

Institutions and the allocation of entrepreneurship across new and established organizations

Abstract

In this paper, we argue that institutions affect the allocation of entrepreneurship across new and established organizations. This is confirmed by empirical analysis of the Global Entrepreneurship Monitor (GEM) data on early-stage (independent) entrepreneurial activity and entrepreneurial employee behavior. Most comparative international research on entrepreneurship has focused on independent new ventures and has ignored the pursuit of entrepreneurial opportunities within established organizations (intrapreneurship). However, in developed economies the prevalence of entrepreneurial employee behavior is on average found to be in the same order of magnitude as that of independent entrepreneurial activity. At the same time prevalence rates of these two types of entrepreneurship vary substantially between countries. We analyze the allocation of entrepreneurial activity across early-stage independent entrepreneurial activity (entrepreneurship in new organizations) and entrepreneurial employee activity (entrepreneurship in established organizations) in 36 countries, taking into account effects of the level of economic development as well as the formal and informal institutional setting. We find that labor market institutions and the extent to which societies value autonomy affect the allocation of entrepreneurship across new and established organizations.

Keywords: entrepreneurial employee activity, intrapreneurship, independent entrepreneurial activity, economic development, institutions

JEL-codes: J83, L26, M13, O43, O57

1. INTRODUCTION

International research has shown enormous variation in national rates of (independent) entrepreneurship (Blanchflower, 2000; Kelley, Singer, & Herrington, 2012). Recent research has also provided increasing insight into the determinants of regional and national variations in self-employment and new firm formation (see e.g. Carree, Van Stel, Thurik, & Wennekers, 2007; Stam, Thurik, & Van der Zwan, 2010; Wennekers, Van Stel, Thurik, & Reynolds, 2005). This research presumes that entrepreneurship is a person-based activity reflected in the occupational status of individuals (self-employment) or in the activity of starting a new independent organization in a market setting. The latter activity is particularly relevant as it is often seen as an important driver of innovation.

This comparative research on entrepreneurship has provided evidence on the relationship between economic development, institutions, demography and agglomeration economies on the one hand, and self-employment levels and new firm formation rates on the other. However, the explained variance in entrepreneurship is rather low and several empirical puzzles remain. For example, how is it possible that several countries which perform quite well with respect to innovation (Sweden, Denmark) are lagging with respect to independent entrepreneurial activity, while some countries that perform only modestly (Australia, Ireland) or very badly (Portugal, Greece) with respect to innovation are among those leading the self-employment rankings?

One important empirical issue is usually overlooked in these comparative international analyses, to the detriment of our insight into varieties in entrepreneurship, and the role of institutions therein in particular. This issue is entrepreneurial behavior by employees in existing organizations, which until recently has been disregarded by international entrepreneurship research. This type of entrepreneurial behavior has however been studied extensively at the business level, labeled as intrapreneurship or corporate entrepreneurship. However, it might also be very relevant to study this type of entrepreneurial behavior at the country level, in order to understand the role of the macro environment in the choice for particular entrepreneurial action. The dominance of studies on innovative new business entry is often traced back to the prevailing interpretation of the Schumpeterian entrepreneur, i.e. the person who carries out new combinations (Schumpeter, 1934), as the founder of an innovative start-up. However, even Schumpeter (1934: 74-75) himself did not limit entrepreneurs to this role: ‘(...) in the first place we call entrepreneurs not only those “independent” businessmen in an exchange economy who are usually so designated, but all who actually fulfill the function by which we define the concept, even if they are, as is

becoming the rule, “dependent” employees of a company’. In this paper we will bring this forgotten dimension of international entrepreneurship research on stage again.

This paper aims to disentangle the role of formal and informal institutions in the allocation of entrepreneurship across independent entrepreneurship and entrepreneurial employee activity. We are inspired by the thesis of Baumol (1990) that the allocation of entrepreneurship over societies is heavily influenced by country specific institutional settings. These institutional settings condition economic behavior in general (North, 1990) and entrepreneurial behavior in particular (Baumol, 1990). Entrepreneurship, defined as the recognition, evaluation and pursuit of entrepreneurial opportunities (Shane & Venkatamaran, 2000) is not limited to the context of the creation of independent new organizations, and should thus also take into account the context of established organizations. We start this paper with a theoretical framework on institutions and entrepreneurship, which allows us to formulate expectations with respect to the allocation of entrepreneurial behavior between new and existing organizations. Subsequently our empirical investigation, using a new and unique international dataset, shows that entrepreneurial employee activity in existing organizations is not at all a marginal type of entrepreneurship, and that its prevalence is indeed significantly affected by the institutional environment. In order to control for spurious correlation between institutions and types of entrepreneurship we provide robustness checks to also account for the effects of prosperity levels (GDP per capita), large firm presence and the educational level of the population on the allocation of entrepreneurship.

2. CONCEPTUAL FRAMEWORK AND HYPOTHESES

Concepts and definitions

Entrepreneurial employee activity (EEA) refers to activities by employees in organizations to undertake new business activities. Although entrepreneurial employee activity is related to corporate entrepreneurship and to intrapreneurship (see Sharma & Chrisman, 1999; Antoncic & Hisrich, 2003), these three concepts differ in the following sense. Corporate entrepreneurship is usually defined at the level of organizations and refers to a top-down process, i.e. a management strategy to foster initiatives and efforts to innovate and develop new business. Intrapreneurship relates to the individual employee level and is about bottom-up, proactive work-related initiatives of individual employees. Entrepreneurial employee activity as used in the present study is a somewhat wider concept at the level of individual employees which, by including activities initiated by the organizations’ top levels

as well as those emerging from the bottom levels and up, partly overlaps with both corporate entrepreneurship and intrapreneurship.

Entrepreneurial employee activity shares many key behavioral characteristics with the comprehensive concept of entrepreneurship, such as taking initiative, pursuit of opportunity and some element of 'newness'. At the same time, entrepreneurial employee activity also belongs to the domain of employee behavior and thus faces specific limitations that a corporate hierarchy and an intra-organizational context may impose on individual initiative, as well as specific means of support that an existing business may offer to an intrapreneur. By combining insights from two strands of literature on employee behavior inside existing organizations, i.e. proactiveness (Crant, 2000; Frese & Fay, 2001; Parker & Collins, 2010) and innovative work behavior (De Jong, 2007; Farr & Ford, 1990; Kanter, 1988) with insights from the literature on early-stage entrepreneurial activity (Gartner & Carter, 2003; Reynolds, 2007; Shane, 2003) and that on intrapreneurship and corporate entrepreneurship (Lumpkin & Dess, 1996; Pinchot, 1987; Sharma & Chrisman, 1999; Zahra, 1996) we derive a detailed list of relevant activities and behavioral aspects of entrepreneurial employee activity (see De Jong & Wennekers, 2008). Major activities related to entrepreneurial employee activity include opportunity perception, idea generation, designing a new product or another recombination of resources, internal coalition building, persuading management, resource acquisition, planning and organizing. Key behavioral aspects of intrapreneurship are personal initiative, active information search, out of the box thinking, voicing, championing, taking charge, finding solutions and some degree of risk taking (Crant, 2000; Kanter, 1988; Lumpkin, 2007; Parker & Collins, 2010; Pinchot, 1985).

Pinchot (1987) refers to intrapreneurs as 'dreamers who do'. Accordingly, it is possible to distinguish between two phases of entrepreneurial employee activity, which may be called 'vision and imagination' and 'preparation and emerging exploitation'. Analytically, this distinction formalizes the sequential nature of the various intrapreneurial activities (from opportunity recognition to evaluation and exploitation, cf. Shane & Venkatamaran, 2000). Empirically, it helps in assembling relevant items for measuring entrepreneurial employee activity. In practice, these stages may overlap and occur in cycles, as the perception of an opportunity sometimes follows various preparatory activities such as product design or networking (see Gartner & Carter, 2003).

As for the relevant scope of entrepreneurial behavior, the large conceptual diversity in the literature also reflects on any concept of entrepreneurial employee activity. A first and very general approach is 'pursuit of entrepreneurial opportunity' (Shane, 2003). A second

view may be labelled ‘new entry’ which includes ‘entering new or established markets with new or existing goods and services’ (Lumpkin & Dess, 1996: 136). Finally, ‘new organization creation’ (Gartner, 1989) offers a third view of entrepreneurship as the process by which new organizations are created. Following this latter view entrepreneurial employee activity should always be linked to some sort of ‘internal start-up’ (such as establishing a joint venture, a new subsidiary, a new outlet or a new business unit).

Causal mechanisms

Entrepreneurship can be seen as an omnipresent aspect of human action, which manifests itself differently across alternative institutional regimes (Baumol, 1990; Boettke & Coyne, 2003). Entrepreneurs are then “persons who are ingenious and creative in finding ways that add to their own wealth, power and prestige” (Baumol 1990: 897). Taking the omnipresence of entrepreneurship as a point of departure we conjecture that there might be an ‘Entrepreneurial Constant’ across societies, the composition of which depends on the institutional context. This Entrepreneurial Constant would contain, among others, both independent entrepreneurship and entrepreneurial employee activity.¹ Taking the sum of independent (early-stage) entrepreneurial activity (IEA) and entrepreneurial employee activity (EEA) as a first estimate of overall entrepreneurial activity (OEA), we turn to the *allocation* of this sum across IEA and EEA, which is expected to be contingent on key characteristics of the institutional context.

This context encompasses an array of institutions including property rights, the rule of law, product market and labor market regulations, and the educational system, and is partly related to the level of economic development. The institutional environment also includes cultural aspects (Hofstede, 2001). In this view, the macro context may influence individual choices towards one type of entrepreneurial behavior in favor of another through a number of channels. These channels include both incentive structures driving individual decision making and macro conditions facilitating or hampering specific individual choices.²

Against this theoretical background we hypothesize several causal mechanisms that are shown in Figure 1. First, we expect that due to the relatively high share of adults formally

¹ In addition the Entrepreneurial Constant may also include rent seeking, as well as many informal activities and parts of the illegal economy, which are all largely unobservable. Note that the existence of an Entrepreneurial Constant is not necessary for our empirical analysis of the allocation of entrepreneurship across IEA and EEA.

² For some other causal factors see Shane & Venkataraman (2000: 224) in their discussion of existing firms and new startups as alternative modes of exploitation of entrepreneurial opportunities.

employed (in multi-person organizations) in economically more highly developed countries (OECD, 2009), entrepreneurial employee activity will be more prevalent in those countries than in less developed economies. Additionally, the higher presence of larger firms associated with a higher level of economic development (Ghoshal, Hahn, & Moran, 1999) will have a negative effect on the prevalence of independent entrepreneurship in an economy. This effect is partly due to an entry deterring influence of large firm presence (Choi & Phan, 2006) and is also related to large firms paying more stable and higher wages than small firms (Parker 2009; Brown & Medoff 1989). This mechanism will be tested with the following hypothesis:

Hypothesis 1. Employment in established (large) organizations is positively associated with the share of entrepreneurial employee activity in overall entrepreneurial activity

Secondly, we hypothesize that the level of education in an economy influences the allocation of entrepreneurial activity across new and established organizations. On the one hand, higher educated individuals are more likely to pursue new business activities as an employee for several reasons. First, higher educated individuals have a relatively high likelihood of reaching a well-paid position as a manager or professional within a larger organization and consequently are more often confronted with high opportunity costs of independent entrepreneurship. Secondly, higher education increases their capabilities to identify and exploit large scale opportunities due to better prior knowledge, and to acquire support and resources through a relatively prominent position within the hierarchy. Finally, human capital theory suggests that people desire to be compensated for their investments in schooling and on-the-job training. As intrapreneurial behavior is generally associated with better job performance, opportunity pursuit through entrepreneurial employee behavior would help to make the most out of their earlier investments (De Jong, Parker, Wennekers, & Wu, 2011). Accordingly, in an in-depth empirical study of 179 employees and their peers, De Jong, Parker, Wennekers, & Wu (2011) found a significant positive correlation of higher education with a newly developed measure of intrapreneurial behavior.

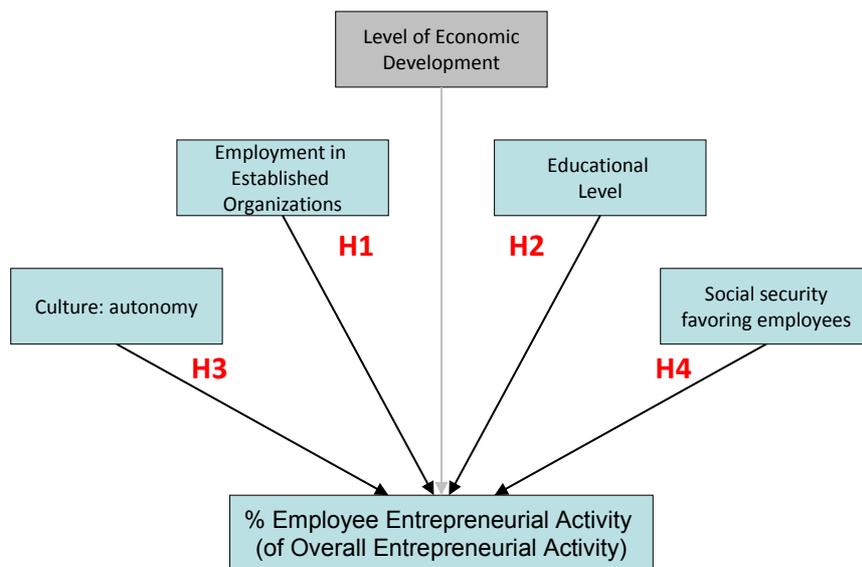
On the other hand, with respect to independent entrepreneurship, a meta study by Van der Sluis, Van Praag, & Vijverberg (2005) concludes that the impact of education on being self-employed is negative in developing countries and insignificant in industrialized countries. On balance, we thus expect a positive effect of the prevalence of highly educated

workers on the share of entrepreneurial employee activity in a country. This mechanism will be tested with the following hypothesis:

Hypothesis 2. The educational level of a population is positively associated with the share of entrepreneurial employee activity in overall entrepreneurial activity

Hypothesis 2 also suggests that more highly developed economies (with in general a relatively highly educated population) may have a higher share of entrepreneurial employee activity.

FIGURE 1
Determinants of the allocation of entrepreneurial activity across new and established organizations



In addition, Figure 1 also indicates two other causal mechanisms influencing the choice between entrepreneurial employee activity and independent entrepreneurship. First, we expect national culture (informal institutions) to affect the allocation of entrepreneurial activity across new and established organizations. At the micro-level the need for autonomy is a well-known driver of entrepreneurial behavior (cf. Frese, Kring, & Soose, 1996). More in particular, many employees leave their employer to strike out on their own, because they are

frustrated about the lack of autonomy provided by their employer (Shapiro & Sokol, 1982), while a high degree of job autonomy has been shown to be positively related to intrapreneurial behavior in organizations (De Jong, Parker, Wennekers, & Wu, 2011). At the macro level we expect that in societies in which autonomy is highly valued, individuals with entrepreneurial inclinations are less likely to leave their employer, because employer organizations will probably accommodate high levels of autonomy. This means that even in countries with similar levels of educational attainment and of employment in established organizations, there may be differences in the level of entrepreneurial employee activity, related to the autonomy of employees to take entrepreneurial action within their organization. In contrast, in societies in which autonomy is not highly valued, entrepreneurially inclined individuals are likely to be pushed out of existing, hierarchical organizations, in order to pursue a career as an independent entrepreneur. Consequently we hypothesize that countries with dominant preferences for autonomy will show a higher share of entrepreneurial employee activity. Hence, we formulate the following hypothesis.

Hypothesis 3. The extent to which autonomy is valued in society is positively associated with the share of entrepreneurial employee activity

Finally, labor market institutions may also influence the choice between entrepreneurial employee activity and independent entrepreneurship. In particular, a social security system that favors wage-employment over self-employment (i.e. by providing social security entitlements mainly for employees) will add to the opportunity cost of independent entrepreneurship (cf. Amit, Muller, & Cockburn, 1995). Thus, enterprising individuals with safe jobs in existing firms will think twice before moving to a risky high potential new independent business venture (see Bosma, Schutjens, & Stam, 2009; Autio 2011). Instead, they may be expected to opt for engaging in entrepreneurial employee activity. This mechanism will be tested with the following hypothesis:

Hypothesis 4. The extent to which social security favors employees in comparison to self-employed is positively associated with the share of entrepreneurial employee activity

3. DATA AND METHOD

The data for the present investigation were collected through a special theme study in the framework of the Global Entrepreneurship Monitor (GEM) that annually surveys a minimum number of 2,000 adults in each participating country as to their attitudes towards entrepreneurship, their participation in entrepreneurial activity and their entrepreneurial aspirations (see Reynolds, Bosma, Autio, Hunt, De Bono, Servais, Lopez-Garcia, & Chin, 2005 for a detailed description of the GEM methodology). In 2011, 52 countries participated in this study on entrepreneurial employee activity using a set of specific questions targeted at all employees – excluding those already identified as owner-managers of businesses - aged between 18-64 years in the GEM samples (Bosma, Wennekers and Amorós, 2012; Bosma, Stam & Wennekers, 2012). This cumulates into a total of over 140,000 respondents, of which more than 70,000 are employees, of the GEM Adult Population Survey. A particular advantage of this methodology is the opportunity to compare entrepreneurial employee activity with ‘regular’ entrepreneurial activity (i.e. individuals who own and manage a business, or expect to own the business they are setting up) at both the macro and the micro level. The measures obtained from the GEM 2011 study that will also be used in the empirical part of the present study are described in Table 1. At the national level the so-called Total early-stage Entrepreneurial Activity (TEA) rate measures the aggregate prevalence of nascent entrepreneurs and owner-managers of new businesses as a percentage of the adult population (18-64 years of age). For terminological consistency with our conceptual framework, we will denote this rate in the present paper, however, as Independent early-stage Entrepreneurial Activity (IEA).

TABLE 1

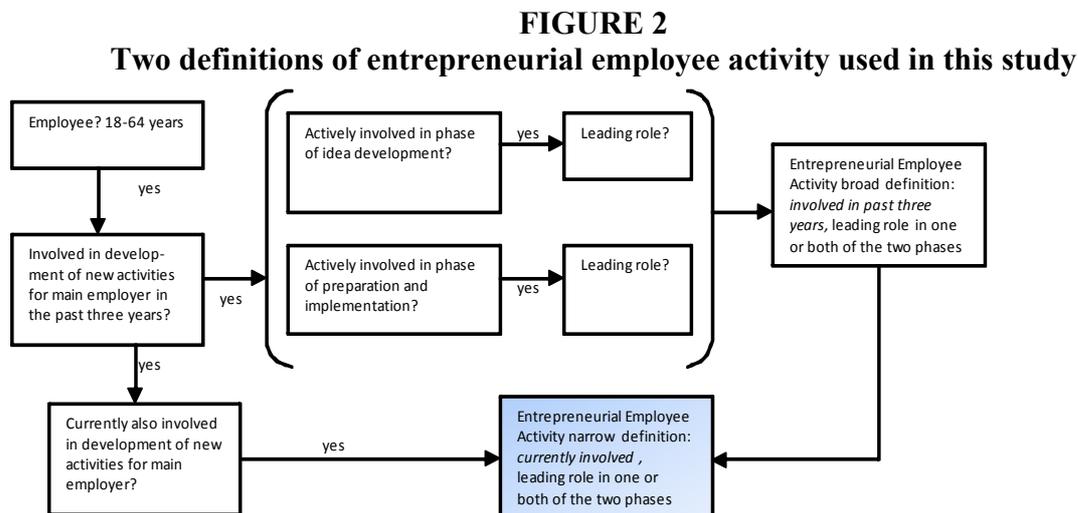
Definitions of GEM measures of involvement in independent entrepreneurial activity

Measure	Description
Nascent entrepreneur	Individual who is currently actively involved in setting up a business he/she will own or co-own; this business has not paid salaries, wages, or any other payments to the owners for more than three months
Owner-manager of new business	Individual who currently, alone or with others, owns and manages an operating business that has paid salaries, wages or other payments to the owners for more than three months, but not more than 42 months.
Owner-manager of established business	Individual who currently, alone or with others, owns and manages an operating business that has paid salaries, wages or other payments to the owners for more than 42 months.

Note: measures at the macro-level represent prevalence rates in percentages of the 18-64 population

Regarding the scope of entrepreneurial employee activity, GEM operationalized entrepreneurial employee activity as employees developing new business activities for their employer, including establishing a new outlet or subsidiary and launching new products or product-market combinations. This approach is closest to the ‘new entry view’ discussed previously, and is in many ways comparable to the measure of independent early-stage entrepreneurial activity, albeit within the context of established organizations. It is however definitely wider than new organization creation. On the other hand, it excludes employee initiatives that aim mainly to optimize internal work processes. These latter activities belong to the domain of ‘innovative work behavior’ (De Jong, 2007): entrepreneurial employee activity and innovative work behavior overlap, but are not identical. Next, two phases are distinguished in the intrapreneurial process: idea development for new business activities and preparation and (emerging) exploitation of these new activities. For the role of entrepreneurial employees in each of these phases we distinguish between leading and supporting roles.

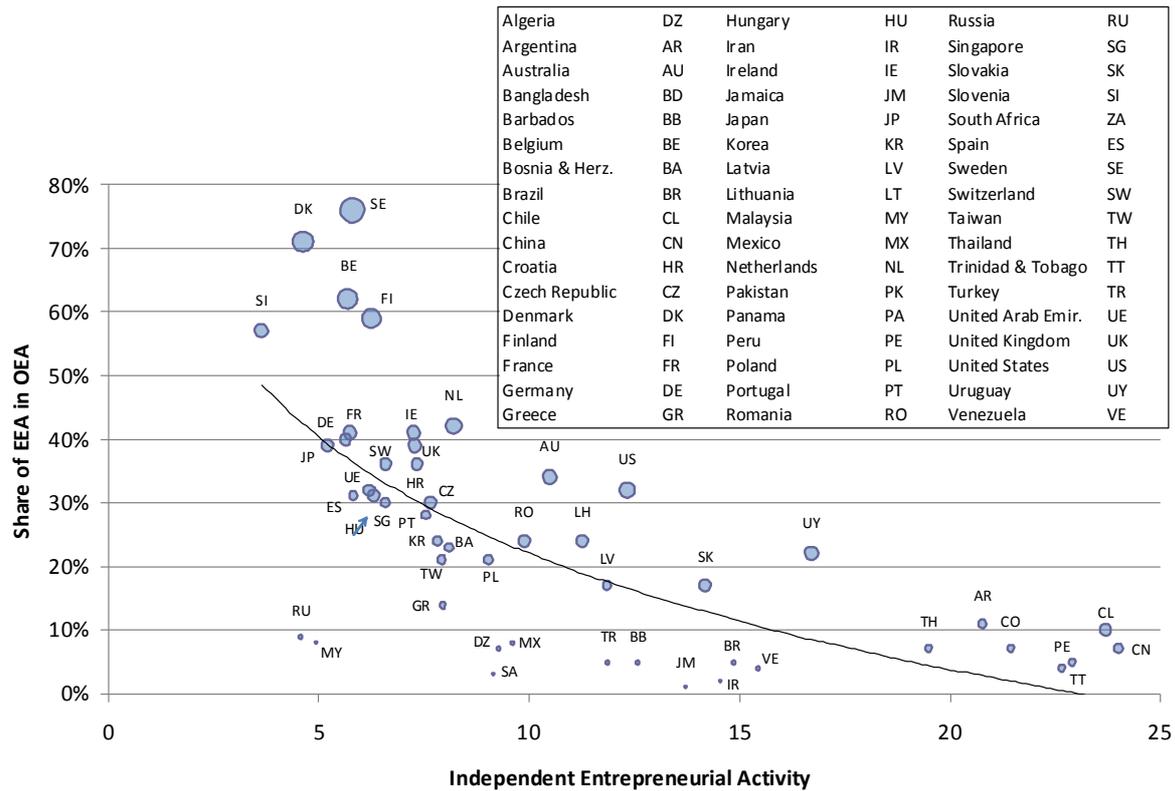
Based on these elements GEM distinguishes between employees who, in the past three years, have been actively involved in and have had a leading role in at least one of these phases and who are in addition also currently involved in entrepreneurial employee activity. See the scheme in Figure 2 for a clarification.



Using the framework in Figure 2 all employees participating in the GEM Adult Population Survey could be classified in terms of their involvement in entrepreneurial employee activity. Accordingly the EEA rate measures the prevalence (in the population of 18-64 years) of employees who, in the past three years, have been actively involved in the

development of new activities for their main employer, had a leading role in at least one phase of the ‘intrapreneurial process’ and are also currently involved in the development of such new activities.

FIGURE 3
Entrepreneurial employee activity (EEA) as a percentage of overall entrepreneurial activity (OEA), by the level of Independent Entrepreneurial Activity



Source: GEM 2011, 52 economies

Note: Size of bubbles indicate level of Entrepreneurial Employee Activity (EEA)

In order to test our hypotheses, we computed the Overall early-stage Entrepreneurial Activity (OEA) by adding up Independent early-stage Entrepreneurial Activity (IEA) and Entrepreneurial Employee Activity (EEA), and operationalized the *allocation* of entrepreneurial activity between IEA and EEA by taking the share of EEA in OEA. Figure 3 shows the share of EEA in overall entrepreneurial activity plotted against the level of IEA. In general, the EEA share declines with IEA and increases with EEA, which follows directly from our operationalization of the allocation of entrepreneurial activity. However, several economies with a low level of IEA nonetheless either exhibit relatively low shares of EEA

(notably Malaysia and Russia) or show an exceedingly high share of EEA (notably Belgium, Denmark, Finland and Sweden.)

Independent variables

Due to a limited data availability of various independent variables we are restricted in our regression analyses to use data for 36 of the 52 participating countries in the GEM 2011 survey on entrepreneurial employee activities. The non-selected countries have less employment in large organizations and a lower GDP per capita, on average.

For testing our hypotheses regarding the allocation of OEA between EEA and IEA (measured by the share of EEA in OEA), we require measures related to the share of employees in large organizations, education levels, the nature of social security and the extent to which autonomy is valued in society. Since there is no public dataset that includes the firm size distribution for the varied set of countries studied in this paper, we used the data of the GEM survey in which employees were asked about the size of their employer organization. We computed an indicator that reflects the percentage of employees working in organizations larger than 250 employees. The percentage of employees working in large organizations is highest in Sweden, the Netherlands, Germany, United States, Singapore, Belgium and the United Kingdom (all above 40%), and lowest in Malaysia, Pakistan, Iran and Thailand (all under 10%). We used United Nations data to construct a variable that reflects the percentage of the adult population that has successfully completed tertiary education (ISCED level 3).

The institutional variables used are based on different sources. We used the (nationally aggregated responses to) statements in the GEM National Expert Survey on labor market institutions, and more specifically the statement “Entrepreneurs have much less access to social security than employees”. Sweden, Finland and the Netherlands have the highest scores on this indicator, while Poland, Greece and Turkey have the lowest scores.

The culture variable is based on the autonomy component of the construct measuring secular-rational values by Inglehart and Baker (2000). It essentially measures the importance attached to determination and independence, as opposed to obedience and religious faith.³ Highest autonomy index scores are observed in Japan, Switzerland, Slovenia, Germany,

³ The exact question is as follows: “Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important?” The four options are independence, determination, religious fate and obedience. See the website of the World Values Survey (www.worldvaluessurvey.org) for more information.

Denmark, Korea and Sweden (all above 0.80), countries with low autonomy index values include Algeria, Pakistan, Trinidad & Tobago, Colombia, Brazil, Turkey and Peru (all below -0.40).

In order to control for additional effects that are covered by the level of economic development, we also add “level of economic development” as a covariate in the regression analyses. GDP per capita (in USD, Purchasing Power Parities) was taken from the IMD Economic Outlook 2011. Summary statistics and correlations between the variables are provided in Table 2. All independent variables reveal strong and statistically significant correlations with the dependent variable, while educational level is strongly and statistically significantly correlated with the prevalence of large organizations and a culture in which autonomy is highly valued.

TABLE 2
Descriptives

Variable	mean	st. dev.	Correlations				
			1	2	3	4	5
1 EEA_share	.23	.18					
2 GDP per capita in PPP (1000 USD)	22.5	11.2	.65 ***				
3 Employment large organizations	.24	.12	.64 ***	.65 ***			
4 Educational level	.46	.22	.65 ***	.67 ***	.48 ***		
5 Social security favoring employees	.69	.11	.51 ***	.35 **	.16	.26	
6 Culture: autonomy index	.15	.54	.68 ***	.66 ***	.34 **	.68 ***	.25

* p<.1, **p<.05, *** p<.01 (N=35)

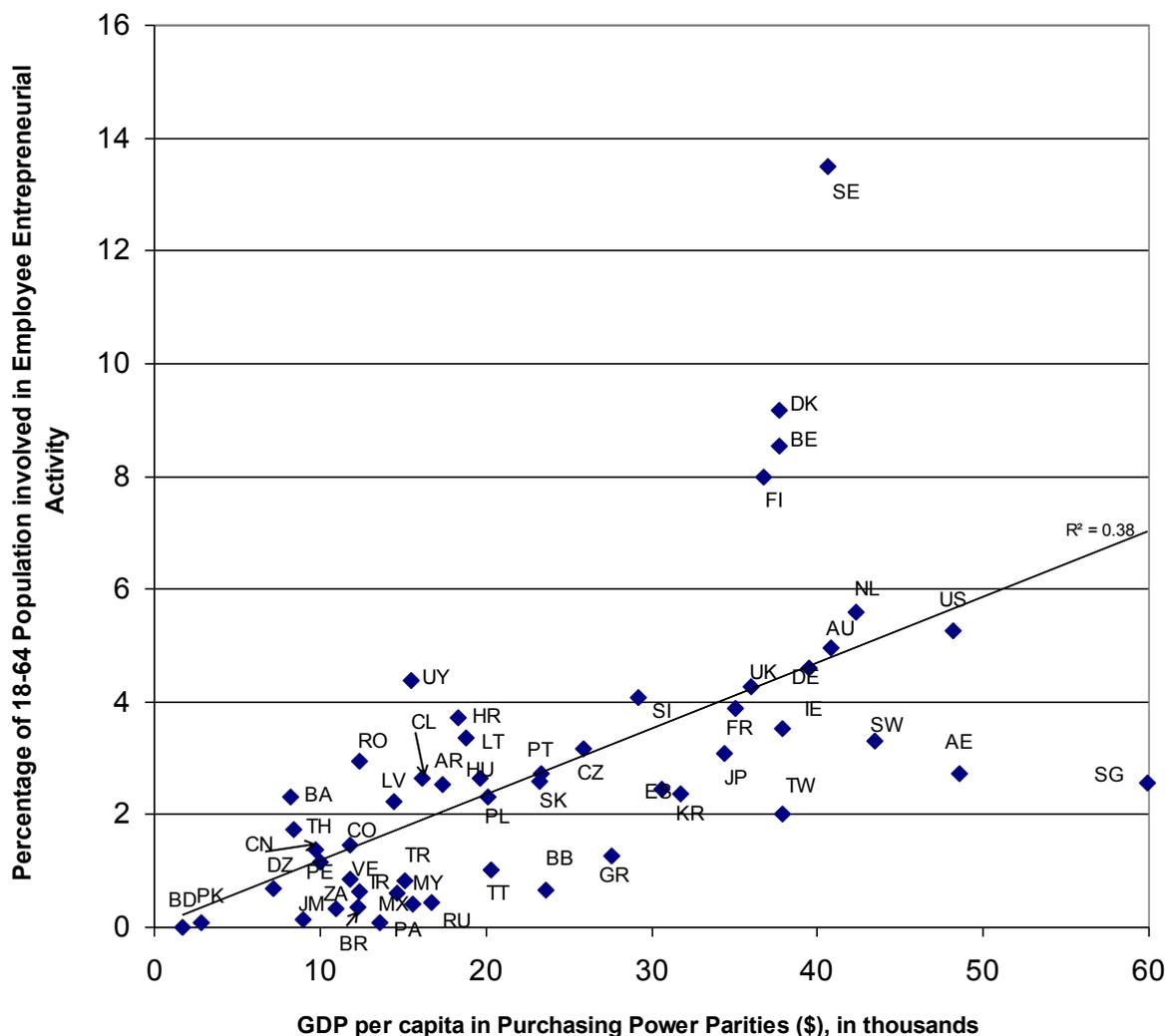
4. RESULTS

Descriptive analyses

Figure 4 explores the possible relationship between the national level incidence of entrepreneurial employee activity EEA and the level of economic development as measured by GDP per capita. The scatter plot for 52 countries clearly suggests a positive relationship between income levels and entrepreneurial employee activity at the macro level, as Figure 1 assumes.

EEA also appears to be negatively correlated with IEA at the national level, both for the set of 52 countries (coefficient equals -0.37, p=0.006) and for the 36 countries appearing in the models explaining the allocation of entrepreneurial activity (-0.31, p=0.063). This lends support to the other important assumption underlying Figure 1, namely that in general the key causal factors have opposite effects on EEA and IEA.

FIGURE 4
Entrepreneurial employee activity in 52 countries as a percentage of the adult population (18-64 years of age) and GDP per capita, 2011



Source: GEM 2011 and IMF World Economic Outlook Database (September 2011 edition)

Regression analyses

The descriptive analyses suggest a positive relationship between the level of economic development (GDP per capita) and EEA, and a negative relationship between IEA and EEA. Considering Figure 1, and addressing hypotheses 1-4, we now turn to the causal mechanisms at play. Table 3 shows the outcomes of the regression analyses explaining the share of EEA in overall participation in entrepreneurial activity (OEA) for 36 countries. The results of model I confirm the positive relationship between GDP per capita and the share of

EEA. While the degree to which employment is prevalent in large organizations is also linked to higher shares of entrepreneurial employee activity, it does not lead to significant effects on top of that of GDP per capita as shown in Model II. The same holds for the influence of education above that of GDP per capita.

TABLE 3
Regression results for share of entrepreneurial employee activity in overall entrepreneurial activity

	I		II		III		IV	
GDP Per Capita, PPP	.013	***	.010	***	.008	***	.006	**
	(.002)		(.002)		(.002)		(.002)	
Employment in large organizations			.27		.31	*	.38	**
			(.19)		(.17)		(.17)	
Educational level			.16		.14		0.04	
			(.11)		(.10)		(.11)	
Regulation: social security favoring employees					.45	***	.45	***
					(.16)		(.15)	
Culture: autonomy index							.09	**
							(.04)	
Constant	-.08	*	-.12	**	-.40	***	-.34	***
	(.04)		(.05)		(.11)		(.11)	
Adj. R ²	.66		0.68		0.74		0.76	
Sign. F change previous model			0.13		0.01	**	0.04	**
Observations	36		36		36		36	

The next two models add our two measures reflecting formal (social security) and informal (culture of autonomy) institutions relevant to the allocation of entrepreneurship. The results in Model III provide support for a labor market regulation effect on the EEA share of overall entrepreneurial activity. Thus, we find support for hypothesis 3. Adding an index for the culture of autonomy in Model IV, it is seen that also hypothesis 4 is confirmed: the more emphasis on autonomy in a society, the higher the share of entrepreneurial employee activity. Moreover, in conjunction with this positive association for autonomy also the link with employment in large organizations becomes more pronounced. These analyses however do not confirm hypothesis 2, a positive effect of educational level on the EEA share.⁴

⁴ In an auxiliary regression we applied an alternative measure of the dependent variable by disregarding necessity-driven entrepreneurship from IEA and OEA. Here the estimates for education are weakly significant at $p < .10$ in Model III however insignificant in Model IV. The other findings were very similar as those presented in Table 4.

5. CONCLUSIONS

This investigation has provided a more complete view on entrepreneurial activity than previous international investigations on entrepreneurship by including entrepreneurial opportunity pursuit by individuals in both new and existing organization. The latter type of entrepreneurship - entrepreneurial employee activity - involves ‘employees developing new activities for their main employer’, while the first type refers to people who are engaged in setting up an independent business which they will own or co-own, or who are active as owner-managers of new businesses. This paper makes two distinct contributions to the literature by analyzing the data from a new and unique international comparative dataset including prevalence rates of entrepreneurial employee activity as well as early-stage independent entrepreneurship across 52 countries. First, this paper combines the prevalence rates of both types of entrepreneurship to construct a measure of overall entrepreneurial activity. Second, the paper gives first indications of various national entrepreneurial framework conditions underlying the *allocation* of overall entrepreneurship across new and established organizations.

A first conclusion is that entrepreneurial employee activity and independent entrepreneurial activity are negatively related, suggesting that these modes of entrepreneurial activity are to some extent substitutes at the national level. As a second conclusion, we found that the share of entrepreneurial employee activity depends on the level of GDP per capita. On top of that, we also find an effect of the prevalence of large organizations in an economy. However, we did not find an (additional) effect of education on the share of entrepreneurial employee activity at the country level, a relationship that has been revealed to be relevant at the micro level (see Bosma, Stam, & Wennekers 2011; 2012). A third conclusion is that the allocation of entrepreneurship is affected by formal and informal institutions: social security favoring employees over self-employed, and a culture emphasizing the value of autonomy both positively affect the share of entrepreneurial employee activity. Particularly these latter underlying mechanisms have important potential implications for policy.

Implications and limitations

If it is indeed the case that, given a ‘supply of entrepreneurial behavior’, it depends on various contextual determinants whether entrepreneurial individuals pursue their aspirations within an established organization or choose to start up for themselves, the implications might be far-reaching. A particularly important implication emerging from our analysis is that policymakers and academics around the globe have now been made aware that

entrepreneurial employee activity is not only on average roughly as prevalent as independent entrepreneurial activity, but that it is also often affected in a completely different way by national conditions than independent entrepreneurship. Especially the prevalence of established, larger organizations, prevailing attitudes towards autonomy in society and the opportunity costs of independent entrepreneurship (measured with social security favoring employees) are important conditions for enhancing entrepreneurial employee activity in an economy. Hence, policies on entrepreneurship may be incomplete if the size, the impact and the idiosyncrasies of entrepreneurial employees are disregarded.

On a more speculative note, our findings are also not in contradiction with the idea of an Entrepreneurial Constant across societies, the composition of which would depend on the institutional context and the degree of participation in the economy. However, even with the inclusion of entrepreneurial employee activity as a form of entrepreneurial behavior in the economy, our study is still not able to provide a complete measurement of such an Entrepreneurial Constant due to its focus on early-stage entrepreneurship and because it still lacks other relevant forms of entrepreneurial behavior outside the formal economy, for example in the informal economy or in crime (cf. Baumol 1990).

Finally, we also have not yet made a distinction between less and more ambitious, and less and more innovative types of EEA and IEA. This other type of allocation of entrepreneurship (see e.g. Bowen & DeClercq, 2008; Stephan & Uhlaner, 2010) may be another interesting area of research, as recent data suggest that job growth expectations by entrepreneurial employees for their ventures by far exceed those of independent early-stage entrepreneurs (Bosma, Stam, & Wennekers, 2012).

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