite its low TEA rate, has nearly a fifth of its entrepreneurs projecting growth of 20 or more employees. With relatively few individuals with low growth projections entering entrepreneurship, perhaps there are conditions or attitudes that make this activity more worthwhile when there is growth potential or ambitions – or less worthwhile if one will not, or cannot, pursue growth.

The USA shows a high proportion of 20+ growth projections in addition to a high TEA rate for an innovation-driven economy, demonstrating both prevalence and impact of entrepreneurship in this economy. Turkey, Latvia, Singapore, China, and Colombia also exhibit both high TEA and high proportions of 20+ growth entrepreneurs relative to other economies in their regions.

Research Papers by GEM Scholars

Anokhin, S., & Wincent, J. 2012. Start-up rates and innovation: A cross-country examination. *Journal of International Business Studies*, 43(1): 41-60

Research Issue
It is widely believed that innovation and entrepreneurship are positively related, and that both drive economic growth. But there has been surprisingly little systematic analysis of these relationships, particularly where the contribution of entrepreneurship to innovation is concerned. Are higher start-up rates always better? More importantly, *when* will high start-up rates be good for innovation and economic growth? This is an important question for policy: if the economic contribution of start-up firms depends on other factors, policies to support growth through entrepreneurship may not be effective if those other factors are ignored. In their study, Sergey Anokhin and Joakim Wincent addressed this question by exploring the joint effect of economy-level start-up rates, relative wealth (GDP per capita) and R&D per capita on economy-level patents and total factor productivity (TFP).

Theory and Method
Anokhin and Wincent drew inspiration from Schumpeter's works and from more recent empirical research to form the general expectation that, overall, there should be a weak *negative* relationship between an economy's start-up rates and innovation. They also hypothesised that an economy's development stage moderates this relationship, such that in 'innovation-driven' economies, this relationship should be positive. To test these hypotheses, they combined GEM data with World Bank's World Development Indicators, Penn World Table, Heritage Foundation and the World Health Organization. Total Factor Productivity they computed using Data Envelopment Analysis. Panel regression was used to test the hypotheses.

Findings
Consistent with their hypotheses, Anokhin and Wincent found that an economy's Total Early-Stage Entrepreneurship rate was weakly and negatively associated with both patenting rate and Total Factor Productivity (TFP), even when controlling for GDP per capita. Interestingly, they also found that in innovation-driven economies, start-up rate was positively associated with both patenting rate and TFP. They also found the same relationship in economies with a high GDP per capita. Furthermore, when an economy's per-capita R&D investment was high, start-up activity contributed positively both to patenting rates and TFP.

Implications
Anokhin and Wincent's study again confirms that the quality and impact of entrepreneurial activity can vary significantly across economies. In other words, higher start-up rates only contribute positively towards economy-level innovation and Total Factor Productivity when the right framework conditions are in place. Specifically, if an economy does not invest in R&D and innovation, entrepreneurs will have little scope of acting as 'agents of creative destruction' by exploiting technological advances created by research. It is possible that this association is driven by both resource and selection effects. The resource effect means that if a economy invests in R&D, there will be advances for entrepreneurs to exploit. The selection effect means that in high-income, innovation-driven economies, there will be more qualified, high-potential entrepreneurs around to start new businesses. The findings also underscore the important point that policy investments in new firm creation alone will not advance economic growth unless accompanied with investments in education and innovation in general. Entrepreneurship can support economic growth, but only as part of a broader policy toolset.

GEM has identified three sets of framework conditions, the underlying fundamentals that are required for a well-functioning business environment and will facilitate innovation and entrepreneurship in society.

GEM EXPERTS'
Assessment of the National Entrepreneurial Environments

The GEM model (**Figure 1.1**) illustrates the relevant national conditions that impact on economic development and activity more generally, and those facilitating innovation and entrepreneurship more specifically in a society. Three sets of framework conditions are expected to concern public and policy makers at different stages of development.

The basic requirements, namely a country's macro-economic stability, institutions, infrastructure, health and primary education, are the underlying fundamental conditions required for a well-functioning business environment. These requirements are usually the focus of development efforts in factor-driven countries. As these factors become relatively established, and the economy moves toward the efficiency stage, more funding and development efforts should focus on the efficiency enhancers. These factors include higher education and training, goods and labour market efficiency, financial market sophistication, technological readiness and market size. The model then looks at factors that are aimed at stimulating and supporting innovation and entrepreneurial activity. The features that are expected to have a significant impact on the entrepreneurial sector are captured in the nine Entrepreneurial Framework Conditions (EFCs) and are

illustrated and described in **Figure 3.1**. The National Experts' Survey (NES) provides insights into the ways in which these EFCs either foster or constrain an entrepreneurial climate, activity and development. In order to assess the national conditions influencing entrepreneurial activity at least 36 experts in each country complete a closed questionnaire on factors relating to our entrepreneurial environment. The responses are measured on a 5-point Likert scale where a score of 1=completely false and 5=completely true. The statements are phrased so that a score of 4 or 5 would indicate that the expert regarded the factor as positive for entrepreneurship, while a score of 1 or 2 would indicate that the expert regarded the factor as negative for entrepreneurship. **Figure 3.2** provides an overview of the rankings for the entrepreneurial framework conditions by the national experts by geographic regions.

Figure 3.2 shows the conditions by geographic regions. It should be noted that three of the conditions (education, national policy, and internal markets) each contain two subconditions, and these are broken out in **Figure 1.2**. Education includes primary/secondary school and post school training. National policy contains both general policy and regulatory policy. Internal markets refers to both

Entrepreneurial Finance	Government Policy	Government Entrepreneurship Programs
The availability of financial resources, equity, and debt, for new and growing firms, including grants and subsidies.	The extent to which government policies, such as taxes or regulations) are either size- neutral or encourage new and growing firms.	The extent to which taxes or regulations are either size-neutral or encourage new and growing firms.
Entrepreneurial Education	**R&D Transfer**	**Commercial and Legal Infrastructure**
The extent to which training in creating/managing new, small or growing business entities is incorporated within the education and training system at all levels. There are two sub-divisions – primary and secondary school entrepreneurship education and training; and post-school entrepreneurship education and training.	The extent to which national research and development will lead to new commercial opportunities, and whether or not these are available for new, small and growing firms.	The presence of commercial, accounting and other legal services and institutions that allow or promote the emergence of small, new and growing business entities.
Entry Regulations	**Physical Infrastructure**	**Cultural and Social Norms**
There are two sub-divisions – market dynamics, i.e. the extent to which markets change dramatically from year to year; and market openness, i.e. the extent to which new firms are free to enter existing markets.	Ease of access to available physical resources – communication, utilities, transportation, land or space – at a price that does not discriminate against new, small or growing firms.	The extent to which existing social and cultural norms encourage, or do not discourage, individual actions that might lead to new ways of conducting business or economic activities which might, in turn, lead to greater dispersion in personal wealth and income.

Figure 3.1: The GEM Entrepreneurial Framework Conditions

dynamics (the level of change in markets from year to year) and openness (the extent to which new firms are free to enter existing markets).

The entrepreneurial framework condition Physical Infrastructure refers to the presence of and access to available physical resources e.g. communication, utilities, transportation, land or space, at a price that does not discriminate against new, small or growing firms. Physical infrastructure gets an average ranking above 4 in the USA and Asia Pacific and South Asia, with 23 nations reporting evaluations of 4 or more points for these criteria. Physical infrastructure is also rated highest in the remaining regions, other than Sub-Saharan Africa where it has an average ranking of 3 (second highest ranking after internal market dynamics). Angola has the lowest ranking with respect to physical infrastructure, and, as the country has recently emerged from a lengthy civil war, the lack of physical infrastructure is unsurprising. As Angola is a factor-driven country, physical infrastructure is a basic requirement that should enjoy government focus. Angola is one of only four countries that did not consider physical infrastructure to be one of the three most positive areas that encourage entrepreneurship in the country (**Table 3.1**). Switzerland had the highest ranking for physical infrastructure.

The entrepreneurial framework condition Education and Training relates to the extent to which entrepreneurship and entrepreneurial qualities receive attention in all phases of the educational and training system. The variable primary

and secondary education is ranked lowest by five out of the six regions (**Figure 3.2**), with only Sub-Saharan Africa scoring R&D transfer lower than primary and secondary education. Thirty countries (43.47%) participating in the 2012 GEM surveys scored primary and secondary education below 2. The Netherlands (3.07) is the only country with a score for this item above 3. The Middle East and North Africa provided the lowest score for primary and secondary education. Experts, when asked to rate whether they believed that the population in their country had the skills and knowledge to start a business, were more critical than the population. This evaluation is consequent with the experts' perception about education and training. Experts in 67 countries scored under 3 with only Israel and the Netherlands obtaining scores over 3. Experts in Japan were the least positive about whether the population in their country had the skills and knowledge to start a business.

The Research and Development framework condition refers to the extent to which national research and development will lead to new commercial opportunities and whether or not these are available for new, small, and growing firms. Research and Development scores below 3 in all six geographic regions (**Figure 3.2**) and there are 12 countries scoring under 2 points. Sub-Saharan Africa is the region with the lowest average score (1.99) and Angola is the country with the lowest individual score. Angola is hampered by small numbers of researchers and the national expenditure on R&D will need to increase. The low ranking with respect to maths and science education, as indicated by the Global
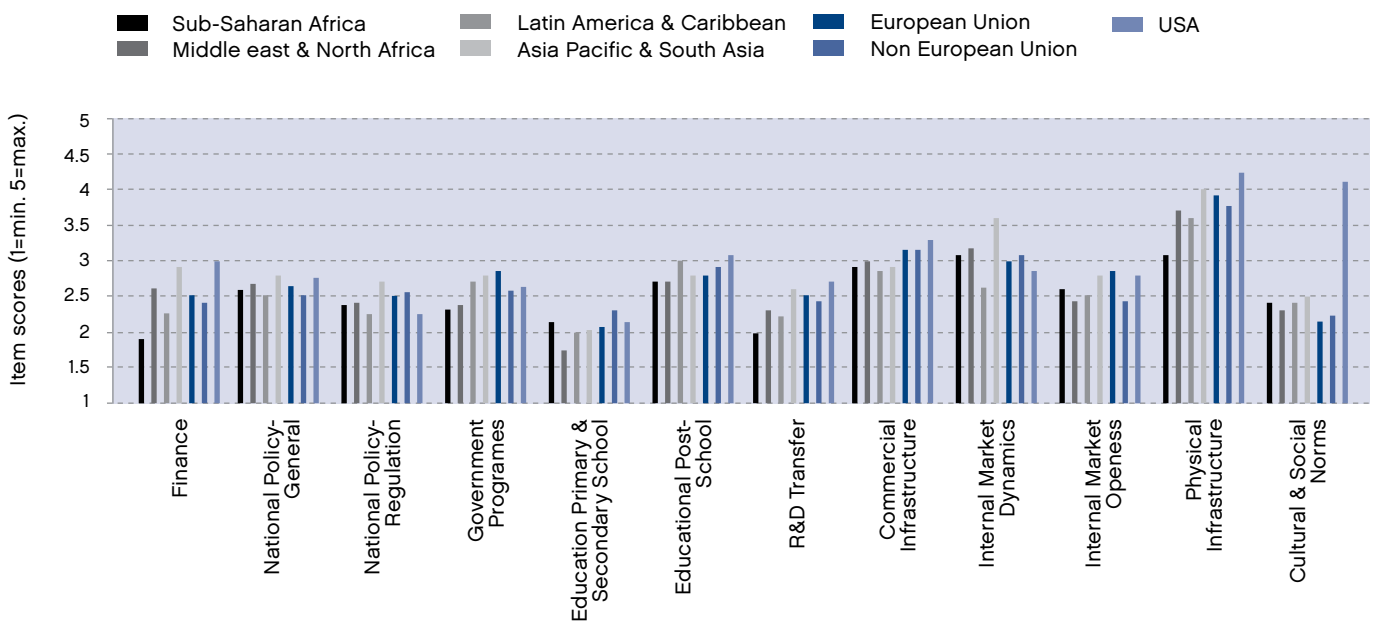
Figure 3.2: Scores on Entrepreneurship Framework Conditions Rated by National Experts, by Geographic Region (Unweighted Country Averages)

Competitiveness Index and the share of the labor force that is involved in scientific and technological areas is a cause of concern. Switzerland (the country with the highest score) and Netherlands were the only countries with scores above 3.

The Financial Support framework condition describes the supply and demand of financial resources, especially for new and expanding businesses. While the score for finance was below 3 for all regions, financing for entrepreneurs was not the lowest ranked criteria in any of the geographical regions. Financing for entrepreneurs is less negatively viewed in the Middle East and North Africa as well as Asia Pacific & South Asia as it does not appear as the top five lowest ranked framework conditions. Experts in Belgium, Switzerland, Malaysia, Singapore, India and Algeria were relatively positive in their assessment of financing for entrepreneurs. Nations such as Greece and Spain that have been severely affected by the financial crisis have scores for this variable, for the 2012 year, that are below the average of the developing nations. Greece shows the worst evaluation of GEM 2012 with an average score of 1.65 for this variable. This impact on the average for the European Union could, in part, explain the low ranking for finance for entrepreneurs in the region.

The Government Policy entrepreneurial framework condition relates to the extent to which government policies seen, as a whole, influence new and growing firm. This includes the tax regime, labor market regulation, social security legislation as well as regulations and schemes that specifically aim at the small business sector. With respect to the government support in general and the priority given to entrepreneurial development, Greece (1.59) had the lowest score, which decreased the average for the European Union. Experts, in

a number of countries, felt that there was insufficient focus, on a national level, on entrepreneurial development and that many policies still benefitted large businesses. A key concern in a number of countries was that there are limited mechanisms to ensure that sufficient monitoring and benchmarking of the progress and effect of entrepreneurship and SME policies takes place. The emphasis should be on creating an enabling environment for entrepreneurial concerns, with an efficient government bureaucracy and a reduction in red tape. Experts in a number of countries, from all geographical regions believed that the national policy, in general, offered support for entrepreneurs. These countries include Ethiopia, Switzerland, France, Finland Singapore, Tunisia, Algeria, Republic of Korea, Malaysia and Colombia. With respect to government policies for example taxes and bureaucracy, there is a range of scores from Argentina with the lowest score (1.49) to Singapore that scores above 4. Experts in countries such as Switzerland, Finland, The Netherlands, Estonia and Tunisia also rate this variable positively (above 3).

The Government Programs framework condition relates to the presence of programs (at national and regional levels) and other initiatives to support new and growing firms. A number of countries in the Middle East and North Africa report low scores, with Iran, Egypt and Palestine all with scores of below 2. Greece is the only country in the European Union with a low score (under 2), while a number of countries in the European Union namely France, Germany, Austria, Ireland and the Netherlands all show positive scores of above 3. Experts in Switzerland, Singapore and Malaysia also rate the presence of programs and other initiatives to support new and growing firms positively i.e. an average score above 3.

Table 3.1: Entrepreneurial Framework Conditions Valued Most Positive (+) and Most Negative (-), per GEM Country and by Geographic Region 2012

SCALE: FROM (–) TO (+)					1 Finance, 2a Nat. Policy – General Policy, 2b Nat. Policy – Regulation, 3 Government Programs, 4a Education – Prim. And Second., 4b Education – Post-School, 5 R&D Transfer, 6 Commercial Infrastructure, 7a Internal Market – Dynamics, 7b Internal Market – Openness, 8 Physical Infrastructure, 9 Cultural and Social Norms										
1	2	3	4	5											
					1	**2a**	**2b**	**3**	**4a**	**4b**	**5**	**6**	**7a**	**7b**	**8**	**9**
SUB-SAHARAN AFRICA																
Angola					+		-	-						+	-		+
Botswana							-			-		-	+	+			+
Ethiopa					-	+			-		-			+		+	
Ghana					-		-				-			+		+	+
Malawi					-				-	+	-	+	+				
Namibia						-			-	+	-					+	+
Nigeria						-	-				-			+		+	+
South Africa						-	-	-					+	+		+	
Uganda						-			-		-		+			+	+
Zambia					-					-	-		+	+		+	
MIDDLE EAST AND NORTH AFRICA																
Algeria						-			-	+	-		+			+	
Egypt								-	-	-		+	+			+	
Iran							-	-	-				+	+		+	
Israel						-	-		-				+			+	+
Palestine								-	-				+	+	-	+	
Tunisia						+		-						+	-	+	-
LATIN AMERICA & CARIBBEAN																
Argentina					-	-			-					+		+	+
Barbados					-				-	+	-	+	+				
Brazil						-			-		-			+		+	+
Colombia					-	+			-	+			-			+	
Costa Rica					-		-		-	+			+			+	
Chile					-	+			-	+	-					+	
Ecuador					-	+	-		-	+						+	
El Salvador					-	-				+	-					+	+
Jamaica						-	-			+	-					+	+
Mexico					-		-		-	+						+	+
Panama					-				-	+	-		+			+	
Peru					-				-	+	-					+	+
Trinidad & Tobago						-	-		-	+			+			+	
Uruguay					-				-	+			+		-	+	
ASIA PACIFIC SOUTH ASIA																
China					-			-	-					+		+	+
India							-		-		-			+		+	+
Japan					-		-		-					+	+	+	
Republic Of Korea					-	+			-					+	-	+	
Malaysia					+		-		-		-			+		+	
Pakistan						-		-	-				+	+		+	
Singapore						+	+	-			-				-	+	
Taiwan						-			-		-			+		+	+
Thailand									-		-			+	-	+	+
NON EUROPEAN UNION																
Bosnia & Hz						-					-		+	+	-	+	
Croatia						-	-		-				+	+		+	
Macedonia					-				-				+	+	-	+	

Norway	-	-			+		+		-	+	
Russia	-			-		-	+	+		+	
Switzerland	-				-	+	+	-		+	
Turkey	-				-	-		+		+	+
EUROPEAN UNION											
Austria				+	-		+	-		+	-
Belgium			-		-		+		+	+	-
Denmark	-	-		+		-	+			+	
Estonia		-	+		-	-		+		+	
Finland	-		+		-	-		+		+	
France		+		+	-	-				+	-
Germany				+	-	-	+			+	-
Greece	-	-				-	+	+		+	
Hungary		-	-			-	+	+		+	
Ireland	-			+	-		+	-		+	
Italy			-	-		-	+	+		+	
Latvia			-			-	+	-		+	+
Lithuania			-			-	+	+	-	+	
Netherlands	-	-				+	-	+		+	
Poland			-		-	-	+				+
Portugal		-	-	+	-		+			+	
Romania	-	+	-		-			+		+	
Slovakia		-			-	-	+		+	+	
Slovenia		-	-			-	+	+		+	
Spain	-			+	-	-	+			+	
Sweden				+	-	-	-	+		+	
United Kingdom	-			-	-	+	+			+	
UNITED STATES											
USA			-	-	-	+				+	+

Table 3.1 identifies the three EFCs with the lowest scores as well as the three with the highest scores for each country that participated in the 2012 national experts' survey.

Two entrepreneurship framework conditions stand out for their high ratings in both Sub-Saharan Africa and MENA: (1) Internal Market Dynamics and (2) Physical Infrastructure. Physical Infrastructure received high ratings throughout the six geographic regions with only five countries not rating it as one of the three framework conditions rated most positively. This is a positive finding as infrastructure is a basic requirement and once the basic requirements are in place, countries are able to focus on other requirements that enable entrepreneurial activity. Latin America and the Caribbean also rated post-school education highly. Commercial Infrastructure and Internal Market Dynamics are rated highly throughout Europe.

Primary and Secondary Education was rated as one of the three most negative framework conditions by the majority of countries throughout all geographic regions. Entrepreneurial Finance was also rated poorly; however, this condition has some interesting geographic variation with no countries in the MENA region and almost all countries in Latin America and the Caribbean rating this poorly. Malaysia and Angola in contrast rated Entrepreneurial Finance as one of the three most positive conditions.

Research Papers by GEM Scholars

Bowen, H. P., & De Clercq, D. 2008. Institutional Context and the Allocation of Entrepreneurial Effort. *Journal of International Business Studies*, 39(1): 1–21
Research Issue

William J. Baumol famously hypothesised that the *level* of entrepreneurial effort actually does not vary much across economies; only the forms that this effort takes do. Depending on an economy's institutional context, Baumol asserted, entrepreneurial effort in an economy may turn productive, unproductive or even destructive. A corollary of this assertion is that it is not the *supply* of entrepreneurs that constitutes the key bottleneck to economic dynamism, but rather, the activities to which entrepreneurial individuals channel their effort. Rather than obsessing about the supply of entrepreneurs, therefore, policy-makers need to address the institutional conditions that regulate the allocation of this effort. However, although Baumol's hypothesis is widely known, it has rarely been tested empirically. In their study, Harry Bowen and Dirk De Clercq used GEM data to test whether the forms of entrepreneurial effort respond to policy-addressable institutional conditions that prevail in the economy.

Theory and Method

Bowen and De Clercq drew on Baumol's theory and on instutitional economics to derive hypotheses on the effect of the extent of an economy's financial capital targeted at entrepreneurship; an economy's human capital; regulatory protection; regulatory complexity; and the level of corruption on the rate of high-aspiration entrepreneurial entries in the economy. To test their hypotheses, they combined GEM adult-population and expert questionnaire survey data with World Economic Forum's executive survey data to form a database that covered 40 economies during years 2002 to 2004 (economy-level averages were used over the period). To analyse their data, they used a grouped data Logit model, which simulated individual-level data consistent with observed economy-level prevalence rates.

Findings

Bowen and De Clercq found that the availability of financial capital for entrepreneurs in an economy was positively associated with high-growth entrepreneurship, when a number of intervening variables were controlled for. They also found the quality of human capital associated with high-growth entrepreneurship. As expected, the level of corruption hindered entry into high-growth entrepreneurship. Bowen and De Clercq did not find statistically significant influences for the economy's level of regulatory protection or regulatory complexity.

Implications

Bowen and De Clercq's study adds to the increasing body of evidence that economy-level institutional factors regulate the quality and allocation of entrepreneurial effort in the economy, and therefore, indirectly, the economy's economic dynamism. Although Bowen and De Clercq did not provide a direct test of the Baumol hypothesis that the quality of entrepreneurial efforts varies more than its overall level, their study provides clues for policy-makers on how to facilitate the kind of entrepreneurial activity that is most likely to contribute to economic dynamism. Importantly, all of the institutional influences identified by Bowen and De Clercq can be addressed by policy. Numerous programs already aim at increasing the availability of financial capital (both public and private) for entrepreneurial ventures. It is also relatively straightforward to increase the provision of education and training that is relevant for entrepreneurship. Although addressing the level of corruption is a great deal more challenging, this study provides yet another reminder of the deleterious effect of corruption on economic development.

International migration is a key contributor to globalization in cultures and in business. The GEM 2012 study included a special focus on the topic of international migration and its impact on entrepreneurship.

ENTREPRENEURSHIP and Migration

by Arne Vorderwülbecke

4.1 Introduction

International migration is a key contributor to globalization in cultures and in business. Today there are more than 210 million international migrants worldwide and the long-term trend indicates a further increase within the next decades. Since the year 2000 alone, the number of international migrants increased by 50 million[1].

An important area of debate on the socio-economic effects of migration, and on the implementation of corresponding strategies, centers around the labor-market. In economies with large numbers of immigrants, this debate focuses on facilitating the economic and social integration of the migrant population as well as on regulations to ease the migration-related pressure on the labor-market. In particular, the inflow of highly-qualified migrants is considered beneficial in many recipient economies to the extent it alleviates a shortage of skilled labor.

On the other hand, for economies of origin, emigration is usually associated with negative development prospects regarding the selectivity of migration. In many emigration economies, the outflow of highly-qualified persons raises concerns about a "brain-drain" and the loss of development

potential. However, in the past decade emigration has also been related to positive effects in economies of origin. In this respect, social ties of migrants to their community of origin, financial remittances and return migration potentially induce economic development.

Discussions on the labor-market issues of migration usually view migrants as dependently-employed, which is arguably the typical case. Only recently has the potential self-employment of migrants been considered a vehicle for their socio-economic integration and a catalyst for economic growth. In this respect, empirical evidence from a number of economies suggests that migrants differ from the non-migrant population in their prevalence for entrepreneurial activity, their attitudes toward self-employment as well as their motivation for starting a firm. Furthermore, studies reveal that these firms differ in characteristics such as market segments, growth orientation and innovativeness (see for example Constant and Zimmermann 2006, De La Vega et al. 2008, Coduras 2008, Irastorza and Pena 2007, Light 1984, Brixy et al. 2010).

Examples of migrant-founded companies include Google, Ebay and Sun Microsystems. In the United States, migrant entrepreneurs account for more than a half million jobs (Drew Hohn et al. 2012). This is a clear indication of the positive impact that migrants can have on a recipient economy; by starting up businesses, they contribute to employment growth and innovation. However, the effects of migrant entrepreneurship are not confined to recipient economies.

Economies of origin are also likely to be positively affected by their diasporas' entrepreneurial activity – at least in the long term. Migrant entrepreneurs often maintain strong social ties to their homeland community, with positive benefits such as the transfer of business and technological know-how, information exchange and remittances. Particularly in less developed economies, returning migrant entrepreneurs may be better equipped to overcome obstacles and start businesses. This phenomenon is observable in economies such as Taiwan, China, Republic of Korea, India and Israel (Saxenian 2006).

The distinctiveness of migrants' entrepreneurial propensity can be explained by considering both internal characteristics of the individual migrant, as well as the external environment of the host economy he/she operates in (Kloosterman et al. 1999). Following this line of argument, migrants can perceive and seek entrepreneurial opportunities through specific sets of resources and personality-traits (Kloosterman/Rath 2001, Kloosterman 2010). These are a consequence of at least three aspects. First, immigration occurs in a highly selective manner, which leads to differing demographic and socio-economic structures among indigenous and migrant populations (Levie 2007, OECD 2010). Second, the decision to leave one's economy of birth correlates with personality-characteristic such as locus of control, self-efficacy and risk-averseness – which are also believed to have a positive effect on a person's likelihood to become engaged in entrepreneurial activity. Third, entrepreneurial attitudes are highly influenced by cultural heritage, which is likely to be different in migrants' homelands (Sahin et al. 2007).

Migrants are also embedded in the economic, social, institutional and cultural environment of their host economy, which influences both their entrepreneurial propensity as well as the realization of their entrepreneurial intentions (Kloosterman and Rath 2001). Formal and informal discrimination or stereotyping (e.g. in the form of regulations), a lack of information about the labor-market, or language and cultural barriers may limit employment opportunities and may push less-educated migrants into self-employment. For similar reasons, migrants intending to start a business face difficulties when dealing with institutions, investors (such as banks) potential customers, and other stakeholders, which can diminish their chances of success.

Empirical evidence on the entrepreneurial behavior and attitudes of migrants has primarily been limited to case studies of single economies (e.g. Drew Hohn et al. 2012 for the US, Levie and Hart 2009 for the UK, De La Vega et al. 2008 and Irastorza and Pena 2007 for Spain, Brixy et al. 2011 for Germany) and the comparison of a small number of economies (e.g. OECD 2010).

In 2012, the GEM survey included a special set of questions on migration, providing evidence on the entrepreneurial activities and motivations of migrants from 69 economies. The analysis specifically considers the impact of migrants' entrepreneurial activity on the economies in which they operate (ie, growth-, innovation- and internationalization-orientation).

4.2 Definitions

This chapter applies two different definitions of migrants. First generation migrants include individuals that were born outside the economy in which they now reside and have assumedly experienced migration themselves. Second-generation migrants are individuals whose mother and/or father were born outside the economy in which they now reside. It is assumed that their affiliations with their migrant communities exert influence on their entrepreneurial behavior and attitudes.

Entrepreneurial behavior, attitudes and motivations do not solely depend on the personality characteristics of a migrant, but are strongly shaped by the context of the recipient economy, which can be impacted, at least in part, by both geographic and economic development-level factors. This chapter is therefore based on an aggregation of economies by geographic location (USA, EU, non-EU, Asia, South and Central America, MENA, Sub-Saharan Africa) and stages of economic development (Innovation-, Efficiency- and Factor-driven economies). Additionally, limited sample sizes from only one year's survey do not allow for accurate estimates of migrants' entrepreneurial activity across single economies; aggregating data thus helps ensure robust results.

In many economies the migrant population is extremely heterogeneous with regard to the motives and circumstances of their migration decisions (e.g. environmental, political, economic, cultural and educational migration), the demographic and socio-economic characteristics of the migrants (age, gender, qualification, etc.) and the presumable duration of stay in the host economy. In order to account for these variations, this chapter considers origin as one dimension of heterogeneity. To ensure accuracy of the estimates, economies of origin (first-generation migrants) and the parents' economies of origin (second-generation migrants) are also aggregated by economic development phase.

4.3 Prevalence and Motivation of Migrant Entrepreneurial Activity Across Different Groups of Economies

Table 4.1 presents the prevalence of entrepreneurial activity (defined as total early-stage entrepreneurial activity (TEA) among the adult population) of migrants compared to the non-migrant population in different geographic regions of the world. The first observation is that the prevalence of entrepreneurial activity of both first and second-generation migrants varies widely across world regions. The pattern is very similar to TEA rates among the non-migrant population, where the South and Central American and Sub-Saharan African economies exhibit the highest rates and the Western European economies the lowest rates. These variations suggest that the entrepreneurial framework conditions in each world region, such as economic, institutional and cultural circumstances, have a similar impact on the entrepreneurial propensity of both migrants and non-migrants.

The second observation is that the world regions show distinct variation in migrants' entrepreneurial prevalence relative to the non-migrant population. In most regions first-generation migrants are more active in business start-ups than non-migrants. The only exceptions are Eastern Europe (including Russia), where there are no such differences, and South and Central America, where first generation migrants exhibit lower prevalence of entrepreneurial activity than non-migrants.

With respect to second-generation migrants, **Table 4.1** reveals that the prevalence of migrant versus non-migrant entrepreneurs varies more across the world regions than does first-generation migrants entrepreneurship. In the USA and Asia for instance, first-generation migrants exhibit higher TEA-rates than non-migrants, while second-generation migrants display very similar rates to the non-

Table 4.1: TEA-rates of Migrants vs. Non-Migrants in World Regions

WORLD REGION	1st Generation			2nd Generation			Migrants
	TEA-rate	% of all		TEA-rate	% of all		TEA-rate
USA	16,4%	11,7%		12,3%	15,9%		12,9%
Western Europe (with Israel)	8,2%	10,7%		7,9%	16,1%		6,1%
Eastern Europe, Russia	8,0%	4,7%		9,9%	13,3%		8,2%
Asia	11,7%	3,9%		9,8%	7,5%		9,4%
South and Central America	17,1%	1,5%		17,5%	3,5%		18,8%
MENA	10,6%	1,4%		12,3%	4,2%		9,3%
Sub-Saharan Africa	31,3%	1,8%		30,4%	3,5%		26,8%
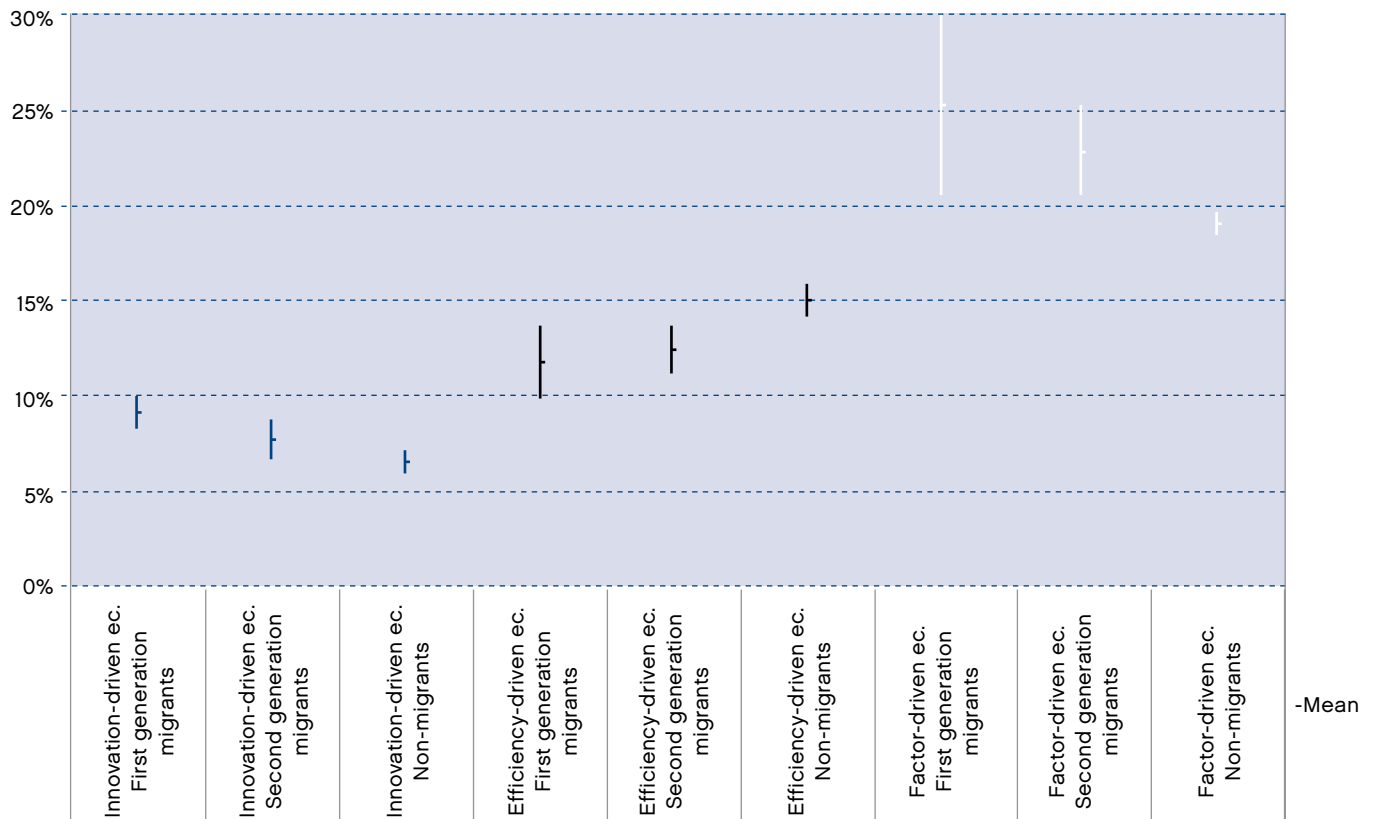
Figure 4.1: TEA-rates of Migrants and Non-Migrants Across Different Stages of Economic Development

migrant population. On the other hand, in Western Europe, Eastern Europe, and MENA, second generation migrants are more active in business start-ups than non-migrants. This is particularly interesting in the case of Eastern Europe and MENA, where entrepreneurship levels of second-generation migrants even exceeds that of first-generation migrants. This comparison of first and second-generation migrant entrepreneurship suggests that both immigration itself and one's affiliation to a migrant community are associated with distinct entrepreneurial behavior.

The third observation is that migrants' contribution to overall entrepreneurial activity differs widely across world regions. In the USA and Western Europe, as many as one tenth of entrepreneurs are first-generation migrants and more than one-seventh are second generation migrants. Conversely, in South and Central America, the MENA-states and Sub-Saharan Africa, migrants play a minor role in overall entrepreneurial activity. This pattern reflects the different population composition of the regions, whereas the USA and Western Europe have a higher share of migrants in their population than, for example, South and Central America or Asia.

Figure 4.1 presents TEA-rates of migrants and non-migrants in innovation-, efficiency-, and factor-driven economies. The prevalence of migrant entrepreneurial activity across development stages mirrors that of non-

migrant involvement in entrepreneurship. In factor-driven economies, both first and second-generation migrants are more active in business start-ups than in efficiency-driven economies, while innovation-driven economies exhibit the lowest entrepreneurial involvement of migrants. This pattern emphasizes that entrepreneurial framework conditions common to particular development stages influence the prevalence of both migrant and non-migrant entrepreneurship similarly.

Figure 4.1 reveals that, in innovation- and factor-driven economies, both first and second-generation migrants exhibit a higher rate of entrepreneurship than non-migrants. The efficiency-driven economies show the opposite pattern: a lower TEA-rate among first-generation migrants compared with non-migrants. In innovation-driven economies, more than one-tenth of new businesses are founded by first generation migrants and more than one-seventh by a second generation migrant. In contrast, in efficiency- and even more so in factor-driven economies, migrants' contribution to overall entrepreneurial activity is relatively small.

Individuals decide to become self-employed for different motivations. As mentioned earlier in this report, GEM captures individual drivers for starting a business and differentiates between necessity- and opportunity-driven motives. The former relates to individuals who start businesses because

Figure 4.2: Percentage of Migrant and Non-Migrant TEA-Entrepreneurs, who Start Up for Necessity-Motivation Across Different Stages of Economic Development

there were no other options for work, while the latter includes entrepreneurs who start their business after identifying an opportunity. One potential explanation for migrants' distinctiveness regarding entrepreneurial activity in various world regions is that it is more difficult for them to take up regular dependent employment.

Following this line of argument, migrants' higher prevalence towards entrepreneurship compared to non-migrants in innovation- and factor-driven economies is likely to result from constraints faced in the host economies' labor markets – presumably due to such conditions as language or cultural barriers, a lack of accredited educational and training qualifications, formal and informal regulations, or even outright discrimination; this, in turn, pushes them into self-employment. Perhaps, then, in efficiency-driven economies, migrants' lower entrepreneurial activities may be a consequence of better job opportunities compared to the other development levels.

An analysis of necessity-motivated entrepreneurship between migrants (both first and second generation) and non-migrants, however, fails to support the above argument, at least across the aggregate level of economic development stages (compare **figure 4.2**). The proportion of necessity-entrepreneurship of migrants across the three development-stages is relatively similar to that of non-migrants.

GEM's measure of improvement-driven opportunity (IDO) entrepreneurship includes individuals who start

businesses to pursue an opportunity and to increase their income or seek independence in their work. While the proportion of necessity entrepreneurship among the overall entrepreneurial activity does not differ between migrants and non-migrants across the stages of economic development, **Figure 4.3** shows that migrants are less likely to start a businesses for IDO-reasons than non-migrants in efficiency- (only the case for first-generation migrants) and factor-driven economies (only for second-generation migrants).

As mentioned above, the migrant population in many economies is rather heterogeneous regarding motivations, circumstances of the migration decision, demographic and socio-economic characteristics, as well as the duration of stay in the host economy. It is therefore plausible to assume that the migrant population within one recipient economy also differs in their entrepreneurial prevalence and motivations. In order to account, at least partly for this heterogeneity, TEA-rates as well as the proportion of necessity-driven and improvement-driven opportunity entrepreneurship are examined by migrants' economy of origin (first generation migrants) and the economy of origin of their parents (second generation migrants). Again, because of limited sample sizes for single economies, the economies of origin are aggregated by stages of economic development. Results are confined to innovation- and efficiency-driven economies, as sample sizes do not allow for accurate estimates for migrants in factor-driven economies.
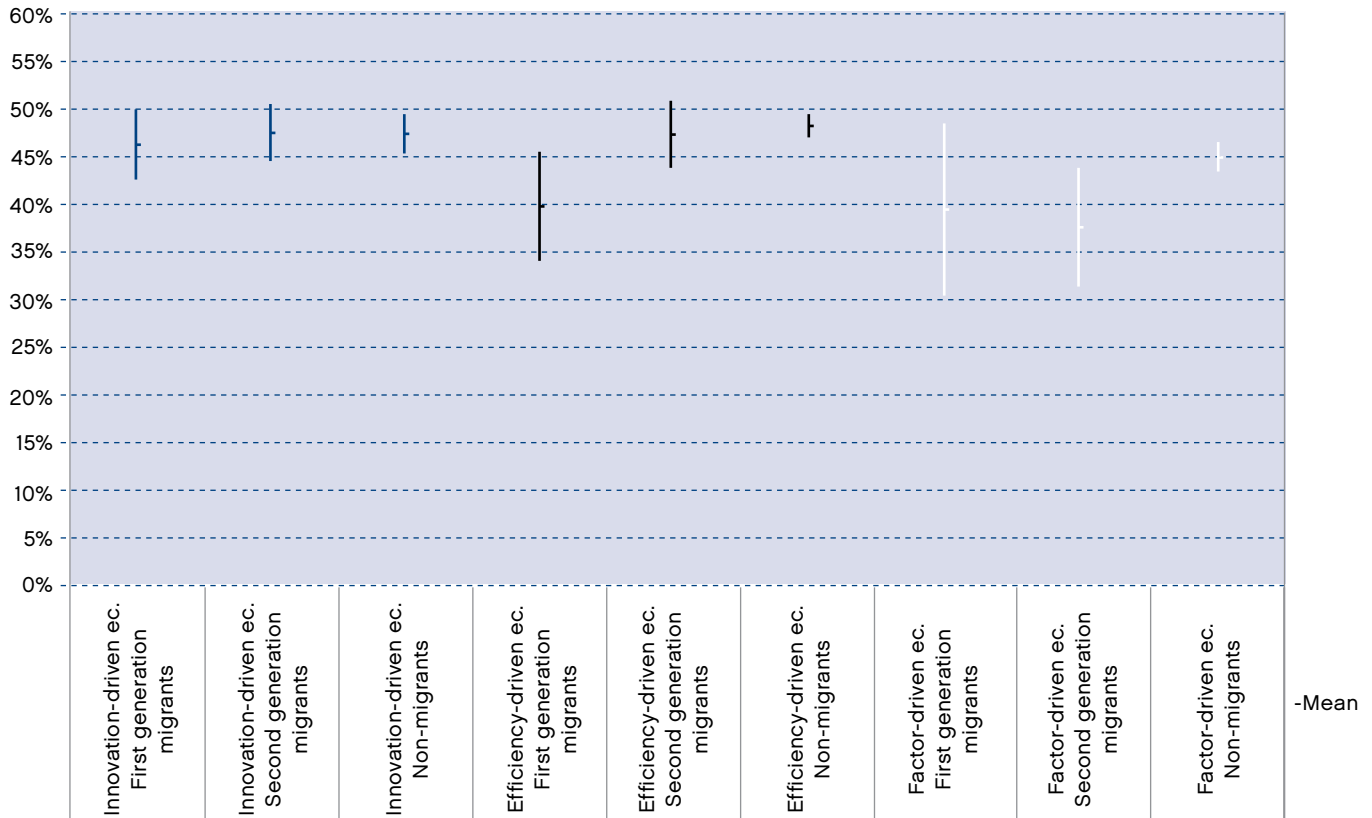
Figure 4.3: Percentage of Migrant and Non-Migrant TEA-Entrepreneurs, who Start Up for Improvement-Driven Opportunity Motivation Across Different Stages of Economic Development

TEA-rates of migrants originating from efficiency-driven economies exhibit a considerably lower prevalence for business start-ups than migrants from innovation-driven economies. In the efficiency-driven economies, entrepreneurs emigrating from innovation-driven economies were less likely to have necessity motives than those coming from efficiency or factor-driven economies. This suggests that migrant entrepreneurs that have come from wealthier regions to the developing world are less likely to be motivated by the need for income and, conversely, more likely to be pursuing opportunities to improve their income or independence. In the innovation-driven economies, there is no difference in necessity motives by economic development level of origin.

4.4 Impact of Migrants' Entrepreneurial Activity

Migrant entrepreneurs can impact the medium- and long-term prospects of the economies in which they start businesses to the extent they create employment, innovation and export opportunities. **Figure 4.4** presents the proportion of migrant and non-migrant entrepreneurs that intend to create 10 or more jobs in the next five years, grouped in the three stages of economic development.
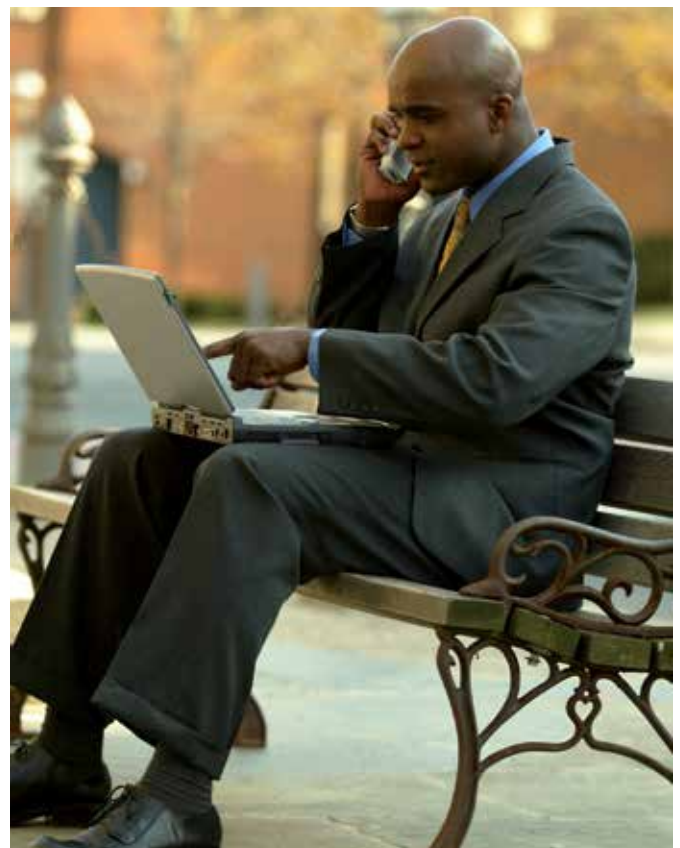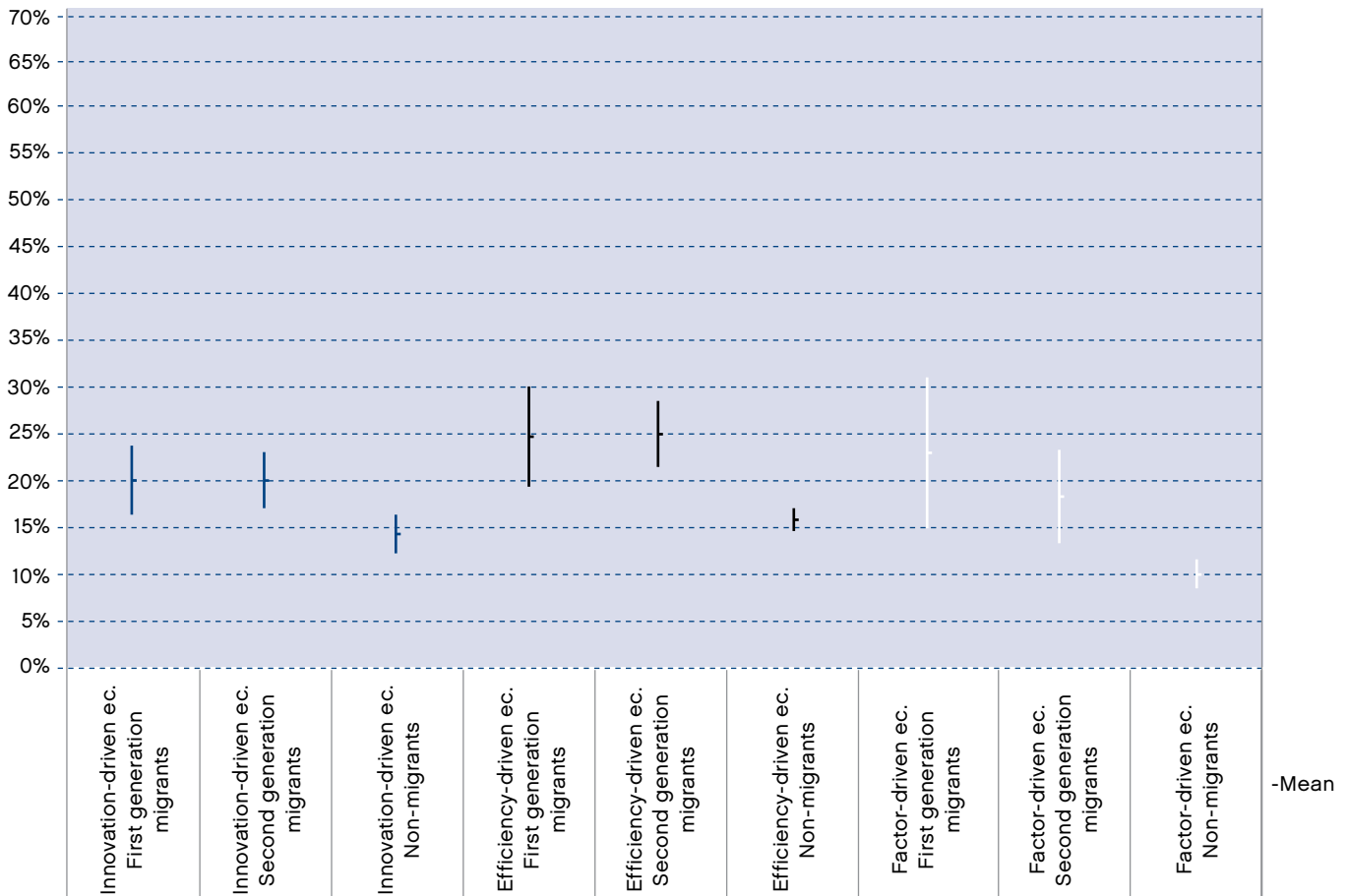
Figure 4.4: Percentage of Migrant and Non-Migrant TEA-Entrepreneurs, who Intend to Create 10 or More Jobs Across Different Stages of Economic Development

The figure shows that start-ups founded by both first and second-generation migrants are on average more growth-oriented than those of non-migrants across all economic development levels, and these differences are statistically significant. The proportion of migrant entrepreneurs expecting to create 10 or more jobs is 25% in efficiency-driven economies (non-migrants 16%), 23% in factor-driven economies (non-migrants 9%) and 20% in innovation-driven economies (non-migrants 14%). These findings emphasize that migrant entrepreneurship should be seriously considered as a source of employment in all stages of economic development.

Migrants starting businesses with innovative products or services benefit their recipient economies by introducing new value into the market and creating a foundation for industry structural renewal. As a result, they contribute to improvements in regional/national productivity and enhanced competitiveness and economic growth. GEM assesses innovation orientation by measuring the novelty of product-market-combinations, which is defined as entrepreneurial activity with current products/services

considered novel and unfamiliar to some or all customers, and that are believed to be offered only by a few or no other businesses.

Figure 4.5 indicates that, in innovation and factor-driven economies, newly founded firms started by both first and second-generation migrants are as equally innovation-oriented as non-migrants. In the efficiency-driven economies, migrants show a tendency toward more innovative products and services than non-migrants, but the differences are not statistically significant.

It is plausible to assume that many migrants offer products or services from their homeland that are new to markets and customers in the recipient economy. Examples include restaurants, country-specific retail stores or migrant community-related services. Yet innovation is not confined to cultural/migrant-specific solutions. The proportion of migrant business start-ups in medium- and high-technology sectors does not differ from that of non-migrants in all three stages of economic development. This also applies to the proportion of entrepreneurs that
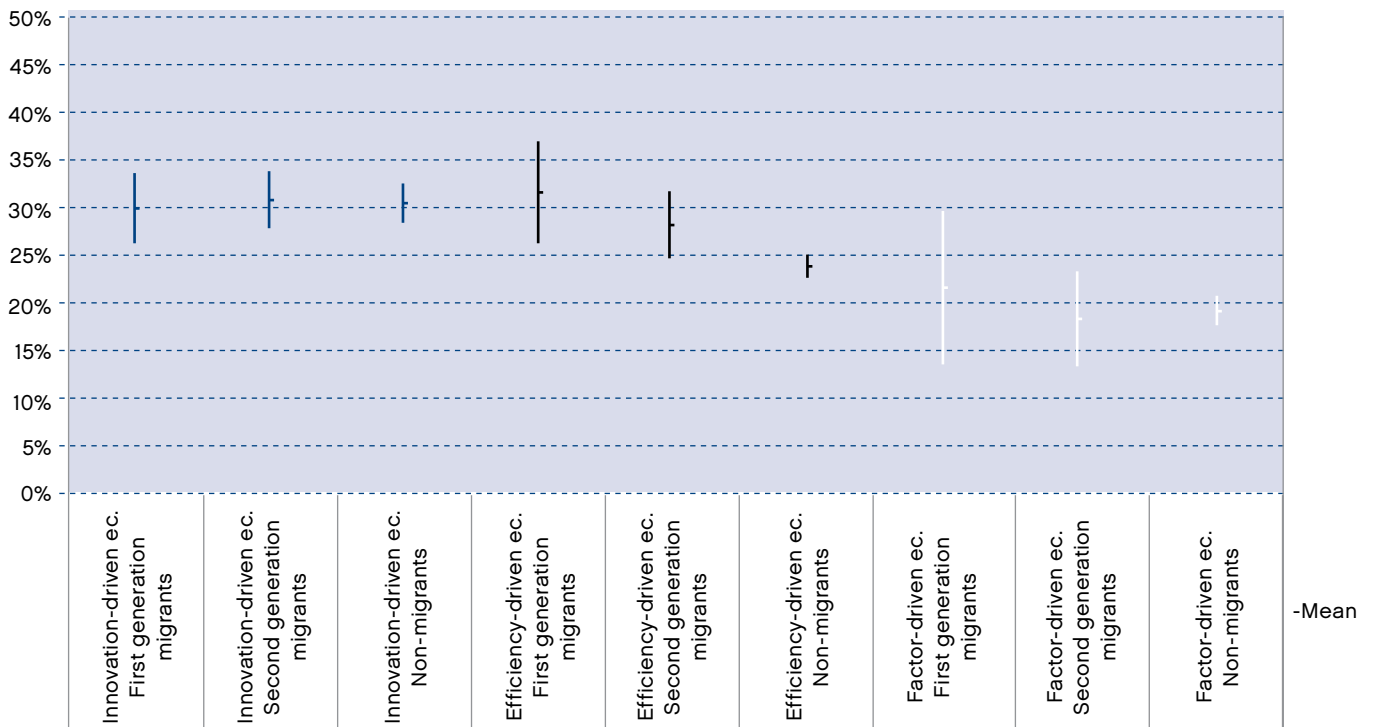
Figure 4.5: Percentage of Migrant and Non-Migrant TEA-Entrepreneurs with New Product-Market Combinations Across Different Stages of Economic Development
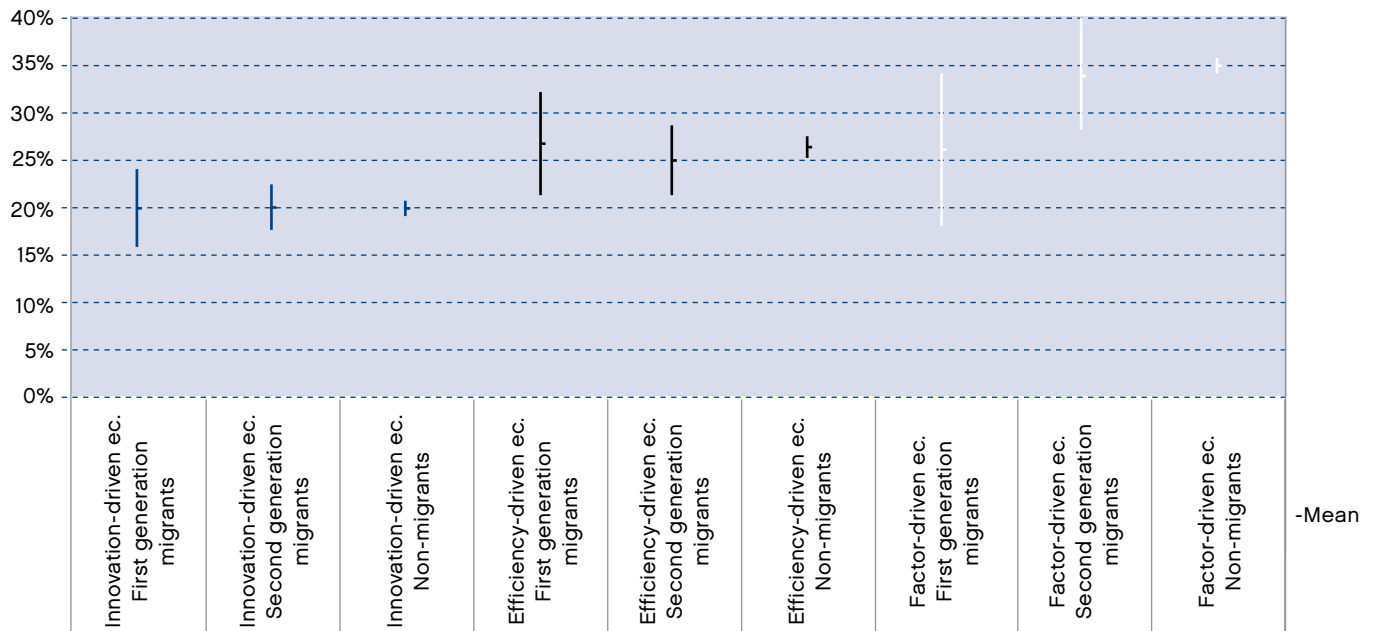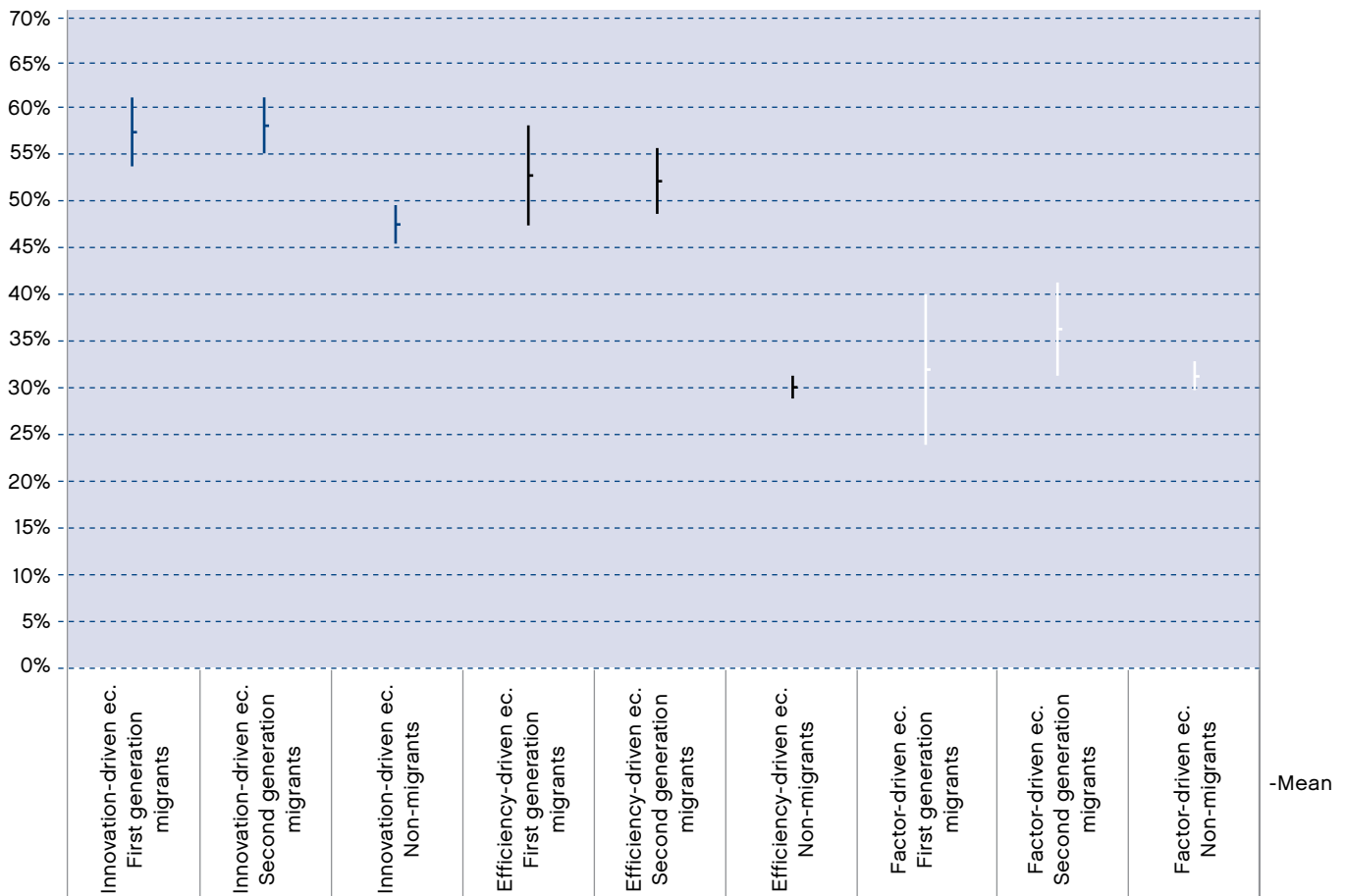
Figure 4.6: Percentage of Migrant and Non-Migrant TEA-Entrepreneurs with Export Orientation Across Different Stages of Economic Development

indicate they use the newest technologies to produce their products. A broader view of innovation is therefore important to consider in this analysis.

A third measure of the economic impact of migrant entrepreneurship centers on international orientation. Entrepreneurs that enlarge the scope of their efforts to include international markets can increase their businesses' prospects for growth and sustainability. By seeking broader and more diverse markets, they can leverage their advantages in multiple cultures and decrease dependence on the market requirements and demand levels of a single economy. Furthermore, a successful market entry into another economy is an indicator of a company's international competitiveness.

Figure 4.6 illustrates the proportion of early-stage entrepreneurs who sell at least some of their products and services to customers outside their economy. The efficiency-driven group shows notable differences between migrants and non-migrants. While more than half of the migrant entrepreneurs indicated they sell products and services outside their host economy, this was the case for only a

third of non-migrant entrepreneurs. This pattern is similar in innovation-driven economies, with a smaller difference between migrants and non-migrants, but a higher level of migrants selling internationally. In the factor-driven economies, however, migrants are not more likely than non-migrants to sell internationally.

There is a plausible explanation for migrants' advantage over non-migrants regarding business internationalization processes, at least for efficiency and innovation-driven economies: as most migrants are culturally and socially connected to foreign economies, they possess specific knowledge about the characteristics, cultural features and institutional conditions in these markets. In addition, migrants often retain strong personal relationships in their home economies, and they possess the language, social awareness and ethnic credibility to form new ties; these can be valuable in, for example, reaching customers and finding suppliers or sub-contractors (Basu 2006, Waldinger et al. 1990).

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1   United Nations Population Division: http://esa.un.org/migration/index.asp?panel=1

Research Papers by GEM Scholars

Autio, E., & Acs, Z. 2010. Intellectual property protection and the formation of entrepreneurial growth aspirations. *Strategic Entrepreneurship Journal*, 4(3): 234–251

Research Issue
To date, most research on individual-level determinants of entrepreneurial behaviours have used single-economy, often cross-sectional samples. In such samples, variance in economy-level conditions is typically zero. In addition, most of the received studies have been carried out in advanced market economies, notably, in the US and in Western Europe. These are important handicaps, because single-economy studies can tell us nothing about how an individual's context regulates his or her entrepreneurial behaviours.

This is a particularly important handicap from the perspective of policy design and implementation, because policy-makers typically seek to manipulate an individual's context in order to induce desired behaviours – such as engagement with growth-oriented entrepreneurship. In their study, Erkko Autio and Zoltan Acs addressed this gap by exploring the cross-level moderating effect of the economy's intellectual property protection regime on the relationship between a given individual's level of education and household income on that individual's entrepreneurial growth aspirations.

Theory and Method
Autio and Acs employed real options theory to consider an individual's allocation of his or her education and household income onto a growth-oriented entrepreneurial venture as an irreversible resource investment performed under uncertainty. They assumed that individuals are mostly rational when making such investments. Therefore, because an economy's intellectual property protection regime regulates the amount of external uncertainty faced by the individual, it will influence how an individual allocates his or her education and household income between entrepreneurship and salaried employment. Specifically, they hypothesised that while education and household income should each have a positive influence on a given individual's entrepreneurial growth aspirations, a strong intellectual property protection regime will strengthen the effect of the individual's household income on growth aspirations and weaken the effect of education on growth aspirations. They combined nine years of GEM adult population survey data with Heritage Foundation data to test their hypotheses. They used a two-step selection model with a multi-level regression design to analyse their data.

Findings
Consistent with hypotheses, Autio and Acs found that both education and household income exercised strong individual-level effects on entrepreneurial growth aspirations when self-selection to entrepreneurship was controlled. They also found that the economy's intellectual property protection regime moderated these relationships. In economies where intellectual property protection was strong, the link between an individual's education and entrepreneurial growth aspirations grew weaker (although it remained positive throughout). Conversely, the link between an individual's household income and entrepreneurial growth aspirations grew stronger in strong IP protection regimes.

Implications
Autio and Acs are the first to have employed two-step multilevel designs to explore the influence of an individual's context on that individual's entrepreneurial behaviours. Their findings suggest that a strong intellectual property protection regime facilitates markets for technology. If markets for technology work well, well-educated individuals have more options to realise gains from their intellectual property. In addition to starting growth-oriented firms, well-educated individuals can also use the market for technology to sell, license or franchise their intellectual property. Conversely, entrepreneurs with a high household income can use that same market to acquire the intellectual property required to grow their firms. Thus, a well-functioning market for technology encourages specialisation among potential entrepreneurs and supports conditions where individuals can choose the course of action that best fits their innate strengths.

Conclusions

The 2012 GEM Global report highlights the multifaceted and dynamic nature of entrepreneurship around the world. Despite some commonalities within both geographic regions and economic development levels, each economy tells a unique story about its entrepreneurs. These stories are apt to evolve and change as institutional environments develop and political and economic contexts shift over time. These changes occur locally, nationally, regionally and globally in a landscape impacted by technological discontinuities, social evolution and revolution, and a host of other human factors.

The Role of Entrepreneurial Attitudes

Population-wide attitudes are important indicators of potential entrepreneurs and societal support for this activity. They often reflect a society's economic development level. For example, attitudes toward entrepreneurship are generally high in the factor-driven economies, where entrepreneurship is a more common source of generating income. People are likely to see this activity as viable and themselves as prepared to undertake it; yet they may not have the same types of businesses in mind, given there are more necessity-based, consumer-oriented, and low growth entrepreneurs in these societies.

Attitudes may also mirror current conditions, as the analysis of Nordic versus South European economies shows. Perceptions about opportunities have mostly increased in the Nordic countries since a drop in 2009, while the Southern European countries, mired in a languishing economic environment, show a pessimism about opportunities that has not begun to rebound toward its 2008 levels.

Positive attitudes reflect entrepreneurial ambitions and societal support. They are needed at a widespread level as some economies develop and others face periodic difficulties. These results perhaps lend merit to efforts that take the pulse of societal attitudes about entrepreneurship and promote educational and other programs that target and assess changes in attitudes, as well as skill building.

In addition, attitudes and support can focus toward higher potential businesses, particularly in the factor and efficiency-driven economies. Micro-enterprise has gained respect and traction, but micro-entrepreneurs should not represent the aspirations of all those with such ambitions. Initiatives can address all levels of entrepreneurial aspirations—micro, middle-growth, and high potential business activities. Goldman Sachs, for example, is focusing on helping women grow businesses through its 10,000 Women project. Endeavor seeks out high-growth entrepreneurs to support and model their high aspiration activities. Both initiatives target emergent and developing economies. People in these societies can believe they have the ability to think big.

Entrepreneurial Activity

Overall, TEA rates displayed upward trends in many economies. Yet a difference between male and female TEA rates continues to persist worldwide. Women entrepreneurs may not be sufficiently empowered or supported to allow them to contribute to new business start-ups. The reasons may include cultural and societal attitudes and access to resources and opportunities. Policies that can promote societal attitude changes, and train, support and encourage women entrepreneurs will promote inclusiveness and fuel economic growth.

Societies can benefit from the entrepreneurial energy of people in all age groups. Individuals of all ages can create jobs and income for themselves and others when there are opportunities to do so, and when there is an undersupply of employment options. Their entrepreneurial efforts may reflect unique orientations and resources, such as the fresh ideas, risk tolerance and technology savvy of the young, and the experience, networks and credibility that comes with maturity. Younger entrepreneurs, however, will likely require different support programs compared to older entrepreneurs.

Failure due to such factors as lack of finances, unprofitability, management issues or external circumstances can be addressed through policy, training and other initiatives. However, the wealth of experience that comes from even failed efforts can be recognized and leveraged. Experienced entrepreneurs can re-engage in entrepreneurial activity. Hessels et al.'s (2011) study shows that serial entrepreneurs tend to be more successful (and therefore, more impactful) than new, and to a large extent less experienced, entrepreneurs.[1]

Additionally, former entrepreneurs may engage in new business activities in established organizations, or they can support other entrepreneurs in a variety of stakeholder roles, such as advisors, managerial staff, investors, and so forth. Attention could therefore turn toward reducing the negative consequences of failure, instead seeing this as valuable learning experience, and re-engaging former entrepreneurs, whether they have discontinued for positive or negative reasons.

Entrepreneurial Growth and Employment Creation

Job creation is on the mind of nearly every policy maker in all parts of the world. As Levie and Autio (2011) suggest, it is not the supply of entrepreneurs that constitutes the key bottleneck to economic dynamism, but rather, the activities toward which entrepreneurial individuals channel their efforts. These authors emphasize that a high-growth oriented approach to entrepreneurship will create jobs and, in tandem, grow economies. Growth projections can be

influenced by the aspirations of entrepreneurs, the quality of their businesses, internal market demand and the supply of qualified labor, access to international markets and other factors. Efforts such as improving the labor market, increasing the internal market, and providing access to international markets can be more specifically addressed toward meeting the specific needs of entrepreneurs.

With unemployment and a growing youth population a key issue in regions such as Sub-Saharan Africa, identifying and successfully implementing policies that both encourage youth to start businesses and support businesses with high employee growth expectations will be critical to creating jobs and ensuring economic growth and societal stability.

Framework Conditions for Entrepreneurship

The analysis of framework conditions provides encouragement in the positive views of experts from all regions of the world about the physical infrastructure for entrepreneurship. At the same time, these experts largely rated entrepreneurship education at primary and secondary school levels as poor, indicating the need for both national and global efforts to encourage this factor. Some conditions show positive results in some regions, but negative ratings in others: for example, the USA rated R&D transfer positively, while most Sub-Saharan African economies, and many economies in the other regions, saw this factor unfavorably. Each region has particular strengths but also areas to improve: for example, Latin America has good post-school entrepreneurship education, yet experts were less favorable about internal market dynamics and access to entrepreneurial finance. While policies that work in one economy are not guaranteed success in others, there may be merit in studying and discussing what works (and doesn't) within and across regions.

The Legal Framework

The *2010 Global Report* (Kelley et al., 2010) showed a strong positive correlation between the success of a society in creating an environment in which fair and predictable rules form the basis for economic and social interaction, and the level of improvement-driven opportunity motivated entrepreneurial activity. High-aspiration entrepreneurs are particularly sensitive to the rule of law, as Levie and Autio (2011) show: if rule of law is weak, entry regulations will still increase the number of new entrepreneurs, but fewer of these will seek growth. Therefore, if an economy's government only professes to support entrepreneurship by making entry regulations easier without enforcing a

strong rule of law, the quality of entrepreneurial entries will suffer – and consequently, the economic impact of entrepreneurship will diminish.[2]

Additionally, both strategy and priorities need to be primed to exploit the competitive advantage of one's respective economy and create globally competitive entrepreneurs. Autio and Acs (2010) highlight the importance of strong IP protection in creating markets for technology. Their study suggests that if markets for technology work well, individuals will have more options to realise gains from their intellectual property. Thus, a well-functioning market for technology encourages specialisation among potential entrepreneurs and supports conditions where individuals can choose the course of action that best fits their innate strengths.[3] These benefits are likely to extend to international markets, where entrepreneurs with IP protection in their home countries can be ensured they can operate under a similar regime in the international sphere.

These findings highlight the importance of the legal framework in developing a context in which entrepreneurship can thrive.

Migrant Entrepreneurship

Migrant entrepreneurs can make significant contributions to economic growth and global competitiveness in both their host and home economies. The GEM results show that migrant entrepreneurs are more likely to have growth intentions at all economic development levels. Additionally, in the efficiency and innovation-driven economies, they are more likely to sell to international customers. As such, migrant entrepreneurs can create jobs, boost global competitiveness and influence the transfer of resources, information and technological know-how. Policy makers in receiving economies can recognize the value migrants can provide in creating jobs and globalizing the business environment. Economies of origin should make every effort to build and support connections to those that have emigrated to other parts of the world.

For 14 years, GEM has served as a distinctive and valuable source of data on entrepreneurship for a variety of audiences, using a rigorous methodology that allows for an evidence-based approach to the study of this phenomenon. A key purpose of GEM is to inform academics, educators, policy makers and practitioners about the frequency and nature of entrepreneurship in and among economies worldwide. With this aim, GEM can encourage better understanding about entrepreneurship and guide decision making that can lead to better support and conditions that allow this endeavor to thrive.

1. Hessels, J., Grilo, I., Thurik, R., & van der Zwan, P. 2011. Entrepreneurial exit and entrepreneurial engagement. Journal of Evolutionary Economics, 21(3): 447-471
2. Levie, J., & Autio, E. 2011. Regulatory burden, rule of law, and entry of strategic entrepreneurs: An international panel study. Journal of Management Studies, 48(6): 1392-1419
3. Autio, E., & Acs, Z. 2010. Intellectual property protection and the formation of entrepreneurial growth aspirations. Strategic Entrepreneurship Journal, 4(3): 234-251

Research Papers by GEM Scholars

Hessels, J., Grilo, I., Thurik, R., & van der Zwan, P. 2011. Entrepreneurial exit and entrepreneurial engagement. *Journal of Evolutionary Economics*, 21(3): 447–471
Research Issue

Both entrepreneurial entry and exit are fundamental aspects of the entrepreneurial process. However, whereas entries into entrepreneurship have been studied extensively, entrepreneurial exits have received considerably less attention. This is in spite of the fact that without exits, there would be far fewer entries into entrepreneurship. Indeed, one may argue that it is exits from entrepreneurship that are the more important driver of the trial-and-error process of 'creative destruction', through which entrepreneurs drive the allocation of resources to productive uses in the economy. Exits provide an important mechanism driving entrepreneurial learning, and it is important that lessons from exited ventures are channelled to new start-ups to enhance the effectiveness of these. But when do exits from entrepreneurship lead to the creation of new ventures, and when are exits permanent? Jolanda Hessels, Isabel Grilo, Roy Thurik and Peter van der Zwan used GEM data to address this under-studied, yet important question.

Theory and Method
Hessels and colleagues drew on human capital theory and on research on entrepreneurial exits and serial entrepreneurship to link a given individual's human capital with the likelihood that that individual will start a new business after exiting a previous venture. They argued that many of the skills and competencies required to successfully launch a new business can be gained most efficiently through experience. Therefore, an individual's previous start-up experience should constitute an important predictor of future start-up activity. Hessels and colleagues argued that this effect should be strengthened by the individual's own human capital (e.g., as expressed in his or her education), as such human capital enhances the individual's ability to learn from experience. To explore these relationships, they used GEM data for 24 economies for years 2004-2006. They studied marginal effects of various individual-level predictors in a logistic regression to gain insights into the determinants of re-entry after an entrepreneurial exit event.

Findings
Hessels and colleagues found that an exit event during the past year significantly increases the probability that an individual is engaged in subsequent entrepreneurial activity – in particular, the probability of an individual being classified as potential or intentional entrepreneur in the GEM data. This finding is consistent with the notion that an entrepreneurial exit encapsulates entrepreneurial learning. They further found that being a male, knowing other entrepreneurs, and having informal exit experience increased the probability that an individual was involved in subsequent start-up activity after an exit event. Interestingly, possessing some secondary education decreased this probability, but possessing post-secondary education did not increase it.

Implications
Entrepreneurship is, to a large extent, project-based activity, the skills for which can be learned by experience. For this reason it is important to understand factors that propel individuals to re-engage with entrepreneurial activity after having exited their previous venture. Understanding these factors is important, since studies show that serial entrepreneurs tend to be more successful (and therefore, more impactful) than *de novo* entrepreneurs. The study by Hessels and colleagues demonstrates the utility of the GEM data for the study of the effects of exit experience, while underscoring the importance of continued attention to this important topic.

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Appendix 1: Tables of GEM Data

Table 1: Entrepreneurial Attitudes and Perceptions in the GEM Countries in 2012 by Phase of Economic Development

Country	Perceived opportunities	Perceived capabilities	Fear of failure*	Entrepre-neurial intentions **	Entrepre-neurship as a good career choice	High status to successful entrepreneurs	Media attention for entrepre-neurship
FACTOR							
Algeria	46	54	35	21	79	81	47
Angola	66	72	38	70			
Botswana	67	71	25	72	76	73	79
Egypt	54	59	33	42	83	87	64
Ethiopia	65	69	33	24	76	92	73
Ghana	79	86	18	60	84	91	82
Iran	39	54	41	23	60	73	61
Malawi	74	85	12	70	-	-	-
Nigeria	82	88	21	44	82	76	78
Pakistan	46	49	31	25	66	68	51
Palestine	46	59	40	36	85	80	71
Uganda	81	88	15	79			
Zambia	78	84	17	55	67	79	72
Average (unweighted)	63	71	28	48	76	80	68
EFFICIENCY							
Argentina	50	63	27	29	74	67	63
Barbados	47	70	17	23	-	-	-
Bosnia and Herzegovina	20	49	27	22	81	72	39
Brazil	52	54	31	36	89	86	86
Chile	65	60	28	43	70	68	66
China	32	38	36	20	72	76	80
Colombia	72	57	32	57	89	75	69
Costa Rica	47	63	35	33	72	72	79
Croatia	17	44	36	19	64	42	40
Ecuador	59	72	33	51	88	84	79
El Salvador	43	59	42	40	73	72	62
Estonia	45	43	34	16	55	63	41
Hungary	11	40	34	13	41	74	29
Latvia	33	44	37	22	60	53	53
Lithuania	30	40	36	18	63	53	37
Macedonia	31	55	39	28	70	67	64
Malaysia	36	31	36	13	46	51	62
Mexico	45	62	26	18	56	54	38
Namibia	75	74	35	45	73	76	82
Panama	38	43	17	12	-	-	-
Peru	57	65	30	45	77	73	76
Poland	20	54	43	22	68	57	56
Romania	37	38	41	27	71	74	55
Russia	20	24	47	2	60	63	45
South Africa	35	39	31	12	74	74	73
Thailand	45	46	50	19	76	79	84
Trinidad & Tobago	59	76	17	37	78	76	64

Country	Perceived opportunities	Perceived capabilities	Fear of failure*	Entrepreneurial intentions **	Entrepreneurship as a good career choice	High status to successful entrepreneurs	Media attention for entrepreneurship
Tunisia	33	62	15	22	88	94	48
Turkey	40	49	30	15	67	76	57
Uruguay	51	58	27	20	61	59	51
Average (unweighted)	41	52	32	26	70	69	60
INNOVATION							
Austria	49	50	36	9	46	76	
Belgium	33	37	41	9	62	57	54
Denmark	44	31	39	7	-	-	-
Finland	55	34	37	8	45	83	68
France	38	36	43	17	65	77	41
Germany	36	37	42	6	49	76	49
Greece	13	50	61	10	64	68	33
Ireland	26	45	35	5	45	81	61
Israel	31	29	47	13	59	72	47
Italy	20	30	58	11	67	70	51
Japan	6	9	53	2	30	55	53
Republic of Korea	13	27	43	13	59	70	68
Netherlands	34	42	30	9	79	65	58
Norway	64	34	39	5	50	80	59
Portugal	16	47	42	14	-	-	-
Singapore	23	27	42	16	50	63	77
Slovakia	18	50	38	12	50	74	59
Slovenia	20	51	27	13	53	71	51
Spain	14	50	42	11	64	64	47
Sweden	66	37	33	11	-	-	-
Switzerland	36	37	32	7	44	63	57
Taiwan	39	26	38	25	70	63	83
United Kingdom	33	47	36	10	50	77	47
United States	43	56	32	13	-	-	-
Average (unweighted)	31	36	39	10	53	68	56

*   Fear of failure assessed for those seeing opportunities

**   Intentions assessed among nonentrepreneur population

\+   These questions were optional and therefore not included by all economies

Table 2: Entrepreneurial Activity in the 69 GEM Countries in 2012, by Phase of Economic Development

Country	Nascent entrepreneur-ship rate	New business ownership rate	Early-stage entrepreneurial activity (TEA)	Established business ownership rate	Discontinuation of businesses	Necessity-driven (% of TEA)	Improvement-driven opportunity (% of TEA)
FACTOR							
Algeria	2	7	9	3	7	30	47
Angola	15	19	32	9	26	24	38
Botswana	17	12	28	6	16	33	48
Egypt	3	5	8	4	5	34	23
Ethiopia	6	9	15	10	3	20	69
Ghana	15	23	37	38	16	28	51
Iran	4	6	11	10	5	42	36
Malawi	18	20	36	11	29	42	43
Nigeria	22	14	35	16	8	35	53
Pakistan	8	3	12	4	3	53	24
Palestine	6	4	10	3	8	42	27
Uganda	10	28	36	31	26	46	42
Zambia	27	15	41	4	20	32	46
Average (unweighted)	12	13	24	11	13	35	42
EFFICIENCY							
Argentina	12	7	19	10	5	35	47
Barbados	10	7	17	12	3	12	63
Bosnia and Herzegovina	5	3	8	6	7	58	20
Brazil	4	11	15	15	5	30	59
Chile	15	8	23	8	5	17	69
China	5	7	13	12	4	37	39
Colombia	14	7	20	7	7	12	48
Costa Rica	10	5	15	3	3	20	48
Croatia	6	2	8	3	4	34	36
Ecuador	17	12	27	19	8	36	30
El Salvador	8	8	15	9	8	35	39
Estonia	9	5	14	7	4	18	49
Hungary	6	4	9	8	4	31	35
Latvia	9	5	13	8	3	25	46
Lithuania	3	4	7	8	2	25	51
Macedonia	4	3	7	7	4	52	29
Malaysia	3	4	7	7	2	13	61
Mexico	8	4	12	5	4	13	52
Namibia	11	7	18	3	12	37	37
Panama	7	3	9	2	2	19	57
Peru	15	6	20	5	7	23	53
Poland	5	5	9	6	4	41	30
Romania	6	4	9	4	4	24	38
Russia	3	2	4	2	1	36	31
South Africa	4	3	7	2	5	32	40
Thailand	9	11	19	30	3	17	67
Trinidad & Tobago	9	7	15	7	5	15	60
Tunisia	2	2	5	4	4	35	42
Turkey	7	5	12	9	5	31	55
Uruguay	10	5	15	5	5	18	40
Average (unweighted)	8	6	13	8	5	28	46

Country	Nascent entrepreneur-ship rate	New business ownership rate	Early-stage entrepreneurial activity (TEA)	Established business ownership rate	Discontinuation of businesses	Necessity-driven (% of TEA)	Improvement-driven opportunity (% of TEA)
INNOVATION							
Austria	7	3	10	8	4	11	38
Belgium	3	2	5	5	2	18	62
Denmark	3	2	5	3	1	8	71
Finland	3	3	6	8	2	17	60
France	4	2	5	3	2	18	59
Germany	4	2	5	5	2	22	51
Greece	4	3	7	12	4	30	32
Ireland	4	2	6	8	2	28	41
Israel	3	3	7	4	4	19	46
Italy	2	2	4	3	2	16	22
Japan	2	2	4	6	1	21	66
Republic of Korea	3	4	7	10	3	35	46
Netherlands	4	6	10	9	2	8	66
Norway	4	3	7	6	1	7	70
Portugal	4	4	8	6	3	18	53
Singapore	8	4	12	3	4	15	54
Slovakia	7	4	10	6	5	36	43
Slovenia	3	3	5	6	2	7	64
Spain	3	2	6	9	2	26	33
Sweden	5	2	6	5	2	7	49
Switzerland	3	3	6	8	2	18	57
Taiwan	3	4	8	10	6	18	43
United Kingdom	5	4	9	6	2	18	43
United States	9	4	13	9	4	21	59
Average (unweighted)	4	3	7	7	3	18	51

Table 3: Gender Distribution of Early-Stage Entrepreneurs (TEA) & Necessity vs Opportunity Entrepreneurship by Geographic Region, 2012

Economy	Male TEA (% adult population)	Female TEA (% adult population)	Male Opportunity TEA (% male TEA)	Female Opportunity TEA (% female TEA)	Male Necessity TEA (% male TEA)	Female Necessity TEA (% female TEA)
LATIN AMERICA & CARRIBEAN						
Argentina	24	14	73	54	27	46
Barbados	18	16	88	86	12	13
Brazil	16	15	75	63	24	36
Chile	26	19	90	72	10	27
Colombia	23	18	90	84	10	15
Costa Rica	20	11	79	77	18	23
Ecuador	26	27	70	59	29	41
El Salvador	16	14	69	57	28	42
Mexico	12	12	85	85	13	14
Panama	8	10	81	78	19	20
Peru	23	18	78	70	21	26
Trinidad & Tobago	17	13	90	74	10	22
Uruguay	20	10	82	76	18	19
Average (unweighted)	19	15	81	71	19	28
MIDDLE EAST & NORTH AFRICA						
Algeria	12	5	63	64	31	28
Egypt	13	2	41	30	34	31
Iran	16	6	56	62	43	38
Israel	8	5	73	63	17	22
Palestine	16	3	62	41	38	59
Tunisia	7	3	56	69	39	28
Average (unweighted)	12	4	58	58	35	34
SUB-SAHARAN AFRICA						
Angola	34	31	77	71	20	27
Botswana	30	25	68	60	29	38
Ethiopia	17	13	81	77	18	23
Ghana	35	38	75	68	23	31
Malawi	39	32	66	49	34	51
Namibia	19	18	65	56	32	43
Nigeria	34	36	68	63	32	37
South Africa	9	6	70	61	27	39
Uganda	36	36	55	51	45	47
Zambia	43	40	71	64	29	36
Average (unweighted)	30	27	69	61	30	38
ASIA PACIFIC & SOUTH ASIA						
China	15	11	64	60	35	40
Japan	6	2	70	87	25	9
Republic of Korea	11	2	65	62	34	38
Malaysia	8	6	87	85	13	14
Pakistan	21	1	47	22	52	73
Singapore	13	10	81	87	16	13
Taiwan	9	6	80	85	20	15
Thailand	17	21	88	77	11	21
Average (unweighted)	12	7	70	76	28	23

Economy	Male TEA (% adult population)	Female TEA (% adult population)	Male Opportunity TEA (% male TEA)	Female Opportunity TEA (% female TEA)	Male Necessity TEA (% male TEA)	Female Necessity TEA (% female TEA)
EUROPEAN UNION						
Austria	11	8	84	78	8	15
Belgium	8	3	73	86	19	14
Denmark	8	3	91	88	8	9
Estonia	19	10	79	80	18	18
Finland	8	4	77	69	15	21
France	6	4	82	79	16	21
Germany	7	4	76	78	22	22
Greece	9	4	75	60	25	40
Hungary	13	6	70	57	28	38
Ireland	8	4	71	71	29	27
Italy	6	3	66	82	21	5
Latvia	19	8	73	71	25	27
Lithuania	9	4	70	77	27	19
Netherlands	14	7	85	82	9	6
Poland	13	6	48	63	44	34
Portugal	9	6	77	68	19	16
Romania	13	5	70	87	29	13
Slovakia	14	7	64	63	36	36
Slovenia	8	3	90	89	7	7
Spain	7	4	75	67	23	31
Sweden	8	5	85	88	7	7
United Kingdom	12	6	82	74	15	24
Average (unweighted)	10	5	75	74	21	21
NON-EUROPEAN UNION						
Bosnia and Herzegovina	10	5	42	36	57	61
Croatia	12	5	66	62	33	38
Macedonia	9	5	52	36	47	62
Norway	10	4	92	80	6	12
Russia	5	3	61	64	38	34
Switzerland	6	5	75	74	20	16
Turkey	17	7	68	64	30	33
Average (unweighted)	10	5	65	59	33	37
UNITED STATES						
United States	15	10	76	74	21	21

Table 4: Job Growth Expectations for Early-Stage Entrepreneurship Activity

Country	Job expectations 0 - 5 jobs (% adult population)	Job expectations 5 - 19 jobs (% adult population)	Job expectations 20 or more jobs (% adult population)
LATIN AMERICA & CARRIBEAN			
Argentina	10.6	2.7	1.8
Barbados	8.8	1.9	1.0
Brazil	10.6	1.5	0.7
Chile	11.1	6.3	2.1
Colombia	8.5	5.7	4.3
Costa Rica	9.9	2.5	0.8
Ecuador	20.9	2.0	0.5
El Salvador	8.2	2.8	1.3
Mexico	6.9	1.9	0.6
Panama	7.3	0.6	0.0
Peru	11.7	3.7	0.6
Trinidad & Tobago	6.8	2.0	1.4
Uruguay	6.6	2.0	1.1
Average (unweighted)	9.8	2.7	1.3
MIDDLE EAST & NORTH AFRICA			
Algeria	4.6	1.5	0.4
Egypt	2.5	3.6	1.3
Iran	8.1	1.9	0.3
Israel	1.6	0.7	1.0
Palestine	7.0	1.8	1.0
Tunisia	1.2	0.8	0.5
Average (unweighted)	4.2	1.7	0.7
SUB-SAHARAN AFRICA			
Angola	8.4	5.2	2.9
Botswana	12.7	6.5	3.2
Ethiopia	12.3	1.5	1.0
Ghana	23.9	5.0	1.6
Malawi	29.2	0.6	0.0
Namibia	9.8	2.8	1.2
Nigeria	18.2	6.1	2.8
South Africa	4.5	1.4	1.0
Uganda	29.9	3.1	0.4
Zambia	31.9	4.2	0.5
Average (unweighted)	18.1	3.6	1.5
ASIA PACIFIC & SOUTH ASIA			
China	7.0	1.5	1.7
Japan	1.9	0.7	0.6
Republic of Korea	3.5	1.2	1.2
Malaysia	5.4	1.3	0.3
Pakistan	8.7	1.2	1.7
Singapore	5.8	2.9	2.3
Taiwan	3.2	1.6	2.0

Country	Job expectations 0 - 5 jobs (% adult population)	Job expectations 5 - 19 jobs (% adult population)	Job expectations 20 or more jobs (% adult population)
Thailand	13.1	1.7	1.0
Average (unweighted)	6.1	1.5	1.4
EUROPEAN UNION			
Austria	5.2	0.8	0.4
Belgium	2.9	1.1	0.2
Denmark	2.9	1.0	0.7
Estonia	5.8	3.8	1.6
Finland	4.1	0.7	0.4
France	3.1	0.9	0.4
Germany	3.3	0.8	0.6
Greece	3.3	0.7	0.2
Hungary	5.0	1.5	1.6
Ireland	3.2	1.1	0.9
Italy	2.9	0.5	0.3
Latvia	3.9	4.0	3.1
Lithuania	1.7	1.9	1.4
Netherlands	6.9	1.2	0.7
Poland	4.8	1.8	1.0
Portugal	3.6	1.5	0.5
Romania	2.6	2.9	1.6
Slovakia	4.3	2.2	1.3
Slovenia	2.5	0.7	0.7
Spain	4.0	0.6	0.2
Sweden	4.6	0.8	0.3
United Kingdom	5.3	1.9	0.9
Average (unweighted)	3.9	1.5	0.9
NON-EUROPEAN UNION			
Bosnia and Herzegovina	1.7	1.9	0.7
Croatia	2.7	1.5	1.0
Macedonia	3.5	1.6	0.7
Norway	5.1	0.8	0.4
Russia	1.9	0.9	0.4
Switzerland	3.6	0.4	0.4
Turkey	3.8	2.5	2.8
Average (unweighted)	3.2	1.4	0.9
UNITED STATES			
United States	6.6	2.2	1.7

Appendix 2: Characteristics of GEM Surveys

Economy	Interview Procedure	Sample size
Algeria	face-to-face	4995
Angola	face-to-face	2636
Argentina	fixed line	2018
Austria	fixed line, mobile phone	4583
Barbados	fixed line, face-to-face	2055
Belgium	fixed line, mobile phone	2010
Bosnia and Herzegovina	fixed line	2001
Botswana	face-to-face	2374
Brazil	face-to-face	10000
Chile	fixed line, mobile phone	2420
China	face-to-face	3684
Colombia	fixed line, face-to-face	6471
Costa Rica	face-to-face	2041
Croatia	fixed line	2000
Denmark	mobile phone	2217
Ecuador	face-to-face	2004
Egypt	mobile phone, face-to-face	2501
El Salvador	fixed line, face-to-face	2180
Estonia	fixed line, mobile phone	2004
Ethiopia	face-to-face	3005
Finland	fixed line, mobile phone	2038
France	fixed line	4003
Germany	fixed line, mobile phone	4300
Ghana	face-to-face	2222
Greece	fixed line	2000
Hungary	mobile phone	2000
India	face-to-face	2700
Iran	face-to-face	3178
Ireland	fixed line, mobile phone	2000
Israel	fixed line	2007
Italy	fixed line	2000
Jamaica	face-to-face	2003
Japan	fixed line	2010
Republic of Korea	fixed line	2000
Latvia	fixed line, mobile phone	2000

Economy	Interview Procedure	Sample size
Lithuania	fixed line, mobile phone	2003
Macedonia	fixed line, mobile phone	2003
Malawi	face-to-face	2006
Malaysia	face-to-face	2006
Mexico	face-to-face	2516
Namibia	face-to-face	1959
Netherlands	fixed line, mobile phone	3501
Nigeria	face-to-face	2651
Norway	fixed line, mobile phone	2000
Pakistan	face-to-face	2000
Palestine	face-to-face	2000
Panama	face-to-face	2000
Peru	face-to-face	2071
Poland	fixed line, mobile phone	2003
Portugal	fixed line, mobile phone	2001
Romania	fixed line, mobile phone	2004
Russia	face-to-face	3541
Singapore	fixed line	2001
Slovakia	fixed line, mobile phone	2000
Slovenia	fixed line, mobile phone	2010
South Africa	face-to-face	2928
Spain	fixed line	21900
Sweden	fixed line, mobile phone	2500
Switzerland	fixed line	2003
Taiwan	fixed line	2009
Thailand	fixed line, face-to-face	3000
Trinidad & Tobago	face-to-face	2029
Tunisia	fixed line, mobile phone	2000
Turkey	fixed line	2401
Uganda	face-to-face	2343
United Kingdom	fixed line, mobile phone	2000
United States	fixed line, mobile phone	5542
Uruguay	fixed line	2016
Zambia	face-to-face	2157
Total		**198 764**

GEM National Teams 2012

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Countries participated in the past

Countries never participated

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