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Entrepreneurial Employee Activity: A Large Scale International Study

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Abstract

This paper presents the results of the first large scale international comparative study of entrepreneurial employee activity (intrapreneurship). Intrapreneurship is a more wide-spread phenomenon in high income countries than in low income countries. At the organizational level, intrapreneurs have relatively high job growth expectations for their new business activities, as compared with independent young businesses. At the individual level, intrapreneurs are much more likely to have the intention to start a new independent business than other employees. However, at the country level there is a negative correlation between intrapreneurship and early-stage entrepreneurial activity. An explanation for these contrasting outcomes is the diverging effect of per capita income on intrapreneurship (positive effect) and early-stage entrepreneurial activity (negative effect). Underlying mechanisms include the role of larger firm presence, of higher education and of the opportunity costs of independent entrepreneurship.

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

JEL classification: J83, L26, M13, O43, O57

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Entrepreneurial Employee Activity: An International Study

INTRODUCTION

Cross-country comparative studies on independent new businesses (Arenius and Minniti, 2005; Bowen and De Clercq, 2008; Koellinger, 2008; Stephan and Uhlaner, 2010; Wennekers et al. 2005) and studies on new business development within existing organizations (Pinchot, 1985; Kanter, 1988; Lumpkin and Dess, 1996; Kuratko, 2007) have developed along separate paths in business and management studies. Entrepreneurial behavior within existing firms (intrapreneurship) has remained outside the bounds of empirical research on national variations in entrepreneurship, because comparable data on intrapreneurship has not been available until now. This means that the study of the effects of the national environment on the individual level trade-off between new business development within existing organizations or with an independent venture has remained an uncharted academic territory. Empirical research is needed in order to gain insight into the relationships between intrapreneurship, independent entrepreneurship and economic development. This paper provides the first large scale cross-national evidence on the prevalence of intrapreneurship.

This paper makes two distinct contributions to the literature. First, it provides international comparative research on intrapreneurship in high and low income countries, making it possible to trace the effect of the macro context (i.e. levels of economic development) on the prevalence and nature of intrapreneurship. Second, this paper provides insight into the relationship between (independent) entrepreneurship and intrapreneurship at both the national and individual level.

DELINEATING INTRAPRENEURSHIP

Intrapreneurship refers to initiatives by employees in organizations to undertake new business activities. Although intrapreneurship is related to corporate entrepreneurship, these concepts differ in the following sense (Antoncic and Hisrich, 2003; Sharma and Chrisman, 1999). Corporate entrepreneurship is usually defined at the level of organizations and refers to a top-down process, i.e. a management strategy to foster workforce initiatives and efforts to innovate and develop new business. Intrapreneurship relates to the individual level and is about bottom-up, proactive work-related initiatives of individual employees.

Intrapreneurship is a special type of entrepreneurship and thus shares many key behavioral characteristics with this comprehensive concept, such as taking initiative, pursuit of opportunity and some element of 'newness'. At the same time, intrapreneurship 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 and Fay, 2001; Parker and Collins, 2010) and innovative work behavior (De Jong, 2007; Farr and Ford, 1990; Kanter, 1988) with insights from the literature on early-stage entrepreneurial activity (Gartner and Carter, 2003; Reynolds, 2007; Shane, 2003) we derive a detailed list of relevant activities and behavioral aspects of intrapreneurship (also see De Jong and Wennekers, 2008). Major activities related to intrapreneurship 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 and Collins, 2010; Pinchot, 1985).

Two phases of intrapreneurship

Pinchot (1987) refers to intrapreneurs as 'dreamers that do'. Accordingly, it is possible to distinguish between two phases of intrapreneurship, 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 and Venkatamaran, 2000). Empirically, it helps in assembling relevant items for measuring intrapreneurship. 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 and Carter, 2003).

The scope of intrapreneurship

The large conceptual diversity in the literature with respect to the relevant scope of entrepreneurial behavior also reflects on any intrapreneurship concept. A first approach is 'pursuit of entrepreneurial opportunity' (Shane, 2003). A second view may be labelled 'new entry' (Lumpkin and Dess, 1996). 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 intrapreneurship 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

There is a literature claiming that entrepreneurship is an omnipresent aspect of human action, but that its manifestation depends upon the institutional environment (Baumol, 1990; Boettke and Coyne, 2003). This wider macro context encompasses an array of institutions including property rights, the rule of law, product market infrastructure, employment regulation 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 behaviour in favour 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. Against this theoretical background we expect intrapreneurship and independent early stage entrepreneurship to be substitutes at the macro level. This expectation is to a large extent based on assumed opposite effects of the level of economic development on respectively intrapreneurship and independent entrepreneurship. In addition it is based on assumed contrasting effects of specific institutions on these two types of entrepreneurship.

Specifically, we hypothesize the following underlying causal mechanisms related to the level of economic development. First, we expect that due to the relatively high share of adults formally employed in multiperson organizations in high income countries (OECD, 2009), intrapreneurship will be more prevalent in high income countries than in low income countries. Since intrapreneurship is not possible in single person organizations, a higher prevalence of multiperson organizations is likely to increase the probability of intrapreneurship in a country. Additionally, the higher presence of larger firms associated with a higher level of economic development (Ghoshal et al. 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 and Phan, 2006) and is also related to large firms paying more stable wages than small firms (Parker 2009).

A second possible mechanism underlying substitution between intrapreneurship and independent entrepreneurship at the macro level is the level of education in an economy. In an in-depth empirical study of 179 employees and their peers, De Jong et al. (2011) find a significant positive correlation of higher education with a newly developed measure of intrapreneurial behavior. So the presence of highly educated workers is likely to increase the probability of intrapreneurship in a country. This suggests that more highly developed economies may have a higher rate of intrapreneurship. With respect to independent entrepreneurship, a meta study by Van der Sluis et al. (2005) concludes that the impact of education on being self-employed is negative in developing countries and insignificant in industrialized countries. A third mechanism is the well-known positive effect of per capita income on the opportunity cost of independent entrepreneurship (Lucas, 1978). Due to rising real wages, 'marginal' entrepreneurs will increasingly opt for a wage job. It seems likely that this mechanism will also have a positive effect on intrapreneurship (also see Bosma, 2009: 175). Fourthly, we expect that employees in high income countries will have more autonomy (partly related to a relatively high

educational level) than employees in low income countries, as is also supported by a very high and positive correlation between per capita income and Hofstede's index of individualism (Hofstede, 2001: 250-253). Again, this leads to a higher rate of intrapreneurship in higher income countries, even after controlling for national firm size distributions. On the other hand, individualism has a complex influence on the rate of independent early-stage entrepreneurship which differs across levels of economic development (Pinillos and Reyes, 2009).

In addition, apart from the level of economic development, specific institutions may also influence substitution between intrapreneurship and independent entrepreneurship. In particular, a high level of employment protection will add to the opportunity cost of independent entrepreneurship (and might also enhance the prevalence of larger firms). Thus, employees with safe jobs in existing firms will think twice before moving to a risky (high job growth expectations) new business venture (see Bosma et al. 2009).

RESEARCH DESIGN

This investigation was carried out as a special theme study in the framework of the Global Entrepreneurship Monitor (GEM) that annually surveys at least 2,000 adults in each participating country as to their attitudes towards entrepreneurship, their participation in entrepreneurial activity and their entrepreneurial aspirations (see Reynolds et al. 2005 for a detailed description of the GEM methodology). In 2011 52 countries (see Table 2) participated in this study on intrapreneurship using a set of specific questions targeted at all employees – excluding those already identified as owner-managers of running businesses - aged between 18-64 years in the GEM samples. A particular advantage of this methodology is the opportunity to compare intrapreneurship with 'regular' entrepreneurial activity (i.e. individuals who own 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.

Table 1 Definitions of GEM measures of involvement in entrepreneurial activity

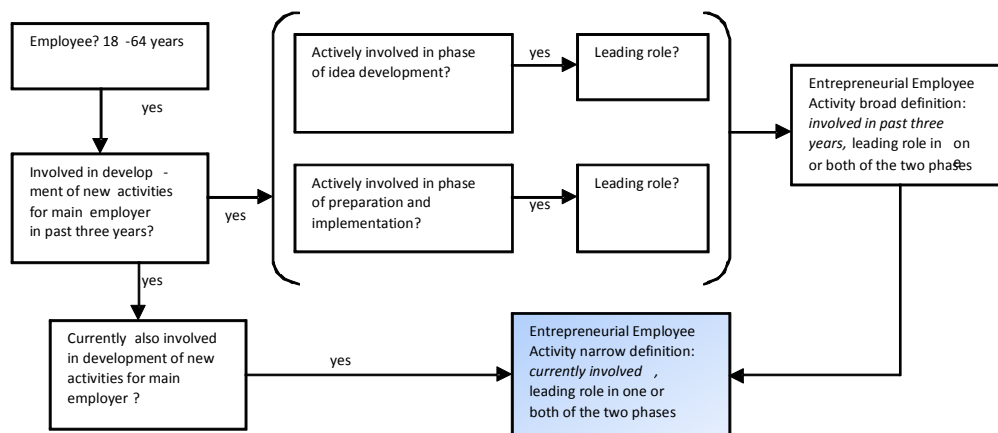
Measure	Description
Nascent entrepreneur	Individual is actively involved in setting up a business he/she will own or co-own; this business has not paid salaries, wages, or any other payments to the owners for more than three months
Owner-manager of new business	Individual currently, alone or with others, 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 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.
Past owner-manager	Individual alone or with others, started a business in the past that s/he owned and managed

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

Regarding the scope of intrapreneurship, we have chosen to operationalize intrapreneurship 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. It is 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): intrapreneurship and innovative work behaviour overlap, but are not identical. Next, we distinguish between two phases in the intrapreneurial process i.e. idea development for new business activities, and preparation and (emerging) exploitation of these new activities. For the role of intrapreneurs in each of these phases we distinguish between leading and supporting roles.

Based on these elements we conceive a broad and a narrow definition of intrapreneurship. According to our broad definition intrapreneurs are 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. According to our narrow definition intrapreneurs are in addition also currently involved in the intrapreneurial process. See the scheme in Figure 1 for a clarification.

Figure 1 Broad and narrow definitions of intrapreneurship used in this study



Subsequently, all intrapreneurs that fitted our narrow definition were asked some further questions about their ‘most significant new business activity’ in the past three years. Firstly, there were some questions concerning various aspects of the intrapreneurial process, including whether he/she personally had to take risks to become involved in the new activity. Secondly, they were also asked whether the new business activity involves a new product or service. Finally, as the intrapreneurship questionnaire was part of GEM’s Adult Population Survey (APS) as a whole (see Reynolds et al. 2005), it was possible to link all these results to other relevant characteristics of the intrapreneurs, including their perceptions and attitudes as well as their intentions to start a business of their own within the next three years. An open ended question was posed to obtain some idea of the business activities the intrapreneurs are actually involved in.

EMPIRICS

The prevalence of intrapreneurship

Table 2 presents the main results regarding the prevalence of intrapreneurship across countries according to our narrow and broad definition, both as percentage of the number of employees and as percentage of the adult population between 18 and 64 years of age. Intrapreneurship, as defined in this paper, is not a very wide-spread phenomenon in factor-driven and efficiency-driven economies, but is much more prevalent in innovation-driven economies, as hypothesized in the section on causal mechanisms. This pattern is the reverse of that for early-stage entrepreneurial activity, which is more abundant in factor-driven and efficiency-driven economies (Bosma et al. 2010).

Table 2 Prevalence of intrapreneurship

	Broad definition: involved in entrepreneurial employee activity in past three years, in % of		Narrow definition: currently involved in entrepreneurial employee activity, 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
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
Efficiency-driven economies				
Argentina	3.2	7.3	2.5	5.8
Barbados	0.7	1.5	0.7	1.4
Bosnia Herzegovina	3.1	9.8	2.3	7.2
Brazil	1.0	3.1	0.8	2.6

	Broad definition: involved in entrepreneurial employee activity in past three years, in % of		Narrow definition: currently involved in entrepreneurial employee activity, in % of	
	adult population	employees	adult population	employees
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 & 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
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 Rep.	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
total average	3.5	6.5	2.8	5.2

Source: Global Entrepreneurship Monitor 2011

Table 3 presents the intrapreneurship prevalence rates, according to our narrow definition, broken down into age, gender, education and income. Overall, efficiency-driven economies reveal lower intrapreneurship rates than innovation-driven economies, even controlling for personal level characteristics. This suggests that after controlling for individual level variables, there still will be a substantial country level (economic development or institutional) effect. Intrapreneurship rates are highest for mid career individuals, for highly educated, and for individuals with a high income. There appears to be a gender gap in intrapreneurship: male employees are about twice as likely to be involved in intrapreneurship.

Table 3 Prevalence rates of intrapreneurship (narrow definition) across age, gender, education and income

	Efficiency-driven economies	Innovation-driven economies	All economies
<i>Age structure</i>			
18-24 years	1.1	1.4	1.2
25-34 years	2.5	4.9	3.7
35-44 years	2.3	6.2	4.2
45-54 years	1.5	5.4	3.4
55-64 years	1.1	3.0	2.0
<i>Gender</i>			
Female	1.3	3.1	1.4
Male	2.3	5.7	2.3
<i>Education</i>			
Low	0.3	0.8	0.5
Medium	1.4	3.1	2.2
High	4.2	8.1	6.1
<i>Income</i>			
Low	0.5	1.3	0.9
Medium	1.0	3.0	2.0
High	3.2	8.2	5.7
Unknown/not reported	2.0	2.6	2.4

Source: Global Entrepreneurship Monitor 2011

Table 4 confirms that intrapreneurs have clearly higher job growth expectations for their new business activity than independent entrepreneurs have for their own new business, suggesting higher aspiration levels of intrapreneurs and/or better access to resources for achieving growth. This finding is in line with research by Antoncic and Hisrich (2001) which revealed that intrapreneurship is a significant predictor of firm growth. The importance of intrapreneurship for firm growth appears to apply to efficiency-driven as well as to innovation-driven economies.

Table 4 Distribution of five-year job growth expectation of intrapreneurs, nascent entrepreneurs and owner-managers of young firms, by country group

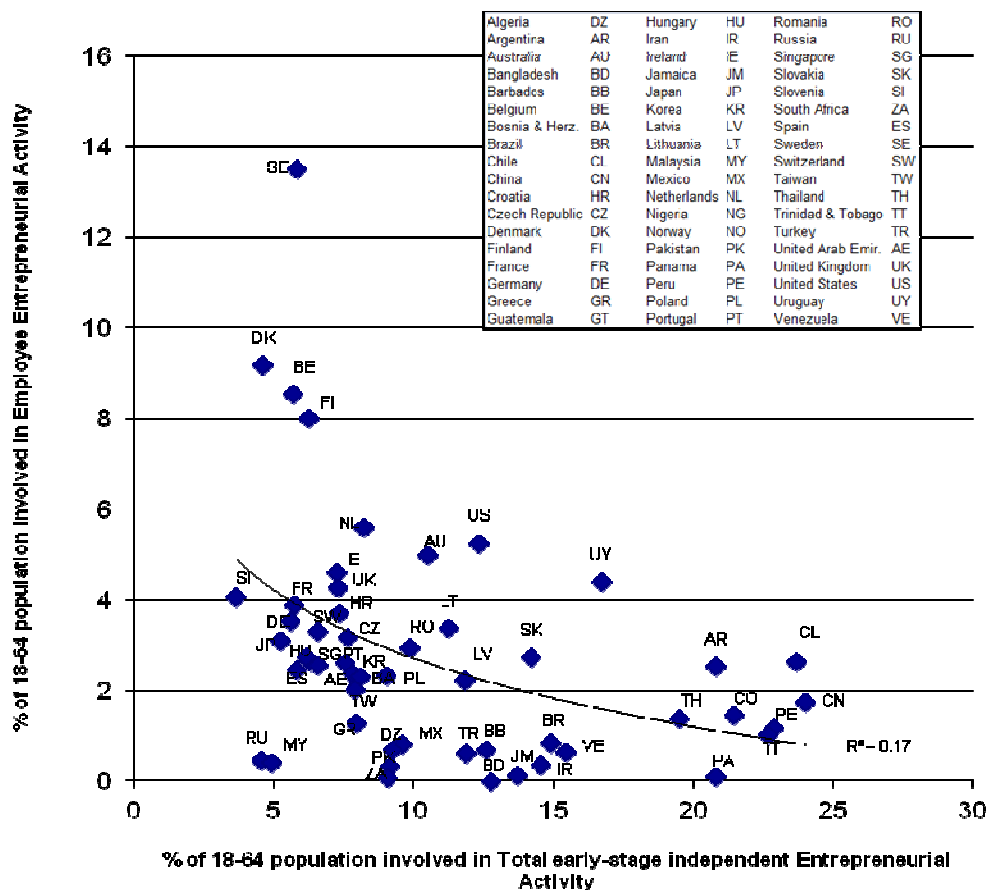
	up to 1 employee	2-5 employees	6-19 employees	>20 employees
<i>Efficiency-driven economies</i>				
intrapreneurs	1	25	27	47
nascent entrepreneurs	6	49	28	18
owner-manager of new business	13	47	24	16
<i>Innovation-driven economies</i>				
intrapreneurs	5	26	25	44
nascent entrepreneurs	16	47	21	17
owner-manager of new business	22	48	16	15

Source: Global Entrepreneurship Monitor 2011

Figure 2 plots the incidence of intrapreneurship, according to our narrow definition, against the prevalence of nascent entrepreneurs and independent owner-managers in new businesses. The figure supports our hypothesis that intrapreneurship and independent entrepreneurship are substitutes rather than positive correlates at the macro-level. If this is indeed the case, the implications might be far-reaching. Given a 'supply of entrepreneurial talent', it might then depend on various contextual determinants, such as the level of economic development, the institutional framework (e.g. employment protection) and management styles within organizations (possibly related to national culture), whether entrepreneurial individuals pursue their aspirations within a business or choose to start up for themselves. These findings also offer some support for the idea of an 'Entrepreneurial Constant' across societies, the composition of which depends on the institutional context. However, even with the inclusion of intrapreneurship as a form of entrepreneurial

behavior in the economy, our study is still not able to come to 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 private sector, for example in politics or in crime (cf. Baumol 1990).

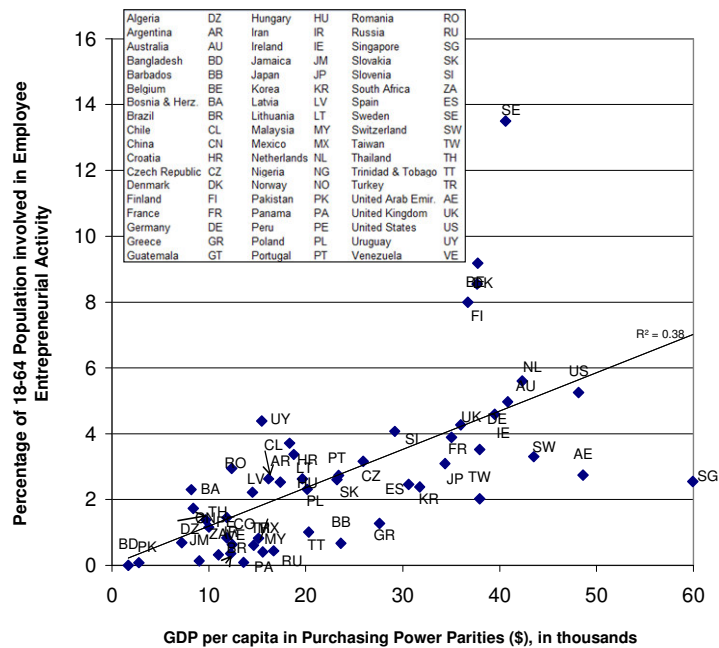
Figure 2 The prevalence of employee entrepreneurial activity and total early-stage independent entrepreneurial activity, percentage of the adult population (18-64 years of age)



Economic development and entrepreneurial employee behavior

Figure 3 explores the possible relationship between the national level incidence of intrapreneurship according to our narrow definition and the level of economic development as measured by GDP per capita. The scatter plot confirms a strong positive relationship between income levels and intrapreneurship at the macro level, as hypothesized in an earlier section of this paper.

Figure 3 Entrepreneurial employee activity as a percentage of the adult population (18-64 years of age) versus GDP per capita



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

This may be caused by the relatively high share of adults employed in multiperson organizations in high income countries, as well as by relatively high levels of employee autonomy in these countries. In addition, higher educational levels in high income countries may also lead to a larger supply of intrapreneurs, as we know that a high level of education has a positive effect on intrapreneurship on the individual level (see Table 3).

CONCLUSIONS

This paper makes two distinct contributions to the literature. First, it provides international comparative research on intrapreneurship in low and high income countries. Second, it offers insight into the relationship between independent entrepreneurship and intrapreneurship at the individual level as well as the national level.

A first conclusion is that intrapreneurship, as defined in this paper, is a more wide-spread phenomenon in innovation-driven economies (with a similar prevalence as owner-managers of young independent businesses) than in efficiency-driven economies. Secondly, intrapreneurs have higher job growth expectations for their new business activity than independent entrepreneurs, suggesting that intrapreneurship might be an important driver of firm growth (and in the end macroeconomic growth). Thirdly, the relationship between independent entrepreneurship and intrapreneurship was explored at the micro (individual) level as well as at the macro (national) level. We found that at the individual level, intrapreneurs are much more likely to have the intention to start a new independent business than other employees. However, there seems to be a negative correlation between intrapreneurship and early-stage entrepreneurial activity at the macro level. One explanation for these contrasting outcomes is the diverging effect of per capita income on intrapreneurship (positive effect) and on early-stage entrepreneurial activity (negative effect). The prevalence of intrapreneurship is about twice as high in innovation-driven economies as in efficiency-driven economies. This is probably caused by a combination of a relatively high share of adults employed in multiperson organizations, and higher levels of autonomy of employees in innovation-driven economies. In addition our micro level analyses revealed a positive effect of high education on intrapreneurship, which is also an

important mechanism for explaining the relative high levels of intrapreneurship in innovation-driven economies.

Finally, our micro level findings show that intrapreneurs are much more likely to have entrepreneurial intentions or to be actively involved in preparing a new business than other employees, suggesting that intrapreneurs have more resemblance with independent entrepreneurs than other employees. Underlying personal characteristics might explain these shared entrepreneurial aspirations. The dominant mode of pursuing entrepreneurial aspirations, however, is likely to depend on the level of economic development (and concomitant levels of education) and national institutions.

REFERENCES

- Antoncic, B. and R.D. Hisrich (2001), Intrapreneurship: construct refinement and cross-cultural validation, *Journal of Business Venturing* 16, 495–527.
- Antoncic, B. and R.D. Hisrich (2003), Clarifying the intrapreneurship concept, *Journal of Small Business and Enterprise Development* 10 (1), 7-24.
- Arenius, P. and M. Minniti (2005), Perceptual variables and nascent entrepreneurship, *Small Business Economics* 24 (3), 233-247.
- Baumol, W.J. (1990), Entrepreneurship: productive, unproductive, and destructive, *Journal of Political Economy* 98 (5), 893-921.
- Boettke, P. and C. Coyne (2003), Entrepreneurship and Development: Cause or Consequence?, *Advances in Austrian Economics* 6, 67-88.
- Bosma, N. (2009), *The Geography of Entrepreneurial Activity and Regional Economic Development. Multilevel analyses for Dutch and European Regions*, PhD Thesis, Faculty of Geosciences, Utrecht University, Utrecht.
- Bosma, N., V. Schutjens. and E. Stam (2009), Two faces of entrepreneurship; Drivers of innovative and replicative entrepreneurship, Paper presented at the DIME workshop on Regional Entrepreneurship as a Source of Perpetuation and Change, October 15-17, Jena.
- Bowen, H.P. and D. De Clercq (2008), Institutional context and the allocation of entrepreneurial effort. *Journal of International Business Studies* 39, 747-767.
- Caliendo, M., F. Fossen and A. Kritikos (2011), Personality characteristics and the decision to become and stay self-employed, IZA Discussion Paper No. 5566.
- Choi, Y.R. and P. H. Phan (2006), The influences of economic and technology policy on the dynamics of new firm formation, *Small Business Economics* 26, 493-503.
- Crant, J.M. (2000), Proactive behaviour in organizations, *Journal of Management* 26 (3), 435-462.
- De Jong, J. (2007), *Individual innovation: The connection between leadership and employees' innovative work behaviour*, PhD Thesis, Zoetermeer: EIM.
- De Jong, J. and S. Wennekers (2008), *Intrapreneurship; conceptualizing entrepreneurial employee behaviour*, Research Report H200802, Zoetermeer: EIM.
- De Jong, J., S.K. Parker, S. Wennekers and C. Wu (2011), *Corporate entrepreneurship at the individual level: measurement and determinants*, Research Report H201108, Zoetermeer: EIM.
- Farr, J. and C. Ford (1990), Individual innovation, in: M.A. West and J.L. Farr (eds.), *Innovation and creativity at Work: Psychological and Organizational Strategies*, Chichester: John Wiley, 63-80.
- Frese, M. and D. Fay (2001), Personal Initiative: An active performance concept for work in the 21st century, *Research in Organizational Behaviour* 23, 133-187.
- Gartner, W.B. (1989), Who is an entrepreneur? Is the wrong question, *Entrepreneurship Theory and Practice* 13, 47-68.
- Gartner, W.B. and N.M. Carter (2003), Entrepreneurial behaviour and firm organizing processes, in: D.B. Audretsch and Z.J. Acs (eds.), *Handbook of Entrepreneurship Research*, Boston/Dordrecht: Kluwer Academic Publishers, 195-221.
- Ghoshal, S., M. Hahn and P. Moran (1999), Management competence, firm growth and economic progress, *Contributions to Political Economy* 18, 121-150.

- Grilo, I. and A. R. Thurik (2008), Determinants of entrepreneurial engagement levels in Europe and the US, *Industrial and Corporate Change* 17 (6), 1113–1145.
- Hall, P.A. and D. Soskice (2001), *Varieties of Capitalism: the Institutional Foundations of Comparative Advantage*, Oxford University Press, Oxford.
- Hofstede, G. (2001), *Culture's Consequences; Comparing Values, Behaviors, Institutions and Organizations Across Nations*, Second edition, Thousand Oaks: Sage.
- Kanter, R.M. (1988), When a thousand flowers bloom: structural, collective, and social conditions for innovation in organization, *Research in Organizational Behaviour* 10, 169-211.
- Koellinger, Ph.D. (2008), Why are some entrepreneurs more innovative than others?, *Small Business Economics* 31, 21-37.
- Kuratko, D.F. (2007), Corporate entrepreneurship, *Foundations and Trends in Entrepreneurship* 3 (2), 151-203.
- Lucas, R.E., Jr. (1978), On the size distribution of business firms, *Bell Journal of Economics* 9, 508-523.
- Lumpkin, G.T. and G.G. Dess (1996), Clarifying the entrepreneurial orientation construct and linking it to performance, *Academy of Management Review* 21 (1), 135-172.
- Lumpkin, G.T. (2007), Intrapreneurship and innovation, in: J.R. Baum, M. Frese and R. Baron (eds), *The Psychology of Entrepreneurship*, Mahwah, New Jersey: Lawrence Erlbaum Associates, 237-264.
- Morrison, E.W. and C.C. Phelps (1999), Taking charge at work: Extra-role efforts to initiate workplace change, *Academy of Management Journal* 42 (4), 403-419.
- OECD (2009), *Is Informal Normal? Towards More and Better Jobs in Developing Countries*, Paris: OECD.
- Parker, S.C. (2009), Why do small firms produce the entrepreneurs?, *Journal of Socio-Economics* 38 (3), 484-494.
- Parker, S.C. (2011), Intrapreneurship or entrepreneurship?, *Journal of Business Venturing* 26, 19-34.
- Parker, S.K. and C.G. Collins (2010), Taking Stock: Integrating and Differentiating Multiple Proactive Behaviors, *Journal of Management* 36 (3), 633-662.
- Pinchot, G. (1985), *Intrapreneuring: why you don't have to leave the corporation to become an entrepreneur*, New York: Harper and Row.
- Pinchot, G. (1987), Innovation through intrapreneuring, *Research Management* 13 (2), 14-19.
- Pinillos, M.J. and L. Reyes (2009), Relationship between individualist-collectivist culture and entrepreneurial activity; evidence from Global Entrepreneurship Monitor data, *Small Business Economics*, 37(1): 23-37.
- Reynolds, P.D. (2007), New firm creation in the United States; a PSED I overview, *Foundations and Trends in Entrepreneurship*, 3 (1), 1-150.
- Reynolds, P.D., N.S. Bosma, E. Autio, S. Hunt, N. de Bono, I. Servais, P. Lopez-Garcia and N. Chin (2005), *Global Entrepreneurship Monitor: data collection design and implementation 1998-2003*, *Small Business Economics* 24 (3), 205-231.
- Shane, S. (2003), *A General Theory of Entrepreneurship; The Individual-Opportunity Nexus*, Cheltenham: Edward Elgar.
- Shane, S. and S. Venkataraman (2000), The promise of entrepreneurship as a field of research, *Academy of Management Review* 25, 217-226.
- Sharma, P. and J.J. Chrisman (1999), Toward a reconciliation of the definitional issues in the field of corporate entrepreneurship, *Entrepreneurship Theory and Practice* 23 (3), 11-27.
- Stam, E., A.R. Thurik and P. van der Zwan (2010), Entrepreneurial exit in real and imagined markets, *Industrial and Corporate Change* 19 (4), 1109-1139.
- Stephan, U. and L.M. Uhlaner (2010), Performance-based vs socially supportive culture: A cross-national study of descriptive norms and entrepreneurship, *Journal of International Business Studies*, forthcoming.
- Van der Sluis, J., M. van Praag, and W.P.M. Vijverberg (2005), *Entrepreneurship Selection and Performance: A Meta-Analysis of the Impact of Education in Developing Economies*. *The World Bank Economic Review* 19 (2), 225-261.
- Wennekers, S., A. van Stel, R. Thurik and P. Reynolds (2005), Nascent entrepreneurship and the level of economic development, *Small Business Economics* 24 (3), 293-309.