GEM

GLOBAL ENTREPRENEURSHIP MONITOR

Special Report on Entrepreneurial Employee Activity

Niels Bosma • Sander Wennekers • Maribel Guerrero • José Ernesto Amorós • Aloña Martiarena • Slavica Singer

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Arthur Fry invented post-it notes based on a particular adhesive that his colleague, Spencer Silver, developed at 3M Corporation. While Arthur Fry initially used it for personal purposes (to have a bookmark for his church hymnal that would stick without damaging the hymnal), the potential for broader use was recognized within 3M and post-it notes were put into production a few years later. It is a prominent example of entrepreneurial employee activity.

The Global Entrepreneurship Monitor

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Although GEM data were used in the preparation of this report, their interpretation and use are the sole responsibility of the authors.

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Summary

Entrepreneurship is often expected to have a positive effect on economic progress through its stimulating influence on innovation, competition and industry dynamics. At the same time, entrepreneurship is a multi-dimensional concept, involving many different actors and several levels of analysis. Adopting a multi-dimensional perspective of entrepreneurship generates new insights on how entrepreneurship might lead to economic development. Important recent developments are the identification of several relevant types of entrepreneurship and of varying related transmission mechanisms. One important distinction contrasts independent (early-stage) entrepreneurial activity by individuals owning and managing a business for their own account and risk, on the one hand, to opportunity pursuit within existing organizations, also known as entrepreneurial employee activity, corporate entrepreneurship or intrapreneurship, on the other.

This special topic study[1] , based on the Global Entrepreneurship Monitor (GEM) 2011 database, focuses on entrepreneurial employees and shows that these individuals represent a relevant dimension of entrepreneurship revealing interesting patterns across the globe. While GEM annually monitors entrepreneurial attitudes and activities worldwide, the study of entrepreneurial activities is primarily focused on the process of setting up and managing a private business owned by one or more entrepreneurs. However, as the GEM methodology is well-positioned to also measure and study the phenomenon of entrepreneurial employees, a comprehensive effort was undertaken to include this topic in the GEM 2011 surveys and make the first significant international comparison on entrepreneurial employee activity. Like previous GEM Global Reports, this report adopts the Global Competitiveness Report classification to classify (national) economies into factor-driven, efficiency-driven and innovation-driven economies[2].

Specifically, this report addresses country level issues such as the prevalence of entrepreneurial employees across different economies around the globe. It also examines the conditions that are conducive to this type of entrepreneurial activity. Furthermore, this report assesses individual level issues including the main characteristics of entrepreneurial employees, their importance in terms of job creation by existing businesses, and the odds that entrepreneurial employees will sooner or later start up a business of their own. A related issue that is also dealt with is how independent entrepreneurs build on their previous job experience as an employee.

Based on the literature, this report defines entrepreneurial employee activity as 'employees developing new activities for their main employer, such as developing or launching new goods or services, or setting up a new business unit, a new establishment or subsidiary'. In particular, this report focuses on entrepreneurial employees who have a leading role in the creation and development of these new activities, which may include both top-down and bottom-up initiatives. Throughout this report, these individuals will be called 'entrepreneurial employees' – their collective actions will be denoted as 'entrepreneurial employee activity'.

In addition, the present report distinguishes between two phases of entrepreneurial employee activity, i.e. 'idea development for a new activity' and 'preparation and implementation of a new activity'. Idea development includes active information search, brainstorming and submitting ideas for new activities to the management of the business. Preparation and implementation of a new activity refers to promoting an idea for a new activity, preparing a business plan, marketing the new activity, finding financial resources and acquiring a team of workers for the new activity. This report measures the prevalence of entrepreneurial employee activity according to two definitions. Following a first (broad) definition, entrepreneurial employee activity refers to employees who, in the past three years, were actively involved in and had a leading role in at least one of these phases. The second (more narrow) definition, denoted as EEA, refers to the entrepreneurial employees who are also currently involved in the development of such new activities.

This special topic study was carried out using two data sources emerging from the Global Entrepreneurship Monitor: the GEM 2011 Adult Population Survey (APS) and the National Experts Survey (NES). An advantage of this methodology is the opportunity to compare entrepreneurial employees with other employees and with early-stage entrepreneurs (i.e. individuals who own their business, or expect to own the business they are setting up), at both the country and the individual level.

Prevalence rates

Entrepreneurial employees are not very numerous. As defined in the narrow sense (EEA), on average just below 3% of the adult population, and 5% of employees are currently actively involved in and have a leading role in the creation and development of new activities for their main employer. EEA is more prevalent in innovation-driven economies (4.6% of the adult population) than in efficiency-

1 First results were already published in the GEM 2011 Extended Report (Bosma et al., 2012)

2 See Kelley et al. (2012) and Bosma et al. (2012) for more information on the GEM Global 2011 assessment.

driven economies (1.8%), while in factor-driven economies EEA is extremely rare (0.3%). The figures for entrepreneurial employee activity in the past three years (broad definition) are 5.8% of the adult population in innovation-driven economies, 2.3% in efficiency-driven economies and 0.4% in factor-driven economies. Abandoning the requirement of having a leading role further increases the percentages to 22% of all employees (13% of adults) in the GEM 2011 sample of innovation-driven economies[3]. In the sample of efficiency-driven economies, 11% of employees (5% of adults) were identified as entrepreneurial employees according to this very broad definition, while this is the case for 11% of employees (2% of adults) in the sample of factor-driven economies.

The pattern of entrepreneurial employee activity (EEA) across the stages of economic development is the reverse of that for early-stage entrepreneurial activity (TEA). TEA rates measure the prevalence of individuals who are owner-managers in nascent or new firms (existing up to 42 months) and tend to decrease with economic development. Accordingly, in the factor-driven and efficiency-driven economies TEA is much higher than EEA[4]. Only in the innovation-driven economies is EEA in the same order of magnitude as TEA. In some countries, such as Belgium, Denmark and Sweden, EEA is higher than TEA. On average, across all 52 economies that completed the special topic study, almost two-thirds of EEA takes place in the private for-profit sector and one-third in the not-for-profit and government sector. Clearly, this type of entrepreneurial behavior is not restricted to private, commercial activities.

Entrepreneurial employees appear to be active in all size classes of organizations. However, in the innovation-driven economies, as compared with the efficiency-driven economies, entrepreneurial employees appear to be more prevalent in large organizations (with 250+ employees), in total numbers as well as in percentages of employees working in large organizations. At the same time, there also tends to be a larger employment share of large organizations in innovation-driven economies. Taken together this suggests that in this more advanced stage of economic development, the presence of larger companies in innovation-driven economies provides opportunities for individuals to pursue entrepreneurial activities as an employee. Apart from this general observation, however, many economies within each phase of economic development do exhibit deviant patterns. To demonstrate these differences, this report adopts a classification based on two entrepreneurship indicators which results in typologies of entrepreneurial economies for efficiency-driven and innovation-driven economies.

Table S1: Types of economies based on low versus high rates* for two dimensions of ambitious entrepreneurial activity (TEA-MH and EEA-MH); efficiency-driven economies

	TEA-MH: low	TEA-MH: high
EEA-MH: high	**Type A** Bosnia and Herzegovina Croatia Hungary Romania	**Type B** Argentina Chile China Latvia Lithuania Slovak Republic Uruguay
EEA-MH: low	**Type C** Barbados Brazil Malaysia Mexico Panama Poland Russia South Africa	**Type D** Colombia Peru Thailand Trinidad and Tobago Turkey

**Note: Below versus above the unweighted average for efficiency-driven economies*

3 This is solely based on the initial selection question in the special topic section of the APS. This question reads: 'In the last three years, have you been involved in the development of new activities for your main employer, such as developing or launching new goods or services, or setting up a new business unit, a new establishment or subsidiary?'

4 The measures of EEA and TEA are not mutually exclusive. Some of the individuals who are identified as a nascent entrepreneur, however pursuing the startup for their employer, will qualify for both measures. This overlap is relatively small: roughly one in ten entrepreneurial employees is starting a business for their employer (as part of their normal job) in efficiency-driven economies. For innovation-driven economies, this holds for about one in twenty entrepreneurial employees.

Typologies of entrepreneurial economies

A simple count of entrepreneurs does not suffice for linking entrepreneurship to economic development. Entrepreneurs have different aspirations and hence not all entrepreneurial activity contributes equally to economic development. In this respect entrepreneurial aspirations for firm growth are relevant. For that reason this report also focuses on ambitious entrepreneurship – in terms of expectations for job growth – both with respect to early-stage entrepreneurial activity (aimed at owning and managing a firm) and to entrepreneurial employee activity. Specifically, this report contains the results of an exploratory investigation of country typologies, for efficiency-driven and innovation-driven economies separately, based on low versus high prevalence rates of medium/high job expectation entrepreneurial employee activity (denoted as EEA-MH) and low versus high prevalence rates of medium/high job expectation early-stage entrepreneurship (denoted as TEA-MH).

The resulting classification for the 24 efficiency-driven economies is presented in Table S1. Only the four South-East European countries constituting Type A (high EEA-MH and low TEA-MH) are geographically close. These four economies also display, on average, a large percentage of employees that are employed in medium-sized and large organizations, low income inequality, a high level of social security and a relatively high rate of employers' support for employees who come up with new ideas. The other three groups consist of countries that are spread more widely across the globe, but share some other underlying distinct characteristics.

Type B (high rates of both types of entrepreneurship) consists of relatively affluent countries in Latin America and Eastern Europe plus China, with a high level of informal investment, a high level of social security and a relatively high rate of employers' support for employees who come up with new ideas. Next, Type C (low rates of both types of entrepreneurship) is spread across four continents. These economies, on average, show a relatively low percentage of employees that are employed in medium-sized and large organizations, have relatively traditional cultural values and display a relatively low rate of employers' support for employees who come up with new ideas. Finally, Type D (low EEA-MH and high TEA-MH), consists of three countries in Latin America plus Turkey and Thailand. These economies have, on average, a relatively low level of per capita income, a high level of informal investment, less developed social security and quite traditional cultural values.

The classification of the innovation-driven economies based on low versus high prevalence rates of ambitious early-stage entrepreneurial activity and ambitious entrepreneurial employee activity is presented in Table S2. Type A (high EEA-MH and low TEA-MH) counts five small open economies in

TABLE S2 TYPES OF ECONOMIES BASED ON LOW VERSUS HIGH RATES* FOR TWO DIMENSIONS OF AMBITIOUS ENTREPRENEURIAL ACTIVITY (TEA-MH AND EEA-MH); INNOVATION-DRIVEN ECONOMIES

	TEA-MH: low	TEA-MH: high
EEA-MH: high	**Type A** Belgium Denmark Finland Netherlands Sweden	**Type B** Australia Ireland United States
EEA-MH: low	**Type C** France Germany Greece Japan Portugal Slovenia Spain Switzerland United Kingdom	**Type D** Czech Republic Korea, Republic of Singapore Taiwan UAE

**Note: Below versus above the unweighted average for innovation-driven economies*

North-West Europe, that have a high score on the World Values Survey index of secular-rational values and a high level of social security for employees.

Type B (high rates of both types of entrepreneurship) consists of three Anglo-Saxon countries with relatively traditional cultural values and a high degree of income inequality. In addition, Types A and B share a high level of self-expression values, suggesting a relatively high degree of autonomy for employees, and a relatively high rate of employers' support for employees who come up with new ideas. Type C (low rates of both types of entrepreneurship) consists of eight other European countries plus Japan that on average have a relatively low average per capita income, a relatively low percentage of employees with post-secondary and higher education, and a low emphasis in the education system on innovative and pro-active behavior. Finally, Type D (low EEA-MH and high TEA-MH) includes four 'Asian tigers' plus the Czech Republic. These economies share a low level of self-expression values and the GEM Adult Population Survey results point at a relatively low rate of employers' support for employees who come up with new ideas.

Overall, for the efficiency-driven and the innovation-driven economies taken together, countries with relatively high rates of EEA-MH appear to share the following distinct characteristics:

- a high employee prevalence in medium-sized and large organizations;
- a high level of social security for all citizens in general and for employees in particular (while for innovation-driven economies this holds especially when high EEA-MH is combined with low TEA-MH);
- a high level of secular-rational values;
- a high level of self-expression values (for the innovation-driven economies only);
- a high degree of employers who give at least some support to employees that come up with new ideas.

Conditions for entrepreneurial employee activity

In 2011 the GEM National Experts Survey (NES) included a special set of additional questions that were carefully designed to capture informed judgments of national and in some cases regional, experts regarding the status of various entrepreneurial employee activity framework conditions in their own countries and/or regions. According to this section of the 2011 NES survey, the innovation-driven countries rate highest on the following items that were assessed by experts across the globe:

1. Entrepreneurs have much less access to social security than employees
2. The education system emphasizes innovative and pro-active behavior of individuals in general
3. Employers stimulate proactive behavior by employees
4. The level of employment protection is deterring employees to start their own business

These expert assessments provide some more clues, in addition to those gathered from the country typologies discussed before, about which factors may stimulate or hamper the development of entrepreneurial employee activity.

Characteristics of entrepreneurial employees

Similar to early-stage independent entrepreneurs, entrepreneurial employees follow an inverted U-shape age pattern with a highest prevalence rate of EEA in the age groups between 25 and 54 years old in all economies. This pattern may reflect (i) openness to change decreasing with age and (ii) perceived capability as indicated by experience in the workplace increasing with age. In addition, male employees are on average almost twice as likely to be involved in entrepreneurial employee activity as female employees. This pattern is broadly similar to that of early-stage entrepreneurs. Finally, entrepreneurial employee activity seems to be particularly prevalent among higher educated employees with high levels of income.

As for job characteristics, in both efficiency- and innovation-driven economies, employees enrolled in managerial activities in different areas in the organization have relatively high prevalence rates of employee entrepreneurial activity. Other groups with a relatively high prevalence of entrepreneurial activity are professional employees in business and administration, information and communications, science and engineering, and teaching.

The entrepreneurial perceptions of entrepreneurial employees, nascent entrepreneurs and owner-managers are remarkably similar, and clearly differ from the perceptions of the other ('non-EEA') employees. A relatively high percentage of entrepreneurial employees (compared with other employees) have the intention to create a new business in the next three years. They are also more likely to be involved in nascent entrepreneurship.

Characteristics of entrepreneurial employee activities

Entrepreneurial employees have substantially higher job (growth) expectations for their new activities than nascent entrepreneurs and owner-manager entrepreneurs have for their new businesses. This observation might be related to their higher levels of education and income, as well as to the support of their incumbent organizations.

In addition, entrepreneurial employee activities usually remain within the incumbent organization. In the innovation-driven economies a separate legal identity has been or will be created for less than 20% of these entrepreneurial activities, while this holds for roughly one-third of the cases in the efficiency-driven economies. This is probably related to the fact that the core decisions for these activities are often deeply embedded in the incumbent organization. However, entrepreneurial activities targeting new customers more often lead to the creation of a new legal entity.

Our study has also looked into the (perceived) risks taken by entrepreneurial employees (vis-à-vis nascent entrepreneurs and owner-managers of new businesses). Entrepreneurial employees act within organizational boundaries and can thus be expected to be less autonomous than independent entrepreneurs, to receive management support for their activities, to reap fewer financial benefits of their entrepreneurial engagement and to run fewer personal risks because the organization provides a considerable amount of security in case of failure. Accordingly on average only 33% of entrepreneurial employees in the innovation-driven economies report that personal risk taking applies to their activities, while in the efficiency-driven economies, personal risk taking is more frequent at 53%. Considering the type of risk taken, the report also shows how risks are distributed across several categories including loss of job, loss of money invested, loss of status and damage to the career. Furthermore, these distributions are also presented across demographic groups based on age, gender and education of the entrepreneurial employees, as well as the main sector they are working in.

Finally, this report has also studied the interlinkages between entrepreneurial employees, their activities and new firm formation from another angle. This has been done by looking at spin-outs in the sense of new businesses created by employees who were or still are in wage-employment before setting up the business and who develop(ed) a business idea they encountered through their experience as an employee. On average, spin-out activities are substantially more prevalent in efficiency- and innovation-driven economies for both early stage and established businesses. At an average level of about 40% of new and established business-owners, spin-out entrepreneurs appear to be more than twice as common among innovation-driven economies as in factor-driven countries. This, however, appears to be a direct consequence of the higher share among business owner-managers that has experience as an employee (at present or previously). Thus, as economies progress and more job opportunities become available to the inhabitants, more spin-out entrepreneurs can be expected.

Implications

The many empirical observations in this report also provide a well documented base for identifying potential implications for the research community, for policymakers and for the business community.

As for researchers, some main implications are to:

- investigate possibilities for developing a composite index of entrepreneurship in a country, as a result of individual attributes, attitudes and activities, regardless of the ownership (private vs. public) and the role (business owner vs. employee) and to revise the GEM conceptual framework;
- investigate correlations between employers' support to entrepreneurial employees' activities and the level of innovativeness in business entities;
- investigate correlations between differences in social and cultural values of countries and the respective rate of entrepreneurial employee activity of countries;
- search for an efficient balance between job security and job mobility, with respect to its effect on entrepreneurial activity; and to
- research what is missing in education in order to provide individuals with stronger entrepreneurial competences.

As for policymakers, some main implications are to:

- intensify inclusion of educational activities (programs, learning/teaching methods) related to the development of entrepreneurial competences and initiative at all educational levels;
- take into account the dependence of both modes of entrepreneurial activity on the quality of the institutional and regulatory context of a country;
- fully appreciate the time dimension for intervening into social and cultural values, and

to understand that policy instruments aiming to achieve changes in that field need consistent policies for more than one election period; and to

- assess the incentives and support for entrepreneurial employee activity in government agencies and not-for-profit organizations, and to assess the possibilities for further stimulating entrepreneurial employee activity in these sectors.

As for the business community, some main implications are to:

- appreciate the value of entrepreneurial employee activity as an important but rare asset, and accordingly stimulate such activity, as a valuable investment, not costs;

- review the degree of job autonomy allowed to employees in their organizations as well as other relevant aspects of job design, and to consider the possibilities for making advances in these areas;

- analyze the importance of entrepreneurial employee activity in developing and maintaining a competitive edge, and to assess the inspiration, endorsement and support that managers and colleagues offer to fellow workers with new ideas and initiatives; and to

- evaluate the contribution of the investment in life-long education of its employees as an investment in a very scarce special type of human capital.

1. Introduction

Entrepreneurship is increasingly at the forefront in economic policy. This is based on a widely asserted positive influence of entrepreneurship on economic progress through its stimulating influence on innovation, competition and industry dynamics. At the same time, entrepreneurship is a multi-dimensional concept, involving many different actors and several levels of analysis (Wennekers and Thurik, 1999). The expectations of these positive effects of entrepreneurship also have roots in its underlying elements of proactiveness, innovativeness and risk taking capability of individuals. Social and economic research into the subject of entrepreneurship is growing and our understanding of how entrepreneurship contributes to economic development is gradually developing. Important theoretical developments include the identification of several relevant types of entrepreneurship and of varying related transmission mechanisms. In particular, a multi-faceted approach to entrepreneurship has great potential for creating new insights into how entrepreneurship affects economic development. In order to make corresponding progress in the development of clear-cut empirical evidence about the role of entrepreneurship, important bottlenecks related to the lack of adequate multi-dimensional data across countries have to be overcome. The Global Entrepreneurship Monitor (GEM) is uniquely disposed to contribute to the fulfillment of this need.

Global Entrepreneurship Monitor

GEM was designed to measure differences across the globe in terms of entrepreneurial attitudes, activities and aspirations. After the first study appeared in 1999 it took several years for the GEM methodology to establish itself and develop consistent measures of entrepreneurship. From the start, the idea has been that in measuring entrepreneurship, the level of the individual (the entrepreneur or the potential entrepreneur) should be central. Therefore, data collection is based on annual adult population surveys directed at individuals in all participating economies. Views from national experts are added to gain more knowledge about the key conditions for fostering entrepreneurial activity. The results are published in annual GEM Global Reports and National Reports, available at www.gemconsortium.org. In addition, GEM has acted as a resource for international assessments of specific topics, such as entrepreneurial finance (with a focus on informal investment), entrepreneurship education, and training and social entrepreneurship.

The topic: entrepreneurial employees

To date, comparative international research on entrepreneurship has primarily focused on early-stage (independent) entrepreneurial activity and has given scant attention to the pursuit of entrepreneurial opportunities within established organizations and to the actors behind these initiatives. However, entrepreneurship researchers increasingly look beyond new business start-ups only, and include new opportunity exploitation by existing organizations as entrepreneurship (Shane and Venkataraman, 2000). In that spirit the present GEM special topic study, based on the GEM 2011 database, focuses on the characteristics and role of entrepreneurial employees.

While GEM annually monitors entrepreneurial activities across the globe, these are mostly viewed from an occupational perspective: the process of setting up and maintaining (or growing) a business that is owned and managed by one or more individuals. These entrepreneurial activities show a wide variety and do not all contribute equally to the economy. On the other hand, the behavioral perspective of entrepreneurship looks at the entrepreneurial behavior of all individuals in the labor force, including that of employees. While the occupational and behavioral perspectives are not mutually exclusive but overlap to a substantial degree, the phenomenon of entrepreneurial employees only belongs to the behavioral perspective. The GEM methodology is also well-positioned to measure entrepreneurial employee activity, and following a pilot study carried out in 2008, a comprehensive effort was undertaken to include the topic in the GEM 2011 cycle.

Who should read this report?

This report is targeted at readers from a wide audience. Policy makers may get acquainted with the size, scope and impact of entrepreneurial employee activity in their economies, scholars may pick up the new measures of entrepreneurial employee activity that are theoretically related (but not identical) to the concepts of intrapreneurship and corporate entrepreneurship, at both the macro and the micro level. Teachers may use the results to present a more nuanced view of entrepreneurship in different contextual settings. The results in this report may help readers reflect on questions including:

- What accounts for the specific mix of owner-managers of nascent and new businesses and entrepreneurial employees in an individual country?
- To what extent and how do entrepreneurs build on their possible previous experience as an employee?
- What are the odds that entrepreneurial employees will start a business of their own?
- What is the social impact of entrepreneurial employee activity in terms of job creation?

Reader guide

Chapter 2 presents a detailed account of the concept of entrepreneurial employee activity and the research design of the GEM 2011 special topic study. It also relates the subject of entrepreneurial employee activity to the overall GEM conceptual model. In chapter 3 the main measures of entrepreneurial employee activity at the level of countries are presented and discussed. This chapter also investigates to what extent it is possible to distinguish between types of economies by relating the varying national patterns of entrepreneurship to distinct underlying cultural and institutional characteristics. Chapter 4 discusses how the characteristics of individual entrepreneurial employees vary across stages of economic development. Chapter 5 describes the new business activities initiated by these entrepreneurial employees, and how employees spin off into independent entrepreneurial activity across the globe. Hence, this report covers the interdependent relation between entrepreneurial employees and independent entrepreneurs both from the employees' perspective (by examining entrepreneurial employees who may be more prone to start a business of their own) and from the independent entrepreneurs' perspective (by assessing whether or not they have 'spun off' from a firm with related activities which they worked for). Finally, chapter 6 concludes and provides implications for researchers and policy makers.

2. ENTREPRENEURIAL EMPLOYEE ACTIVITY: CONCEPTS AND RESEARCH DESIGN

2.1 INTRODUCTION

Entrepreneurship is a multi-dimensional phenomenon, and many types of entrepreneurship have been identified in the literature. Sternberg and Wennekers (2005) distinguish between the occupational and behavioral notions of entrepreneurship. The occupational notion centers on the individuals owning and managing businesses for their own account and risk, and is usually denoted as self-employment, independent entrepreneurship or business ownership. The behavioral notion centers on behavior related to pursuing an entrepreneurial opportunity, and it is generally denoted as entrepreneurial behavior or simply as entrepreneurship. The occupational and behavioral notions are not mutually exclusive, but overlap to a substantial degree. Some further distinctions of entrepreneurship include 'necessity' versus 'opportunity' entrepreneurship, and 'replicative' or 'routine' entrepreneurship versus 'innovative', 'high impact' or 'ambitious' entrepreneurship. Over many years, empirical research by GEM has clearly shown that the prevalence rates of these various types of entrepreneurship vary considerably across countries (see www.gemconsortium.org).

In addition, there is an important distinction of entrepreneurship into two 'modes of exploitation' (Shane and Venkataraman, 2000), i.e. independent (early-stage) entrepreneurial activity versus 'opportunity pursuit within existing organizations', also known as entrepreneurial employee activity, corporate entrepreneurship or intrapreneurship. In the GEM 2011 survey, several countries were found to have a high prevalence of either (early-stage) entrepreneurial activity or entrepreneurial employee activity, while other countries appear to have a low or a high prevalence in both modes of entrepreneurship. Some authors suggest that these varying patterns of entrepreneurial activity may be related to differences in entrepreneurial framework conditions (Baumol 1990; Levie and Autio, 2008; Frederick and Monsen, 2011). In particular, the level of economic development may be influential. Additionally, culture and institutions vary considerably across countries, and these differences may also help explain the various patterns of entrepreneurial manifestations across economies. The role of these various framework conditions is explicitly modeled and analyzed in chapters that follow, though these analyses should be seen as first steps; follow-up research is certainly called for. This chapter elaborates on the concept of entrepreneurial employee activity, presents the research design of this special topic study, and relates the subject of entrepreneurial employee activity to the overall GEM model.

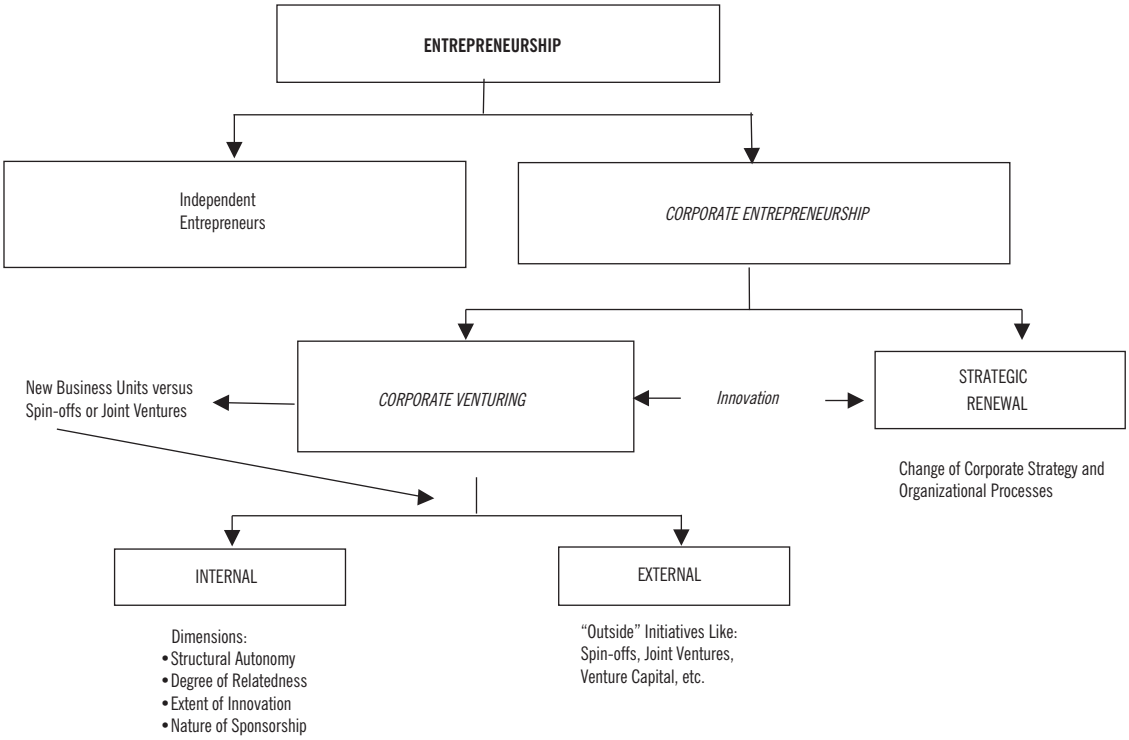
2.2 ENTREPRENEURIAL EMPLOYEE ACTIVITY: CONCEPTUAL FRAMEWORK AND DEFINITIONS

The 'entrepreneurship within existing organizations' field employs a wide-ranging terminology (Sharma and Chrisman, 1999). One of the most extended concepts in the literature is related to the term corporate entrepreneurship. This concept encompasses several business strategies and practices for pursuing business opportunities by developing potential new ventures or by strategically renewing the company, and usually involving entrepreneurial behavior of employees. Corporate entrepreneurship primarily refers to the level of organizations and often concerns top-down processes and management strategies (De Jong and Wennekers, 2008). As is shown in Figure 2.1, corporate entrepreneurship includes corporate venturing and strategic renewal (Guth and Ginsberg, 1990; Sharma and Chrisman, 1999).

Corporate venturing is the generation of new business initiatives (Miles and Covin, 2002; Covin and Miles, 2007). It is therefore a process of seeking new opportunities to extend the scope of activities of the company to related or partially related areas, leading to the development of new products, markets and/or technologies. Corporate venturing may take two forms (Sharma and Chrisman, 1999): (1) Internal venturing refers to new projects arising from within the company and resulting in the creation of organizational entities that reside within the existing organization; (2) External venturing refers to new projects resulting in the creation of (semi-)autonomous organizational entities that reside outside the existing organization. In the case of external corporate venturing, firms also look beyond the entrepreneurial drive of the organization and promote partnerships with newly created innovative companies and with projects from research centers and universities, where the creation of corporate venture capital funds also becomes an important strategic tool (Dushnitsky and Lenox, 2006; Teng 2007).

The second type of corporate entrepreneurship encompasses strategic renewal activities, also involving a new combination of resources and a profound transformation of the foundations of the company, that make a renewed company significantly different from what it was before (Guth and Ginsberg, 1990). Strategic renewal often involves redefining the mission of the company, the construction of a new business model, the reformulation of competitive strategic bases, and the acquisition or generation of new skills. The success of this process will largely depend on 'entrepreneurial drive' similar to that observed in the processes of business creation, with the existence of an entrepreneurial leader with a

Figure 2.1 Typology Of Different Entrepreneurial Activities: Concepts From The Literature



Note: Based on Sharma and Chrisman, 1999

commitment and motivation, attitudes and behaviors similar to those of independent entrepreneurs (Dess et al., 2003; Jones 2005).

Compared with strategic renewal, corporate venturing is probably more related to the concept of intrapreneurship. The term 'intrapreneurship' is usually attributed to Pinchot (1985). This concept relates to bottom-up, proactive initiatives of individual employees. In whatever ways corporate entrepreneurship and intrapreneurship are viewed, they always highlight the role of intentions, drives and activities of individual employees at various levels of the business hierarchy.

Definition adopted in this study

This report addresses the hitherto largely unanswered question as to who are the individuals (i.e. entrepreneurial employees) behind entrepreneurial activities originating in existing organizations (Hammann 2006). Based on the literature summarized above, this report defines entrepreneurial employee activity as 'employees developing new activities for their main employer, such as developing or launching new goods or services, or setting up a new business unit, a new establishment or subsidiary' (see Box 2.1 for examples).

The scope adopted is therefore broader than new organization creation; however it excludes employee initiatives that mainly aim at optimizing internal work processes. In particular, this report focuses on the individual level of entrepreneurial employees who have a leading role in the creation and development of these new activities. These entrepreneurial initiatives include both top-down and bottom-up activities. Throughout this report, these individuals will be called 'entrepreneurial employees' – their collective actions will be denoted as 'entrepreneurial employee activity' (EEA).

Box 2.1 Examples of entrepreneurial employee activity in leading companies

The USA-based multi-national 3M is famous around the globe, not only because of its portfolio of products but also because of its 'innovation-based culture' leading to entrepreneurial employee activities. One example of their entrepreneurial employees is Andy Wong, former manager of the Optical Systems business unit at 3M. He developed a project around a new technology related to light control film between 1989 and 1992. After two unsuccessful launches and continuous technical and market failures, the project was under threat. However, Wong's ability to create a strong team, redesign the marketing strategy and construct a final prototype that fits with the demand from the 'real' market eventually enabled him to refloat the project and restore the credibility of the unit. Under the 3M slogan 'to stimulate ordinary people to produce extraordinary performance', today all the technologies related to light control films are under the umbrella of a successful business unit called Vikuiti that has one of the largest market shares in the industry. After his intrapreneurial performance, Andy Wong was promoted to vice-president of 3M's optical systems division. He retired in 2008 after 34 years working for 3M[5].

Another interesting example is Dow Chemical's launch of the e-epoxy.com project in 2000. E-epoxy.com was an original idea of Ian Telford, at this time European Sales Director for epoxy products. He recognized a big opportunity on the emergent e-commerce technologies and the '.com revolution' in the final years of the 1990s. The original idea of this project was to sell Dow's epoxical products to the spot market and small costumers whom Dow Chemical had never reached before because it was difficult to serve them by lack of an efficient distribution channel. In a very entrepreneurial way, Ian Telford developed a profitable web-based platform that formed a corner-stone of the actual on-line sales systems of all Dow Chemical divisions.

Technology-based companies like Google, Sony, Hewlett Packard and Intel also have policies to support intrapreneurs. These employees – mainly those in engineering activities – receive support to develop new products. This strategy has already reaped benefits; for instance Gmail resulted from this initiative. Likewise, the development of the Sony Playstation would not have occurred without Sony intrapreneur Ken Kutaragi.

2.3 CAPTURING ENTREPRENEURIAL EMPLOYEE ACTIVITY USING THE GEM RESEARCH FRAMEWORK

The assessment of entrepreneurial employees can be positioned as an extension of the (evolving) conceptual model GEM has used over the years (see Amorós et al., 2013). The annual GEM Global Reports describe the full conceptual model that drives the GEM data collection and analysis[6]. In short, the full GEM model documents (i) how entrepreneurship is affected by national conditions; and (ii) how the resulting entrepreneurial profile in turn may determine socio-economic development. GEM monitors Entrepreneurial Framework Conditions (EFCs) in each country through harmonized surveys of experts in the field of entrepreneurship[7]. The measures of entrepreneurial attitudes, activity and aspirations are captured using the adult population surveys and constitute the three main components that capture the multi-faceted nature of (independent) entrepreneurship. In particular, aspirations or ambitions are relevant because researchers increasingly realize that all entrepreneurial activity does not equally contribute to development. For example, in many countries, much employment creation comes from a small number of ambitious, fast-growing new businesses (Autio 2007; Stam et al., 2012).

Thus GEM generates both original macro data on institutional framework conditions for entrepreneurship and original micro data on entrepreneurial attitudes, activity and aspirations by using its own methodology that is harmonized across countries. Figure 2.2 can be seen as an abstraction of the overall GEM model and shows how the EFCs relate to entrepreneurial dynamics, both in the form of (early-stage and established) entrepreneurship and of employee entrepreneurial activities.

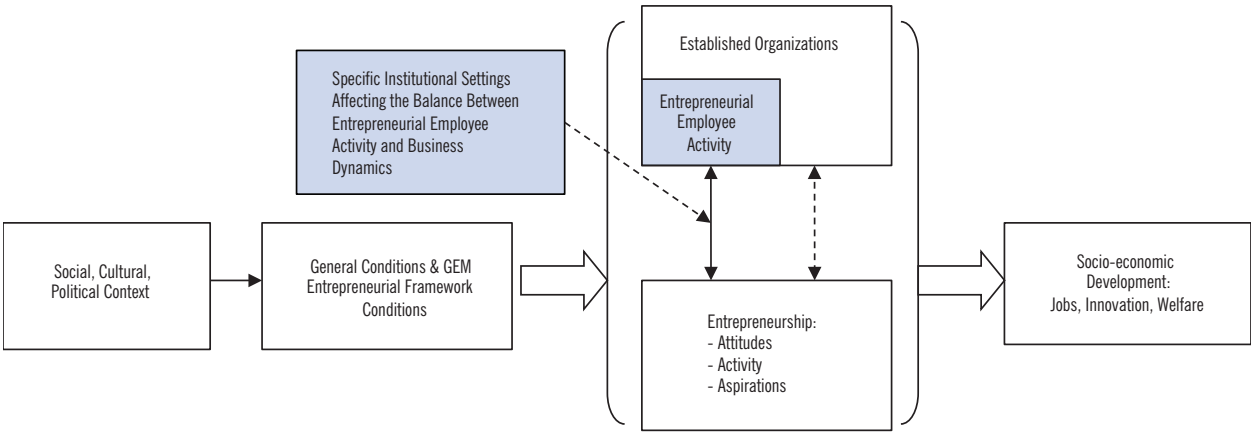
In addition, specific institutional characteristics may have an impact on the balance between entrepreneurial employee activity and (early-stage and established) entrepreneurship captured by GEM via entrepreneurial attitudes, activity and aspirations. Examples of such specific institutional settings relate to the degree to

5 For the complete history on 3M optical systems, we refer to the HBS Case 9-395-017 prepared by Bartlett and Mohammed (1994). For more information about 3M and Vikuiti see http://solutions.3m.com/wps/portal/3M/en_US/VikuitiHome/Landing-Page/

6 See Levie and Autio (2008) for a theoretical grounding. See also Amorós et al. (2013) for updates.

which social security favors employees in comparison to self-employed, and to the dominant leadership styles in certain economies. Therefore, specific questions were added to the GEM 2011 National Experts Survey to capture these specific institutional characteristics. The two shaded areas in Figure 2.2 reflect the extensions to the GEM conceptual model: specific institutional settings are assessed by means of the National Experts Survey, whereas Entrepreneurial Employee Activity (including several alternative measures) is measured adopting a special module of questions in the GEM Adult Population Survey. Finally, the interrelationship between self-employed and their previous or current wage-employment is explored (see section 5.4 on spin-outs).

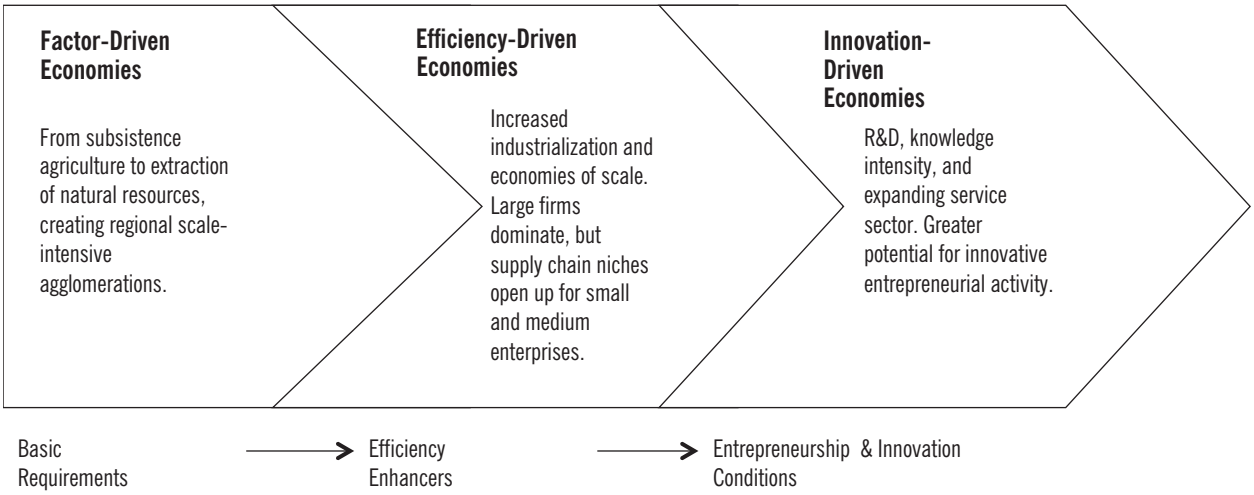
Figure 2.2 Highlighting The Role Of Entrepreneurial Employee Activity In A Process Model Explaining Macro Economic Development



The outcome of the model is socio-economic development, consisting of job creation, innovation and growth of prosperity or social welfare. Different profiles of entrepreneurship, related to different conditions, may hence lead to different forms of socio-economic output. In this sense, the measurement of entrepreneurial employee activity may prove to be of value for exploring the role of entrepreneurship in economic development as well. In this perspective, it is important to note that GEM recognizes that different profiles of entrepreneurial activity may be required at different stages of economic development in order to advance in terms of socio-economic development. To this end, the stages of economic development as published in the Global Competitiveness Reports (GCR; Schwab 2011) are adopted and GEM results are categorized by these stages of economic development. The basic structure is provided in Figure 2.3. For example, for developing economies (labeled 'factor-driven economies' in the GCR) priority should be given to developing basic requirements such as infrastructure, stability, health and primary education. In the next stage ('efficiency-driven economies'), efficiency enhancers build on these basic conditions to ensure better market processes – leading to more efficiency and social welfare as a result. Conditions for entrepreneurship and innovation (captured in the GEM Model by Entrepreneurial Framework Conditions) will only produce positive effects if the basic requirements and efficiency enhancers are in good shape. Thus, these conditions will be most important to innovation-driven economies, even though these economies should of course maintain their basic requirements and efficiency enhancers as well. Considering the topic of entrepreneurial employees – and the related theoretical concepts of intrapreneurship and corporate entrepreneurship – it is to be expected that this component of entrepreneurship starts to be developed in efficiency-driven economies but becomes even more critical in innovation-driven economies.

6 The National Experts Survey provides qualitative and subjective information on the state of several framework conditions whose evaluation is not measured by objective and quantitative variables. For the rest of contextual variables, GEM collects each year, objective information from the most reputed sources offering it: World Bank, United Nations, OECD, World Economic Forum and many others.

FIGURE 2.3 SOME KEY CHARACTERISTICS OF THREE STAGES OF ECONOMIC DEVELOPMENT



Source: Kelley et al. 2012

2.4 RESEARCH DESIGN

This special topic study investigation was carried out using the GEM 2011 Adult Population Survey (APS) and National Experts Survey (NES)[8]. An advantage of this methodology is the opportunity to compare entrepreneurial employees with other employees and with early-stage entrepreneurs (i.e. individuals who own their businesses, or expect to own the business they are setting up, see Box 2.2), at both the macro and the micro level.

Methodologically this special topic study builds upon an earlier pilot study across 11 countries, conducted during GEM 2008 (see Bosma et al., 2011). Two phases of entrepreneurial employee activity are distinguished, i.e. 'idea development for a new activity' and 'preparation and implementation of a new activity'. Idea development includes active information search, brainstorming and submitting ideas for new activities to the management of the business. Preparation and implementation of a new activity refers to promoting an idea for a new activity, preparing a business plan, marketing the new activity, finding financial resources and acquiring a team of

BOX 2.2 THE GEM MEASURE OF TOTAL EARLY-STAGE ENTREPRENEURIAL ACTIVITY (TEA) AND ITS OVERLAP WITH ENTREPRENEURIAL EMPLOYEE ACTIVITY (EEA)

For years GEM has focused on the phase that combines the stage in advance of the start of a new firm (nascent entrepreneurship) and the stage directly after the start of a new firm (owning-managing a new firm). Taken together this phase is denoted as 'total early-stage entrepreneurial activity' (TEA)[9]. In addition, individuals with entrepreneurial attitudes – potentially leading to entrepreneurial activity – and individuals involved as owner-managers in established firms are identified. These categories discerning phases of entrepreneurship are derived from the raw GEM data using a complex filter procedure. For a more extensive account of the operational GEM methodology see Bosma et al. (2012).

It should be noted that some of the individuals identified as being involved in nascent entrepreneurship may do this as part of their job, with the expectation to become an owner-manager. Hence, they may be identified as entrepreneurial employees at the same time. The data show that these cases indeed occur. For innovation-driven economies, on average 5% of the entrepreneurial employees are at the same time identified as nascent entrepreneurs who are setting up a business for their employers. In efficiency-driven economies this share amounts to 12%.

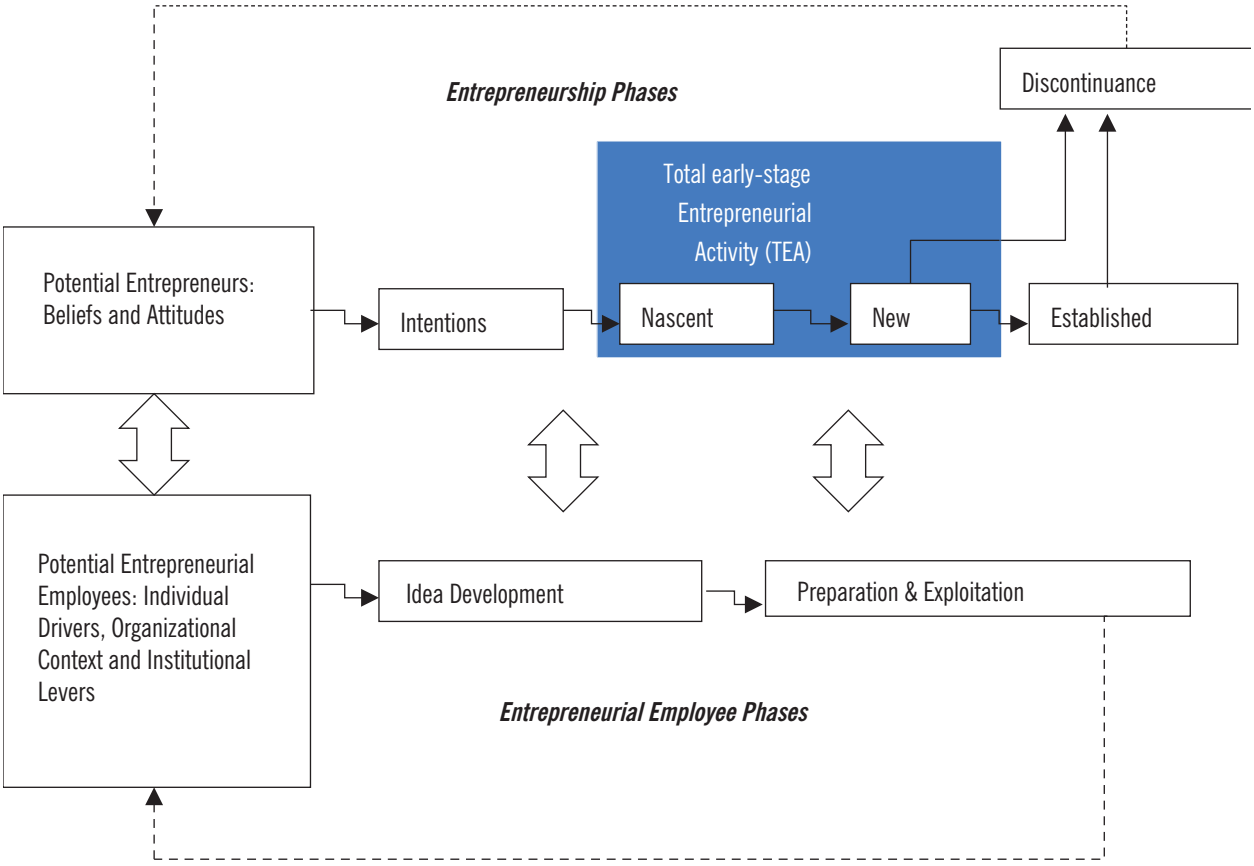
8 Initial results were published in the Global Entrepreneurship Monitor 2011 Extended Report (Bosma et al., 2012).

9 The acronym TEA originally expressed 'total entrepreneurial activity'. Here, the word 'total' was meant to capture the 'total' collection of owner-managers in nascent and new firms, including agriculture. This led to some confusion (see e.g. Hindle 2006) as the suggestion was made that, for instance, also entrepreneurial activities by owner-managers in established firms were captured in the measure. Hence, the words 'early-stage' are usually included in describing the TEA acronym that has been retained as the measure itself and has not been altered since 2001.

workers for the new activity. See Figure 2.4 for a schematic representation and a comparison with the entrepreneurship phases for early-stage independent entrepreneurs, as derived from the overall GEM-model described in greater detail in section 2.3.

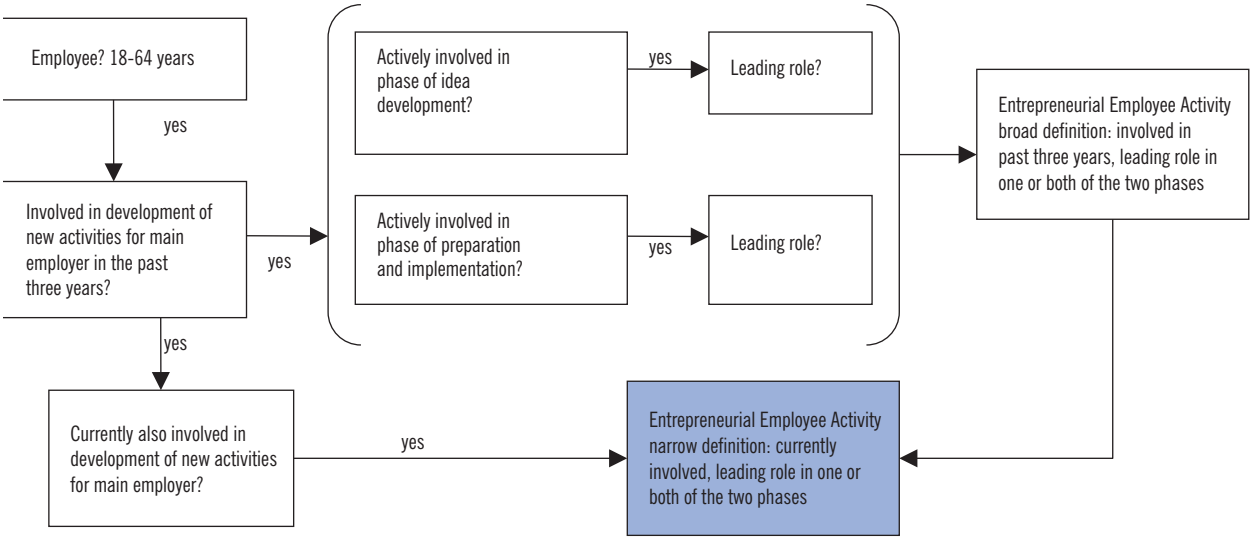
In addition, with respect to the involvement of employees in each of these phases of the development of new activities, this study makes a distinction in a supporting and a leading role. A leading role in at least one of these phases has been used as the final criterion for identifying entrepreneurial employees (see Figure 2.5). However, this report will also pay some attention to the characteristics of employees who have a supporting role in the development of new business activities.

FIGURE 2.4 ENTREPRENEURSHIP PROCESS AND GEM OPERATIONAL DEFINITIONS, INCLUDING ENTREPRENEURIAL EMPLOYEE ACTIVITY



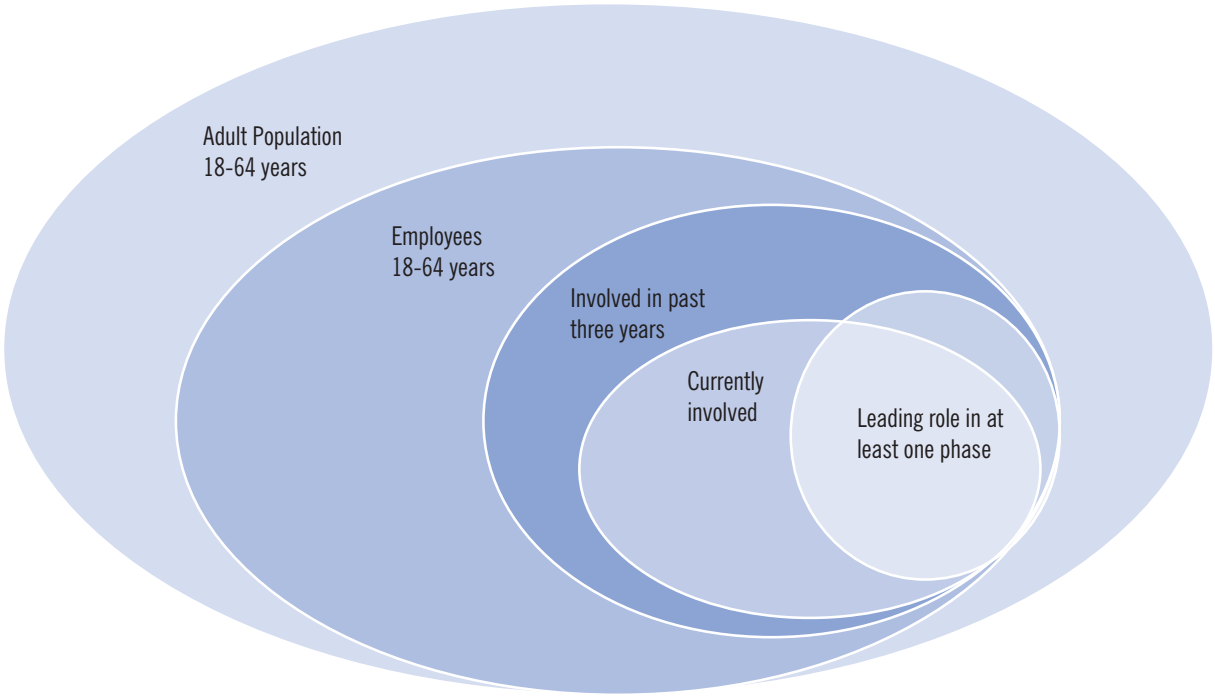
Based on these conceptual elements, this report measures the prevalence of entrepreneurial employee activity according to two definitions. Following a first definition entrepreneurial employee activity refers to employees who, in the past three years, were actively involved in and had a leading role in at least one of these phases (i.e., 'idea development for a new activity' and/or 'preparation and implementation of a new activity'). The second (more narrow) definition refers to the entrepreneurial employees who are also currently involved in the development of such new activities (also see Figure 2.5). Current entrepreneurial employees are thus a subgroup of the group of employees who were involved in entrepreneurial employee activity during the past three years. The prevalence of entrepreneurial employee activity can be defined as the number of entrepreneurial employees, according to either definition, as a percentage of either the total number of employees or the adult population (between 18 and 64 years of age). In most tables and figures in this report, the narrow definition (denoted as EEA) will be used. If relevant it will be indicated which other definition of entrepreneurial employee activity has been employed.

Figure 2.5 Entrepreneurial Employee Activity: Recent And Current Involvement



While Figure 2.6 shows how entrepreneurial employees according to gradually narrowing definitions may be identified, further distinctions are also possible dependent on the characteristics of EEA[10]. Most importantly, we consider in this report (i) EEA with significant job expectations (more than five expected jobs within the next five years, denoted as EEA-MH); (ii) EEA with independent entrepreneurial activity orientation (EEA-IEO); and (iii) EEA emerging from the private sector versus the (semi) public sector. The main measures used throughout the report are summarized in Table 2.1.

Figure 2.6 Narrowing Down From Adult Population To Entrepreneurial Employee Activity



10 Details on the breakdown of entrepreneurial employees from the GEM 2011 sample are provided in section 3.6

Table 2.1 Indicators On Entrepreneurial Employee Activity Used In This Report

Indicator	Abbreviation	TEA-MH: high
Entrepreneurial Employee Activity	**EEA**	Currently active in EEA, leading role in at least one phase
Entrepreneurial Employee Activity, broad definition	**EEA-p3y**	Active in EEA in past three years, leading role in at least one phase
Entrepreneurial Employee Activity with solo/low job expectations	**EEA-SL**	EEA *and* expects at most four jobs resulting from the activity five years from now
Entrepreneurial Employee Activity with medium/high job expectations	**EEA-MH**	EEA *and* expects at least five jobs resulting from the activity five years from now
Entrepreneurial Employee Activity with orientation towards independent entrepreneurial activity	**EEA-IEO**	EEA *and* currently starting a new business - or intentions to do so in the next three years; these may include nascent entrepreneurs who are currently setting up a business for their employer, expecting to own and manage this business in due course
Entrepreneurial activity in private sector	**EEA-PRIV**	EEA *and* currently working for an organization in the private sector
Entrepreneurial activity in (semi) public sector	**EEA-PUB**	EEA *and* currently working for an organization in the public or semi-public sector

**Note: Below versus above the unweighted average for efficiency-driven economies*

In all 52 countries for which data were collected on entrepreneurial employee activity, all employees classified as entrepreneurial employees (according to either definition) were asked two further questions about their 'most significant new activity' in the past three years. These questions referred to a brief description of the new activity and to the expected number of people working on the new activity five years after its introduction. In addition, in 32 economies participating in an optional survey section, entrepreneurial employees were asked some additional questions about the new business activity. These questions dealt with the degree of innovation, the relation with technologies used in the firm, the expectation whether or not the activities will remain part of the firm, and whether personal risks were involved. The results of these additional questions are presented in chapter 5. Finally, in the optional survey section some other additional questions were asked to all employees.

3. THE PREVALENCE OF ENTREPRENEURIAL EMPLOYEE ACTIVITY

3.1 INTRODUCTION

Which economies exhibit high prevalence rates of entrepreneurial employee activity and which economies are lagging behind? Which distinct country characteristics appear to go together with a high or a low prevalence of entrepreneurial employee activity and what forces appear to drive the observed differences across economies? This chapter presents the empirical data for the GEM 2011 measures on entrepreneurial employee activity that were introduced in the previous chapter. It also presents a preliminary, descriptive analysis of overall patterns that can be observed from the GEM 2011 assessment. First, in section 3.2, the main measures are presented across three phases of economic development. These results confirm that entrepreneurial employee activity is quite rare at the early phases of economic development and is particularly prevalent in innovation-driven economies. However, significant variation also exists across economies within each phase of economic development, pointing to the relevance of the institutional context. Section 3.3 deals with a selection of the items included in the GEM 2001 NES survey of conditions for entrepreneurial employee activity, highlighting patterns related to phases of economic development.

The focus moves to ambitious entrepreneurship – in terms of expectations for job growth[11] – in section 3.4. Here, a measure for entrepreneurial employee activity with medium/high job expectations (EEA-MH) is combined with its counterpart from the regular GEM surveys: early-stage entrepreneurial activity with medium/high job expectations (TEA-MH). The combination of these two measures, examined separately for efficiency-driven economies and innovation-driven economies, is used as the basis for a new exploratory country classification. It singles out the economies that have high rates for both measures versus those with low rates for each of these measures, while the remaining countries have a high prevalence in either EEA-MH or TEA-MH, and a low prevalence in the other entrepreneurship mode. Further analysis shows that economies that are classified in the same group also appear to share several economic, social and cultural characteristics.

Subsequently, section 3.5 presents the distribution of entrepreneurial employee activity across sectors and size classes. Finally, section 3.6 considers the empirical data for the alternative definitions of entrepreneurial employee activity as outlined in chapter 2 (Figures 2.5 and 2.6). Step by step we relax the restrictions set for the main EEA indicator, i.e. that entrepreneurial employees should both have a leading role and be currently active in the development of new activities. To explore the link between entrepreneurial employees and owner-managers in nascent and new firms, we also distinguish between entrepreneurial employees who are currently involved in nascent entrepreneurial activity and/or have intentions to start and own a business within three years (EEA-IEO) versus entrepreneurial employees who have no such orientation (EEA-NIEO).

3.2 ENTREPRENEURIAL EMPLOYEE ACTIVITY ACROSS COUNTRIES

Table 3.1 presents the main results for the prevalence of entrepreneurial employee activity across 52 countries according to the two main definitions introduced in Figure 2.5, as a percentage of the adult population between 18 and 64 years of age and as a percentage of the number of employees. A first glance at Table 3.1 reveals that entrepreneurial employees, as defined here, are not very numerous. According to the narrowest definition, on average only about 3% of the adult population and 5% of the employees in our sample are currently involved in entrepreneurial employee activity (EEA). And the percentage of the adult population that was involved in EEA in the past three years is on average only slightly higher.

A second observation is that entrepreneurial employee activity is more prevalent in innovation-driven economies than in efficiency-driven economies. The differences in prevalence between innovation-driven economies and factor-driven economies are even larger. More precisely, the prevalence of entrepreneurial employee activity (according to the most narrow definition) as a percentage of the adult population in innovation-driven economies is more than ten times that of factor-driven economies and more than twice that of efficiency-driven economies.

These differences in EEA rates across the stages of economic development may partly be due to higher (salaried) employment participation rates in the innovation-driven economies, but to a large extent these differences are also visible for the prevalence of entrepreneurial employee activity as a percentage of employees (between 18 and 64 years). Accordingly, the prevalence of entrepreneurial employee activity as a percentage of employees in innovation-driven economies is almost five times as high as in factor-driven economies and almost twice as high as in efficiency-driven economies.

11 The focus on job growth expectation is partly driven by data availability. Other indicators of ambitious entrepreneurship might include the degree of innovation (see Stam et al., 2012), which may be even more important for some entrepreneurial employee activities.

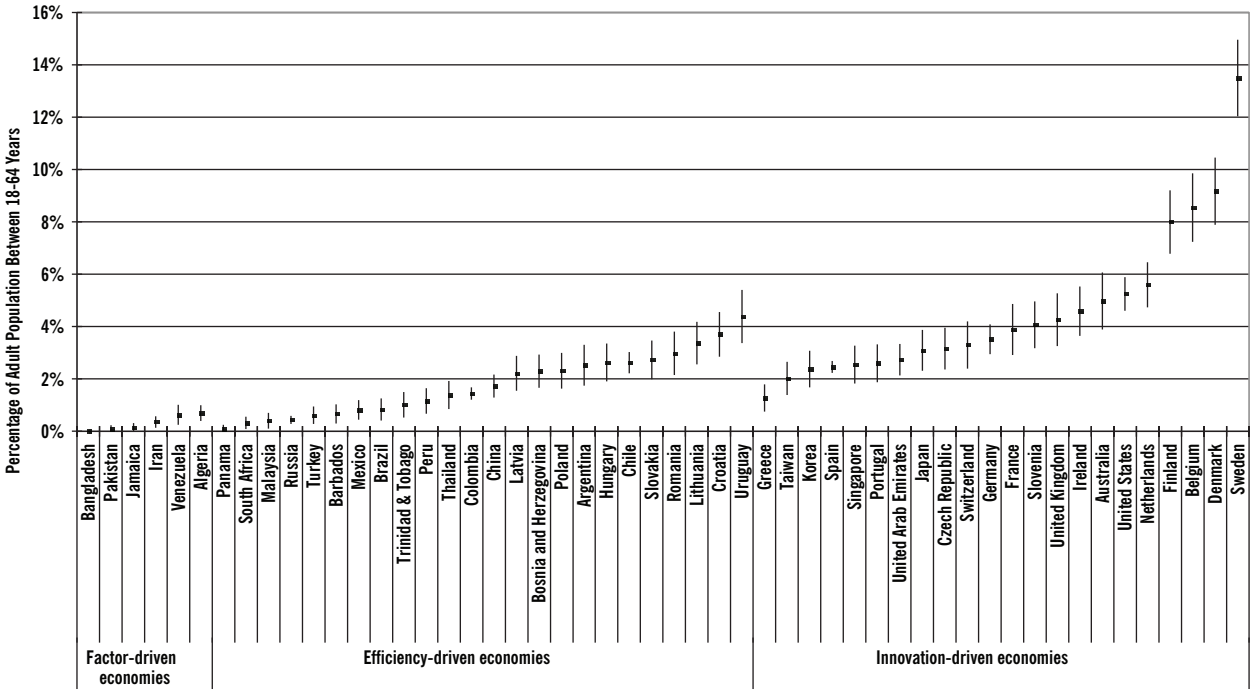
Table 3.1 Prevalence Of Entrepreneurial Employee Activity In 52 Countries

	Leading Role in Entrepreneurial Employee Activity in Past 3 Years in % of		Leading Role in Entrepreneurial Employee Activity in Past 3 Years & Currently Involved in % of	
	Adult Population	Employees	Adult Population	Employees
FACTOR-DRIVEN ECONOMIES				
Algeria	0.8	3.9	0.7	3.3
Bangladesh	0.0	0.0	0.0	0.0
Iran	0.4	2.4	0.4	2.4
Jamaica	0.2	0.7	0.1	0.5
Pakistan	0.2	1.1	0.1	0.4
Venezuela	0.6	2.3	0.6	2.3
unweighted average	0.4	1.7	0.3	1.5
EFFICIENCY-DRIVEN ECONOMIES				
Argentina	3.2	7.3	2.5	5.8
Barbados	0.7	1.5	0.7	1.4
Bosnia and Herzegovina	3.1	9.8	2.3	7.2
Brazil	1.0	3.1	0.8	2.6
Chile	3.5	12.9	2.6	9.9
China	2.1	4.8	1.7	4.0
Colombia	1.7	4.9	1.5	4.3
Croatia	4.4	9.0	3.7	7.5
Hungary	3.9	7.8	2.6	5.2
Latvia	3.0	5.0	2.2	3.6
Lithuania	4.9	8.1	3.4	5.6
Malaysia	0.4	0.9	0.4	0.9
Mexico	0.9	2.3	0.8	2.0
Panama	0.2	0.3	0.1	0.2
Peru	1.4	7.3	1.2	6.1
Poland	2.8	5.7	2.3	4.7
Romania	3.9	7.6	3.0	5.8
Russia	0.6	1.0	0.4	0.7
Slovakia	3.4	6.5	2.7	5.2
South Africa	0.4	2.0	0.3	1.6
Thailand	1.4	4.9	1.4	4.9
Trinidad and Tobago	1.2	2.6	1.0	2.3
Turkey	0.7	2.1	0.6	1.8
Uruguay	5.2	9.8	4.4	8.3
unweighted average	2.3	5.3	1.8	4.2
INNOVATION-DRIVEN ECONOMIES				
Australia	6.2	9.0	5.0	7.3
Belgium	9.4	13.5	8.6	12.3
Czech Republic	3.8	6.3	3.2	5.2
Denmark	15.1	20.7	9.2	12.6
Finland	9.4	13.4	8.0	11.4

France	4.7	7.5	3.9	6.1
Germany	4.8	7.6	3.5	5.5
Greece	1.6	4.9	1.3	3.8
Ireland	5.9	10.4	4.6	8.1
Japan	3.4	5.7	3.1	5.2
Korea, Republic of	2.6	6.7	2.4	6.1
Netherlands	7.8	11.1	5.6	7.9
Portugal	4.0	6.0	2.6	3.9
Singapore	3.3	6.2	2.6	4.8
Slovenia	5.1	9.3	4.1	7.4
Spain	2.7	6.1	2.5	5.5
Sweden	16.2	22.2	13.5	18.4
Switzerland	4.6	7.2	3.3	5.1
Taiwan	2.0	3.9	2.0	3.9
United Arab Emirates	3.6	4.9	2.7	3.7
United Kingdom	5.3	8.1	4.3	6.6
United States	6.6	10.5	5.3	8.4
unweighted average	5.8	9.1	4.6	7.2
Total unweighted average	3.5	6.5	2.8	5.2

Source: Global Entrepreneurship Monitor 2011

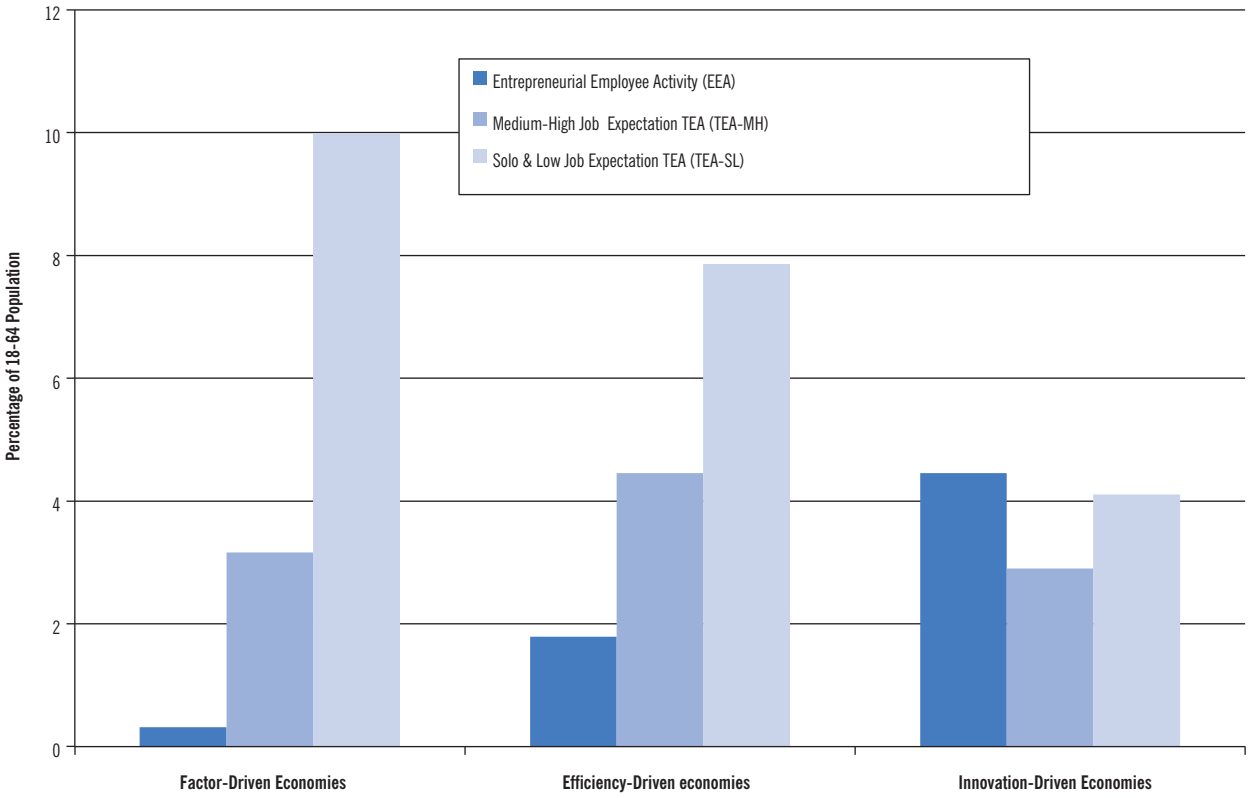
Figure 3.1 Prevalence Rates Of Employee Entrepreneurial Activity (EEA) In The 18-64 Population



Source: Global Entrepreneurship Monitor 2011

Note: The narrow definition was used for this figure.

Figure 3.2 Prevalence Of Three Distinct Types Of Entrepreneurial Activity in % Of Adult Population, For Three Stages Of Economic Development



Source: Global Entrepreneurship Monitor 2011

Note: TEA-MH (5 or more jobs) and TEA-SL (up to 4 jobs) based on job expectations five years ahead, averages 2009-2011; EEA averages 2011. In this figure, other than in Table 3.2, all three indicators are calculated for 52 economies..

Figure 3.1 shows the point estimates of the EEA rates for each of the 52 economies in 2011 by phase of economic development. The confidence intervals constitute the range within which the average value of 95 out of 100 replications of the survey would be expected to lie. Thus, where the vertical bars do not overlap, as is the case comparing Japan and the United States, the EEA rates are statistically different with 95% certainty, also denoted as statistically different at the 0.05 level.

On average the incidence of EEA in the adult population is, by either definition, substantially lower than that of early-stage Entrepreneurial Activity (TEA) (Kelley et al., 2012; Bosma et al., 2012). In the factor-driven economies, EEA is extremely scarce while TEA is abundant. In the efficiency-driven economies, the differences are smaller, but TEA is still several times as prevalent as EEA. Only in the innovation-driven economies is the incidence of EEA in the adult population in the same order of magnitude as that of TEA. However, in some countries, such as Belgium, Denmark and Sweden, EEA is even higher than TEA (see Table 3.2).

The pattern of EEA across the stages of economic development is thus the reverse of that for TEA. Figure 3.2 illustrates these patterns, while taking account of the distinction between medium/high job expectations early-stage entrepreneurial activity (TEA-MH), as defined in section 2.4 of this report, and its complement solo/low job expectations early-stage entrepreneurial activity (TEA-SL). This figure also shows that the latter is the most prevalent type of early-stage entrepreneurship, even in the innovation-driven economies. In addition, it is an intriguing observation that the sum of these three measures (EEA, TEA-MH and TEA-SL) is on average in the same order of magnitude for all three stages of development. However, Table 3.2 shows that this does not hold at the level of individual economies.

Table 3.2 summarizes some key indicators for the individual countries participating in GEM 2011. In

TABLE 3.2 SOME KEY INDICATORS OF ENTREPRENEURIAL ACTIVITY

	Entrepreneurial Employee Activity (EEA) in 52 Economies	Early-stage Entrepreneurial Activity (TEA) in 54 Economies	Private Sector Entrepreneurial Employee Activity (EEA-PRIV) in 52 Economies	Medium/High Job Expectations EEA (EEA-MH) in 52 Economies	Medium/High Job Expectations TEA (TEA-MH) in 54 Economies
FACTOR-DRIVEN ECONOMIES					
Algeria	0.7	9.3	0.3	0.4	4.2
Bangladesh	0.0	12.8	0.0	0.0	2.6
Guatemala		19.3			
Iran	0.4	14.5	0.2	0.2	3.8
Jamaica	0.1	13.7	0.1	0.1	2.5
Pakistan	0.1	9.1	0.0	0.0	1.4
Venezuela	0.6	15.4	0.4	0.2	4.6
unweighted average	0.3	13.4	0.2	0.1	3.1
EFFICIENCY-DRIVEN ECONOMIES					
Argentina	2.5	20.8	1.5	1.6	5.5
Barbados	0.7	12.6	0.0	0.1	2.8
Bosnia and Herzegovina	2.3	8.1	1.5	2.1	2.3
Brazil	0.8	14.9	0.7	0.5	3.3
Chile	2.6	23.7	1.8	2.1	9.6
China	1.7	24.0	0.7	1.5	7.9
Colombia	1.5	21.4	1.0	1.0	10.8
Croatia	3.7	7.3	2.2	2.5	2.7
Hungary	2.6	6.3	2.1	1.6	3.2
Latvia	2.2	11.9	1.9	1.5	5.4
Lithuania	3.4	11.3	2.6	2.7	5.6
Malaysia	0.4	4.9	0.3	0.3	1.1
Mexico	0.8	9.6	0.4	0.4	2.3
Panama	0.1	20.8	0.0	0.0	2.1
Peru	1.2	22.9	0.9	0.5	7.6
Poland	2.3	9.0	1.8	1.1	4.3
Romania	2.9	9.9	2.2	2.1	3.3
Russia	0.4	4.6	0.4	0.2	2.0
Slovakia	2.7	14.2	2.3	1.6	6.1
South Africa	0.3	9.1	0.2	0.2	3.0
Thailand	1.4	19.5	0.7	1.0	5.4
Trinidad and Tobago	1.0	22.7	0.8	0.7	5.5
Turkey	0.6	11.9	0.5	0.4	5.8
Uruguay	4.4	16.7	3.0	2.2	5.7
unweighted average	1.8	14.1	1.2	1.2	4.7

12 Due to an error in the UK GEM 2011 survey, non-private sector entrepreneurial employee activity is understated. This is why it appears as an outlier in Figure 3.3 (with coordinates EEA 4.3 and EEA-PRIV 3.6).

	Entrepreneurial Employee Activity (EEA) in 52 Economies	Early-stage Entrepreneurial Activity (TEA) in 54 Economies	Private Sector Entrepreneurial Employee Activity (EEA-PRIV) in 52 Economies	Medium/High Job Expectations EEA (EEA-MH) in 52 Economies	Medium/High Job Expectations TEA (TEA-MH) in 54 Economies
Innovation-Driven Economies					
Australia	5.0	10.5	3.1	3.4	4.2
Belgium	8.6	5.7	5.4	5.2	1.1
Czech Republic	3.2	7.6	2.6	1.7	3.8
Denmark	9.2	4.6	4.8	5.6	1.4
Finland	8.0	6.3	4.9	4.7	1.3
France	3.9	5.7	2.4	2.7	1.8
Germany	3.5	5.6	2.5	1.9	1.4
Greece	1.3	8.0	1.0	0.7	1.7
Ireland	4.6	7.2	3.0	3.4	3.2
Japan	3.1	5.2	2.7	2.0	1.8
Korea, Republic of	2.4	7.8	1.6	1.7	2.8
Netherlands	5.6	8.2	3.3	4.0	2.3
Norway		6.9			2.4
Portugal	2.6	7.5	2.0	1.3	1.8
Singapore	2.6	6.6	2.2	1.8	3.4
Slovenia	4.1	3.7	2.7	2.5	1.9
Spain	2.5	5.8	1.6	1.3	1.2
Sweden	13.5	5.8	6.3	9.5	1.7
Switzerland	3.3	6.6	2.0	1.6	2.0
Taiwan	2.0	7.9	1.7	1.4	4.8
United Arab Emirates	2.7	6.2	1.5	1.2	6.6
United Kingdom	4.3	7.3	3.6	2.9	1.9
United States	5.3	12.3	3.4	3.7	4.0
unweighted average	4.6	6.9	2.9	2.9	2.5

Note: TEA-MH represents averages 2009-2011. Other indicators are based on GEM 2011 data.

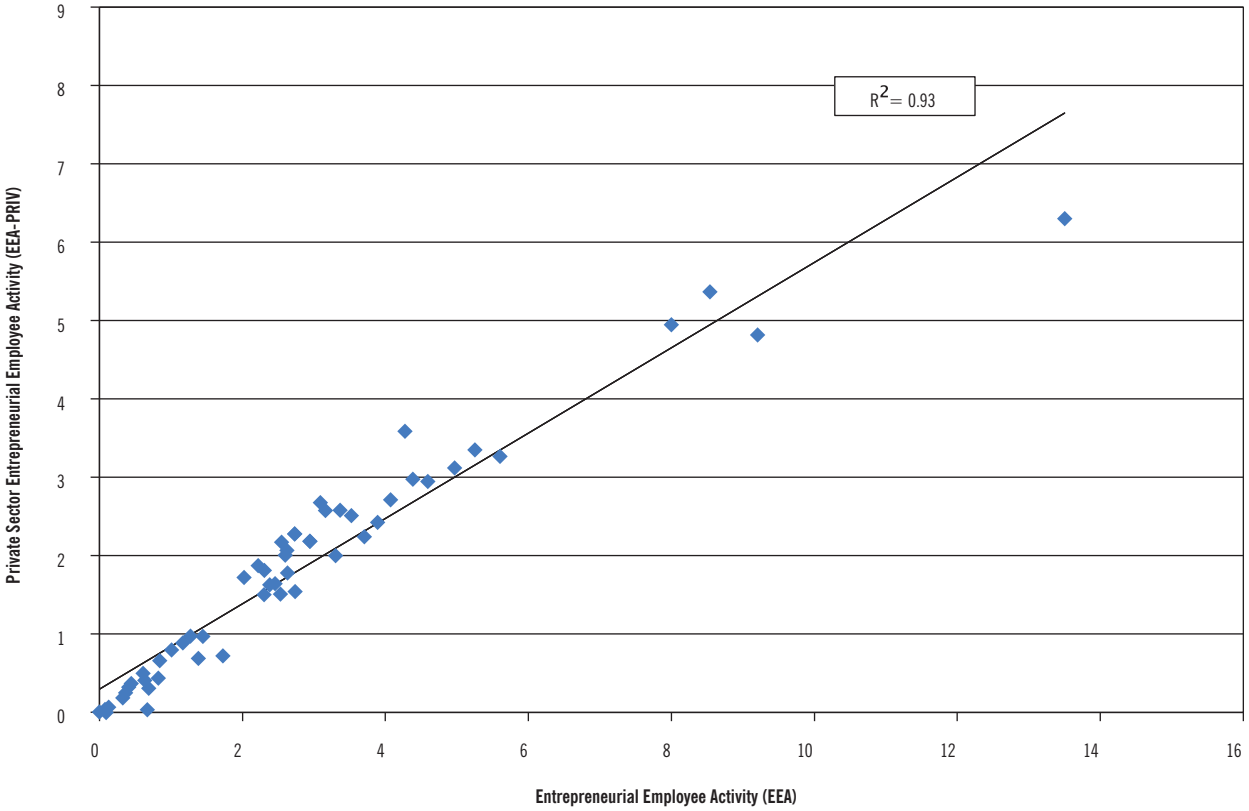
the area of entrepreneurial employee activity these are EEA, private sector entrepreneurial employee activity EEA-PRIV and medium/high job expectations entrepreneurial employee activity EEA-MH (for 52 economies). In the area of independent (early-stage) entrepreneurial activity these are TEA and TEA-MH (for 54 economies).

On average across all 52 economies almost two-thirds of entrepreneurial employee activity takes place in the private for-profit sector. However, as can be seen in Table 3.2, there are substantial differences across individual countries. For example, in the Scandinavian countries as well as in Belgium and the Netherlands, private sector entrepreneurial employee activity has a relatively modest share, while it has a relatively large share in Hungary, Japan, Peru, Portugal, Singapore, Taiwan and the United Kingdom[12]. Nonetheless, the scatter plot in Figure 3.3, also reported in Bosma et al. 2012, shows a strong positive correlation between the rates of overall entrepreneurial employee activity (EEA) and private sector entrepreneurial employee activity (EEA-PRIV) in 52 economies.

3.3. CONDITIONS FOR ENTREPRENEURIAL EMPLOYEE ACTIVITY

As discussed in Section 2.3 the GEM National Experts Survey (NES) is part of the standard GEM methodology and assesses different entrepreneurial

Figure 3.3 Relationship Between Entrepreneurial Employee Activity (EEA) And Private Sector Entrepreneurial Employee Activity (EEA-PRIV)



Source: Global Entrepreneurship Monitor 2011

TABLE 3.3 SPECIFIC STATEMENTS IN THE 2011 GEM NATIONAL EXPERT SURVEY RELATED TO ENTREPRENEURIAL EMPLOYEE ACTIVITY

1.	Entrepreneurs have much less access to social security than employees
2.	The education system emphasizes innovative and pro-active behavior of individuals in general
3.	Employers stimulate proactive behavior by employees
4.	The level of employment protection is deterring employees to start their own business

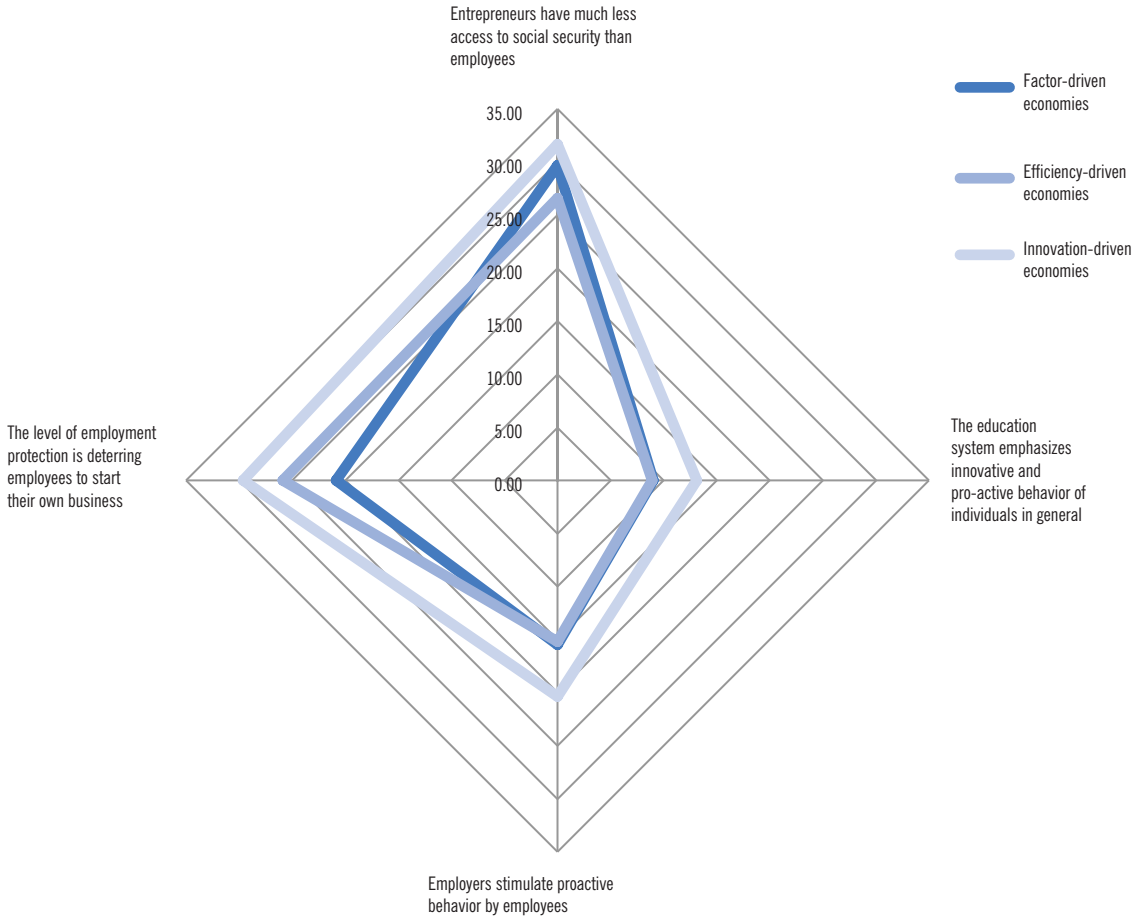
framework conditions defined in the GEM Model To meet the specific objectives of the special topic on entrepreneurial employee activity a set of additional questions was included in the 2011 NES survey. The questions were carefully designed and refined to capture informed judgments of national and in some cases regional, experts regarding the status of various entrepreneurial employee activity framework conditions in their own countries and/or regions. Table 3.3 summarizes the specific set of questions that we highlight in this report[13].

Table 3.4 provides an overview of the results on each of the statements for the 49 economies that completed the NES in 2011, by the three phases of economic development adopted throughout this report[14]. The tables show the means and the standard deviation of each of the four items, for each economy. Even though Table 3.4 makes clear that there is much variation between countries, even between countries in the same stage of economic development, the highest evaluations in experts' judgments tend to occur in the innovation-driven economies. This matches with the overall findings

13 NES questionnaires are copyrighted; they are available at the GEM website: www.gemconsortium.org.

14 Some countries that are involved in the project and completed the APS, could not participate in the NES process for various reasons. Nigeria completed the GEM 2011 National Expert Survey; however Nigeria's submitted GEM 2011 Adult Population Survey data did not meet GEM's standard quality requirements. Hence Nigeria does not feature in the tables and figures elsewhere in this report.

FIGURE 3.4 ENTREPRENEURIAL EMPLOYEE ACTIVITY FRAMEWORK CONDITIONS BY STAGE OF DEVELOPMENT



Source: Global Entrepreneurship Monitor 2011, National Expert Surveys

Note: Values of indicators are based on the exponential transformation of the average for the economies in each of the three phases of economic development.

for GEM Entrepreneurial Framework Conditions (Bosma et al., 2012). In Figure 3.4 for example, innovation-driven countries tend to rate somewhat higher on education systems emphasizing innovative and pro-active behavior of individuals. However, no clear difference between factor-driven and efficiency-driven economies is observed. A similar observation holds for the item that differentiates between social security for employees versus those of (self-employed) entrepreneurs. A positive relationship between lower access to social security for entrepreneurs vis-à-vis employees, and the share of EEA in the sum of EEA and TEA is shown in Figure 3.5, even though the association is only weakly positive.

3.4 TYPOLOGIES OF ECONOMIES BASED ON PATTERNS OF AMBITIOUS ENTREPRENEURSHIP

As stated in section 2.3 not all entrepreneurial activity contributes equally to economic development. Entrepreneurial aspirations with respect to firm growth are relevant because much employment creation comes from a small number of ambitious, fast-growing new businesses (Autio 2007; Stam et al., 2012). For that reason our focus in this section moves to ambitious entrepreneurship – in terms of expectations for job growth – both with respect to early-stage entrepreneurial activity and to entrepreneurial employee activity.

When taking a broad view of ambitious entrepreneurship, as indicated in section 3.1, economies can be classified along two main dimensions:

- The prevalence of medium/high job expectations early-stage entrepreneurial activity (TEA-MH), as a reflection of ambitious early-stage entrepreneurship
- The prevalence of medium/high job expectations

Table 3.4 - Entrepreneurial Employee Activity: Framework Conditions Indicators 2011

1. Entrepreneurs Less Access to Social Security	2. Education Emphasizes Innovative and Pro-Active Behavior
3. Employers Stimulate Proactive Behavior	4. Employment Protection is Deterring Start-Ups

	1		2		3		4	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
FACTOR-DRIVEN ECONOMIES								
Algeria	2.66	1.06	2.35	0.95	2.66	0.94	2.66	0.97
Bangladesh	2.96	1.15	2.64	1.27	2.88	1.20	3.24	1.09
Guatemala	3.87	1.38	1.97	0.87	3.03	0.90	3.45	1.11
Iran	3.97	0.94	1.56	0.61	1.86	0.72	3.44	1.05
Jamaica	3.00	1.48	2.41	1.10	2.73	1.15	2.60	1.14
Nigeria	3.15	1.08	2.39	1.05	2.72	1.16	2.57	1.17
Pakistan	3.66	1.29	2.21	1.17	2.58	1.15	2.97	1.17
Venezuela	3.41	1.39	2.00	0.79	2.89	0.93	3.28	1.28
unweighted average	3.34		2.19		2.67		3.03	
EFFICIENCY-DRIVEN ECONOMIES								
Argentina	3.35	1.23	2.25	0.87	2.94	0.89	3.23	1.09
Barbados	2.34	1.11	1.94	0.79	2.59	1.02	3.21	1.07
Bosnia and Herzegovina	3.53	1.13	2.31	0.79	2.67	0.72	3.69	0.95
Brazil	2.84	1.32	1.86	0.80	2.81	0.79	2.83	1.07
Chile	3.88	1.16	1.84	0.76	2.82	1.00	3.38	1.08
Colombia	3.17	1.39	2.23	0.82	2.48	1.02	3.23	1.22
Croatia	3.44	1.12	2.26	0.90	2.81	0.70	3.33	0.94
Hungary	3.61	1.26	1.94	0.92	2.52	0.76	4.09	0.89
Latvia	3.56	1.22	2.42	0.89	3.10	1.11	3.11	1.13
Lithuania	3.47	1.19	2.53	0.86	3.14	1.00	2.76	0.97
Malaysia	3.47	1.13	2.36	1.25	3.03	1.01	3.26	0.74
Mexico	3.64	1.10	2.61	0.99	2.69	0.79	3.19	0.98
Panama	3.76	1.30	1.64	0.76	2.75	1.02	3.78	1.29
Peru	3.34	1.06	2.16	0.96	2.84	0.91	3.29	1.15
Poland	2.37	1.14	2.22	0.83	2.44	0.73	3.33	0.99
Russia	3.29	1.05	2.26	0.98	2.59	0.91	3.00	1.14
Slovakia	4.00	1.00	2.46	0.95	3.14	0.72	3.40	1.03
South Africa	3.75	1.25	2.11	0.94	2.58	0.98	3.62	1.21
Thailand	3.35	1.12	2.39	0.64	3.22	0.83	2.78	0.93
Trinidad and Tobago	3.21	1.32	2.26	1.06	2.65	0.84	2.78	1.24
Turkey	2.63	1.16	1.92	1.00	2.60	1.03	2.77	1.12
Uruguay	2.58	1.20	2.08	0.69	2.92	0.84	3.46	1.15
unweighted average	3.30		2.18		2.79		3.25	
INNOVATION-DRIVEN ECONOMIES								
Australia	3.06	1.39	2.65	1.03	3.13	0.95	3.53	1.02
Czech Republic	2.81	1.19	1.98	0.87	2.78	0.82	3.66	1.14
Finland	4.46	0.89	2.83	0.95	3.22	0.68	2.59	1.08

1. Entrepreneurs Less Access to Social Security 3. Employers Stimulate Proactive Behavior	2. Education Emphasizes Innovative and Pro-Active Behavior 4. Employment Protection is Deterring Start-Ups							
	1		2		3		4	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Greece	2.58	1.06	1.75	0.65	2.40	0.76	3.11	1.07
Ireland	4.12	1.17	2.41	1.13	3.03	0.87	3.25	0.98
Korea, Republic of	3.40	1.06	2.76	0.89	3.80	0.93	3.20	0.97
Netherlands	4.22	0.93	2.60	0.95	3.21	1.08	3.85	0.91
Norway	4.10	1.19	2.65	0.92	3.00	0.71	3.06	0.98
Portugal	3.61	1.14	1.95	0.91	2.56	1.15	3.83	1.1
Singapore	3.05	0.89	3.83	0.83	3.66	0.99	4.02	0.72
Slovenia	4.00	1.05	2.46	1.04	3.14	0.85	3.40	0.93
Spain	3.38	1.23	1.85	0.82	2.29	0.83	3.40	1.33
Sweden	4.58	0.55	2.11	0.90	2.94	0.92	4.38	0.7
Switzerland	2.97	1.44	2.94	0.86	3.41	0.66	3.03	1.22
Taiwan	3.43	1.24	3.08	0.87	3.50	0.85	3.08	0.97
United Arab Emirates	3.25	1.29	3.00	1.31	2.88	1.07	3.00	0.95
United Kingdom	3.48	1.29	2.56	0.91	2.69	0.68	3.42	0.99
unweighted average	3.56		2.50		2.98		3.38	

Source: Global Entrepreneurship Monitor 2011

Figure 3.5 Share Of EEA In Overall Entrepreneurial Activity (Sum Of TEA and EEA) Versus Access For Entrepreneurs To Social Security

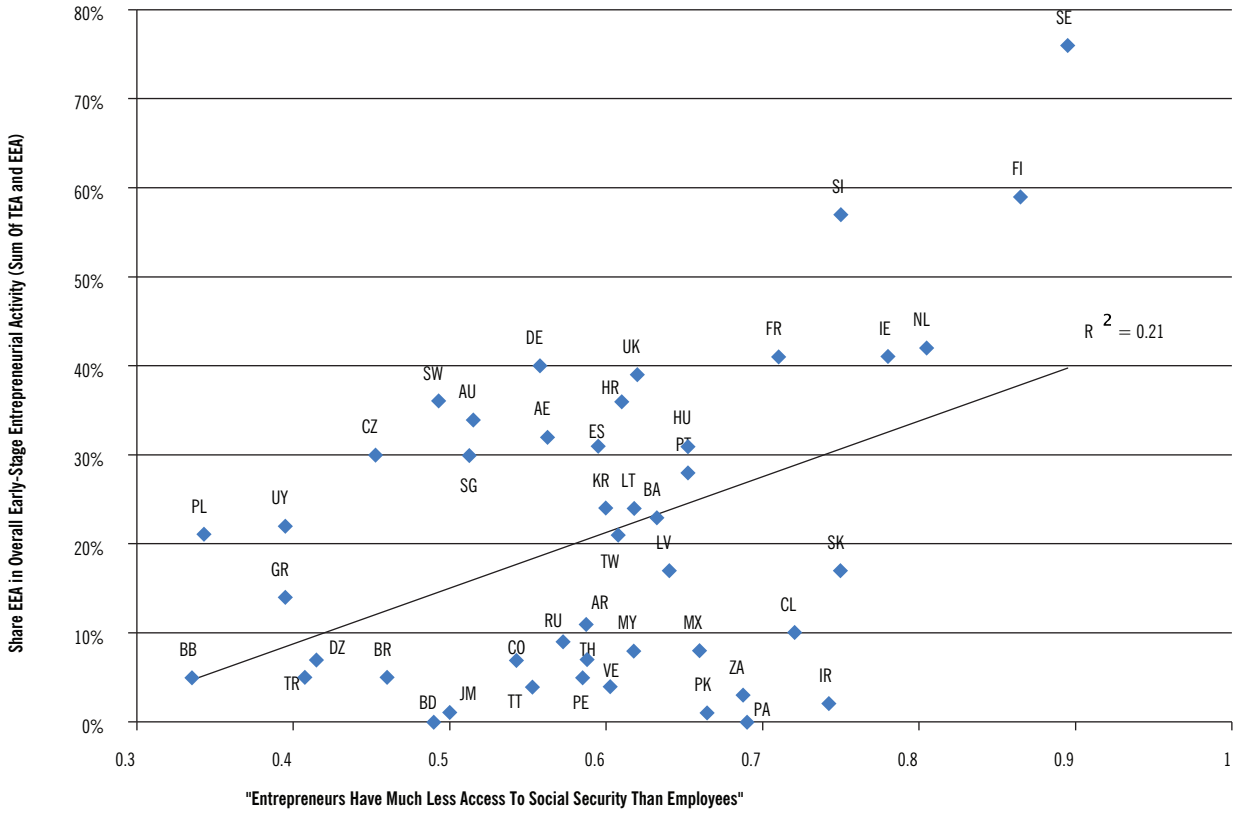
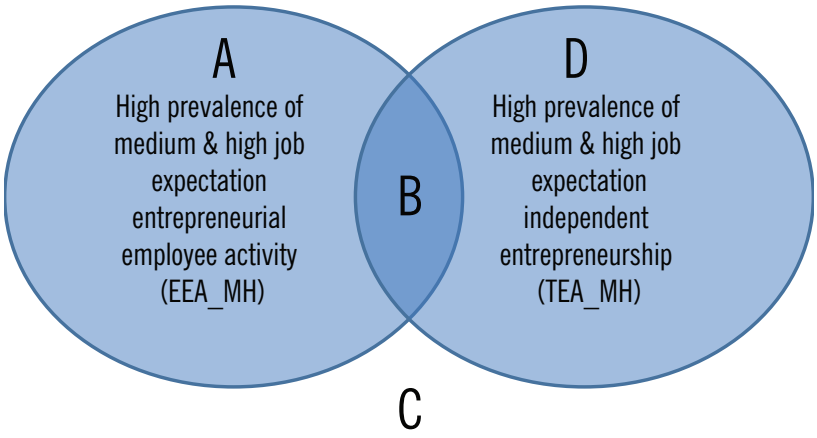


FIGURE 3.6 TYPOLOGY OF ECONOMIES BASED ON TWO DIMENSIONS OF AMBITIOUS ENTREPRENEURSHIP



Type A: High prevalence of medium/high job expectation entrepreneurial employee activity (EEA-MH) and low prevalence of medium/high job expectation entrepreneurship (TEA-MH)

Type B: High prevalence of both types of entrepreneurial activity (TEA-MH and EEA-MH)

Type C: Low prevalence of both types of entrepreneurial activity (TEA-MH and EEA-MH)

Type D: High prevalence of medium/high job expectation entrepreneurship (TEA-MH) and low prevalence of medium/high job expectation entrepreneurial employee activity (EEA-MH)

entrepreneurial employee activity (EEA-MH), as a reflection of ambitious entrepreneurial employee activity in existing firms

An exploratory country classification of different types of economies may then be based on the four possible combinations of high versus low country prevalence rates for these two entrepreneurship dimensions (TEA-MH and EEA-MH). This classification can be applied separately to efficiency-driven economies and innovation-driven economies. In each group it singles out the economies that have high rates for both measures and those that have low rates for each of these measures, while the remaining countries have a high prevalence in either EEA-MH or TEA-MH, and a low prevalence in the other entrepreneurship mode. These combinations or types of economies may be numbered A through D, as is visualized in Figure 3.6.

Countries were classified as having high versus low prevalence with respect to the *average value*[15] for each dimension. This exercise was carried out separately for the twenty-four efficiency-driven economies and the twenty-two innovation-driven economies. This was done because there is reason to believe that classifications at separate phases of development are more meaningful in terms of underlying institutional and cultural characteristics, because there is less influence of varying levels of per capita income. The classification was not made for the factor-driven economies as there are only six of these economies in our sample with data for both TEA and EEA, and because the prevalence rates of EEA-MH are extremely low for all six of these countries.

Efficiency-driven economies

The resulting classification for the 24 efficiency-driven economies is presented in Figure 3.7. Note that only the countries in group A (four South-Eastern European countries) are geographically close. The other three groups consist of countries that are spread more widely across the globe; possible distinct characteristics of these groups are investigated later in this section. Type B consists of relatively affluent countries in Latin America and Eastern Europe plus China, Type D consists of three countries in Latin America plus Turkey and Thailand, while Type C is spread across four continents.

In Figure 3.7, Poland, Latvia, Thailand, Argentina, China, Colombia and Hungary are 'borderline cases' that may also fit with other groups, whereas Croatia and Bosnia & Herzegovina seem quite solid examples of economies exhibiting relatively high EEA-MH but low TEA-MH. The opposite is the case for Peru. Chile shows conspicuously high rates of both types of entrepreneurial activity, whereas Malaysia, Russia, Panama and Mexico appear to be well under average in terms of both EEA-MH and TEA-MH.

15 Average values were chosen instead of median values because, in the case of a skewed distribution, use of the latter criterion would lead to classifying a number of countries as 'high' which are visually closer to the bulk of the countries classified as 'low'. This mainly applied to the innovation-driven economies

Figure 3.7 Types Of Economies Based On Low Versus High Rates For Two Dimensions Of Ambitious Entrepreneurial Activity (TEA-MH and EEA-MH); Efficiency-Driven Economies

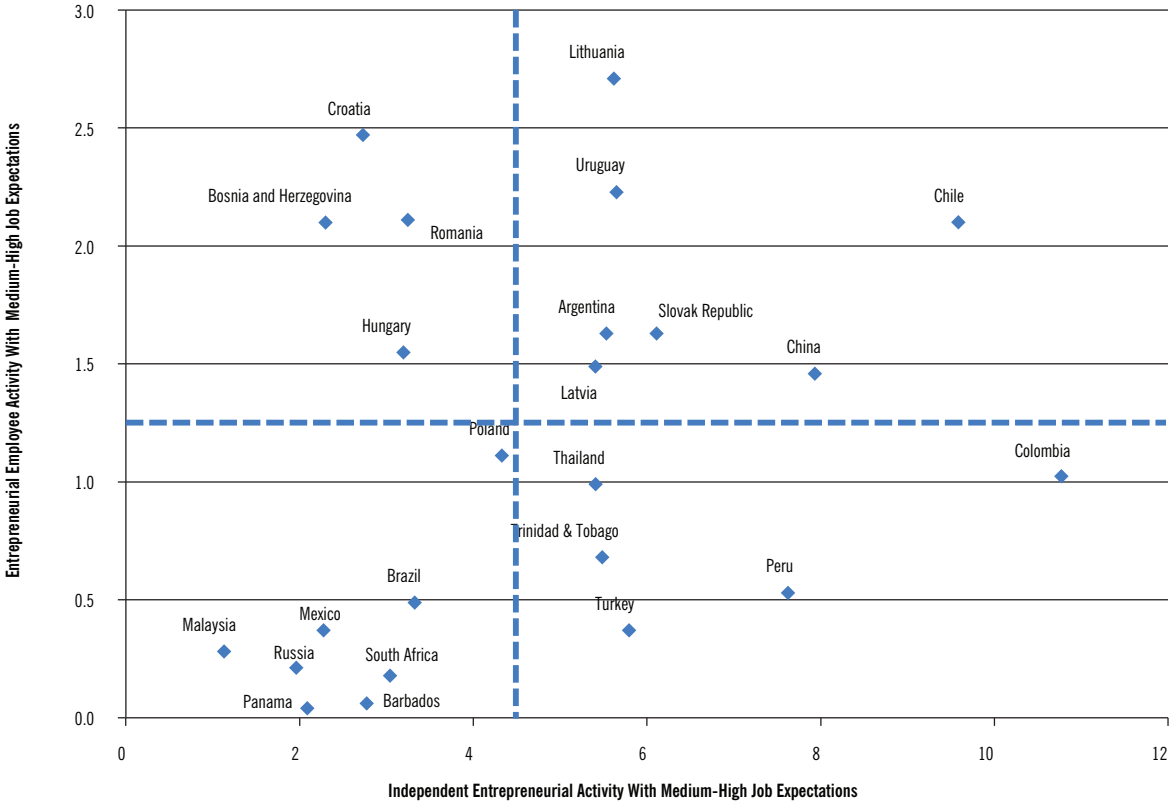


Table 3.5 presents some underlying distinct characteristics of the four categories of efficiency-driven countries, grouped in economic, social and cultural indicators. Differences in the average levels of per capita income are relatively small across these economies which are all situated in the middle income range. Income levels are highest for Type B and lowest for Type D, but these small income differences do not appear to correlate in a clear way with the entrepreneurial patterns across the four types. This observation is consistent with Figure 2.16 in Bosma et al. (2012:37) which shows no clear relationship between per capita income and ambitious independent early-stage entrepreneurship for the efficiency-driven economies.

However, the percentage of employees in the APS sample that are employed in medium-sized and large organizations does show an apparent pattern. Employee prevalence in organizations with ten or more employees as measured in the APS[15] is clearly highest in country Types A and B, which also have a relatively high prevalence of (ambitious) entrepreneurial employee activity. This suggests that entrepreneurial employees may be more prevalent in larger organizations (with ten or more employees). We will return to this topic in chapter 4. Another characteristic is the prevalence of informal investors who provided funds for new businesses in the past three years. Informal investment is highest for Types B and D which probably follows rather directly from their high prevalence of ambitious early-stage entrepreneurship. In addition, as will be shown in chapter 4, the prevalence of entrepreneurial employee activity increases with education level. Independent early-stage entrepreneurship rates are also higher for individuals with a post-secondary education (Kelley et al., 2012). Accordingly one might expect that economies with a relatively large share of higher educated employees also exhibit high EEA and/or TEA prevalence. By and large this is roughly confirmed by Table 3.5, where the share of employees with post-secondary education in all employees in the APS sample is lowest for country type C. Finally, the economic freedom index is high for Types B and D (high rates of TEA-MH) and low for Type A (low rates of TEA-MH) which seems to make sense. However, the relatively high economic freedom for Type C (low rates for both entrepreneurship modes) seems an anomaly in this respect.

In respect of the social indicators listed in Table 3.5, for the efficiency-driven countries, a low degree of income inequality and a high level of social security for all citizens in general and for employees seems

16 While the APS sample was not stratified for the employment share, we do regard this sample characteristic as roughly indicative of relative employment levels across countries.

Table 3.5 Economic, Social and Cultural Characteristics in 4 Types of Efficiency-Driven Economies

	Type A Low TEA-MH High EEA-MH	Type B High TEA-MH High EEA-MH	Type C Low TEA-MH Low EEA-MH	Type D High TEA-MH Low EEA-MH
ECONOMIC CHARACTERISTICS				
GDP Per Capita In Purchasing Power Parities (IMF 2011)	14,629	16,594	15,946	12,953
% All Employees In APS Sample: Employed In Medium-Sized And Large Organizations	.80	.74	.50	.54
% 18-64 Pop [7/10] YES: Provided Funds For New Business in Past 3 Years Excl Stocks & Funds	5.3	8.3	3.1	7.4
% All Employees in APS Sample: 'High' Education (Post Secondary and Higher)	40	44	35	44
Economic Freedom Index	51	64	62	62
SOCIAL CHARACTERISTICS				
Gini Inequality Index	29	41	47	50
Social Security Laws Index	0.72	0.72	0.58	0.54
NES: Entrepreneurs Have Much Less Access to Social Security Than Employees	3.5	3.5	3.2	3.1
CULTURAL CHARACTERISTICS				
Secular-Rational Values	0.29	0.15	-0.31	-0.68
Employer Gives at Least SOME Support When Employees Come with New Ideas (APS)	69	73	55	63
% 18-64 Pop [7/10] YES: Fear of Failure Would Prevent Starting a Business	43	39	34	36

to be associated with substitution of (ambitious) independent entrepreneurship by (ambitious) entrepreneurial employee behavior. The conditions and incentives accompanying this substitution process seem particularly clear from comparing the social characteristics of country Types A and D.

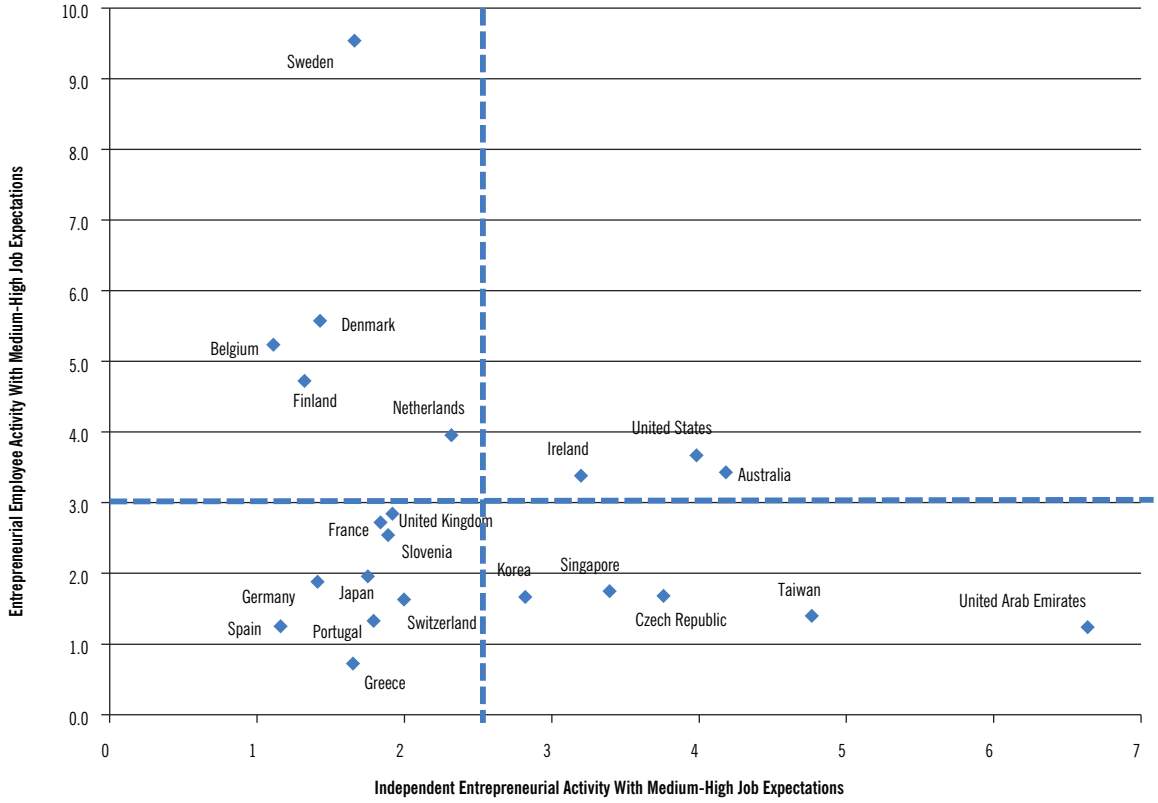
Finally, three cultural indicators listed in Table 3.5 also shown some distinct patterns. Note the relatively high level of secular-rational values for Type B and especially for Type A where an implied relatively high autonomy for employees correlates with a high prevalence of entrepreneurial employee activity. Next, employers' support for employees who come up with new ideas seems to be positively associated with entrepreneurial employee behavior (Types A and B versus Types C and D). Finally, the relatively high fear of failure in Type A may also enhance substitution of (ambitious) independent entrepreneurship by (ambitious) entrepreneurial employee behavior.

Typology of innovation-driven economies

The classification of the innovation-driven economies based on the prevalence rates of ambitious independent early-stage entrepreneurial activity and ambitious entrepreneurial employee activity is presented in Figure 3.8. Type B consists of three Anglo-Saxon countries, Type D includes four 'Asian tigers' plus the Czech Republic, Type A counts five small open economies in North-West Europe, while Type C consists of eight other European countries plus Japan.

France, United Kingdom and Slovenia are 'close' to Type A countries, while the Republic of Korea's TEA-MH rate is close to average and hence exhibits a similar pattern as the European economies and Japan that are classified in Type C. Furthermore, Ireland and Australia's EEA-MH is just above average for the set of innovation-driven economies. The position of Sweden is solidly in Type A. Even though the EEA-MH measure

FIGURE 3.8 TYPES OF ECONOMIES BASED ON LOW VERSUS HIGH RATES FOR TWO DIMENSIONS OF AMBITIOUS ENTREPRENEURIAL ACTIVITY (TEA-MH AND EEA-MH); INNOVATION-DRIVEN ECONOMIES



for Sweden may be a statistical outlier, its position in the upper left part is certainly not unexpected and accompanied by countries that are similar in terms of economic size and institutional settings. On the opposite side, the position of the United Arab Emirates is noteworthy. Here, ambitious independent entrepreneurial activities have been very prevalent while entrepreneurial employee activity was limited.

Table 3.6 presents some underlying distinct characteristics of these four country types, grouped in economic, social and cultural indicators. As for the economic characteristics, an interesting difference concerns the relative levels of per capita income across these wealthy economies. Income levels are highest for Type B and to a lesser extent D (the two groups with high levels of TEA-MH). This observation confirms a finding in Bosma et al. (2012:37) showing a weakly positive relationship between per capita income and ambitious independent early-stage entrepreneurship for the wealthiest economies. This upward sloped relationship was also highlighted in Wennekers et al. (2010), who interpret this as evidence that the advanced economies are now experiencing a shift back to a Schumpeter Mark I regime in which innovative new enterprises play a growing role.

Next, the percentage of employees in the APS sample that are employed in medium-sized and large organizations shows a similar though less striking pattern for the innovation-driven countries as presented above for the efficiency-driven countries. Thus again employee presence in larger organizations as measured in the APS[17] is highest in country Types A and B, which show a relatively high prevalence of (ambitious) entrepreneurial employee activity. However, also note that the percentage of employees in larger organizations is on average significantly higher in innovation-driven countries than in efficiency-driven ones (unweighted averages across the four types are 80% versus 65% approximately). In addition Table 3.6 shows that in the innovation-driven economies, just as was seen for the efficiency-driven economies, the share of post-secondary education within the APS sample of all employees is lowest for country Type C. Finally, the economic freedom index is on average highest for group B (high rates of TEA-MH and EEA-MH) and clearly lowest for Type C (low rates of TEA-MH and EEA-MH). Possibly in the innovation-driven countries economic freedom is positively associated with the overall sum total of entrepreneurship, irrespective of its specific mode.

The social indicators suggest that, as in the efficiency-driven countries, a low degree of income inequality and a high level of social security for all citizens

17 Also see previous footnote.

Table 3.6 Economic, Social and Cultural Characteristics in 4 Types of Innovation-Driven Economies

	Type A Low TEA-MH High EEA-MH	Type B High TEA-MH High EEA-MH	Type C Low TEA-MH Low EEA-MH	Type D High TEA-MH Low EEA-MH
ECONOMIC CHARACTERISTICS				
GDP Per Capita in Purchasing Power Parities (IMF 2011)	39,017	42,830	33,051	40,831
% All Employees in APS Sample: Employed in Medium-Sized and Large Organizations	.82	.81	.76	.77
% 18-64 Pop [7/10] YES: Provided Funds for New Business in Past 3 Years Excl Stocks & Funds	4.7	3.9	3.3	4.7
% All Employees in APS Sample: 'High' Education (Post Secondary and Higher)	51	65	47	56
Economic Freedom Index	74	79	67	73
SOCIAL CHARACTERISTICS				
Gini Inequality Index	28	38	33	33
Social Security Laws Index	0.75	0.71	0.74	0.65
NES: Entrepreneurs Have Much Less Access to Social Security Than Employees	4.4	3.6	3.4	3.2
CULTURAL CHARACTERISTICS				
Traditional versus Secular-Rational Values (WVS)	0.87	-0.07	0.57	0.61
Survival versus Self-Expression Values (WVS Set 1)	1.03	.92	.55	-.17
NES: the Education System Emphasizes Innovative and Pro-Active Behavior of Individuals in General	2.5	2.5	2.2	2.9
NES: Employers Provide Support to Employees Who Come Up with New Ideas	3.2	3.2	2.9	3.3
Employer Gives at Least SOME Support When Employees Come with New Ideas (APS)	74	73	64	62
% 18-64 Pop [7/10] YES: Fear Of Failure Would Prevent Starting a Business	39	41	48	42

in general and for employees in particular may enhance substitution of (ambitious) independent entrepreneurship by (ambitious) entrepreneurial employee behavior. This substitution process is strikingly indicated by the values of all three social indicators for Type A (with low TEA-MH and high EEA-MH rates) versus those of Type D (with high TEA-MH and low EEA-MH rates). This makes sense as these indicators may indicate various opportunity costs of independent entrepreneurship.

Finally, the cultural indicators also show some distinct patterns. A plausible observation is the high level of self-expression values for Types A and B where relatively high autonomy for employees correlates with a high prevalence of entrepreneurial employee activity. The three Anglo-Saxon countries of Type B have relatively traditional cultural values while the five small open economies in North-West

Europe (Type A) have a high level of secular-rational values, also confirming the negative effect of secular-rational values on the rate of early-stage entrepreneurship reported by Reynolds (2010). Next, the index scores of Types A and B versus C for the emphasis of the education system on innovative and pro-active behavior indicate that this cultural trait may be positively associated with entrepreneurial behavior in general, while the high rate for Type D seems a bit of an anomaly. Employers' support for employees who come up with new ideas seems to be positively associated with entrepreneurial employee behavior (Types A and B versus Type C, with again an anomaly for Type D). Finally, the high fear of failure for Type C, where both types of entrepreneurship have a low prevalence, and the low fear of failure for Types B and D with high rates of (ambitious) independent entrepreneurship stand to reason, but the even lower fear of failure for Type A is more difficult to interpret. Possibly the relatively generous social security in these countries also lessens fear of failure, while still promoting waged employment as an occupational choice.

3.5 ENTREPRENEURIAL EMPLOYEE ACTIVITY ACROSS SECTORS AND SIZE CLASSES

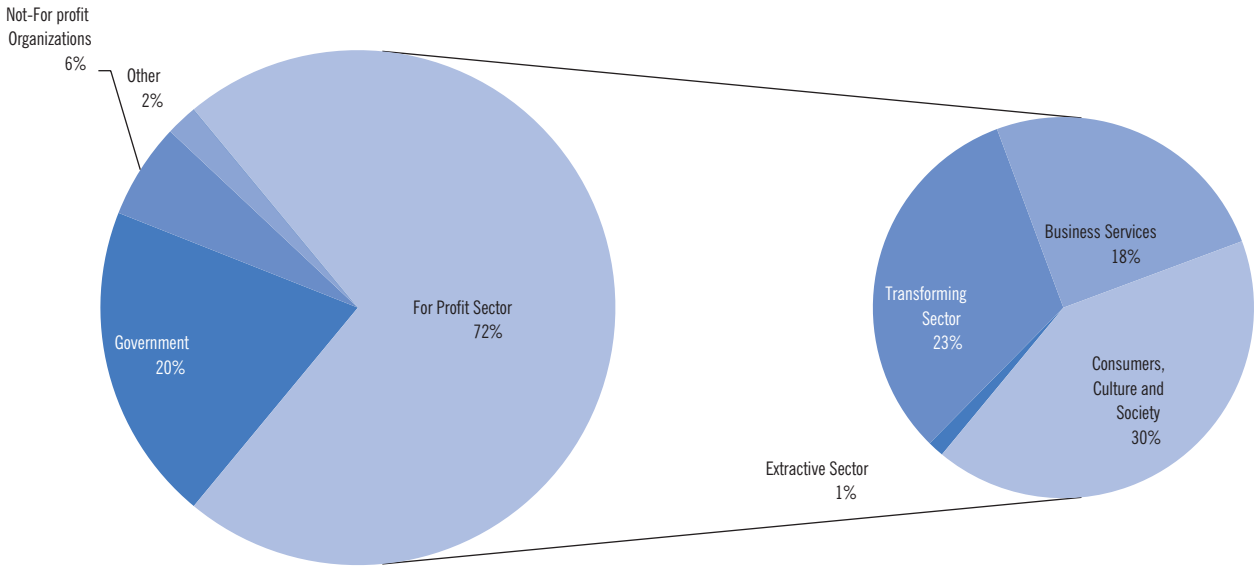
In this section we will discuss the distribution of entrepreneurial employee activity across sectors and size classes. Like in the previous section, this information will be shown separately for the efficiency-driven and the innovation-driven economies. Again, factor-driven economies are not analyzed as our sample includes only six of these economies with data for entrepreneurial employee activity, and because the prevalence rates of this type of entrepreneurial activity are quite low for all six of these countries. Depending on the variable, the diagrams are based on either 46 (=52-6) countries or 26 (=32– 6) countries. The smaller number is because some issues (e.g. distribution across subsectors of industry within the for-profit sector) were included in the optional part of the adult population survey.

Entrepreneurial employee activity across sectors

Figures 3.9 and 3.10 present the distribution of entrepreneurial employee activity across sectors for, respectively, the efficiency-driven and the innovation-driven economies. In each figure the left hand pie relates to the distribution across the for-profit sector, the not-for-profit sector and the government. The right hand pies present the distribution of the for-profit sector across four main subsectors of industry.

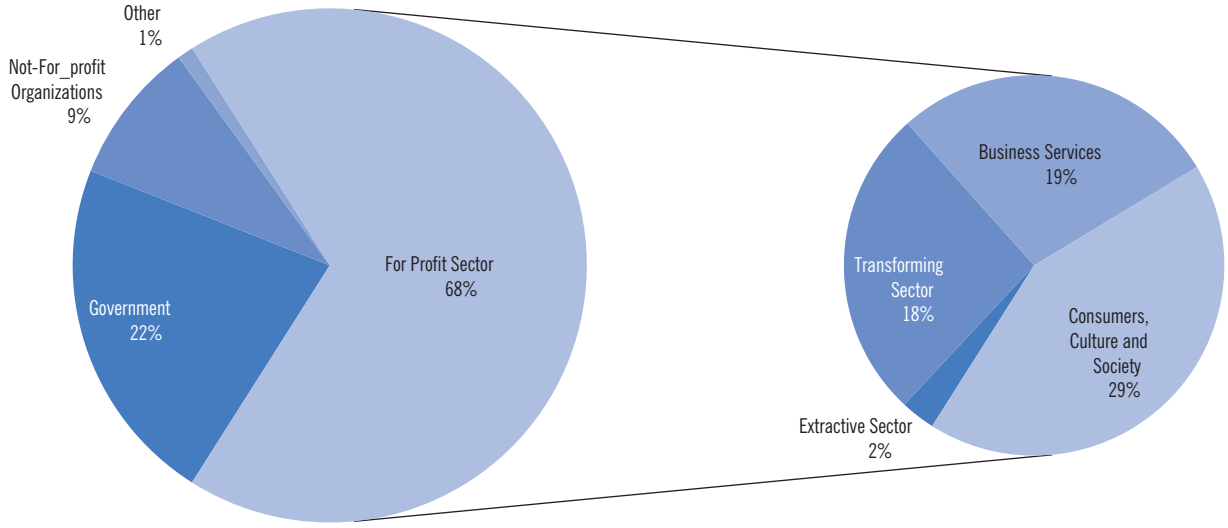
The distributions for the efficiency-driven and the innovation-driven economies are remarkably alike.

FIGURE 3.9 EEA AND SECTOR STRUCTURE, EFFICIENCY-DRIVEN ECONOMIES



Note: The distribution by type of organizations (left hand pie) is obtained by averaging country-level distributions. To obtain the sector distribution, all entrepreneurial employees in efficiency-driven economies in the sample have been given equal weight, i.e. respondents are not weighted with country size.

FIGURE 3.10 EEA AND SECTOR STRUCTURE, INNOVATION-DRIVEN ECONOMIES



Note: The distribution by type of organizations (left hand pie) is obtained by averaging country-level distributions. To obtain the sector distribution, all entrepreneurial employees in innovation-driven economies in the sample have been given equal weight, i.e. respondents are not weighted with country size.

However, the share of entrepreneurial employees in the government and the not-for-profit sector is slightly higher for the innovation-driven economies, and this probably reflects a growing employment share of these sectors as a corollary of economic development (Baumol, 1967). A similar reasoning holds for the somewhat smaller share of entrepreneurial employees in the transforming sector for the innovation-driven economies.

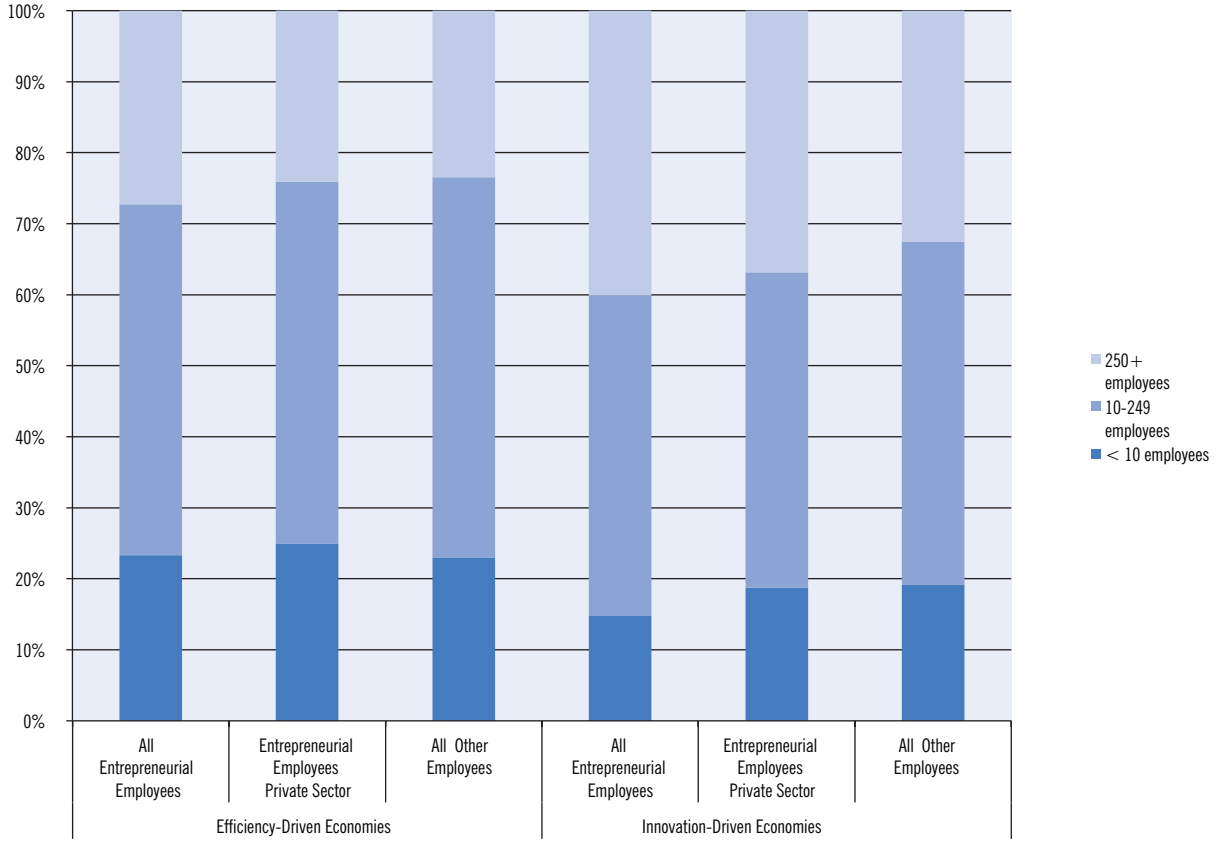
About 30% of entrepreneurial employees are active in the government and the not-for-profit sector. This may be interpreted as another illustration of the omnipresence of entrepreneurial behavior as proposed by the Austrian school of economics (Boettke and Coyne, 2003). Clearly, this type of behavior is not restricted to independent entrepreneurship, and not even to private, commercial activities. Not-for-profit organizations and government agencies also develop new activities, just like private businesses, and apparently a significant percentage of employees in these organizations are involved in these entrepreneurial activities. As will be shown in chapter 4, in the innovation-driven economies, EEA prevalence rates are remarkably similar for the private and the public sectors, while in the efficiency-driven economies these rates are only somewhat lower for the public sector.

Finally, a third observation relates to the distribution of entrepreneurial employees across the subsectors of the for-profit sector, which appears to be roughly similar for efficiency-driven and innovation-driven economies, apart from a somewhat higher share of entrepreneurial employees in the transforming sector in the efficiency-driven economies. However, this latter observation does not reflect a higher EEA prevalence rate, even on the contrary (see chapter 4), but a higher employment share of manufacturing in the efficiency-driven economies.

Entrepreneurial employee activity across size-classes

Figure 3.11 presents the distribution of entrepreneurial employee activity across organizations in three size classes (less than 10 employees; 10-249 employees; 250 or more employees), for efficiency-driven and innovation-driven economies, respectively. For each stage of economic development, the first and second column present the size class distribution of entrepreneurial employees in all sectors together and the private (for-profit) sector only, while the third column relates to the size class distribution of all other employees. However, it should be noted that size class data were missing for almost 10% of entrepreneurial employees and for about 20% of all other employees. Given these data restrictions, three provisional observations can be made. First, entrepreneurial employees appear to be active in all three size classes of organizations and so the omnipresence of entrepreneurship is also reconfirmed irrespective of the size of the organization. Secondly, and in addition to the previous observation, the size class distribution of all other employees appears to be roughly, although not completely, similar to that of the entrepreneurial employees. Thirdly, in the innovation-driven economies, as compared with the efficiency-driven economies, entrepreneurial employees appear to be more abundant in large organizations. This observation reflects not only a higher prevalence rate of entrepreneurial

FIGURE 3.11 FIRM SIZE DISTRIBUTIONS, BY TYPE OF EMPLOYEE AND PHASE OF ECONOMIC DEVELOPMENT



Private sector entrepreneurial employee activity across sectors and size-classes

employee activity but also a bigger employment share of large organizations in the economy as a corollary of economic development (Ghoshal et al., 1999).

Figure 3.12 presents the distribution of entrepreneurial employee activity across three size classes and three subsectors of industry, for the efficiency-driven and the innovation-driven economies, respectively. As is clear from this figure, entrepreneurial behavior is also omnipresent across all subsectors of industry.

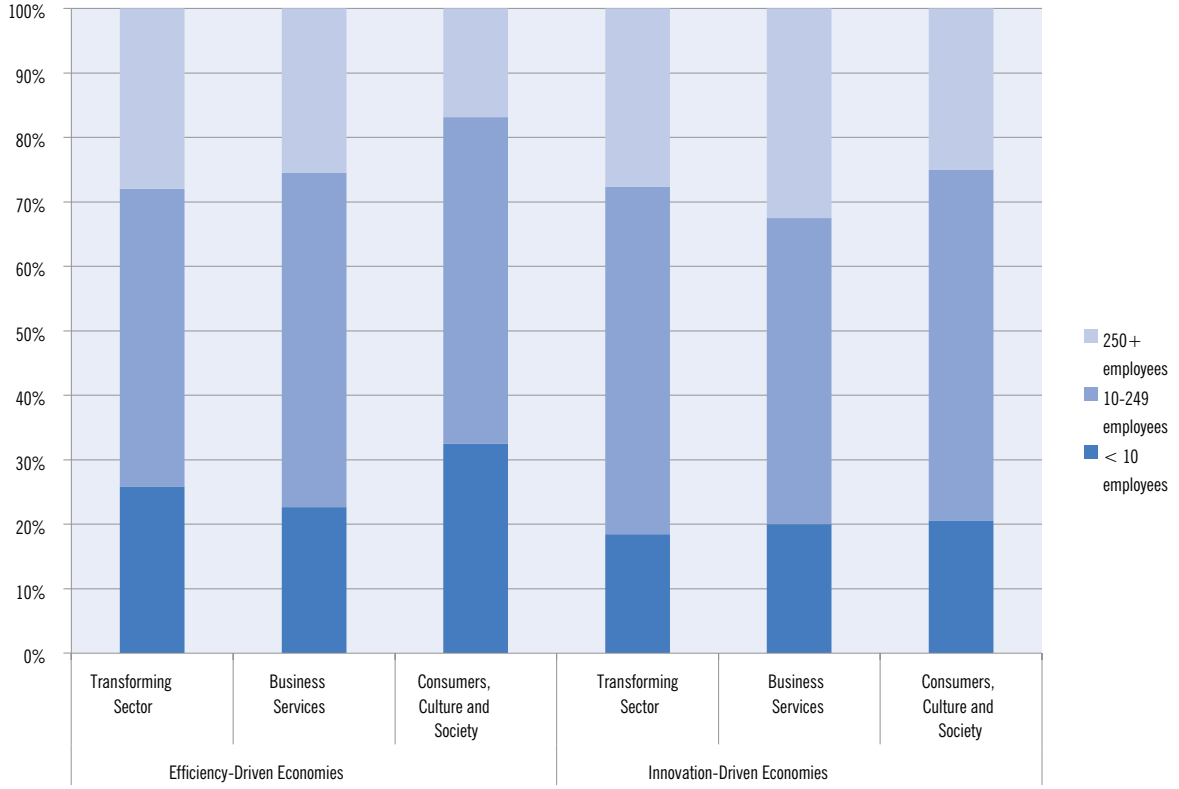
3.6 TYPES OF ENTREPRENEURIAL EMPLOYEES

In section 2.4 on the research design of the present study, three distinctions were made for identifying entrepreneurial employees. First, a distinction was made between two phases of entrepreneurial employee activity, i.e. 'idea development for a new activity', including active information search, brainstorming and submitting ideas for new activities to the management of the business, and 'preparation and implementation of a new activity', including preparing a business plan, marketing the new activity, finding financial resources and acquiring a team of workers for the new activity. Secondly, for both of these phases a distinction was made in a supporting and a leading role of entrepreneurial employees. Thirdly, a distinction was made between employees who, in the past three years, were actively involved in the development of new (business) activities and entrepreneurial employees who are also currently involved in the development of such new activities. Based on these distinctions, four types of entrepreneurial employees may be distinguished, ranging from a rather broad to a more narrow delimitation (see Figure 2.5).

A leading role in at least one of these phases, as well as current involvement in entrepreneurial activity, has been used as the final criterion for identifying the entrepreneurial employees used for the EEA index as defined in this report. In this section, attention is paid to the other types of entrepreneurial employees who have a supporting role in the development of new business activities and/or who are not currently involved in such activities. More precisely, the section gives quantitative information about the prevalence of all four increasingly more narrow measures of entrepreneurial employee activity.

In addition, a distinction is presented based on the degree to which entrepreneurial employees (narrow

FIGURE 3.12 DISTRIBUTION OF ENTREPRENEURIAL EMPLOYEE ACTIVITY ACROSS THREE SIZE CLASSES AND THREE SUBSECTORS OF INDUSTRY, BY PHASE OF ECONOMIC DEVELOPMENT



definition) are themselves actively oriented towards business ownership, in the sense of being currently involved in nascent business owner-management and/or having intentions to start and own a business within three years.

Broad and narrow operationalizations of entrepreneurial employee activity

Figures 3.13 and 3.14 present a breakdown of entrepreneurial employees into four types, as discussed above, for both efficiency-driven and innovation-driven economies. In addition, entrepreneurial employees are shown as a fraction of all employees, and ultimately, of the adult population. The following definitions are used:

AP - adult population 18-64 years
EMP - employees 18-64 years
IP3 - employees who, in the past three years, were involved in the development of new activities for their main employer
IP1 - employees who, in the past year, were involved in the development of new activities for their main employer
ILR - employees who, in the past three years, were involved in and had a leading role in at least one of the phases of the development of new activities
EEA - entrepreneurial employees as defined in ILR who are also currently involved in the development of such new activities (conjunction of IP1 and ILR)

Figure 3.13 presents a breakdown for efficiency-driven economies. In the sample of these economies, 3,360 employees out of 31,511 employees (10.7%) and out of 68,595 adults (4.9%) were identified as entrepreneurial employees according to the broadest definition (IP3: involvement in the past three years, irrespective of their role). Please note that due to a different weighting scheme[18], the latter percentage (4.9% of the adult population) differs slightly from that to be presented in Table 3.7 (6.0%). Also, as can be seen from Figure 3.13, the number of entrepreneurial employees according to the narrowest definition (EEA) is 1,039 employees, which is just over 30% of the number of entrepreneurial employees according to the broadest definition (IP3).

Figure 3.14 presents a breakdown for innovation-driven economies. In the sample of these economies, 8,236 employees out of 38,078 employees (21.6%) and out of 64,885 adults (12.7%) were identified as

18 In Figure 3.13 the average prevalence rates for efficiency-driven countries are calculated with respect to the pooled employees in the relevant APS sample, while in Table 3.7 the average prevalence per development phase is calculated as an unweighted average value of country averages.

FIGURE 3.13 BREAKDOWN OF ENTREPRENEURIAL EMPLOYEES IN THE GEM 2011 ADULT POPULATION SAMPLE – EFFICIENCY-DRIVEN ECONOMIES (UNWEIGHTED SAMPLE COUNTS)

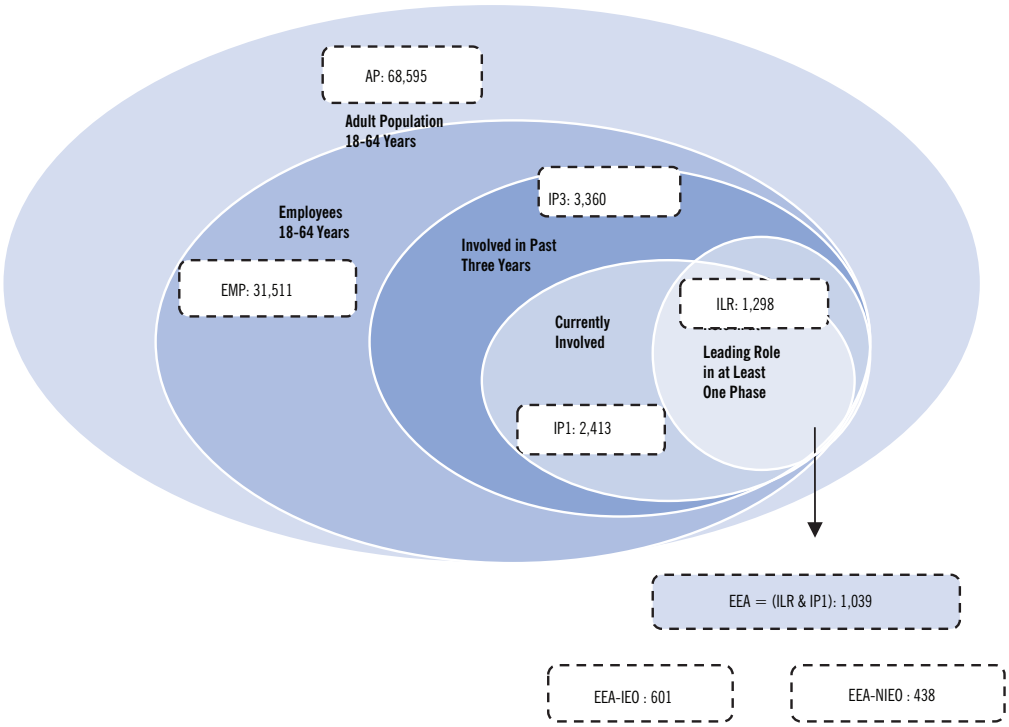


FIGURE 3.14 BREAKDOWN OF ENTREPRENEURIAL EMPLOYEES IN THE GEM 2011 ADULT POPULATION SAMPLE – INNOVATION-DRIVEN ECONOMIES (UNWEIGHTED SAMPLE COUNTS)

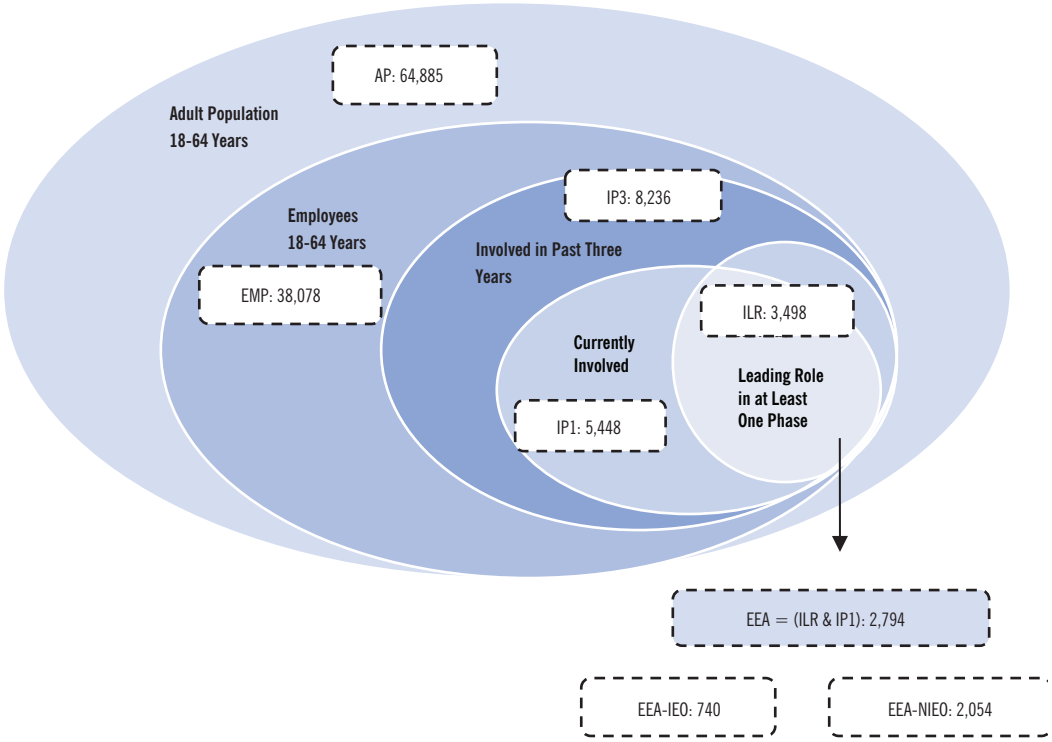


TABLE 3.7 DIFFERENT TYPES OF ENTREPRENEURIAL EMPLOYEE ACTIVITY IN % ADULT POPULATION

	IP3 Involved in Entrepreneurial Employee Activity in Past 3 Years	ILR Leading Role in Entrepreneurial Employee Activity in Past 3 Years	EEA Leading Role in Entrepreneurial Employee Activity in Past 3 Years & Currently Involved	EEA-IEO EEA Combined with Orientation on Independent Entrepreneurship	EEA-NIEO EEA Without Orientation on Independent Entrepreneurship
FACTOR-DRIVEN ECONOMIES					
Algeria	1.9	0.8	0.7	0.5	0.1
Bangladesh	0.0	0.0	0.0	0.0	0.0
Iran	1.2	0.4	0.4	0.2	0.2
Jamaica	1.1	0.2	0.1	0.1	0.1
Pakistan	0.5	0.2	0.1	0.1	0.0
Venezuela	1.6	0.6	0.6	0.5	0.1
unweighted average	1.1	0.4	0.3	0.2	0.1
EFFICIENCY-DRIVEN ECONOMIES					
Argentina	5.6	3.2	2.5	1.3	1.2
Barbados	2.3	0.7	0.7	0.2	0.5
Bosnia and Herzegovina	8.9	3.1	2.3	1.0	1.3
Brazil	2.2	1.0	0.8	0.4	0.4
Chile	8.0	3.5	2.6	1.9	0.7
China	5.0	2.1	1.7	1.2	0.6
Colombia	3.8	1.7	1.5	1.0	0.4
Croatia	16.7	4.4	3.7	1.2	2.5
Hungary	9.4	3.9	2.6	1.2	1.4
Latvia	7.5	3.0	2.2	1.2	1.0
Lithuania	11.6	4.9	3.4	1.6	1.8
Malaysia	1.3	0.4	0.4	0.2	0.2
Mexico	2.0	0.9	0.8	0.6	0.3
Panama	1.4	0.2	0.1	0.1	0.0
Peru	2.8	1.4	1.2	0.8	0.3
Poland	10.8	2.8	2.3	1.1	1.2
Romania	11.7	3.8	2.9	1.3	1.7
Russia	1.3	0.6	0.4	0.2	0.2
Slovak Republic	12.0	3.4	2.7	1.7	1.1
South Africa	1.2	0.4	0.3	0.1	0.2
Thailand	2.9	1.4	1.4	1.1	0.3
Trinidad and Tobago	1.8	1.1	1.0	0.6	0.4
Turkey	2.1	0.7	0.6	0.4	0.2
Uruguay	11.7	5.2	4.4	2.4	2.0
unweighted average	6.0	2.2	1.8	0.9	0.8

	IP3 Involved in Entrepreneurial Employee Activity in Past 3 Years	ILR Leading Role in Entrepreneurial Employee Activity in Past 3 Years	EEA Leading Role in Entrepreneurial Employee Activity in Past 3 Years & Currently Involved	EEA-IEO EEA Combined with Orientation on Independent Entrepreneurship	EEA-NIEO EEA Without Orientation on Independent Entrepreneurship
INNOVATION-DRIVEN ECONOMIES					
Australia	12.6	6.1	5.0	2.1	2.9
Belgium	21.3	9.4	8.5	1.8	6.7
Czech Republic	13.5	3.8	3.2	1.0	2.1
Denmark	32.7	15.1	9.2	1.4	7.8
Finland	23.3	9.4	8.0	1.7	6.3
France	15.6	4.7	3.9	1.3	2.6
Germany	15.8	4.8	3.5	0.6	2.9
Greece	4.5	1.6	1.3	0.2	1.0
Ireland	10.7	5.9	4.6	1.1	3.5
Japan	7.3	3.4	3.1	0.9	2.2
Korea, Republic of	6.1	2.6	2.4	0.9	1.5
Netherlands	17.9	7.8	5.6	1.5	4.1
Portugal	7.8	4.0	2.6	1.3	1.3
Singapore	6.8	3.3	2.6	1.1	1.4
Slovenia	14.6	5.1	4.1	1.3	2.7
Spain	6.9	2.7	2.5	0.7	1.8
Sweden	27.9	16.2	13.5	3.2	10.2
Switzerland	12.1	4.6	3.3	1.4	1.9
Taiwan	4.9	2.0	2.0	0.9	1.1
United Arab Emirates	7.8	3.6	2.7	0.8	2.0
United Kingdom	10.1	5.2	4.3	1.0	3.3
United States	11.7	6.6	5.2	2.0	3.2
Unweighted Average	*13.3*	*5.8*	*4.6*	*1.3*	*3.3*

entrepreneurial employees according to the broadest definition (IP3: involvement in the past three years, irrespective of their role). Again please note that due to a different weighting scheme, the latter percentage (12.7% of the adult population) differs slightly from that presented in Table 3.7 (13.3%). As can be seen from Figure 3.14, the number of entrepreneurial employees according to the narrowest definition (EEA) is 2,794, which is about 34% of the number of entrepreneurial employees according to the broadest definition (IP3).

Finally, Table 3.7 shows the percentages of IP3, ILR and EEA in the adult population for all individual economies.

Orientation of entrepreneurial employees towards independent entrepreneurship

Finally, Figures 3.13 and 3.14 as well as Table 3.7 also present a breakdown of entrepreneurial employees according to their orientation towards independent entrepreneurship (EEA-IEO versus EEA-NIEO), in the sense of being currently involved in nascent entrepreneurial activity and/or having intentions to start and own a business within three years. As it turns out, the share of entrepreneurial employees with orientation to independent entrepreneurship differs along the stage of development. Whereas in factor driven economies and efficiency-driven economies, somewhat more than half of the entrepreneurial employees exhibit an orientation to starting a business that they will own and manage themselves, this holds for fewer than three in ten in innovation-driven economies. This discrepancy is especially caused by the few countries with high EEA rates, such as Sweden, Denmark, Belgium and Finland. Apparently, there are fewer incentives and/or necessities for entrepreneurial employees to become an owner-manager in a new business in these countries.

4. CHARACTERISTICS OF ENTREPRENEURIAL EMPLOYEES

4.1 INTRODUCTION

Since entrepreneurial employee activity is initiated and implemented by (groups of) individuals within existing organizations, it is important to identify the main characteristics, roles and perceptions of these individuals who decide to act entrepreneurially within the incumbent organizations that employ them (Dess et al., 2003). Prevailing models that explain individuals' entrepreneurial intentions and behavior focus on the role of individual characteristics (e.g., age, gender, education, income) and contextual circumstances (e.g., job type, organizational characteristics, external environment). This chapter therefore provides a descriptive analysis of the demographic and job characteristics of entrepreneurial employees. In addition, entrepreneurial perceptions and intentions of entrepreneurial employees are compared to those of other employees and independent entrepreneurs.

4.2 DEMOGRAPHIC CHARACTERISTICS

Table 4.1 presents the entrepreneurial employee activity (EEA) prevalence rates, according to the narrow definition, across age, gender, education and household income, by stage of economic development and using observations from 52 economies[19]. The age distribution of EEA follows an inverted U-shape pattern, similar to early stage entrepreneurs. This means that there is a higher prevalence rate of EEA in the 25–54 years age group in all economies. Age can be linked to higher levels of experience and lower levels of uncertainty tolerance and desire to start a business (Bosma and Levie, 2010); however, the literature on organizational behavior provides mixed results on the impact of age (Bindl and Parker, 2010). If age is considered a proxy of both motivation and perceived capability to engage in entrepreneurial activity, a possible explanation is that (i) openness to new experiences and change decreases with age, implying a negative relationship between age and motivation; and (ii) perceived capability as indicated by experiences in the workplace increases with age (De Jong et al., 2011).

TABLE 4.1 PREVALENCE OF ENTREPRENEURIAL EMPLOYEE ACTIVITY ACROSS AGE, GENDER, EDUCATION AND HOUSEHOLD INCOME, IN % OF ADULT POPULATION 18–64 YRS (BASED ON 52 ECONOMIES)

	Efficiency-Driven Economies	Innovation-Driven Economies	All Economies
AGE			
18–24 Years	1.0	1.5	1.2
25–34 Years	2.1	4.3	3.2
35–44 Years	2.1	5.6	3.9
45–54 Years	1.5	5.0	3.3
55–64 Years	1.0	2.9	2.0
GENDER			
Male	2.2	5.3	3.7
Female	1.1	3.0	2.0
EDUCATION			
Low	0.4	0.9	0.6
Medium	1.3	3.5	2.4
High	4.0	7.7	5.9
INCOME			
Low	0.5	1.3	0.9
Medium	0.9	2.9	1.9
High	3.0	7.8	5.4

Source: Global Entrepreneurship Monitor 2011

Note: Figures represent prevalence rate of individuals in the sample by stage of economic development – regardless of the country.

19 Presenting these figures by country is not feasible considering the sample sizes. The figures for factor-driven economies are not presented because of the limited number of entrepreneurial employees in factor-driven economies encountered in the national samples.

Regarding gender, Table 4.1 shows that male employees are on average almost twice as likely to be involved in entrepreneurial employee activity as female employees. This pattern is broadly similar to that of early stage entrepreneurs. Studies on the influence of gender on entrepreneurship support the long-standing view that women are more likely to follow non-entrepreneurial career choices in order to attain goals such as work–life balance (Hisrich and Peters, 1998; Matthews and Moser, 1996; Delmar and Davidsson, 2000). Women are also more likely to withdraw from employment when they reach child-rearing age (Charles et al., 2001) and return to employment later, when their children are older. Table 4.1 furthermore indicates EEA to be particularly prevalent among more highly educated employees with high levels of income. These findings could be partly related to the human capital requirements of innovation activity in all types of economies. For example, an employee's specific human capital can affect the trajectory of a new idea, culminating in an innovation that will be beneficial to the firm and, hence, be more valuable if exploited within the firm (Parker 2011).

4.3 JOB CHARACTERISTICS

Both the intra-organizational environment and the external environment can influence the behavior of entrepreneurial employees within established organizations (Antoncic and Hisrich, 2001). Table 4.2 presents the prevalence of entrepreneurial employee activity as the percentage of employees in private and public organizations as well as by firm size, categorized by stage of economic development over 52 economies. EEA occurs in organizations of all sizes but is somewhat more prevalent in organizations with more than 250 employees. EEA offers large, established organizations the potential for revitalization and restructuring, while allowing small and new organizations the opportunity to make progress on the life cycle of the firm and to establish itself, generating organizational support structures (Fini et al., 2012). For innovation-driven economies, the prevalence rates of entrepreneurial employees in private organizations do not appear to be that different from those in public organizations. Table 4.2 also shows that there is a particularly high prevalence of EEA in organizations related to business sectors (e.g., financial, professional and administrative services). In innovation-driven economies, however, entrepreneurial employees also seem to be quite active in extractive and customer-oriented sectors (e.g., retail trade, health, education and social services).

TABLE 4.2 PREVALENCE RATES OF ENTREPRENEURIAL EMPLOYEE ACTIVITY ACROSS INCUMBENT ORGANIZATION CHARACTERISTICS, IN % OF ALL EMPLOYEES IN EACH CATEGORY (BASED ON 52 ECONOMIES))

	Efficiency-Driven Economies	Innovation-Driven Economies	All Economies
ORGANIZATION TYPE			
Private	4.2	7.2	5.7
Public	2.9	6.9	4.9
ORGANIZATION SIZE			
< 10 Employees	4.1	6.7	5.4
10-250 Employees	4.1	7.4	5.8
> 250 Employees	5.3	9.5	7.4
SECTOR			
Extractive	2.7	8.0	5.3
Transforming	3.5	6.5	5.0
Business	6.6	9.8	8.2
Customer-oriente	4.8	7.2	6.0

Source: Global Entrepreneurship Monitor 2011

Note: Figures represent prevalence rate of individuals in the sample by stage of economic development – regardless of the country.

Table 4.3 presents, rather than prevalence rates of EEA in some part of the population, the distribution of entrepreneurial employees across demographic characteristics by stage of economic development. These distributions reflect both the underlying distributions of all employees across the chosen characteristics and the prevalence rates of entrepreneurial employees in the various categories. In innovation-driven economies, female entrepreneurial employees are spread almost evenly over public and private organizations, in sharp contrast to male entrepreneurial employees. Even though this contrast is also visible for other employees, public organizations nonetheless appear as an appropriate 'outlet' for female individuals to pursue their entrepreneurial talents in innovation-driven economies, but these figures also reflect a higher percentage of female employees in public organizations in these economies. In efficiency-driven economies, the majority of female entrepreneurial employees are enrolled in private organizations. At the same time, entrepreneurial employees with higher levels of education are relatively often found in public organizations, in both efficiency-driven economies and innovation-driven economies.

The findings by firm size, education and income present a mixed picture, but in the efficiency-driven economies and the innovation-driven economies, the lower educated and the low-income entrepreneurial employees can relatively often be found in small organizations.

TABLE 4.3 DEMOGRAPHIC CHARACTERISTICS OF ENTREPRENEURIAL EMPLOYEES BY PHASE OF ECONOMIC DEVELOPMENT (DISTRIBUTIONS; BASED ON 52 ECONOMIES)

	Efficiency-Driven Economies					Innovation-Driven Economies				
	TYPE		SIZE			TYPE		SIZE		
	Private	Public	< 10 Employees	10-250 Employees	> 250 Employees	Private	Public	< 10 Employees	10-250 Employees	> 250 Employees
AGE										
18–24 Years	91	10	38	53	9	83	17	38	44	18
25–34 Years	86	14	23	54	23	80	20	20	44	36
35–44 Years	75	25	17	49	34	74	26	13	47	40
45–54 Years	65	35	19	48	34	68	32	14	47	40
55–64 Years	65	35	17	43	41	51	49	15	45	41
GENDER										
Male	81	19	21	47	33	79	21	15	45	41
Female	70	30	23	58	19	57	43	19	47	34
EDUCATION										
Low	88	12	57	29	14	84	16	34	47	20
Medium	84	16	28	52	20	78	22	17	47	36
High	71	30	11	52	37	65	35	14	45	41
INCOME										
Low	76	24	66	20	14	76	24	37	46	17
Medium	81	19	27	57	16	70	30	20	53	27
High	76	24	18	50	33	71	29	13	44	44

Source: Global Entrepreneurship Monitor 2011

Note: Figures represent prevalence rate of individuals in the sample by stage of economic development – regardless of the country

Table 4.4 shows the prevalence of entrepreneurial employees across several job titles (based on responses across 32 economies). In both efficiency- and innovation-driven economies, there is higher prevalence of entrepreneurial employees enrolled in managerial activities. Based on the roles in these different management levels (e.g., senior, middle, first), managers have special perceptions about the feasibility and/or desirability of the organizational factors promoting entrepreneurial actions, such as supports, rewards/reinforcement, organizational boundaries and performance (Hornsby et al., 2009). Managers are also better positioned to recognize entrepreneurial opportunities and they often regard entrepreneurial activities to be part of their job (De Jong et al., 2011). For similar reasons, other employee groups with a high prevalence of entrepreneurial employee activity are professional entrepreneurial employees in business and administration, information and communications, science and engineering, and teaching.

TABLE 4.4 PREVALENCE OF JOB CHARACTERISTICS OF ENTREPRENEURIAL EMPLOYEES IN % OF ALL EMPLOYEES IN EACH CATEGORY, BY PHASE OF ECONOMIC DEVELOPMENT (BASED ON 32 ECONOMIES)

	Efficiency-Driven Economies	Innovation-Driven Economies
JOB TYPE		
Managers	15.3	19.3
Professionals	4.4	7.4
Technicians and Associate Professionals	4.1	8.7
Clerical Support Workers	1.0	2.4
Service and Sales Workers	2.1	3.0
Skilled Agricultural, Forestry and Fishery Workers	3.1	0.0
Craft and Related Trades Workers	1.7	1.5
Plant and Machine Operators, and Assemblers	0.8	1.4
Elementary Occupations	0.2	0.0

Source: Global Entrepreneurship Monitor 2011

Note: Figures represent distributions of individuals in the sample by stage of economic development – regardless of the country..

4.4 ENTREPRENEURIAL PERCEPTION AND INTENTIONS

Entrepreneurial perceptions can be seen as cognitive constructs or mental representations of the external environment around individuals that may play a significant role in the formation of intentions toward start-up (Krueger, 2000). From the perspective of the individual, tone might expect entrepreneurial employee activity to be positively related to subsequent independent entrepreneurship, since entrepreneurial employees to a large extent share several entrepreneurial traits with independent entrepreneurs, such as risk attitudes, internal locus of control, extraversion and openness to experiences (De Jong et al., 2011). While the GEM adult population survey does not measure these traits, there is information about perceptions and intentions related to starting and owning a new business. As this information is available for all individuals, including entrepreneurial employees, other employees and individuals involved in early-stage entrepreneurship, it is insightful to compare the entrepreneurial perceptions and intentions for these groups.

Table 4.5 shows how, on average for efficiency-driven economies and innovation-driven economies, some important entrepreneurial perceptions vary among entrepreneurial employees, other employees (non-EEA), nascent entrepreneurs and owner-managers in new firms. In almost all cases, the perceptions of entrepreneurial employees, nascent entrepreneurs and owner-managers are remarkably similar. One of the exceptions deals with entrepreneurial employees in efficiency-driven economies claiming somewhat more often to personally know an entrepreneur who recently started a business; here, the learning process and perceptions of entrepreneurial employees could be influenced by role models via cognitive processes (Bandura 1977). Another exception is that entrepreneurial employees in innovation-driven economies are less likely than owner-managers in

TABLE 4.5 ENTREPRENEURIAL ATTITUDES AND PERCEPTIONS OF ENTREPRENEURIAL EMPLOYEES, NASCENT ENTREPRENEURS, OWNER-MANAGERS IN A NEW FIRM AND OTHER EMPLOYEES (NON-EEA) BY PHASE OF ECONOMIC DEVELOPMENT (BASED ON 52 ECONOMIES)

	Efficiency-driven Economies % of				Innovation-driven Economies % of			
	Other Employees (non-EEA)	Entrepreneurial Employees	Nascent Entrepreneurs	Owner-Managers	Other Employees (non-EEA)	Entrepreneurial Employees	Nascent Entrepreneurs	Owner-Managers
There are **good opportunities** for starting a business in the area where you live.	33	54	64	62	28	51	50	45
You have the required **skills and knowledge** to start a business.	38	79	84	83	35	67	81	84
You personally **know an entrepreneur** who recently started a business.	31	62	56	66	26	51	58	63
Fear of failure would prevent you from starting a business.	44	31	25	26	49	36	32	31

Source: Global Entrepreneurship Monitor 2011

nascent and new firms to feel that they have the required skills and knowledge to start a business. Also, they slightly more often state that fear of failure would prevent them from starting a business. The table also shows that entrepreneurial employees differ quite strongly from the other employees in terms of their entrepreneurial perceptions.

Table 4.6 presents prevalence rates of nascent entrepreneurship and start-up intentions of entrepreneurial employees versus those of other employees. The table clearly shows that entrepreneurial employees exhibit higher prevalence rates of both nascent entrepreneurship and intention to start a new business in the next three years. For efficiency-driven economies, rates of nascent entrepreneurship among entrepreneurial employees are about double that of other employees. For innovation economies, the difference is even higher: three times as many entrepreneurial employees are in the process of starting their own business, while intention rates are double that of other employees.

TABLE 4.6 NASCENT ENTREPRENEURS AND START-UP INTENTIONS BY ENTREPRENEURIAL EMPLOYEES VS. OTHER EMPLOYEES

	Nascent Entrepreneurship, % of		Entrepreneurial Intentions (excl. Nascent Entrepreneurs), % of	
	Entrepreneurial Employees	Other Employees	Entrepreneurial Employees	Other Employees
Efficiency-Driven Economies	17	8	35	24
Innovation-Driven Economies	9	3	16	8

Source: Global Entrepreneurship Monitor 2011

4.5 GROWTH EXPECTATIONS

To see the relevance of studying and comparing entrepreneurial employee activity in a cross national setting, examining the expectations for job growth by entrepreneurial employees is quite insightful. Based on 52 economies, Table 4.7 presents substantially higher job expectations of entrepreneurial employees enrolled in private/public organizations than nascent entrepreneurs and owner-manager entrepreneurs. This could be related to individual characteristics such as higher levels of education and income, as well as the extent to which the organization supports entrepreneurial behavior by employees. However, there is a long-running debate regarding growth expectations (Mahoney and Michael, 2005). Authors such as Baltes (1987) state that younger people tend to perceive their future as open-ended (holding a 'time since birth' perspective) and are especially motivated by growth or knowledge-related goals, while elder people increasingly regard time as a constraint ('time until death' perspective) and prefer to deepen and maintain their existing relations.

TABLE 4.7 GROWTH EXPECTATIONS AMONG ENTREPRENEURIAL EMPLOYEES VS. NASCENT ENTREPRENEURS AND OWNER-MANAGER ENTREPRENEURS

	Nascent Entrepreneurship, % of		Entrepreneurial Intentions (excl. Nascent Entrepreneurs), % of	
	Entrepreneurial Employees	Other Employees	Entrepreneurial Employees	Other Employees
Efficiency-Driven Economies	17	8	35	24
Innovation-Driven Economies	9	3	16	8

Source: Global Entrepreneurship Monitor 2011

Table 4.8 therefore presents the distribution of growth aspirations of entrepreneurial employees across some key demographic characteristics. It can be seen that the medium/high growth aspirations are somewhat concentrated in the age group of 25 to 44 years, as well as linked with entrepreneurs with medium/higher level of education and higher incomes. However, if we focus on entrepreneurial employees with low level of education we observe that, in both efficiency and innovation driven economies, the solo/low versus medium/high growth aspirations are almost evenly distributed. A similar finding occurs among entrepreneurial employees with low income in efficiency-driven economies.

TABLE 4.8 GROWTH EXPECTATIONS OF ENTREPRENEURIAL EMPLOYEES ACROSS GENDER, AGE, EDUCATION AND INCOME LEVELS

	Efficiency-Driven Economies		Innovation-Driven Economies	
	Solo/Low Growth	Medium/High Growth	Solo/Low Growth	Medium/High Growth
AGE				
18–24 Years	30	70	29	71
25–34 Years	19	81	22	78
35–44 Years	15	85	20	80
45–54 Years	12	88	23	77
55–64 Years	19	81	22	78
GENDER				
Male	17	83	21	79
Female	19	81	24	76
EDUCATION				
Low	44	56	46	55
Medium	18	82	23	77
High	15	85	19	81
INCOME				
Low	43	57	36	65
Medium	21	79	24	76
High	16	84	20	80

Source: Global Entrepreneurship Monitor 2011

4.6. ACCOUNTING FOR MULTIPLE EFFECTS: MAIN DEMOGRAPHIC DETERMINANTS OF ENTREPRENEURIAL TYPES

In this section, a more accurate assessment of differences between entrepreneurial employees and other employees/self-employed individuals in terms of gender, age, education, and income and the entrepreneurial perceptions is performed with the aid of a multinomial logit regression. This compares the independent effects of several demographic characteristics discussed earlier in this chapter on the occurrence of distinct types of entrepreneurial activity versus no entrepreneurial activity at all. In this analysis, employees and entrepreneurs are assumed be active in one of the following alternatives:

0) non-entrepreneurial employees (reference)
1) entrepreneurial employees with orientation towards independent entrepreneurship and with the intention to start a new business
2) entrepreneurial employees without the intention to start a new business and not active now (no TEA)
3) employees with the intentions to start a new business but not entrepreneurial employees and not active now
4) nascent entrepreneurs
5) owner-managers in new firm
6) owner-managers in established firm
7) employees who discontinued owning and managing a business in the past 12 months

Table 4.9 shows the results of these regressions by each category (excluding the final two) , without including variables that identify different countries. The coefficients for each entrepreneurial type should be interpreted as effects relative to the group of non-entrepreneurial employees. Gender effects are most pronounced for entrepreneurial employees, in particular for those with orientation towards independent entrepreneurship. Young people (18-24) are less often involved as entrepreneurial employees, but individuals aged between 25 and 34 are more involved in entrepreneurial activities with orientation towards independent entrepreneurship (nascent entrepreneurs or owner-managers in new firms). Taking individuals with the highest level of education (tertiary-second stage or higher education) as a reference, we observe a stronger effect of education on being an entrepreneurial

employee than on being a nascent entrepreneur and as an owner-manager in a new firm, compared with not having any entrepreneurial activity. These findings reinforce the idea that, while being different from (traditional) independent entrepreneurs, entrepreneurial employees are a specific asset exhibiting human capital that comprises education, experiences and capabilities (Parker 2011). A similar pattern is identified for household income. The effect is more pronounced for entrepreneurial employees and it would be associated with their higher growth expectations (Mahoney and Michael, 2005). Of course, another reason for this pattern may be that individuals with low human capital and who are not employees may attempt to start businesses out of economic necessity, whereas there is no such pressure for employees.

TABLE 4.9 MULTINOMIAL REGRESSIONS: MAIN DEMOGRAPHIC DETERMINANTS OF TYPES OF ENTREPRENEURIAL ACTIVITY

	EEA (TEA, Intentions to Start)			EEA (No TEA, No Intentions)		
	estimate	st. error	sign.	estimate	st. error	sign.
Gender (Ref: Female))	0.926	(0.06)	***	0.548	(0.05)	***
AGE (REF: 55-64)						
18-25	0.360	(0.13)	**	-0.977	(0.13)	***
25-34	0.907	(0.11)	***	0.105	(0.08)	
35-44	0.854	(0.11)	***	0.513	(0.08)	***
45-54	0.589	(0.12)	***	0.500	(0.08)	***
EDUCATION (REF: TERTIARY - SECOND STAGE)						
1- Pre-Primary	-1.454	(0.23)	***	-1.407	(0.20)	***
2- Primary	-2.416	(0.31)	***	-2.659	(0.31)	***
3- Lower Secondary	-1.936	(0.16)	***	-1.892	(0.15)	***
4- (Upper) Secondary	-1.269	(0.11)	***	-0.919	(0.10)	***
5- Post-Secondary	-0.625	(0.11)	***	-0.202	(0.10)	**
6- Tertiary - First Stage	-0.367	(0.10)	***	0.211	(0.09)	**
HOUSEHOLD INCOME (REF: HIGH)						
Low	-1.402	(0.12)	***	-1.371	(0.09)	***
Medium	-0.790	(0.07)	***	-0.744	(0.06)	
Constant	-3.960	(-0.14)	***	-3.211	(0.11)	***
n= 124110; X2= 3764.35 ; Prob. X2= 0.000 ; Pseudo R2 = 0.109						

(Table 4.9 continued on next page)

TABLE 4.9 (continued) MULTINOMIAL REGRESSIONS: MAIN DEMOGRAPHIC DETERMINANTS OF TYPES OF ENTREPRENEURIAL ACTIVITY

Intentions to Start (No EEA, No Entrepreneur)			Owner-Manager in New Firm			Owner-Manager in New Firm		
estimate	st. error	sign.	estimate	st. error	sign.	estimate	st. error	sign.
0.257	(0.02)	***	0.551	(0.02)	***	0.575	(0.03)	***
AGE (REF: 55-64)								
1.287	(0.03)	***	0.88	(0.05)	***	0.574	(0.06)	***
1.028	(0.03)	***	1.063	(0.04)	***	1.003	(0.05)	***
0.805	(0.03)	***	0.935	(0.05)	***	0.913	(0.05)	***
0.525	(0.03)	***	0.658	(0.05)	***	0.526	(0.06)	***
EDUCATION (REF: TERTIARY - SECOND STAGE)								
1.263	(0.07)	***	0.581	(0.08)	***	0.713	(0.10)	***
0.749	(0.07)	***	0.242	(0.08)	**	0.514	(0.10)	***
0.525	(0.06)	***	-0.102	(0.07)		0.310	(0.09)	**
0.591	(0.06)	***	0.061	(0.06)		0.304	(0.09)	***
0.466	(0.06)	***	0.058	(0.07)		0.319	(0.09)	***
0.357	(0.06)	***	-0.029	(0.07)		0.269	(0.09)	**
HOUSEHOLD INCOME (REF: HIGH)								
-0.232	(0.02)	***	-0.547	(0.03)	***	-0.777	(0.04)	***
0.016	(0.02)		-0.239	(0.03)	***	-0.331	(0.03)	***
-2.813	(0.06)	***	-3.097	(0.07)	***	-3.694	(0.10)	***
n= 124110; X2= 3764.35 ; Prob. X2= 0.000 ; Pseudo R2 = 0.109								

*Note: (1) Established entrepreneurs and individuals who discontinued a business (but are not in any of the other categories) were also identified but not reported. The reference group is the remaining group, i.e. not involved in entrepreneurial activity (and no intentions for next 3 years), not involved in EEA, not discontinued a business in past year. (2) This regression does not include country dummies. (3) Robust standard errors are reported in parentheses, and asterisks indicate significance level where *** p<0.001, ** p<0.05, * p<0.1*

5. CHARACTERISTICS OF ENTREPRENEURIAL EMPLOYEE ACTIVITY

5.1 INTRODUCTION

Entrepreneurship can be viewed as a 'nexus' of individual and opportunity (Shane 2003). Some individuals may have access to the same knowledge but see different opportunities arising from that knowledge. Whereas Chapter 4 discussed the characteristics of individuals involved in entrepreneurial employee activity across the globe, this chapter presents characteristics of the 'opportunities'. More specifically, it describes the activities the entrepreneurial employees are involved in, as well as the organizational environment that may stimulate these activities. In section 5.2, we provide some basic classifications (by e.g. type of activity and whether or not the activity will be conducted from a new legal entity) and show how patterns may differ between efficiency-driven economies and innovation-driven economies. Section 5.3 deals with organizational support and the (perceived) degree of risk taking. The final section explores spin-out patterns. Section 5.4 takes a backward look at this process, analyzing the degree to which current owner-managers of firms have taken ideas from previous spells in salaried employment.

5.2 TYPOLOGY OF ACTIVITIES AND LEGAL STRUCTURE

The GEM 2011 survey asked entrepreneurial employees how their most important entrepreneurial activity of the past three years could be described. The open ended answers have been coded into three main activities: (i) the creation of new products/ services; (ii) the exploration of and expansion to new markets or new establishments (e.g., business units, brands, ventures); and (iii) the process of innovation to improve the core business and the main functions associated with it. Table 5.1 presents the distribution of entrepreneurial employee activity across these categories. Activities related to product and process innovation are relatively more prevalent in innovation-driven economies. Recall from Chapter 3 that EEA rates are also higher in innovation-driven economies. While the Global Competitiveness Index classification is normative in the sense that it argues that countries it classifies as innovation-driven should be focused on innovation to achieve competitiveness, this GEM data suggest that these countries are actually more innovation-driven, at least from the perspective of employees' work behavior. Entrepreneurial employees in efficiency-driven economies put more emphasis on creating new establishments and entering new markets. The categorization by major industry shows that in both types of economies, EEA is concentrated in services, with roughly two out of three entrepreneurial employees being active in business services or consumer services.

TABLE 5.1 DISTRIBUTION OF ENTREPRENEURIAL EMPLOYEE ACTIVITY BY TYPE OF ACTIVITY AND INDUSTRY (% of EEA)

	Efficiency-Driven Economies	Innovation-Driven Economies
EEA RELATED TO		
New Products	31	37
New Markets and New Establishments	39	30
Process Innovation	26	31
Others	4	1
MAIN INDUSTRY		
Extractive	2	3
Transforming	31	29
Business Services	26	28
Costumer-oriented	42	40

Source: Global Entrepreneurship Monitor 2011

A relevant question is whether the activities will remain within the organization or if a new legal entity will be created. Table 5.2 presents this information separately for several potentially relevant characteristics of the activity, such as the newness of the product, the degree of market competition, the customers targeted with the activity (new and/or existing) and the sector involved. The table shows that entrepreneurial activities tend to remain within organizations, particularly in the innovation-driven economies. This is only natural since the core decisions are mostly made in environments deeply embedded in the incumbent organization, certainly if they are made by managers. If they are strategically unrelated, the organization is less likely to support them, and rather than spin them out, they may simply get developed outside—the entrepreneur leaves and starts it up on her/his own. However, Table 5.2 provides some nuances to this general observation. Viewed from the supply side, new entities in efficiency-driven economies are particularly associated with markets characterized by many or few competitors. From the demand side perspective activities that focus on existing groups of customers relatively often remain within the organization, in both stages of economic development. Activities targeting new customers may be seen as being beyond the firm's core business and hence more often lead to the creation of a new legal entity. This effect is also visible for innovation, although it is not very pronounced. Furthermore, the share of new legal entities (expected to be) created are somewhat higher in transforming sectors and business-oriented sectors.

TABLE 5.2 DEVELOPING THE ENTREPRENEURIAL ACTIVITY INTERNALLY OR CREATING A NEW LEGAL ENTITY (% OF EEA, BY KEY CHARACTERISTICS)

	Efficient-driven Economies			Innovation-driven Economies		
	New Legal Entity Has Been Created	New Legal Entity Will Be Created	Business Activity Remains within Organization	New Legal Entity Has Been Created	New Legal Entity Will Be Created	Business Activity Remains within Organization
INNOVATION						
All consider new & unfamiliar	24	12	64	9	5	86
Some consider	20	19	62	9	8	83
None will consider	19	10	71	9	6	85
MARKET COMPETITION						
Many business competitors	25	15	60	8	8	84
Few business competitors	26	17	57	10	6	84
No business competitors	21	9	70	8	6	86
TARGET CUSTOMERS						
Existing group of customers	21	14	65	8	5	87
New group of customers	23	19	58	11	10	80
Both existing and new group	32	13	55	9	7	84
No customers at all	38	13	49	7	5	88
MAIN INDUSTRY						
Extractive	22	9	68	8	5	87
Transforming	26	21	54	9	9	82
Business services	29	18	53	10	10	80
Consumer-oriented	22	9	68	8	5	87

Source: Global Entrepreneurship Monitor 2011

Note: Chi-square Test indicates that all differences in distributions are statistically significant, except for 'Innovation' and 'Market competition' in innovation-driven economies.

5.3 RISK TAKING AND ORGANIZATIONAL SUPPORT

This section focuses on (perceived) risk taking by entrepreneurial employees (vis-à-vis independent entrepreneurs) and, related to this, the degree to which the employer supports employees who come up with new ideas that could be developed within the organization. The investment of personal financial means and the related financial risk taking are, along with a higher degree of autonomy and the legal and fiscal aspects of establishing a new independent business, key differential elements of traditional, independent entrepreneurs (De Jong and Wennekers, 2008). In contrast, entrepreneurial employees act within organizational boundaries and can thus be expected to be less autonomous than independent entrepreneurs, reap fewer financial benefits of their entrepreneurial engagement and run fewer personal risks because the organization provides a considerable amount of security in case of failure. At the individual level, risk taking can refer to the quick pursuit of opportunities, fast commitment of resources and bold actions (Antoncic and Hisrich, 2003). Table 5.3 outlines the percentage of entrepreneurial employees who have mentioned that they have taken a risk. Subsequently the type of risk taken is assessed (i.e., loss of job, loss of money, 'loss of status' and 'loss of career'). In general terms, in efficiency-driven economies as well as innovation-driven economies, the percentage of individuals who indicate to take risks increases when moving from a broad to a more refined definition of entrepreneurial employees (i.e., from individuals that mentioned they may have only a supporting role to individuals that have leading roles, are now active and have an orientation towards owning and managing a new firm).

Considering the type of risk taken, Table 5.3 shows that among those entrepreneurial employees with orientation to independent entrepreneurship who perceive to be dealing with risks, 50% indicate to risk losing money. By age, older entrepreneurial employees are more often indicated to be taking a risk than younger entrepreneurial employees. In efficiency-driven economies, almost 50% of entrepreneurial employees with primary education affirmed to be taking a risk; in most instances this involved a loss of money only, whereas higher educated individuals also mentioned other risks. By gender, we observe a slightly lower percentage of female than male entrepreneurial employees that perceive to be taking a risk in both efficiency-driven economies and innovation-driven economies. This difference seems mostly attributable to the risk of losing money. By industry, in efficient-driven economies, the risk of loss money is more related to customer-oriented sectors, while the risk of losing a job is more associated to extractive sectors. In contrast, in innovation-driven economies, risk is more distributed among extractive, transforming and business services sectors.

TABLE 5.3 PERSONAL RISKS UNDERTAKEN BY ENTREPRENEURIAL EMPLOYEES

	Efficient-Driven Economies					Innovation-Driven Economies				
	Type of Risk Taken					Type of Risk Taken				
	% Yes: Risks Taken	Loss Job	Loss Money	Loss Status	Damage Career	% Yes: Risks Taken	Loss Job	Loss Money	Loss Status	Damage Career
ENTREPRENEURIAL EMPLOYEES										
Including supporting roles (all answering 'Yes' to initial selection question)	43	37	46	38	38	25	27	26	46	40
Leading, Active in Past Three Years	51	39	50	36	43	32	29	32	48	45
EEA: Leading, Active Now	53	39	47	37	46	33	28	33	49	46
EEA_IEO: Leading, Active Now, Orientation to TEA	57	42	58	34	46	44	28	49	39	46

	Efficient-Driven Economies					Innovation-Driven Economies				
	Type of Risk Taken					Type of Risk Taken				
	% Yes: Risks Taken	Loss Job	Loss Money	Loss Status	Damage Career	% Yes: Risks Taken	Loss Job	Loss Money	Loss Status	Damage Career
EEA_NIEO: Leading, Active Now, No Orientation to TEA	48	33	30	43	45	29	29	24	55	45
EEA: LEADING, ACTIVE NOW										
BY AGE										
18-34 Years	50	38	46	41	43	29	23	36	54	43
35-44 Years	52	43	48	32	45	30	31	38	45	46
45-64 Years	59	36	48	38	49	39	29	30	50	48
BY GENDER										
Male	58	38	51	37	46	37	30	37	51	49
Female	43	41	39	40	45	27	23	22	45	37
BY EDUCATIONAL LEVEL (UN ISCED CLASSIFICATION)										
Level 1	45	6	81	6	13	39	33	22	33	33
Level 2	53	43	46	38	48	27	27	29	51	47
Level 3	53	37	45	40	47	45	29	38	50	48
BY MAIN INDUSTRY										
Extractive	36	60	50	50	50	38	67	33	67	33
Transforming	50	40	49	38	54	40	33	50	56	51
Business Services	49	42	38	46	53	39	31	34	55	61
Consumer-Oriented	61	40	62	40	37	26	19	38	50	35

Source: Global Entrepreneurship Monitor 2011

Note: The Chi-square Test indicates that all differences in distributions are statistically significant, except for 'age' in both economies; 'educational level' and 'main industry' in innovation-driven economies.

TABLE 5.4 DEGREE OF EMPLOYER SUPPORT FOR INNOVATIVE BEHAVIOR BY EMPLOYEES (% OF EMPLOYEE CATEGORY)

	Efficient-driven Economies			Innovation-driven Economies		
	High Support	Some support	No support	High support	Some support	No support
Entrepreneurial employees with orientation to TEA	49	39	11	57	36	7
Entrepreneurial employees without orientation to TEA	55	38	7	53	42	5
Other employees	18	43	39	23	43	34

Source: Global Entrepreneurship Monitor 2011

Table 5.4 shows that entrepreneurial employees perceive substantially more support from the employer than other employees. In both efficiency and innovation driven economies, there appear to be no systematic differences in this respect between entrepreneurial employees with and without orientation to owning and managing a new firm.

5.4 RELATION BETWEEN ENTREPRENEURIAL EMPLOYEE ACTIVITY AND SPIN-OUTS

Introduction

While entrepreneurial employee activities account for new business initiatives developed and promoted by the organization they are generated in, entrepreneurial employees are also more inclined to start a business themselves (see section 4.4), and that part of their entrepreneurial activities may be expected to be transferred to a new legal entity. This suggests that entrepreneurial employees, their activities and new firm formation are strongly interconnected. Indeed, the empirical evidence indicates in retrospect that most independent entrepreneurs were in paid employment before setting up their own business (Burton et al., 2002; Gompers et al., 2005; Sørensen and Fassiotto, 2011). Moreover, a high share of them developed an idea they found in the workplace (Bhide 2000; Cooper 1985; Klepper and Sleeper, 2005). This phenomenon of spin-outs has been well documented for a number of industries including, automobiles, tires, semiconductors, disk drives and wine producers (see Klepper 2001, 2009, for a review). It has been claimed to drive the diffusion of knowledge across firms and growth of these industries. Indeed, spin-outs are found to outperform de novo entrants, especially if they emerge from an outstanding parent firm (Franco and Filson, 2006; Gompers et al., 2005).

Throughout this section, the term spin-out will refer to the new businesses created by employees who were or are still in employment before setting up the business and develop a business idea they encountered through their experience as an employee[20]. Thus, the distinction between spin-outs and other modes of entry, such as independent start-ups or joint ventures, lies in the origin of the business idea (Helfat and Lieberman, 2002). The term will be used in its broadest sense; without requiring entering the same industry as the incumbent operates, often referred as 'intra-industry' spin-outs, or requiring any minimum number of employees transitioning together to set up the business. Note that spin-outs as defined here also account for new ventures created by individuals who are still in employment, which differs from earlier uses of the concept in the literature. Given that many individuals create a business while keeping a salaried job (also known as 'hybrid entrepreneurs'), restricting the analysis to individuals that were in paid-employment in the past would underestimate the prevalence of spin-outs.

There are several classes of explanations for the formation of spin-outs. One of these highlights the influence of workplace characteristics in shaping the abilities and attitudes toward entrepreneurship among prospective entrepreneurs. This would affect the probability of employees quitting the firm to pursue their career or lifestyle goals (Parker 2009; Sørensen 2007). Another view posits that spin-outs reflect the limited capabilities of established firms to reap the benefits of the ideas generated within the organization (Gompers et al., 2005; Sørensen 2007). Spin-outs could emerge following strategic disagreements between the entrepreneur and the employer on how to develop and manage the new business activity or aspects related to the reward scheme (Klepper and Thompson, 2009). Likewise, established firms may abstain from developing certain ideas because they lie outside the core expertise of the firm, which implies that they may even fail to properly evaluate and select the most promising projects in the first place.

20 The underlying questions included in the GEM 2011 APS Survey are the following: (i) 'Are you in employment in addition to working on this new business?'; (ii) 'Were you in employment before you started working on this new business?'; and (iii) 'Is your business idea based on an idea you encountered through your experience as an employee?'

Given the above-mentioned interconnections, the prevalence of entrepreneurial employee activities and the existence of spin-outs are expected to be closely linked phenomena. Established firms often provide support to spin-outs while allowing entrepreneurs to hold ownership of the firm. Hence, in essence, spin-outs and corporate-backed startups can emerge under similar circumstances, although spin-outs differ in that their parent firm does not necessarily retain an equity stake or affiliation with the new business. Based on this logic, it is useful to divide spin-outs according to the level of involvement of their parent firm into sponsored and non-sponsored spin-outs. Throughout this report, the former will refer to spin-outs that have received financial support or physical infrastructure from their current or previous employer, whereas the latter have not. This is distantly related to the distinction between voluntary and involuntary spin-outs often examined in the literature. The main difference is that the unilateral decisions of workers to set up their own business as a means to pursue personal goals would be considered voluntary spin-outs, while they do not usually represent sponsored spin-outs.

Prevalence of Spin-Outs

The percentages of spin-outs, as defined above, in total early stage entrepreneurial activity (TEA) and owner-managers of established businesses in 2011 are shown in columns 1 and 2 of Table 5.5. There are clear differences between countries by phase of economic development. On average, spin-out activities are substantially more prevalent in efficiency- and innovation-driven economies for both early stage and established businesses. For example, spin-out entrepreneurs are more than twice as common in innovation-driven countries than in factor-driven countries. This could reflect higher rates of employees quitting or being dismissed from their jobs and starting their own businesses in economically more advanced countries. Or instead, it may be owing to greater paid-employment opportunities in these countries, hence higher probabilities to have wage-work experience prior to transitioning into entrepreneurship.

In order to disentangle these two explanations, we compute more broadly defined spin-out activity rates out of the early stage entrepreneurs and owner managers of established firms that state they were in employment before setting up their business or were still in employment in addition to working on their own business (columns 3 and 4). Compared to the results in columns 1

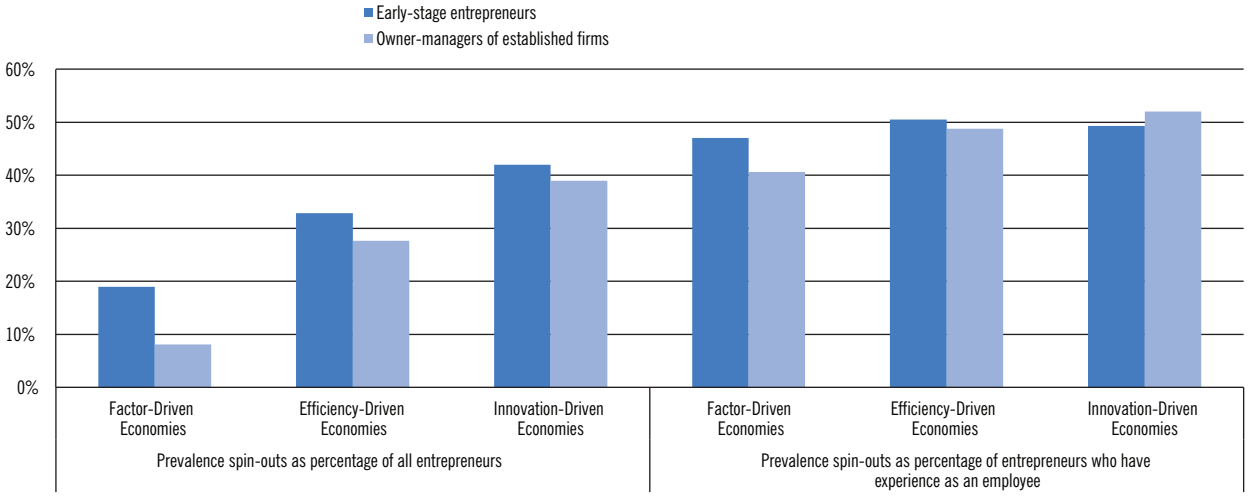
TABLE 5.5 SPIN-OUT ACTIVITY RATES ACROSS COUNTRIES, BY STAGE OF ENTREPRENEURSHIP AND PHASE OF ECONOMIC DEVELOPMENT

	Spin-out Activity. % of Individuals Involved in		Spin-out Activity Among previously or Currently Working Entrepreneurs. % of Individuals Involved in		Experience as Employee: Additionally or Previously in Employment. % of Individuals Involved in	
	TEA	EB	TEA	EB	TEA	EB
FACTOR-DRIVEN ECONOMIES						
Algeria	39	35	56	56	70	62
Bangladesh	7	.	31	.	22	13
Iran	6	.	42	.	14	8
Jamaica	21	.	36	22	59	44
Pakistan	.	.	67	.	24	2
Venezuela	29	.	47	.	62	53
pooled average	19	8	47	41	40	20
EFFICIENCY-DRIVEN ECONOMIES						
Argentina	33	24	44	39	76	61
Barbados	31	.	35	46	89	85
Bosnia and Herzegovina	42	27	67	53	63	52
Brazil	24	15	36	29	67	52
Chile	25	28	35	45	72	62
China	25	24	42	52	61	46

	Spin-out Activity. % of Individuals Involved in		Spin-out Activity Among previously or Currently Working Entrepreneurs. % of Individuals Involved in		Experience as Employee: Additionally or Previously in Employment. % of Individuals Involved in	
	TEA	EB	TEA	EB	TEA	EB
Colombia	30	28	50	61	60	46
Croatia	50	45	61	51	81	89
Guatemala	34	.	50	.	67	51
Hungary	48	.	57	.	84	93
Latvia	41	29	48	36	84	82
Lithuania	42	46	49	51	87	90
Malaysia	33	22	48	43	69	52
Mexico	17	.	38	.	45	26
Nigeria	20	26	52	.	39	51
Panama	24	.	47	49	51	40
Peru	35	39	54	77	64	51
Poland	60	48	71	64	84	76
Romania	36	37	39	45	91	82
Russia	38	30	48	42	79	72
Slovak Republic	40	47	50	53	81	88
South Africa	23	.	40	.	57	63
Thailand	25	21	44	45	58	48
Trinidad and Tobago	30	12	45	25	67	48
Turkey	35	24	66	58	53	41
Uruguay	44	35	56	47	79	75
pooled average	33	28	50	49	65	57
INNOVATION-DRIVEN ECONOMIES						
Australia	49	42	54	46	89	91
Belgium	44	35	52	54	84	65
Czech Republic	38	56	46	61	83	92
Denmark	27	45	32	53	84	86
Finland	54	53	66	65	82	81
France	58	.	65	.	89	82
Germany	39	41	51	53	77	77
Greece	54	45	62	54	87	84
Ireland	31	42	40	52	77	81
Japan	42	48	50	55	85	87
Korea, Republic of	36	36	51	62	71	58
Netherlands	35	31	45	44	79	72
Norway	33	36	38	44	86	82
Portugal	46	32	57	49	81	64
Singapore	39	52	50	68	79	76
Slovenia	49	61	59	66	82	92
Spain	42	30	53	49	79	63
Sweden	37	43	45	47	83	93

	Spin-out Activity. % of Individuals Involved in		Spin-out Activity Among previously or Currently Working Entrepreneurs. % of Individuals Involved in		Experience as Employee: Additionally or Previously in Employment. % of Individuals Involved in	
	TEA	EB	TEA	EB	TEA	EB
Switzerland	47	42	52	53	92	80
Taiwan	45	45	49	58	92	77
United Arab Emirates	34	40	44	53	77	77
United Kingdom	41	48	52	60	79	80
United States	34	42	39	47	88	89
pooled average	42	39	49	52	85	75

FIGURE 5.1 PREVALENCE OF SPIN-OUTS AS PERCENTAGE OF EARLY-STAGE ENTREPRENEURS AND OWNER-MANAGERS IN NEW FIRMS



and 2, the differences relative to factor-driven economies diminish and turn negligible between efficiency- and innovation-driven economies. Figure 5.1 visualizes these different patterns contingent on the degree to which individuals have experiences as an employee. Note that this finding is very similar to the one observed in section 3.2, that is, that the share of paid-employed in the working age population (aged 18-64 years) is also positively associated with the country level prevalence of entrepreneurial employee activities. Columns 5 and 6 in Table 5.5 show, for each economy, which percentage of entrepreneurs have some (current or past) experience as an employee and confirms that the differences in spin-out rates across stages of economic development tend go together with differences in entrepreneurs' current and previous experiences as an employee.

To what extent may spin-outs reflect missed opportunities of incumbent firms? On the one hand, some business ideas might be deliberately rejected because they do not fit with the competences of the incumbent firm, and others might be pursued by employees in a new independent firm following disagreements or unilateral decisions of employees. The former may imply missing additional revenues, but the latter may threaten the incumbent firm, especially if spin-outs enter the same industry. On the other hand, and as a means of keeping ties with and perhaps some control of spin-outs, established firms may allow employees to undertake the project and to hold the ownership of the new firm as well as providing support for the setting up of the business. In addition, sponsored spin-outs can be the result of top-down entrepreneurial strategies of established firms that take the form of self-standing ventures owned, at least, in part by the employee.

Table 5.6 shows the percentage of spin-out entrepreneurs that affirm having received financial support or physical infrastructure from their former or current employer. The prevalence of spin-outs appears to differ substantially across countries, ranging from 6% in Guatemala to 42% in Bosnia and Herzegovina as extremes, yet we do not observe significant

TABLE 5.6 INCIDENCES OF SPONSORED SPIN-OUTS ACROSS COUNTRIES (% OF SPIN-OUTS)

	Sponsored Spin-Outs, %of	
	Early-Stage Spin-Outs	New & Established Spin-Outs
FACTOR-DRIVEN ECONOMIES		
Algeria	20	24
Bangladesh	.	.
Iran	.	.
Jamaica	23	.
Pakistan	.	.
Venezuela	19	.
pooled average	20	24
EFFICIENCY-DRIVEN ECONOMIES		
Argentina	12	12
Barbados	14	.
Bosnia and Herzegovina	42	.
Brazil	22	22
Chile	12	13
China	28	27
Colombia	18	16
Croatia	33	16
Guatemala	6	3
Hungary	36	.
Latvia	22	18
Lithuania	15	15
Malaysia	.	.
Mexico	.	.
Nigeria	39	25
Panama	13	19
Peru	23	22
Poland	21	8
Romania	18	18
Russia	21	21
Slovak Republic	22	17
South Africa	21	18
Thailand	16	21
Trinidad and Tobago	27	.
Turkey	31	18
Uruguay	39	36
pooled average	22	19

	Sponsored Spin-Outs, %of	
	Early-Stage Spin-Outs	New & Established Spin-Outs
INNOVATION-DRIVEN ECONOMIES		
Australia	24	16
Belgium	.	13
Czech Republic	19	23
Denmark	.	9
Finland	11	7
France	20	.
Germany	27	18
Greece	20	15
Ireland	.	15
Japan	.	28
Korea, Republic of	30	22
Netherlands	16	11
Norway	.	21
Portugal	14	12
Singapore	24	29
Slovenia	.	20
Spain	13	11
Sweden	.	33
Switzerland	18	15
Taiwan	34	29
United Arab Emirates	37	42
United Kingdom	.	14
United States	26	18
pooled average	21	17

Note: Both stages considered include owner-managers of new firms.

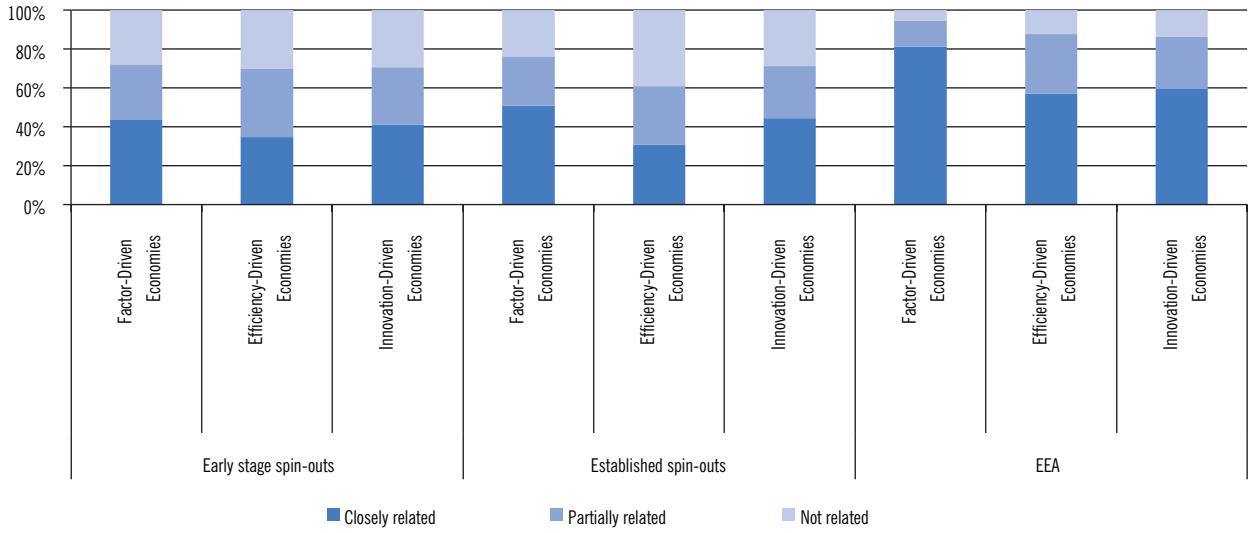
differences across the groups based on their level of economic development. Although we could expect a greater fraction of sponsored spin-outs in the later phases of entrepreneurial activity relative to those in their early stage, which would reflect the advantages of having additional resources and support in the setting up of the business, the results are quite mixed.

Degree of Technological Relatedness

The degree of technological relatedness between the established firm and the new spin-out business is believed to be a crucial factor for incumbents when deciding whether to develop a business idea or not. However, it can also be viewed as the outcome of the knowledge that spin-out entrepreneurs transfer from the incumbent to the new firm. Figure 5.2 shows the answers given by spin-out entrepreneurs on the extent to which the technology used in the new business is related to the core technology of their most recent employer. These are compared to the answers provided by those actively involved in entrepreneurial employee activities in the last 3 years and having a leading role in them, as discussed in previous chapters.

Entrepreneurial employee activities are found to be based on a technology that is closer to the core technology of the established firm, which suggests that incumbents are willing to provide support to projects that are closer to their main competences. If this is the case, one would expect to find similar

FIGURE 5.2 DEGREE OF TECHNOLOGICAL RELATEDNESS: SPIN-OUTS VS. EEA



differences among sponsored and non-sponsored spin-outs. Table 5.7 shows that sponsored spin-outs do indeed develop ideas using a technology more closely related to that of their supporting employer.

Finally, given that the industry in which the established firm operates may impose limits to the transferability of the technology across firms, Table 5.8 explores the degree of technological relatedness for early stage spin-outs across the industries they enter. There appears to be a larger propensity of spin-outs in extractive industries to use a non-related technology, contrary to those in the transforming sector and business services which appear to use more often a closely related technology. The equivalent analysis among entrepreneurial employee activities, although in this case the industry refers to that of the established firm rather than to the EEA itself, yields similar results. Yet, and consistent with the earlier finding, EEAs are in comparison to spin-outs technologically more similar to their parent firm across all industries.

TABLE 5.7 DEGREE OF TECHNOLOGICAL RELATEDNESS ACROSS EARLY STAGE (<3.5 YRS) SPONSORED AND NON-SPONSORED SPIN-OUTS

	Early-Stage Sponsored Spin-outs			Early-Stage Non-Sponsored Spin-outs		
	Closely Related	Partially Related	Not Related	Closely Related	Partially Related	Not Related
Factor-Driven Economies	49	39	11	57	36	7
Efficiency-Driven Economies	45	33	21	32	36	33
Innovation-Driven Economies	53	29	18	38	30	33

TABLE 5.8 DEGREE OF TECHNOLOGICAL RELATEDNESS ACROSS INDUSTRIES (% OF EARLY-STAGE SPIN-OUTS AND ENTREPRENEURIAL EMPLOYEE ACTIVITY)

		Early-Stage Sponsored Spin-outs			Early-Stage Non-Sponsored Spin-outs		
		Closely Related	Partially Related	Not Related	Closely Related	Partially Related	Not Related
EFFICIENCY-DRIVEN ECONOMIES	Extractive	26	31	43	.	.	.
	Transforming	36	36	28	53	31	15
	Business Services	40	37	24	61	31	8
	Consumer Oriented	33	34	32	52	35	13
INNOVATION-DRIVEN ECONOMIES	Extractive	33	22	45	.	.	.
	Transforming	45	29	26	61	31	8
	Business Services	46	28	26	65	23	12
	Consumer Oriented	36	31	33	57	32	11

6. CONCLUSION AND IMPLICATIONS

The traditional focus of the GEM survey is on entrepreneurial attributes, attitudes and activities of individuals who are about to start a business venture or started one in the last 42 months. It was a logical extension of research curiosity to check if entrepreneurial activity exists outside of this specific segment of individuals and if it does, what form and intensity it adopts. What is happening in already established businesses? Do these entrepreneurial employee activities only occur in the business sector? Do they occur in all countries or just in some? These questions prompted this Special Topic Study. To obtain insights into entrepreneurial employee activity (EEA) in established businesses, the following operational definition was used: 'employees developing new activities for their main employer, such as developing or launching new goods or services, or setting up a new business unit, a new establishment or subsidiary in the past three years, and also currently involved in the development of such new activities'. The focus was on individuals who have a leading role in the creation and/or implementation of these new business activities, no matter where the individuals were organizationally located (top level, bottom level). This definition of entrepreneurial employee activity is wider than new organization creation, but excludes employee initiatives that mainly aim at optimizing internal work processes.

The report presented a detailed account of the state of entrepreneurial employee activity in 52 economies across the globe and provides a well documented base for the following conclusions with potential implications for researchers, policymakers and business community.

1. ENTREPRENEURIAL EMPLOYEE ACTIVITY IS A SPECIAL TYPE OF ENTREPRENEURSHIP, CO-EXISTING WITH AND COMPLEMENTING ENTREPRENEURIAL ACTIVITY FOCUSED ON STARTING A NEW BUSINESS

This exploratory investigation confirms the existence of entrepreneurial employee activity in established businesses, but also reveals that entrepreneurial employee activity is not just restricted to the business sector but can be found in the public sector too. It also can be found in all countries, to some extent regardless of the development stage. Therefore, entrepreneurial activity is a multi-faceted phenomenon, not restricted to the phase of starting a business, to business owners or to the business sector. It can be found in all phases of the business life cycle, in the private and public sector, and in all countries across the globe.

The observations in this report provide ample support for this view. Compared with other employees, individuals who are involved in EEA are significantly more likely to perceive entrepreneurial opportunities and believe they have the capabilities for starting a business, and they are less likely to state that fear of failure would prevent them from starting a business. On the whole, the entrepreneurial perceptions of entrepreneurial employees are remarkably similar to those of early-stage entrepreneurs.

These findings do not contradict the fact that entrepreneurial employees may differ from independent entrepreneurs in other respects. One obvious difference is related to the circumstance that entrepreneurial employees are usually less exposed to personal financial risk. In addition, the access which entrepreneurial employees may have to the resources of the organization they work for, and the possibility of receiving support and encouragement from their employers also present differences with independent entrepreneurs. In that respect entrepreneurial employee activity can rightly be called a special type of entrepreneurship.

Implications:

For researchers, especially those using the GEM database and GEM methodology: to investigate further possibilities of developing a composite index of entrepreneurship in a country, as a result of individual attributes, attitudes and activities, regardless of the ownership (private vs. public) and the role (business owner vs. employee) and to revise the GEM conceptual framework.

For policymakers, especially in education: to intensify inclusion of educational activities (programs, learning/teaching methods) related to the development of entrepreneurial competences and initiative at all educational levels.

2. ENTREPRENEURIAL EMPLOYEE ACTIVITY IS A SCARCE ASSET

EEA is not a very widespread phenomenon. On average, only about 3% of the adult population and 5% of the employees in the sample are currently involved in this activity, but its prevalence differs markedly across individual countries, from slightly more than zero to almost 14%. As was extensively documented in this report, EEA is most prevalent in innovation-driven economies and least prevalent in factor-driven economies. The pattern of entrepreneurial employee activity across the stages of economic development is thus the reverse of that for early-stage independent

entrepreneurship which tends to decrease with economic development. These patterns suggest that at the country level, entrepreneurship in organizations may, to some extent, replace independent entrepreneurial activity as an alternative mode of exploitation of entrepreneurial opportunities. On the other hand, there are also many examples of countries where the prevalence of entrepreneurial activity in all its forms is either high or low.

Implications:

For researchers: to investigate reasons for different combinations of early-stage business ownership and entrepreneurial employee activity across countries (lack of entrepreneurial competences; organizational culture; wider country institutional context, especially education sector; labor market features, like the balance between social security and incentives for looking for jobs).

For policymakers: to take into account the dependency of both modes of entrepreneurial activity on the quality of the institutional and regulatory context of a country.

For the business community: to appreciate the value of entrepreneurial employee activity as an important, but rare asset and accordingly stimulate such activity, viewing it as a valuable investment, rather than as a cost.

3. COUNTRIES CAN DIFFER ACROSS A TYPOLOGY OF ECONOMIES BASED ON ENTREPRENEURSHIP PATTERNS

Investigating complementarity versus substitutability of two distinct entrepreneurship modes (entrepreneurial employee activity – EEA; and early-stage entrepreneurship – TEA), based on criteria of high/low prevalence rates of medium/high job expectation in each of those two modes (denoted as EEA-MH and TEA-MH), provided an interesting topography of economies for each of two development stages (efficiency-driven and the innovation-driven economies)[21]. This classification acknowledges four possible combinations, i.e. high rates for both measures, low rates for both measures, and two combinations of high and low rates. A rather even distribution across all four cells was observed both for the efficiency-driven and the innovation-driven economies. Apparently entrepreneurship in organizations may, to some extent, replace independent entrepreneurial activity, or vice versa, while at the same time, entrepreneurial activity may also thrive or be relatively weak in both forms. It confirms that the same development level can go together with different configurations of entrepreneurial activity as a result of different social, economic and political context and heritage. Monitoring these configurations over time would lead to a better understanding of the trajectories of these configurations and their linkage with economic development.

Two institutional features are particularly common for economies with relatively high rates of EEA-MH, regardless of being at the efficiency-driven or in the innovation-driven development stage: a high level of social security for employees in particular, and a high degree of employers who give at least some support to employees that come up with new ideas. Economies with relatively high rates of TEA-MH distinguish themselves by, on average, a high share of employees with post secondary and higher education, and a high economic freedom index. Finally, economies with relatively low rates for both EEA-MH and TEA-MH on average have a low share of employees with post secondary and higher education, a low emphasis of education on innovative and pro-active behavior, a low economic freedom index and a low proportion of employees who say their employers give them at least some support if they come up with new ideas.

Implications:

For researchers, especially in the field of regional development and organizational behavior: (a) to research different economies (emphasizing the social, economic, historical and political contexts) with the aim to understand the observed entrepreneurial activity configuration and build a stock of case studies for helping policymakers in choosing from available experience for designing policy instruments in their own countries; (b) to research the apparent link between employers' support to entrepreneurial employees' activities and the level of innovativeness in business entities at the level of individuals, thus extending the entrepreneurial orientation (EO) literature to multiple levels of analysis (firms, business units and individuals).

For policymakers, especially in the field of macroeconomic and regional development: to understand how the entrepreneurial activity configuration in their economy compares with that of 'benchmark' economies and to what extent it fits with their social, economic and political context and their locally identified goals. Importantly,

21 The small number of countries at the factor-driven stage (6) in the sample with data for both TEA and EEA, and the extremely low prevalence rates of EEA-MH in these countries prevented the classification of these economies.

policy makers designing long-term policy programs on entrepreneurship are advised to look beyond entrepreneurship that is related to owning and managing a business, also the activities of entrepreneurial employees should be taken into account.

For the business community: to use findings related to the work environment (employers' support for innovative behavior and job security) for designing organizational structure and culture with a view to enhancing innovation.

4. SOCIAL AND CULTURAL VALUES MATTER – ENTREPRENEURIAL EMPLOYEE ACTIVITY MORE OFTEN CAN BE FOUND IN COUNTRIES WHICH PROMOTE INNOVATIVE AND PRO-ACTIVE BEHAVIOR OF INDIVIDUALS, BUT ALSO PROVIDE AN APPROPRIATE LEVEL OF SOCIAL SECURITY

A national culture that may be expected to promote job autonomy seems to be positively related to entrepreneurial employee activity. Encouragement of innovative and pro-active behavior of individuals, both in the educational system and within organizations, also seems to play a role here. Finally, EEA was observed to be more prevalent in countries with a high level of perceived employer support for employees who come up with new ideas.

In addition, entrepreneurial employee activity appears to correlate with (perceived) employment protection and several indicators of social security entitlements. This is in line with the view that high opportunity cost of independent entrepreneurship may stimulate enterprising employees to engage in entrepreneurial behavior within an existing business.

Implications:

For researchers: to research correlations between differences in social and cultural values of countries and the respective rate of entrepreneurial employee activity of countries. The challenge for researchers in the field of the labor market is to search for an efficient balance between job security and job mobility that takes into account its effect on entrepreneurial activity while appreciating existing – and perhaps changing – values within the society.

For policymakers, especially in the field of education, social security and labor market: to fully appreciate the time dimension for intervening into social and cultural values, and to understand that policy instruments aiming to achieve changes in that field need consistent policies for more than one election period.

For the business community: in order to motivate employees for entrepreneurial activity, corporate leaders might review the degree of job autonomy accorded to employees in their organizations as well as other relevant aspects of job design, and might consider the possibilities for making advances in these areas.

5. ORGANIZATIONAL CULTURE MATTERS – ENTREPRENEURIAL EMPLOYEE ACTIVITY MORE OFTEN CAN BE FOUND IN ORGANIZATIONS IN WHICH INNOVATIVE INITIATIVES ARE SUPPORTED. AT THE SAME TIME ENTREPRENEURIAL EMPLOYEE ACTIVITY CONTRIBUTES TO JOB CREATION, INNOVATIVENESS AND STARTING NEW INDEPENDENT BUSINESSES

A culture that may be expected to promote job autonomy of employees seems to be positively related to entrepreneurial employee activity. Encouragement of innovative and pro-active behavior of individuals, both in the educational system and within organizations, also seems to play a role here.

In addition, Bosma et al. (2012) demonstrate that entrepreneurial employee activity appears to be more innovative than early-stage entrepreneurial activity, particularly in the innovation-driven economies. Entrepreneurial employees also have substantially higher job expectations for their new activity than nascent entrepreneurs and owner-managers of young businesses have for their new business.

Finally, entrepreneurial employees are also far more likely than other employees to be actively involved in setting up a new business which they will own and manage. Thus, while some entrepreneurial employees opt for entrepreneurial employee activity instead of self-employment in order to limit their risks or to receive material support from their employer for developing their idea, it appears that entrepreneurial employee activity can also be a stepping stone towards founding one's own business at a later stage.

Implications:

For researchers, especially in the field of organizational behavior: to research different organizational contexts (structure and culture) related to entrepreneurial employee activity and to develop cases of good practice, which could be used in education and in broad promotion of entrepreneurial employee activity.

For the business community: (a) to use this finding as a starting point to analyze the importance of entrepreneurial employee activity in developing and maintaining a competitive edge, and to assess the inspiration, endorsement and support that managers and colleagues offer to fellow workers with new ideas and initiatives; (b) to consider entrepreneurial behavior of their employees as an important source of achieving and maintaining business vitality and to design an appropriate organizational climate to stimulate such behavior.

6. EDUCATION MATTERS – ENTREPRENEURIAL EMPLOYEE ACTIVITY IS MORE OFTEN CONNECTED TO BETTER EDUCATED EMPLOYEES

The probability of being an owner-manager in a nascent or new business increases with levels of educational attainment. Entrepreneurial employee activity seems to be an activity that is even more suitable for more highly educated employees. This finding is partly related to the human capital requirements of innovation activity. In addition, higher job levels offer more autonomy to employees and provide better opportunities to develop social networks, which may both be conducive to entrepreneurial employee activity.

Implications:

For researchers, especially in the field of education: to research which fields and styles of education are most conducive to subsequent entrepreneurial employee activity and what is missing in education in order to provide individuals with stronger entrepreneurial competences.

For policymakers, especially in the field of education: to support interventions in the education sector in order to provide entrepreneurial competence as an infrastructural life-long competence, across disciplines.

For the business community: to evaluate the contribution of the investment in life-long education of its employees as an investment in a very scarce and special type of human capital.

7. ENTREPRENEURIAL EMPLOYEE ACTIVITY IS NOT LIMITED TO THE BUSINESS SECTOR

On average across all 52 economies that participated in the special theme study, almost two-thirds of EEA takes place in the private for-profit sector and one-third in the not-for-profit and government sector. Clearly, this type of behavior is not restricted to private, commercial activities. The share of public and semi-public sector EEA in the innovation-driven economies is closer to 40% and in some of these economies, notably some Scandinavian countries, it is as high as about 50%. This latter finding is primarily related to a higher employment share of the (semi-) public sector, but differences in EEA-prevalence between the private and public sector may in some economies also play a role.

Implications:

For researchers, especially in the field of public administration: to research the efficiency and efficacy of the public sector and how entrepreneurial employee activity is constrained or enhanced by organizational context (structure and culture).

For policymakers, especially in the field of public administration: to follow up on these research findings and to assess the rules of the game in the public sector accordingly.

For management in the public sector: to assess the incentives and support for entrepreneurial employee activity in government agencies and not-for-profit organizations.

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