Bosma, Niels S.; Stam, Erik; Wennekers, S.

Working Paper

Intrapreneurship versus independent entrepreneurship: A cross-national analysis of individual entrepreneurial behavior

Discussion Papers Series, No. 11-04

Provided in Cooperation with:
Utrecht University School of Economics (U.S.E.), Utrecht University

Suggested Citation: Bosma, Niels S.; Stam, Erik; Wennekers, S. (2011) : Intrapreneurship versus independent entrepreneurship: A cross-national analysis of individual entrepreneurial behavior, Discussion Papers Series, No. 11-04, Utrecht University, Utrecht School of Economics, Tjalling C. Koopmans Research Institute, Utrecht

This Version is available at:
https://hdl.handle.net/10419/322846

Tjalling C. Koopmans Research Institute

Discussion Paper Series nr: 11-04

Intrapreneurship versus independent entrepreneurship

A cross-national analysis of individual entrepreneurial behavior

Niels Bosma
Erik Stam
Sander Wennekers

Universiteit Utrecht

Utrecht School of Economics

Tjalling C. Koopmans Research Institute
Utrecht School of Economics
Utrecht University

Janskerkhof 12
3512 BL Utrecht
The Netherlands
telephone +31 30 253 9800
fax +31 30 253 7373
website www.koopmansinstitute.uu.nl

The Tjalling C. Koopmans Institute is the research institute and research school of Utrecht School of Economics.
It was founded in 2003, and named after Professor Tjalling C. Koopmans, Dutch-born Nobel Prize laureate in economics of 1975.

In the discussion papers series the Koopmans Institute publishes results of ongoing research for early dissemination of research results, and to enhance discussion with colleagues.

Please send any comments and suggestions on the Koopmans institute, or this series to J.M.vanDort@uu.nl

ontwerp voorblad: WRIK Utrecht

How to reach the authors

Please direct all correspondence to the second author.
Niels Bosma
Faculty of Geosciences
Utrecht University
Heidelberglaan 2
3584 CS Utrecht
E-mail: N.Bosma@geo.uu.nl
Global Entrepreneurship Research Association
Erik Stam*
Utrecht University
Utrecht School of Economics
Janskerkhof 12
3512 BL Utrecht
The Netherlands.
E-mail: e.stam@uu.nl
WRR (Scientific Council for Government Policy)
Sander Wennekers
*EIM Business and Policy Research
P.O. box 7001
2701 AA Zoetermeer
The Netherlands

This paper can be downloaded at: http://
www.uu.nl/rebo/economie/discussionpapers

Utrecht School of Economics
Tjalling C. Koopmans Research Institute
Discussion Paper Series 11-04

Intrapreneurship versus independent entrepreneurship: A cross-national analysis of individual entrepreneurial behavior

Niels Bosma[a]
Erik Stam[b]
Sander Wennekers[c]

[a]Faculty of Geosciences
Utrecht University

[b]Utrecht School of Economics
Utrecht University

[c]EIM Business and Policy Research
the Netherlands

February 2011

Abstract

This paper presents the results of the first international comparative study of intrapreneurship and independent entrepreneurship. The prevalence of intrapreneurship is about twice as high in high income countries as in low income countries. We find 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 is a negative correlation between intrapreneurship and early-stage entrepreneurial activity at the macro level. One explanation for these contrasting outcomes is the diverging micro level effect of education on intrapreneurship (positive effect) and early-stage entrepreneurial activity (negative effect).

Keywords: intrapreneurship, comparative entrepreneurship, economic development, industrial organization, multi-level analysis

Acknowledgements

This paper is part of the Research Program SCALES carried out by EIM and financed by the Dutch Ministry of Economic Affairs. Earlier versions were read at a research seminar at Utrecht University and Imperial College London. The authors wish to thank Global Entrepreneurship Monitor (GEM) researchers and their sponsors (www.gemconsortium.org) for making this research possible. Nations participating in the 2008 special GEM survey underlying this paper were Brazil, Chile, Ecuador, Iran, Republic of Korea, Latvia, the Netherlands, Norway, Peru, Spain, and Uruguay.

INTRODUCTION

Cross-country comparative studies on independent new businesses (Arenius & Minniti, 2005; Bowen & De Clercq, 2008; Koellinger, 2008; Stephan & Uhlaner, 2010; Wennekers, Van Stel, Thurik & Reynolds 2005) and studies on new business development within existing organizations (Pinchot, 1985; Kanter, 1988; Lumpkin & Dess, 1996; Kuratko, 2007) have developed along separate paths in business and management studies. Entrepreneurial behavior within existing firms (intrapreneurship) has remained beyond 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 creation and intrapreneurship has been off the map of academic research. This lack of insight into intrapreneurship at the national level is an undesirable state of affairs, because it creates the risk of reaching conclusions on the prevalence and causes of entrepreneurship that are based only on a limited part of this phenomenon. This is not only an academic issue; it might also lead to misplaced interpretations about the effect of national level economic development and institutions on entrepreneurship, and to ill-guided policy recommendations regarding entrepreneurship. If, for example, research showed intrapreneurship to be a substitute for independent new businesses in developed economies, this would throw new light on the relationship between entrepreneurship and economic development. Empirical research is needed in order to gain insight into the relationships between intrapreneurship, independent entrepreneurship and economic development. This paper provides the first cross-national evidence on the prevalence of intrapreneurship and on this basis performs a multilevel analysis at country, organizational and individual levels.

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. We expect that due to the relatively high share of adults formally employed in multiperson organizations in high income countries (OECD, 2009), intrapreneurship is more prevalent in

high income countries than in low income countries. In addition 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. Second, this paper provides insight into the relationship between (independent) entrepreneurship and intrapreneurship at both the national and individual level. If it is true that entrepreneurship is an omnipresent aspect of human action, but that its manifestation depends upon the institutional context,[1] we would expect independent entrepreneurship and intrapreneurship to be substitutes at the macro level. In addition, as we also have individual level data, we are able to trace the relationship between these two types of entrepreneurial behavior at the individual level as well (i.e. are intrapreneurs more likely to have the intention to start a new independent business than other employees?).

We first discuss the nature, process and scope of intrapreneurship. 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) we derive a detailed list of relevant activities and behavioral aspects of intrapreneurship. This list provided a basis for the design of the questionnaire for the first international comparative study of intrapreneurship, in which eleven countries across a wide range of economic development levels participated. After discussing the questionnaire and the sample, we will present the empirical results of this first cross-national study into intrapreneurship.

DELINEATING INTRAPRENEURSHIP

A special type of entrepreneurship

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 & Hisrich, 2003; Sharma & 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.

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 a way and some degree of risk taking (Crant, 2000; Kanter, 1988; Lumpkin, 2007; Parker & 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.[2] 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 & Carter, 2003). The two core elements of

intrapreneurship are also strongly linked as imagination includes exploring possible barriers and problems facing the project and figuring out various solutions.

The scope of intrapreneurship

As there is a large conceptual diversity in the literature with respect to the relevant scope of entrepreneurial behavior this also reflects on any intrapreneurship concept. There are at least three alternative conceptual approaches. The first is 'pursuit of entrepreneurial opportunity' (Shane, 2003). This includes developing a new product or service, a new geographical market or a new production process in the widest sense. This view probably represents the most encompassing view of entrepreneurship, as it acknowledges both the Kirznerian and the Schumpeterian perspective of entrepreneurial opportunities (Shane, 2003: 35). The second view may be labeled 'new entry' (Lumpkin & Dess, 1996). New entry includes entering new markets with new products, entering established markets with new products or entering new markets with established goods or services. In the latter case, the venture may be characterized as replicative rather than innovative. This concept is particularly relevant for intrapreneurship. Finally, 'new organization creation' (Gartner, 1989) offers a behavioral view of entrepreneurship as the process by which new organizations are created. Following this specific view intrapreneurship could be either innovative or replicative but 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).

This conceptual elaboration on the nature, process, and scope of intrapreneurship provides us with the building blocks for a theory-driven research design of the international comparative study of intrapreneurship.

RESEARCH DESIGN

The questionnaire

The major goal of this first international comparative study of intrapreneurship is to obtain more empirical information about entrepreneurial employee activities across a number of countries. This

investigation was carried out as a special theme study in the framework of the Global Entrepreneurship Monitor. The Global Entrepreneurship Monitor (GEM) annually surveys at least 2,000 adults per country as to their attitudes towards entrepreneurship, their (intentional) participation in entrepreneurial activity and their entrepreneurial aspirations (see Reynolds et al. 2005 for a detailed description of the GEM methodology). In 2008 eleven countries participated in this exploratory study of 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 their businesses, or expect to own the business they are setting up) at both the macro and the micro level. The measures obtained from the GEM 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 used in this paper

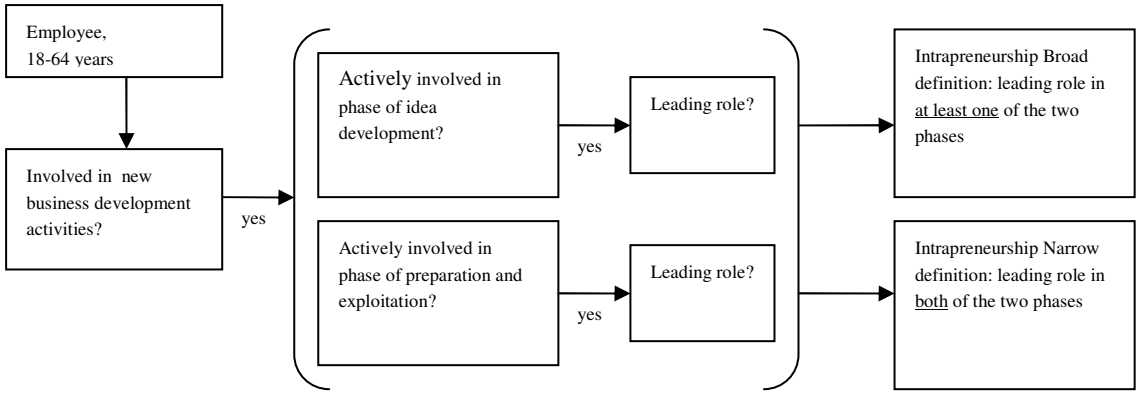
Measure	Description
Nascent entrepreneur	Individual is actively involved in setting up a business he/she will own or co-own; this business has not paid salaries, wages, or any other payments to the owners for more than three months
Owner-manager of new business	Individual currently, alone or with others,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

Based on the literature as discussed in the previous sections, three elements were important for designing the questionnaire for our empirical investigation. These are the scope of intrapreneurship, the phases of the intrapreneurial process and the role of intrapreneurial employees in each of these phases. For the scope, 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 probably 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).[3] 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 two years, have been actively involved in and have had a leading role in <u>at least one</u> of these phases. According to our narrow definition intrapreneurs have a leading role in <u>both</u> phases of 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 two years. Firstly, there were some questions concerning various aspects of the intrapreneurial process, including whether the new business activity was the intrapreneur's own initiative, whether he/she had to overcome internal resistance and 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, Bosma, Autio, Hunt, De Bono, Servais, Lopez-Garcia & Chin 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, an open ended question was phrased; see Appendix 1 for an impression of the responses.

The sample

Table 2 presents some characteristics of the eleven countries that participated in the GEM survey on intrapreneurship. These include GDP per capita and population size. The levels of GDP per capita range from $7,500 (Ecuador) to $55,200 (Norway). We used the GDP per capita levels to

distinguish four high and seven low income countries. As might be expected, the low income countries have relatively low (formal) employment rates in comparison with the high income countries. This is probably due to the large informal economies in low income countries. The two outliers in these groups are Latvia with a relatively high employment rate in the sample (73%), and the Republic of Korea with a relatively low employment rate (55 %).

Table 2 Characteristics of GEM countries participating in intrapreneurship investigation

Countries	*GDP per capita ($)*	*Population size (X 1,000)*	*Sample size adult population 18-64 years*	*Number of employees in sample*	*Employees as % of adult population*
Low income countries					
Brazil	10,300	191,900	2,000	1,162	58
Chile	14,700	16,400	1,828	1,124	61
Ecuador	7,500	13,900	2,142	557	26
Iran	12,400	65,900	3,119	1,146	37
Latvia	17,800	2,400	2,011	1,477	73
Peru	8,600	29,000	1,990	1,189	60
Uruguay	12,700	3,500	1,645	1,104	67
High income countries					
Korea Republic	26,300	48,400	2,000	1,102	55
Netherlands	40,400	16,600	2,534	2,024	80
Norway	55,200	4,600	1,614	1,241	77
Spain*	30,800	40,500	2,597*	2,000	77*

* Spain selected a random sample of employees within a much larger sample of adults. The corresponding number of the adult population 18-64 years is an estimate based on the reported employment rate of 77% (obtained from IMD (2008) The World Competitiveness Yearbook and US Bureau of the Census, International Database (IDB)).

Source: Global Entrepreneurship Monitor 2008

THE PREVALENCE OF INTRAPRENEURSHIP

Table 3 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. A first observation is that

intrapreneurship, as defined in this paper, is not a very wide-spread phenomenon. On average, fewer than 5% of employees are intrapreneurs, even according to our broad definition. In addition, its incidence in the adult population is, on average, significantly lower than that of early-stage entrepreneurial activity. This suggests that - if we assume that early-stage entrepreneurial activity and intrapreneurship are both part of a larger category of entrepreneurial behavior – early-stage entrepreneurial activity is a more frequent expression of entrepreneurial behavior than intrapreneurship is.

A second observation is that intrapreneurs seem to be more prevalent in high income countries as compared to low income countries. This pattern is the reverse of that for early-stage entrepreneurial activity, which is more abundant in low income countries.

Table 3 Prevalence of intrapreneurship

	Intrapreneurship narrow definition in		*Intrapreneurship broad definition in*	
	% employees	*% adult population*	*% employees*	*% adult population*
Low income countries:				
Brazil	1.1	0.7	1.5	0.9
Chile	3.4	2.2	5.2	3.5
Ecuador	1.0	0.3	2.1	0.6
Iran	0.6	0.1	1.2	1.4
Latvia	1.1	0.8	1.8	1.3
Peru	1.6	1.0	3.2	1.9
Uruguay	1.9	1.3	4.5	3.0
unweighted average	1.5	0.9	2.8	1.8
High income countries:				
Korea Republic	1.2	0.7	2.0	1.1
Netherlands	3.5	2.7	7.2	5.5
Norway	4.2	3.2	7.4	5.7
Spain	2.0	1.5	3.4	2.6
unweighted average	2.7	2.0	5.0	3.7
Total unweighted average	1.9	1.3	3.5	2.4

Source: Global Entrepreneurship Monitor 2008

Table 4 presents the intrapreneurship prevalence rates, according to our narrow definition, broken down into organizational size, age and gender. Intrapreneurs appear to be active in organizations within all size classes. For high income countries it appears that the size class of the organization does not differentiate the intrapreneurship rates: the rate is about 3% for all three size classes.[4] In low income countries intrapreneurship seems to be underrepresented in small organizations and relatively prominent in (the very small number of) large organizations. The relatively low number of intrapreneurs in the 18-24 years age group in high income countries may be related to longer education careers in high income countries resulting in a differential effect on the composition of the employed in this age group. We find no evidence for a gender gap in intrapreneurship in low income countries, although we find significant gender differences – male employees being more likely to be involved in intrapreneurship - in the high income countries, except for Spain.

Table 4 Prevalence rates of intrapreneurship (narrow definition) across organization size classes, age and gender

	Low income countries	High income countries	All countries
Organization size class			
< 10 employees	0.9	2.7	1.5
10 – 249 employees	2.2	3.0	2.5
> 250 employees	2.7	2.7	2.7
Age structure			
18-24 years	1.0	0.5	0.8
25-34 years	1.7	3.5	2.4
35-44 years	1.3	2.5	1.7
45-54 years	1.5	3.8	2.3
55-64 years	0.9	1.8	1.2

Gender			
Female	1.4	1.4	1.4
Male	1.4	3.8	2.3

Source: Global Entrepreneurship Monitor 2008

THE NATURE OF INTRAPRENEURSHIP

Table 5 highlights characteristics of the most significant new business activity in which intrapreneurs, as defined according to our narrow definition, have been involved during the past two years. The first column shows that in 50% of the cases, these intrapreneurs became involved in developing the new business idea, acting on their own initiative rather than because they were asked to do so by their manager or another colleague. The incidence of own initiative is, on average, higher in high income countries than in low income countries. This suggests that the relatively low levels of autonomy in low income countries affect both the prevalence and nature of intrapreneurship in these countries. The second column shows that, on average, about 50% of all intrapreneurs have had to overcome some kind of internal resistance in developing the new business activity. This element deserves further scrutiny in a future study.

In addition, risk taking is a well-known core characteristic of entrepreneurship. The third column makes it apparent that, on average across the eleven participating countries, about one-third of intrapreneurs report having taken personal risks by becoming involved in the new business activity. However, the incidence of personal risk taking appears to be much lower in high income countries than in low income countries. This suggests that intrapreneurship is a much more daunting activity in low income countries than in high income countries. Four types of risk were identified to examine this in somewhat more detail: loss of status, damage to career, loss of employment and loss of own money invested in new activity. It appears that, for both country groups personal risk most often relates to the possible loss of own money that is invested in the new activity, Loss of status was mentioned more often in high income countries, whereas loss of job was mentioned more often in low income countries.

Finally, it was found that about half of the intrapreneurs developed new business activities involving a good or service that was new to the intrapreneur's organization. The innovativeness of these activities shows no clear difference between high and low income countries. Both categories include countries with relatively many innovative intrapreneurs: Chile and Latvia in the low income group (both 71%), and Norway (65%) and the Netherlands (58%) in the high income group. Information about newness for customers and newness for the industry is available for both intrapreneurs and early-stage entrepreneurs. In high income countries, 13% of the early-stage entrepreneurs believe that their product is new to all customers, while this holds for 26% of the intrapreneurs. Both figures are somewhat higher in low income countries. However, the intrapreneurs and early-stage entrepreneurs in high income countries perceive *similar* degrees of newness for the industry: 7% of the intrapreneurs, compared to 10 % for the early-stage entrepreneurs, see no existing competitors for their product. These figures are not very different in low income countries.

Table 5 Some characteristics of intrapreneurship (narrow definition) in eleven countries, as percentage of the total number of intrapreneurs

	% own initiative	*% overcoming internal resistance*	*% taking any risks personally*	*% new good or service*
Low income countries:				
Peru	71	71	71	50
Brazil	36	45	27	45
Chile	39	25	66	71
Iran	50	53	86	71
Latvia	57	57	43	71
Ecuador	25	75	67	33
Uruguay	40	50	40	40
unweighted average	45	53	53	52
High income countries:				
Netherlands	60	56	30	58
Spain	73	40	18	28
Norway	48	48	28	65
Korea Republic	50	50	25	N/A
unweighted average	58	49	25	38

	% *own initiative*	*% overcoming internal resistance*	*% taking any risks personally*	*% new good or service*
Total unweighted average	50	51	42	46

Source: Global Entrepreneurship Monitor 2008

Table 6 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 low and high income countries alike.

Table 6 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
Low income countries				
intrapreneurs	2	21	27	50
nascent entrepreneurs	13	49	26	12
owner-manager of new business	30	38	20	12
High income countries				
intrapreneurs	12	24	33	31
nascent entrepreneurs	32	33	20	15
owner-manager of new business	37	37	16	11

Entrepreneurship can manifest itself in many forms, expressed, for example, as entrepreneurial engagement levels ranging from nascent entrepreneurs to past owner-managers (see Grilo & Thurik 2008; Stam, Thurik & Van der Zwan 2010). As we have advocated in this paper, intrapreneurship should be regarded as one of these manifestations. To gain a better understanding of some of the abovementioned characteristics of intrapreneurship in relation to other manifestations of entrepreneurial activity, we performed a multinomial logistic regression using a set of often-used, basic demographic determinants of entrepreneurship and country dummies in order to control for country specific effects (see Table 7).[5] The reference group in the multinomial logistic regression

is that part of the workforce (aged 18-64) that has not been involved in any type of entrepreneurship. This means that all coefficients in the table – as well as those highlighted below - should be interpreted as effects *relative* to the probability of not being involved in entrepreneurship *at all*, which has, witness the negative intercepts for all manifestations of entrepreneurship, the highest probability. Higher educational attainment is positively linked to intrapreneurship, but linked negatively to independent entrepreneurship (owner-managers of new firms and owner-managers of established firms).[6] The effect of household income is positive for all types of entrepreneurship, but strongest for intrapreneurship. The analyses of the country dummies reveal that the Netherlands and Norway – the two countries with highest GDP per capita in our sample – have the highest propensities of intrapreneurship but lower propensities in the independent forms of entrepreneurship, also after controlling for individual level characteristics.

Table 7 Multinomial logistic regression determinants of intrapreneurship and entrepreneurial engagement levels

	intrapreneurs		nascent entrepreneurs		owner-managers new firms		owner-managers established firms		past owner-managers	
Gender: female	-0.70 (0.14)	**	-0.11 (0.06)		0.02 (0.07)		-0.31 (0.06)	**	-0.28 (0.06)	**
Age category										
18-24 years	(ref)		(ref)		(ref)		(ref)		(ref)	
25-34 years	0.95 (0.35)	**	-0.10 (0.10)		-0.20 (0.11)		0.73 (0.15)	**	0.51 (0.14)	**
35-44 years	0.71 (0.35)	*	-0.31 (0.10)	**	-0.16 (0.11)		1.32 (0.14)	**	0.91 (0.14)	**
45-54 years	1.20 (0.34)	**	-0.22 (0.10)	*	-0.27 (0.12)	*	1.70 (0.14)	**	0.99 (0.14)	**
55-64 years	0.57 (0.38)		-0.39 (0.13)	**	-0.52 (0.15)	**	1.74 (0.15)	**	1.05 (0.15)	**
Household income										
Lowest tertile	(ref)		(ref)		(ref)		(ref)		(ref)	
Middle tertile	0.18 (0.22)		0.04 (0.09)		-0.01 (0.09)		0.31 (0.08)	**	0.02 (0.08)	
Highest tertile	0.86 (0.21)	**	0.43 (0.09)	**	0.37 (0.1)	**	0.62 (0.09)	**	0.11 (0.09)	
Educational attainment										
No secondary degr.	(ref)		(ref)		(ref)		(ref)		(ref)	
Secondary degree	0.17 (0.20)		-0.02 (0.09)		-0.22 (0.09)	*	-0.20 (0.08)	*	0.04 (0.09)	
Post secondary	0.35 (0.24)		0.09 (0.10)		-0.47 (0.12)	**	-0.39 (0.11)	**	0.24 (0.10)	*
Graduate exp.	0.63 (0.22)	**	-0.23 (0.10)	*	-0.27 (0.11)	*	-0.56 (0.10)	**	0.01 (0.10)	
Country dummies										
Korea Republic	0.15 (0.34)		-0.36 (0.15)	*	0.72 (0.13)	**	1.26 (0.11)	**	0.54 (0.12)	**
Netherlands	0.88 (0.24)	**	-2.10 (0.19)	**	-1.14 (0.16)	**	-0.67 (0.12)	**	-0.94 (0.14)	**
Norway	0.93 (0.24)	**	-0.96 (0.15)	**	-0.78 (0.17)	**	-0.26 (0.14)		-0.37 (0.13)	**
Spain[a)]	0.43 (0.26)								-0.08 (0.11)	
Brazil	0.46 (0.36)		-0.71 (0.16)	**	0.87 (0.13)	**	1.46 (0.11)	**	0.13 (0.14)	
Chile	(ref)		(ref)		(ref)		(ref)		(ref)	
Ecuador	-0.54 (0.73)		0.64 (0.15)	**	1.35 (0.15)	**	1.58 (0.14)	**	-0.53 (0.26)	*
Iran	-0.75 (0.49)		0.31 (0.11)	**	0.25 (0.14)		0.96 (0.12)	**	-0.27 (0.15)	
Latvia	-0.53 (0.32)		-1.48 (0.15)	**	-1.11 (0.17)	**	-1.21 (0.17)	**	-1.63 (0.18)	**
Peru	0.38 (0.34)		1.22 (0.10)	**	0.79 (0.13)	**	0.76 (0.12)	**	0.17 (0.13)	
Uruguay	0.74 (0.29)	*	-0.02 (0.12)		-0.16 (0.16)		0.14 (0.14)		0.77 (0.11)	**
Intercept	-5.25 (0.42)	**	-1.44 (0.13)	**	-1.78 (0.15)	**	-3.15 (0.17)	**	-2.55 (0.16)	**

* p<0.05, **p<.01

Reference category dependent variable: part of the workforce that is *not* involved in any manifestation of entrepreneurial activity (nor in the past)

Model fit: Nagelkerke R^2: 0.260, McFadden: 0.109. All variables enter pass the likelihood ratio test comparing the full model and the reduced model

[a)] The sampling methodology for Spain did not allow for comparisons with nascent entrepreneur and owner-managers in new/established firms

INTRAPRENEURS AND THEIR ENTREPRENEURIAL PERCEPTIONS AND INTENTIONS

Table 8 shows how perceptions of entrepreneurship differ between individual intrapreneurs and other employees. The results suggest that intrapreneurship may function as a stepping stone on the way to independent entrepreneurship, even more so in low income countries than in high income countries. This observation is especially reflected in the very high levels of self-perceived entrepreneurial skill (94%) and perceived opportunity (50%) of intrapreneurs in low income countries, even higher than the already high levels for other employees. In high income countries, intrapreneurs do not seem to differ significantly from other employees when it comes to recognizing opportunities to start a business or the fear of failure preventing them from starting. They do, however, more often believe to have the required skills to start and more often know someone who recently started a business.

Table 8 Entrepreneurial perceptions, intrapreneurs versus other employees

	Low income countries		*High income countries*	
	% of intrapreneurs	*% of other employees*	*% of intrapreneurs*	*% of other employees*
You personally know an entrepreneur who recently started a business	*59*	*46*	*54*	*33*
You have the required skills and knowledge to start a business	*94*	*60*	*62*	*44*
There are good opportunities for starting a business in the area where you live	*50*	*35*	33	25
Fear of failure would not prevent you from starting a business	*76*	*65*	65	56

Source: Global Entrepreneurship Monitor 2008

Note: numbers in italics denote significant differences between intrapreneurs and other employed ($p<.05$)

While some entrepreneurial employees deliberately opt for intrapreneurship instead of self-employment in order to limit their risks, it also seems likely that intrapreneurship can be a useful stepping stone towards founding one's own business. Indeed, as shown in Table 9, the incidence of nascent entrepreneurship, as well as that of intended entrepreneurship, is higher for intrapreneurs than for other employees. This finding holds for low income countries as well as for high income countries. This suggests that at the micro level intrapreneurship is not a substitute for independent entrepreneurship, but on the contrary might induce independent entrepreneurship, and/or is driven by the same underlying factors.

Table 9 Nascent entrepreneurship and business start-up intentions, intrapreneurs versus other employees

	Nascent entrepreneurship		*Intended entrepreneurship (excl. nascent entrepreneurs)*	
	% of intrapreneurs	*% of other employees*	*% of intrapreneurs*	*% of other employees*
Low income countries	12.4	7.4	36.6	24.6
High income countries	5.1	1.7	12.9	6.4
All countries	8.1	4.6	23.2	15.6

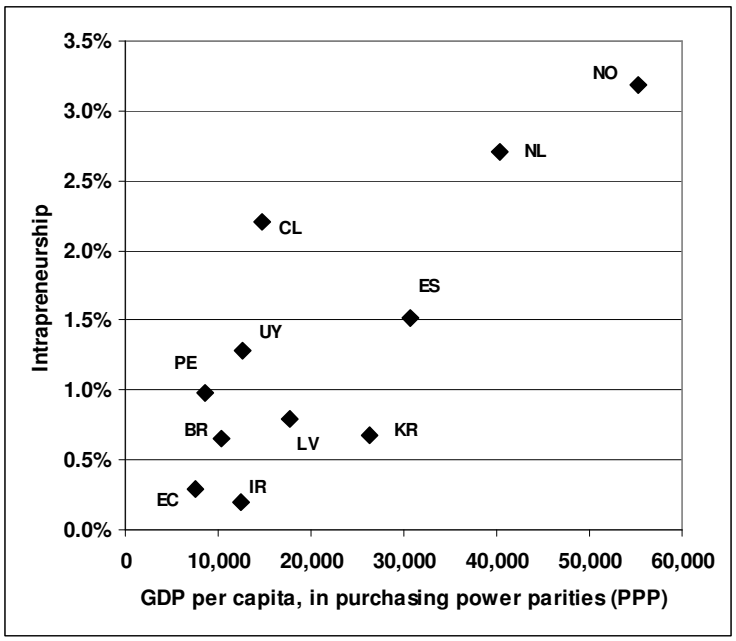
Source: Global Entrepreneurship Monitor 2008

NATIONAL LEVEL RELATIONSHIPS

Figure 2 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 suggests a strongly positive relationship between income levels and intrapreneurship at the macro level. As suggested previously in this paper, 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 7). Obviously a far larger sample including higher income countries with varying institutional frameworks - i.e. varieties of capitalism (Hall & Soskice 2001; see also Bowen & De Clercq 2008; Stam et al. 2010) - will be needed for a more conclusive analysis.

Figure 2 Intrapreneurship as a percentage of the adult population (18-64 years of age) versus GDP per capita

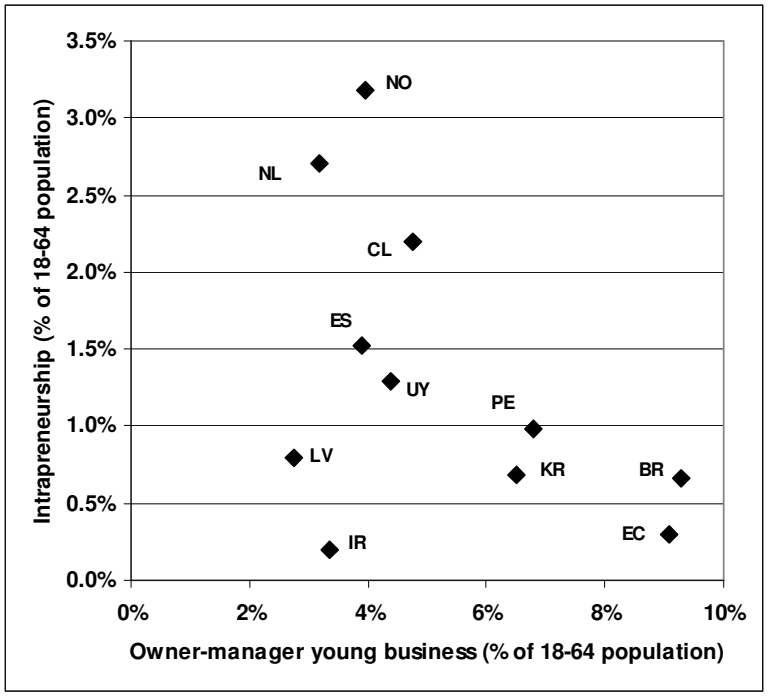


Source: GEM 2008 and IMF World Economic Outlook Database (October 2008 edition)

Figure 3 plots the incidence of intrapreneurship, according to our narrow definition, against the prevalence of independent owner-managers in new businesses. The figure suggests that intrapreneurship and independent entrepreneurship may be 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.[7]

Figure 3 Intrapreneurship and the prevalence rates of owner-managers in independent young businesses, percentage of the adult population (18-64 years of age)



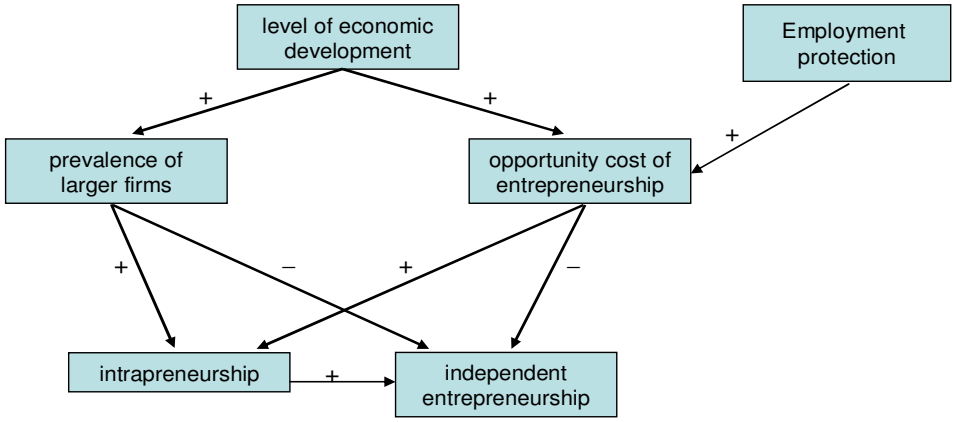
DISCUSSION

The relationship between intrapreneurship and independent entrepreneurship differs at the micro level from that at the macro level. At the micro level intrapreneurship seems to induce (subsequent) independent entrepreneurship, while at the macro level intrapreneurship turns out to be a substitute of independent entrepreneurship. This paradox can be explained by considering the underlying mechanisms, especially those related to the level of economic development. First, the level of economic development has a positive effect on the presence of larger firms (Ghoshal, Hahn & Moran

1999), which has a negative effect on the prevalence of independent entrepreneurship in an economy (Choi & Phan, 2006; Parker 2009). At the same time the related incidence of multiperson firms as well as higher levels of autonomy of employees in higher income countries lead to higher rates of intrapreneurship. A second mechanism underlying substitution between intrapreneurship and independent entrepreneurship at the macro level is the well-known positive effect of economic development (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). Both underlying mechanisms related to the level of economic development are illustrated in Figure 4.

Finally, apart from the level of economic development, the institutional context 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); employees with safe jobs in existing firms will think twice before moving to a risky new business venture. This is a subject for future research based on a larger sample of countries across diverging labour market institutions.

Figure 4 The causal relationships between level of economic development, intrapreneurship and independent entrepreneurship.



CONCLUSIONS

This paper presented the first results of a novel international study into entrepreneurial employee behavior, also known as intrapreneurship. Intrapreneurship was defined 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 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 not a very wide-spread phenomenon. On average, fewer than 5% of employees are intrapreneurs and, in addition, its incidence in the adult population is, on average, significantly lower than that of early-stage entrepreneurial activity.

Secondly, intrapreneurs have higher job growth expectations for their new business activity than independent entrepreneurs do for their own new business, suggesting higher aspiration levels of intrapreneurs and/or better access to resources for achieving growth. This confirms earlier findings from the literature that intrapreneurship is an important driver of firm 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 is 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 high income countries as in low income countries. This is probably caused by a combination of a relatively high share of adults employed in multiperson organizations in high income countries, and

higher levels of autonomy of employees in high income countries. In addition our micro level analyses revealed a positive effect of high education on intrapreneurship (and a negative effect on independent entrepreneurship), which is also an important mechanism for explaining the relative high levels of intrapreneurship in high income countries (which have a higher share of highly educated individuals than low income countries), and low levels of independent entrepreneurship.

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 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. & Hisrich, R.D. 2001. Intrapreneurship: construct refinement and cross-cultural validation, *Journal of Business Venturing* **16**, 495–527.

Antoncic, B. & Hisrich, R.D. 2003. Clarifying the intrapreneurship concept, *Journal of Small Business and Enterprise Development* **10** (1), 7-24.

Arenius, P. & Minniti, M. 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. & Coyne, C. 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.

Bowen, H.P. & De Clercq, D. 2008. Institutional context and the allocation of entrepreneurial effort. *Journal of International Business Studies* **39**, 747-767.

Choi, Y.R. & Phan, P. H. 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. & Wennekers, S. 2008. Intrapreneurship; conceptualizing entrepreneurial employee behaviour, Research Report H200802, Zoetermeer: EIM.

Farr, J. & Ford, C.1990. Individual innovation, in: M.A. West & J.L. Farr (eds.), *Innovation and creativity at Work: Psychological and Organizational Strategies*, Chichester: John Wiley, 63-80.

Frese, M. & Fay, D. 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. & Carter, N.M. 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., Hahn, M. & Moran, P. 1999. Management competence, firm growth and economic progress, *Contributions to Political Economy* **18**, 121-150.

Grilo, I. & Thurik, A. R. 2008. Determinants of entrepreneurial engagement levels in Europe and the US, *Industrial and Corporate Change* **17** (6), 1113–1145.

Hall, P.A. & Soskice, D. 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. & Dess, G.G. 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 & R. Baron (eds), *The Psychology of Entrepreneurship,* Mahwah, New Jersey: Lawrence Erlbaum Associates, 237-264.

Morrison, E.W. & Phelps, C.C. 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. 2010. Intrapreneurship or entrepreneurship?, *Journal of Business Venturing,* forthcoming.

Parker, S.K. & Collins, C.G. 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.

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., Bosma, N.S., Autio, E., Hunt, S., De Bono, N., Servais, I., Lopez-Garcia, P. & Chin, N. 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. & Venkataraman, S. 2000. The promise of entrepreneurship as a field of research, *Academy of Management Review* **25**, 217-226.

Sharma, P. & Chrisman, J.J. 1999. Toward a reconciliation of the definitional issues in the field of corporate entrepreneurship, *Entrepreneurship Theory and Practice* **23** (3), 11-27.

Stam, E., Thurik, A.R. & Van der Zwan, P. 2010. Entrepreneurial exit in real and imagined markets, *Industrial and Corporate Change* **19** (4), 1109-1139.

Stephan, U. & Uhlaner, L.M. 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., Van Praag, M., & Vijverberg, W.P.M. 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., Van Stel, A., Thurik, R. & Reynolds, P. 2005. Nascent entrepreneurship and the level of economic development, *Small Business Economics* **24** (3), 293-309.

Appendix 1. Examples of 'new business activities'

To obtain an idea of the business activities the intrapreneurs are actually involved in, an open ended question was posed. Here the intrapreneurs were asked to briefly describe the most significant new business activity in which they had been actively involved in the past two years. Table A1 displays the responses from the Dutch sample and has been categorised into activities involving (i) new products and services; (ii) new markets, outlets, or establishments; and (iii) new production processes.

The large majority of new business activities in this sample are market-oriented, through introducing new goods and services, by entering new markets or by establishing new outlets or establishments. Most of these activities fit best under the heading of 'new entry', as discussed in a previous section, while a fair number belong to the domain of 'new organization creation'. Just under 25% of the new business activities in the Dutch sample involve developing and/or introducing new production processes. It would require a more in-depth investigation to find out to what extent these latter activities truly represent 'pursuit of entrepreneurial opportunity' or are rather examples of 'innovative work behaviour'[8]. A final observation is that a number of new business activities in the Dutch sample are in the fields of education, health care or social services. In so far as some of these activities may possibly be 'non-profit', these may also be viewed as examples of 'social intrapreneurship'.

Table A1 Categorization of new business activities mentioned by Dutch intrapreneurs, 2008

New goods and services	New markets, outlets, establishments	New production processes
Consultancy, business to business, business take-overs	To merge two independent institutions.	Digital printing
To set up training program, exercise program, for people with lung disorders.	Company for leasing and financing cars.	To be able to train students on the job.
Introduction of new products.	Making/producing and importing products. We are expanding to Asia.	Innovations in education.
Training and communication services.	To set up new offices abroad.	I am outsourcing activities.
Expanding services.	Started a cooperation with another firm	Starting a production line.
Started a new training.	Investment company	To get more money by creative thinking.
Starting a new department for assurance products/services.	Foundation of Good Ideas: to give a chance to ideas that are difficult to develop.	R&D
To develop and promote a new, state subsidized scheme.	We build satellites of our own company all over the country: a kind of "Shop in shop" concept.	To introduce a new and faster internet connection.
Manager in a dolphin house, thinking up and promoting new shows with animals, new animation programs for children.	Taken over companies	New automated ticket selling system.
Positioning business intelligence by means of the newest Microsoft technologies.	Starting a new company in Romania.	Importing more from China and Japan.
To introduce a new insurance product for private persons.	Telemarketing.	Development of maintenance plan.
Expand the present company with consultancy on privatization of public services.	Marketing, developing products, promotion and selling a sales channel for barbecues.	New stockroom/warehouse.
To launch a new product	Finding a new market for existing products, optical products.	
To start/introduce a new product in our branch, thermal printer heads.	Starting a new sports centre.	
Social and domestic services	To seek a market, to seek partners, to maintain/keep accounts.	
To give workshops.	Setting up an office abroad, part of a university.	
	Agency to support clients with physical defects	
	To start a clinic for people with mental defects and psychiatric problems.	
	To organize distribution in China	
	Starting a new company selling products on the internet.	
	Starting new sites and establishments.	
	Starting a new establishment.	
	To start new establishments.	
	Business for welfare/social work.	

Source: Global Entrepreneurship Monitor 2008

Note: out of 63 responses, six could not be coded into either of these categories, while five were unable or not willing to provide a description

NOTES

[1] This institutional context is said to provide an incentive structure that drives individual choices towards one type of entrepreneurial behaviour in favour of another (cf. Baumol, 1990; Boettke & Coyne, 2003).

[2] This resembles the sequence of the three entrepreneurial processes opportunity recognition, evaluation, and exploitation that are seen as the key characteristics of the domain of entrepreneurship studies by Shane and Venkatamaran (2000).

[3] Intrapreneurship and innovative work behavior overlap, but they are not identical.

[4] Organizations (private and public) with more than 250 employees are more prevalent in high income countries than in low income countries. The percentage of intrapreneurship in large organizations in high income countries may have been negatively influenced by the dominance of public sector organizations in this size segment.

[5] Household income is divided in tertiles for each country. This implies that the income categories are relative to the country's phase of economic development and are not heavily correlated with national levels of GDP.

[6] This is in line with Van der Sluis, Van Praag & Vijverberg (2005) who found in their meta study that the impact of education on being self-employed is negative in developing countries (but insignificant in industrialized countries). However, our findings are in contrast with those of Parker (2010), who found general human capital to be more associated with entrepreneurship than with intrapreneurship. This however was based on a United States sample only, and with a more narrow definition of intrapreneurship restricting it to new venture creation. Grilo and Thurik (2008) also find a positive impact of education on entrepreneurship, but with a sample of the total adult population (in European countries and the US), while we take a sample of only the workforce into account for our multinomial logistic regression.

[7] 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).

[8] For a discussion of differences and similarities of intrapreneurship and innovative work behaviour, see De Jong & Wennekers (2008).