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Multidimensional entrepreneurship: theoretical considerations and Swedish empirics

Paper prepared for the 50th Anniversary Congress of the European Regional science Association, Jönköping, Sweden, 19-23 August, 2010

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ABSTRACT

Entrepreneurship is often defined as merely the starting-up of new firms. There are obvious advantages in using this simplified definition, not least regarding measurement, but with such a definition there is also a great risk in missing important aspects of entrepreneurship and how it emerges and develops.

This paper starts from an assumption that entrepreneurship can be divided in six different spheres and that these spheres interact and mutually affect each other. The six spheres of entrepreneurship are:

- Economic entrepreneurship, which is manifesting itself in new enterprises and products, production, distribution and sales methods and organizations.
- Social entrepreneurship, with the aim of creating social value.
- Civil entrepreneurship, in the form of new organizations and new activities in the civil society and human relations.
- Political entrepreneurship, e.g. in the form of new types of policies, governance, decision-making and implementation processes.
- Academic entrepreneurship, displayed in innovative research (new hypotheses, methods, applications, etc), collaboration with other actors and starting-up research based enterprises.
- Innovative entrepreneurship, as opposed to “replicative entrepreneurship”.

It can be assumed that the six forms of entrepreneurship mutually are having impacts on each other, but that the directions of these impacts can vary. On the one hand it is possible that the four six of entrepreneurship show a mutually positive relationship, on the other hand it is just as possible that the different entrepreneurs might exclude each other as they compete for the engagement of a finite number of potential entrepreneurs in a region.

This paper makes a first investigation of the six dimensions of entrepreneurship in Sweden and the connections between them and measures of growth on local government level.

1. Introduction

As pointed out by Casson (2005) "...theories of entrepreneurship, from Cantillon (1755) onwards, have always been somewhat general and abstract". In contrast to the 'general and abstract' theories, the mainstream of empirical entrepreneurship research has stuck to relatively simple and robust definitions of the concept: the starting-up of new businesses or being self-employed. However, the theoretical contributions, from Cantillon (1755), via Schumpeter (1911/1934), Knight (1921) and Kirzner (1973), to Shane and Venkataraman (2000) – including the literature on 'intrapreneurship' (Pinchot & Pinchot 1978, Pinchot 1985, etc.) – have one clear thing in common with the mainstream empirical literature: they both restrict the concept of entrepreneurship to the business sphere of society.

Many of the general definitions of entrepreneurship are centered on the discovery (or creation) of business opportunities and the gathering of resources to exploit them. One example is the one by Shane and Venkataraman (2000): "Entrepreneurship is an activity that includes the discovery, evaluation and exploitation of opportunities to introduce new goods and services, ways of organizing, markets, processes, and raw materials, through organizing efforts that previously had not existed."

A growing literature has taken this opportunity approach as a starting point for applying the entrepreneurship concept in fields of society outside the business sphere. The basic idea behind this broadening of the entrepreneurship concept is that 'discovery, evaluation and exploitation of opportunities' of course can be considered taking place also outside the business sphere. In line with this idea there is now a relatively developed field of research on *social entrepreneurship* (see e.g. Boschee 1995, Leadbetter 1997, Peredo & McLean 2006). *Civil/civic entrepreneurship* is an additional concept that is being used primarily in research on the civil society and local communities (Henton et al. 1997, Gawell 2006, Banuri et al. 2002). A third type of entrepreneurship starting to be discussed in the literature is *political entrepreneurship* within or connected to the public sector (Buchanan & Badham 1999, Harris & Kinney 2004, Chatterjee & Lakshmanan 2009). Entrepreneurship in certain sectors is something being strongly acknowledged as well, with *academic entrepreneurship* as the most noticed example (Klofsten & Jones-Evans 2000, Shane 2004, Powers & McDougall 2005, Wright et al. 2007). A fifth type of these novel interpretations of the entrepreneurship concept is *innovative entrepreneurship* – in contrast to replicative entrepreneurship (Baumol 2010, Piergiovanni & Santarelli 2006, Wennekers & Thurik 1999).

From a traditional view of entrepreneurship, this 'multidimensional' use of the concept can be questioned. It can be argued that the use of the entrepreneurship concept should be restricted to the business field and that the other, abovementioned phenomena should have other denominations and not mooch on the popularity of the entrepreneurship concept. On the other hand, it can be claimed that the increasing use of the concept also outside the business world is a recognition that entrepreneurial behavior do exist in other spheres of society, and that this behavior can be analyzed within the same theoretical framework as traditional entrepreneurship.¹ This paper takes this latter perspective as its starting point.

¹ This discussion resembles to a high degree the discussion on whether social capital should be denominated capital or not. As shown in Westlund (2006), using the term capital for social capital does not have any support in traditional capital theory and it is thus a matter of taste whether the concept

To identify the six abovementioned dimensions of entrepreneurship in theory is one thing; to empirically define them and find ways to measure them is something else. The aims of this paper are a) to discuss empirical definitions of the six dimensions of entrepreneurship and to make a first test of measuring them in the local governments of Sweden, and b) to analyze whether the various dimensions of entrepreneurship are spatially connected to each other and whether they are connected to local economic development. The first aim is treated in Section 2, in which empirical measures of the six forms of entrepreneurship are discussed and presented in the Swedish context. The second aim is treated in Section 3, where the relations among the entrepreneurship forms as well as their connections to measures of economic development are analyzed. Section 4 contains some concluding remarks about further research on these topics.

2. Measurement of Entrepreneurship in Six Dimensions

2.1. The Economic Dimension

Start-up of new enterprises is the by far most used definition of entrepreneurship. Usually it is measured by the number of firms being started during a certain time period, in relation to the number of inhabitants of a certain geographical area. Alternatively, the accumulated result of the start-up process (minus the close-downs), i.e. the total number of firms per inhabitant, can be considered a measure of entrepreneurship. A third alternative, used by the Global Entrepreneurship Monitor (GEM) surveys, is to focus on nascent firms. These simple measures can of course be criticized, e.g. for not taking quality aspects into account. Just the number of start-ups or existing companies does not say anything about their relative importance in terms of their size, growth rate or impact on the economy in general. Acs & Varga (2005) made a distinction between “necessity entrepreneurship” (having to start a business due to lack of alternatives) and “opportunity entrepreneurship” (active chose to start a firm based on the perception of an unexploited business opportunity). In a study of eleven countries they found that necessity entrepreneurship had no impact on economic development, while opportunity entrepreneurship had a significant, positive effect. Acs & Varga (2005) suggested the opportunity/necessity entrepreneurship ratio as a measure of the entrepreneurship having economic effects. However, this measure is not available in official statistics, but has to be collected by surveys. For this reason, the easy available measures of economic entrepreneurship are the ones most frequently used. This is also the case in this paper, where the number of new firms and the total number of firms per 10 000 inhabitants are used as measures of economic entrepreneurship.

2.2. The Social Dimension

Social entrepreneurship seems to be a far more complicated concept than its economic counterpart. What is to ‘discover, evaluate and exploit opportunities’ in a social

should be used or not. In fact, it can be argued that the multidimensional use of the entrepreneurship concept has a stronger theoretical support than the denomination ‘capital’ for social capital.

dimension? According to Steyaert & Hjorth (2006, p 4) social entrepreneurship can be described as a “hybrid” signifier and ‘oxymoron’ that can cover many diverse initiatives, oriented as an approach that can change welfare and social problems in the interfaces of the non-profit, public, voluntary, philanthropic, and private sectors”. The perhaps most developed definition of social entrepreneurship has been given by Peredo & McLean (2006, p. 64) according to whom it is activities by persons or groups that “(1) aim at creating social value [...]; (2) show a capacity to recognize and take advantage of opportunities to create that value [...]; (3) employ innovation [...] in creation and/or distributing social value; (4) are willing to accept an above-average degree of risk in creating and disseminating social value; and (5) are unusually resourceful in being relatively undaunted by scarce assets in pursuing their social venture.”

The problems in operationalizing this (and other, similar) definition(s) to a single measure are obvious. Without a comprehensive scrutiny, it is hardly possible to determine whether a person or organization is practicing social entrepreneurship in accordance with the definition. However, by focusing on the aspect of social value it is possible to sort out enterprises that chose to organize themselves in forms that lay more emphasis on social than economic values. Cooperatives are such a form. In Sweden, in principle all cooperatives are organized under the law of ‘economic associations’ and cooperatives are generally considered being a non-profit form of businesses. As we are compiling data on local government level (see Section 2.7.) and the annual number of cooperative start-ups often is low, we use the sum of start-ups 1998-2008 per capita as measure of social entrepreneurship.²

2.3. The Civil Dimension

What is civil entrepreneurship and how does it distinguish itself from social entrepreneurship? The literature does not supply any clear answer to the question. However, one difference seems to be that the social entrepreneurship literature stays closer to the economic dimension in that it can include business activities as long as they have social values as their prime aim. Civil entrepreneurship, on the other hand, is a term used for entrepreneurial activities in the civil/civic society, i.e. outside the private and public sectors.

Often used measures of the civil society are the number of existing civil sector organizations or the number of members of these organizations. Such measures give an indication on the relative strength of the civil society but do not give any information on potential civil entrepreneurship, i.e. whether people or groups discover, evaluate and exploit opportunities within the civil society.

In order to construct a measure of civil entrepreneurship we have used the answers on a number of questions in Statistics Sweden’s National Survey on Living Conditions (*Undersökningen om Levnadsförhållanden, ULF*). Questions of the type “Have you taken initiatives to change local political decisions?”, “Have you written letters to the press/editor the last year”, etc, were included in the index. Due to the small number of survey respondents in many small local government areas, the index was constructed as a combination of the values for each local government area (50% weight) and the average value of all local government areas of the surrounding region (50% weight) – assuming that there exist some degree of spatial spillovers and thus that civil

² The sum of start-ups 1998-2008 is restricted to those still being in business 2008, as there are no data available for those being started and closed down during the period.

entrepreneurship in a local government area is affected by its relative occurrence in surrounding local government areas.

2.4. The Political Dimension

Neither the concept of political entrepreneurship has a clear and undisputed definition. Buchanan & Badham (1999) discuss the concept in an almost Machiavellian way, in which entrepreneurship is to exploit (in an ethical or unethical way) the opportunities that turn up to increase a person's power or position. However, they reserve the term political entrepreneur for the positive agent of change. Björkman & Sundgren (2005) view the concept in contrast to the traditional view of entrepreneurship of exploiting opportunities on the market and consider political entrepreneurship as mainly concentrated on exploiting opportunities within an organization. This organization-internal view on entrepreneurship makes it strongly connected to the intrapreneurship perspective. However, an organization does not exist in a vacuum and it normally has non-market relations with external actors. This should mean that political entrepreneurship also is carried on at the interface between an organization and other actors. This perspective is developed in Chatterjee and Lakshmanan (2009) who *inter alia* describe political entrepreneurs as nodes, linking social and economic entrepreneurs.

Buchanan & Badham (1999) and related literature considers political entrepreneurship as a phenomenon in all types of organizations where struggle of power and influence occurs. In this study, the concept is delimited to activities within or connected to the politically governed sector. As in the other dimensions of entrepreneurship in this paper, the focus is on the local government level. In order to measure the level of entrepreneurship in the local government organizations, a web-survey with questions about how local government aimed at discovering, evaluating and exploiting development opportunities was elaborated. The survey was sent out to the directors of all Swedish local governments (municipalities and cities) in June 2009 and was followed up by telephone interviews. The response rate was 83%. Based on the survey, an index of political entrepreneurship in local government was constructed.

2.5. The Academic Dimension

In most parts of the literature, academic entrepreneurship seems to be equated with academic or technology-based spin-offs in the form of enterprises (e.g. Cooper 1971, Olofsson & Wahlbin 1984, Powers & McDougall 2005). On the other hand, as pointed out by Klofsten and Jones-Evans (2000) it can be argued that there are a number of different academic entrepreneurship activities, which can be distinguished by their degree of external contact with industry.

In a still broader perspective, academic entrepreneurship can also be interpreted as discovering, evaluating and exploiting opportunities within the traditional tasks of the academy, i.e. education and research. In this respect, academic entrepreneurship would consist of developing new theories, hypothesis and methods for research and teaching.

Here, this latter aspect of academic entrepreneurship is not treated. Instead, the empirical measure is based on a survey, reported in Wahlbin & Wigren (2007) where a number of questions on university teachers' and researchers' starting-up businesses, patent applications, contacts and collaboration with industry and public sector, etc. were asked. 30 of 31 of the Swedish universities and colleges participated in the study. Almost 10 000 of 19 000 respondents answered a web-survey, which gave a

response rate of 52%. The questions that we found could be connected to discovering, evaluating and exploiting opportunities in university employees' external activities, were selected and formed the base for an index of each university's academic entrepreneurship.

Less than 10% of the Swedish local government areas (municipalities and cities) have a university or college, but there is at least one university/college per region. To assess the influence of the university cities' academic entrepreneurship in surrounding cities and municipalities, estimations of all local government areas' accessibility to academic entrepreneurship were made.

2.6. The Innovative Dimension

Even if entrepreneurship and innovation today are two almost completely separated research themes, this has not always been the case. Schumpeter's (1911/1934) opinion was clear and simple: innovations are made by the entrepreneur: "The carrying out of new combinations we call 'enterprise'; the individuals whose function it is to carry them out we call 'entrepreneurs'" (Schumpeter 1934, p 74). After Schumpeter, the term innovation has been decoupled from the starting-up of enterprises and has instead come to be a denomination of commercialization of inventions. However, Baumol (2010) has brought the two concepts together again. He distinguishes between innovative entrepreneurship, meaning creating something really new, and replicative entrepreneurship, which in principle is copying or replicating already existing methods, products or enterprises.

Here, we define innovative entrepreneurship as discovering, evaluating and exploiting opportunities, which result in a potential commercializing of an invention. This means that we are using the by far most used empirical measure of innovation, i.e. patents per capita, as a measure of innovative entrepreneurship.

2.7. Spatial Level and Divisions

As already mentioned, all data are collected on local government level. Sweden consists of 290 local government areas; formally, all the local government areas, cities as well, are municipalities. An advantage of having the data on local government level is that the municipalities can be divided in subgroups based on incomes, population density, growth, etc. Two types of divisions will be tested in this paper: a division used by the Swedish Board of Agriculture, in metropolitan, city, rural and sparse rural municipalities; and a division based on the municipalities' average income.

3. Analysis

3.1. Differences between municipality types

Are there any spatial differences in the relative strength of the various entrepreneurship forms? Table 1 that shows indexed values of the six entrepreneurship dimensions for four municipality types confirms that this is the case. Economic entrepreneurship (start-ups per capita) has a relative concentration to metropolitan areas and is least frequent in rural areas. Academic entrepreneurship is (for obvious reasons) most occurring in metropolitan and urban areas and by far least in the peripheral, sparse rural municipalities. Civil entrepreneurship is on the other hand most frequent in sparse rural areas and this holds even more for social

entrepreneurship. Innovative entrepreneurship is strongest in the metropolitan areas and weakest in the sparse rural ones, whereas political entrepreneurship shows an opposite pattern. All in all, the conclusion is that Table 1 roughly confirms the “conventional wisdom” about what regional disparities that could be expected: metropolitan areas are strong in the fields of entrepreneurship that are more obviously connected to economic growth, while the sparse rural areas are strongest in the social, civil and political dimensions. However, the two region types between the two “extremes” in certain cases deviate from what could be expected.

Table 1. Indexed average values for the six dimensions of entrepreneurship in four types of municipalities. (National average = 100)

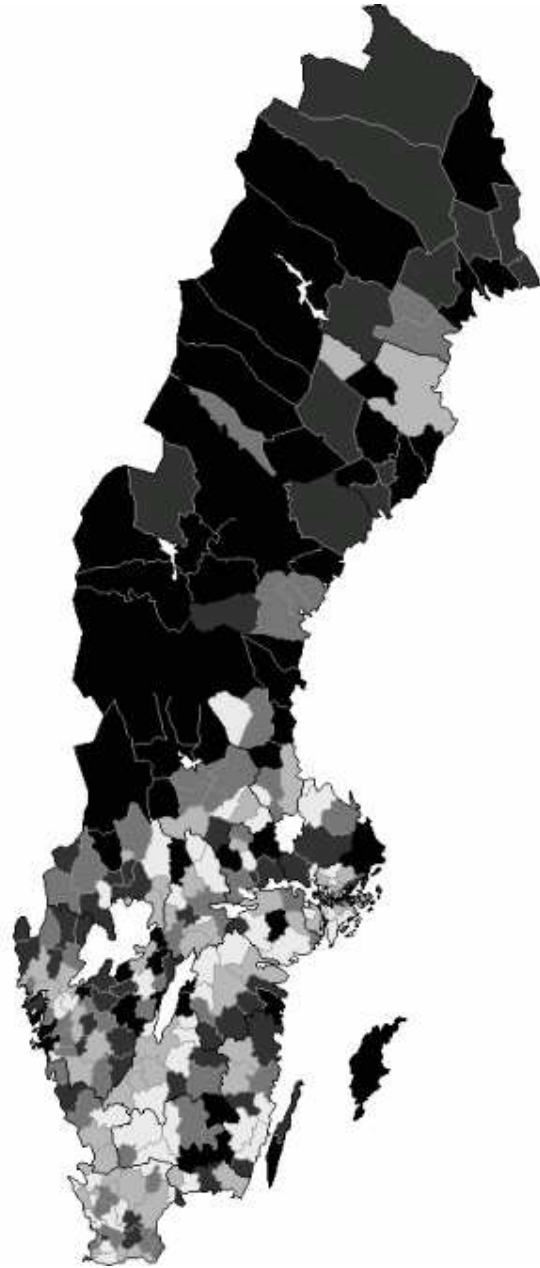
Municipality type	Economic Entrepren.	Academic Entrepren.	Civil Entrepren.	Innovative Entrepren.	Social Entrepren.	Political Entrepren.
Metropolitan	132	199	99	125	63	90
Urban	100	194	99	82	72	105
Rural	91	63	100	104	89	100
Sparse rural	99	13	105	71	244	105
National average	100	100	100	100	100	100

Figures 1 and 2 provide more information about the spatial pattern of two of the entrepreneurship dimensions, economic, and social entrepreneurship respectively. Figure 1 shows a concentration of high start-ups rates in the three metropolitan regions, in particular in the Stockholm region, and low levels in many rural areas. The sparse rural areas show a divided pattern. Certain areas, mainly such with winter sport centers have start-up rates on the same level as the metropolitan areas, while other sparse areas are among those with the lowest rates. Figure 2, showing social entrepreneurship, measured in start-ups of cooperatives per capita, present a rather different pattern. Even if a few, scattered rural municipalities in southern Sweden show high rates, the picture is completely dominated by sparsely populated areas in the North and Northwest. The metropolitan regions have small shares, especially Malmö and Stockholm. A comparison of the two maps indicates that regular start-ups and cooperative start-up in a spatial perspective almost acts as substitutes – with the exception of some rural and sparse rural (winter and summer) tourism municipalities that show high rates in both dimensions.

Figure 1. Concentration of economic entrepreneurship (start-ups/capita) in Swedish municipalities



Figure 2. Concentration of social entrepreneurship (cooperative start-ups) in Swedish municipalities



3.2. Mutual reinforcement or exclusion? Relations between the six dimensions

How are the six dimensions of entrepreneurship related to each other? Table 2 shows the correlation coefficients for the relations between them for all types of municipalities. Most of the results are insignificant, indicating that the various types of entrepreneurship exist independently of each other. However, some of the measures show significant correlations. The social and civil entrepreneurship measures have a weak but significant positive correlation, which indicate a certain connection between them. Economic entrepreneurship is positively correlated to academic entrepreneurship but negatively related to political entrepreneurship. Academic entrepreneurship is negatively connected to social entrepreneurship.

Table 2. Correlations between the six entrepreneurship variables.

		Economic Entrepreneurship: Start-ups/inhabitant	Academic Entrepreneurship accessibility	Civil Entrepreneurship index	Innovative Entrepreneurship: patents/inhabitant	Social Entrepreneurship: New cooperatives/inhabitant
Academic Entrepreneurship accessibility	Pearson Correlation	.142**				
	Sig. (2-tailed)	.015				
	N	290				
Civil Entrepreneurship index	Pearson Correlation	.010	-.036			
	Sig. (2-tailed)	.861	.540			
	N	290	290			
Innovative Entrepreneurship: patents/inhabitant	Pearson Correlation	-.028	.018	.008		
	Sig. (2-tailed)	.629	.764	.886		
	N	290	290	290		
Social Entrepreneurship: New cooperatives/inhabitant	Pearson Correlation	.055	-.243***	.112*	-.067	
	Sig. (2-tailed)	.348	.000	.056	.258	
	N	289	289	289	289	
Political Entrepreneurship index	Pearson Correlation	-.112*	.001	-.045	.025	.063
	Sig. (2-tailed)	.083	.994	.490	.697	.329
	N	240	240	240	240	239

The positive correlation between academic and economic entrepreneurship can be a sign of increased importance of academic entrepreneurship for the starting of new businesses. Both variables are stronger than average in metropolitan regions and weaker than average in rural regions (see Table 1). The negative relationship between economic and political entrepreneurship can be interpreted as if they are compensating each other. Areas with strong economic entrepreneurship do not have the same need of political entrepreneurship as areas with weak start-up rates. Thus, it can be assumed that the political sector in the latter areas has a stronger pressure to develop entrepreneurial approaches within its own organization to compensate for lacking economic entrepreneurship.

The negative relationship between academic and social entrepreneurship was also clearly reflected in Table 1. Social entrepreneurship has its by far strongest extension in the sparse rural areas and the weakest in the metropolitan areas, while the situation for academic entrepreneurship is the opposite.

Can similar patterns as those above be discerned within the four types of municipalities or are there other correlations between the variables when the municipalities are divided in groups? Table 3 and 4 show that the latter is the case.

Table 3. Correlations between the entrepreneurship variables in metropolitan and urban areas.

Metropolitan areas						Urban areas							
		Academic Entrepreneurship accessibility	Civil Entrepreneurship Index	Innovative Entrepreneurship	Social Entrepreneurship			Academic Entrepreneurship accessibility	Civil Entrepreneurship Index	Innovative Entrepreneurship	Social Entrepreneurship		
Academic Entrepreneurship accessibility	Corr.	-.235				Academic Entrepreneurship accessibility	Corr.	-.272*					
	Sig.	.116					Sig.	.065					
	N	46					N	47					
Civil Entrepreneurship index	Corr.	.133	-.011			Civil Entrepreneurship index	Corr.	.267*	-.038				
	Sig.	.377	.942				Sig.	.069	.799				
	N	46	46				N	47	47				
Innovative Entrepreneurship	Corr.	.220	-.096	.209		Innovative Entrepreneurship	Corr.	.176	.240**	.018			
	Sig.	.141	.526	.164			Sig.	.237	.104	.906			
	N	46	46	46			N	47	47	47			
Social Entrepreneurship	Corr.	.245**	.053	.154	-.003	Social Entrepreneurship	Corr.	.213	.092	.469**	.120		
	Sig.	.101	.725	.307	.986		Sig.	.151	.540	.001	.420		
	N	46	46	46	46		N	47	47	47	47		
Political Entrepreneurship index	Corr.	-.077	-.168	.037	.397*	.283*	Political Entrepreneurship index	Corr.	-.036	.340*	.041	.277*	.118
	Sig.	.661	.335	.831	.018	.099		Sig.	.825	.032	.803	.084	.467
	N	35	35	35	35	35		N	40	40	40	40	40

In the metropolitan areas, political entrepreneurship show significant correlations with innovative and social entrepreneurship respectively. Social entrepreneurship also shows a correlation as close as can be to 90% significance with economic entrepreneurship. It is not unlikely that the correlation between political and social entrepreneurship might be a result of differences in political support for the social economy. Also, the (almost) significant correlation between social and economic entrepreneurship can be an indication on a certain connection between the two. However, it does not seem likely that local political measures should exert a systematic influence on the number of patents per capita, so this possible connection remains to explain.

The group of urban municipalities shows the highest number of significant correlations between the entrepreneurship measures. Also here, political entrepreneurship shows a positive connection with patents, but also with academic entrepreneurship (and the correlation between academic entrepreneurship and patents is almost significant on 10% level). It is possible that this is an indication of some kind of regional innovation systems, in which local government in the regional centers and the regional university colleges have established a functioning collaboration. Civil entrepreneurship shows positive correlations with both economic and social entrepreneurship. Both results are in line with Putnams (1993) claims that a strong social capital in the civil society supports economic and social development. The negative correlation between economic and academic entrepreneurship is harder to explain. If there are some regional innovation systems, as indicated above, they do not

seem to materialize in new firms. A possible explanation could be that the regional innovation systems are supporting existing firms.

Table 4. Correlations between the entrepreneurship variables in rural and sparse rural areas.

Rural areas						Sparse rural areas							
		Academic Entrepreneurship accessibility Economic Entrepreneurship	Civil Entrepreneurship Index	Innovative Entrepreneurship	Social Entrepreneurship			Academic Entrepreneurship accessibility Economic Entrepreneurship	Civil Entrepreneurship Index	Innovative Entrepreneurship	Social Entrepreneurship		
Academic Entrepreneurship accessibility	Corr.	-.057				Academic Entrepreneurship accessibility	Corr.	.158					
	Sig.	.466					Sig.	.381					
	N	164					N	33					
Civil Entrepreneurship index	Corr.	-.020	.116			Civil Entrepreneurship index	Corr.	.006	.061				
	Sig.	.799	.140				Sig.	.974	.738				
	N	164	164				N	33	33				
Innovative Entrepreneurship: patents/inhabitant	Corr.	-.171	.009	.012		Innovative Entrepreneurship: patents/inhabitant	Corr.	-.150	.070	-.089			
	Sig.	.028	.908	.877			Sig.	.406	.700	.621			
	N	164	164	164			N	33	33	33			
Social Entrepreneurship: New cooperatives/inhabitant	Corr.	.098	-.079	.047	-.075	Social Entrepreneurship: New coops/inhabitant	Corr.	.320*	-.178	-.299*	.029		
	Sig.	.214	.319	.548	.342		Sig.	.070	.322	.091	.873		
	N	163	163	163	163		N	33	33	33	33		
Political Entrepreneurship index	Corr.	-.062	.064	-.078	-.045	-.114	Political Entrepreneurship index	Corr.	.039	.014	-.184	.027	.116
	Sig.	.470	.450	.362	.594	.181		Sig.	.853	.947	.378	.897	.579
	N	140	140	140	140	139		N	25	25	25	25	25

The large group of municipalities defined as rural show surprisingly few significant correlations between the entrepreneurship variables. One reason might be that the group is too heterogeneous. The only significant relationship is the negative one between start-ups and patents, which should be interpreted as that the patents that are being taken in rural areas either are used by existing companies in the rural municipalities or being commercialized elsewhere. As the patents per capita in rural municipalities on average are higher than the national average (see Table 1) this anyway indicates a problem for the rejuvenation of the economies of the rural municipalities.

Also the smallest group of municipalities, the sparse rural one, shows few significant correlations. It is only social entrepreneurship that corresponds positively with start-ups and negatively with civil entrepreneurship. The former relationship indicates a positive influence between the starting-up of ordinary firms and cooperative ones, something that is hardly surprising in areas where social and economic motives for starting a firm often coincide. Starting a firm might be the only way to stay on the labor market and not have to move from the social environment where you have your roots. The negative relationship between social and civil entrepreneurship is harder to explain without further investigations.

3.3. Growth effects of multidimensional entrepreneurship

The motive for the contemporary strong focus on entrepreneurship in public policies is that entrepreneurship is expected to contribute to growth and development of nations, regions and local areas. “Growth” and “development” can be defined in many ways. In this study, four different measures were tested: Population growth 1998-2009, Employment growth, Local “GDP”/capita growth and Income/capita growth. Of these, the results for Population growth and Employment growth are presented in Tables 5 and 6, and 7 and 8 respectively. A number of control variables were tested in addition to the six entrepreneurship variables: stocks of Population, Local “GDP”/capita, Income/capita, Small house prices, Employment level, Market accessibility, and Firms/capita – all of them as close to the start of the “growth period”, 1998, as possible. Of these control variables, Small house prices in 2000 were selected for presentation in Tables 5-8 as a summarizing measure of development level at the starting point.

In Table 5, T-values of the selected variables’ influence on population growth are shown for all municipalities and for the four types that the Swedish Board of Agriculture divided them in. Economic entrepreneurship is positively significant in all municipality types. Accessibility to academic entrepreneurship is significant and positive for the large group of rural municipalities and when all municipalities are included. Neither civil nor innovative entrepreneurship show any significant influence. Social entrepreneurship show negative significant connections in the group of urban municipalities and when all municipalities are included. Political entrepreneurship is the only of the entrepreneurship variables that show divergent significant values; it is negative in metropolitan municipalities but positive in the sparse rural ones. The first control variable, Population size in the starting point is significant only for rural municipalities, while the second control variable, Small house prices is significant and positive for all types of municipalities but the metropolitan ones for which it is negative.

Table 5. OLS models of the entrepreneurship variables’ and a control variable’s influence on population growth of Sweden’s municipalities 1998-2009, all municipalities and divided by types.

	All			Metropolitan			Urban			Rural			Sparse rural		
	St.Err	Beta	T	St.Err	Beta	t	St.Err	Beta	t	St.Err	Beta	t	St.Err	Beta	t
Economic Ent.	.018	.335	5.779**	.055	.802	3.016**	.043	.248	1.463	.020	.259	3.355**	.021	.347	2.604**
Academic Ent.	.022	.252	5.807**	.037	.147	.924	.040	-.045	-.372	.036	.201	3.425**	.125	.200	1.640
Civil Ent.	.005	-.036	-.924	.025	-.146	-.953	.016	.040	.305	.004	.007	.123	.008	-.076	-.607
Innovative Ent.	.018	.009	.216	.057	.165	.980	.111	.039	.335	.016	.015	.230	.066	-.028	-.243
Social Ent.	.097	-.228	-5.155**	.493	-.226	-1.404	.336	-.259	-2.159**	.139	-.084	-1.350	.101	.116	.830
Political Ent.	.048	-.022	-.528	.137	-.602	-3.189**	.095	-.112	-.933	.045	.065	1.115	.096	.218	<i>1.731*</i>
Population 1998	.000	.047	1.038	.000	.160	.973	.000	-.108	-.728	.000	.185	2.767**	.000	-.007	-.044
<u>Small house prices 2000</u>	.001	.337	5.259**	.002	-.640	-2.442**	.004	.631	3.130**	.002	.452	5.342**	.010	.520	3.343**
			R ² = .66			R ² = .51			R ² = .72			R ² = .58			R ² = .82

Bold= Sig. < 0.05 *Italics*= Sig. < 0.1

The result of another division of the municipalities – in groups of high, medium and low population growth – is shown in Table 6. Most results resemble those of the other division in Table 5. The only noticeable exception is Economic entrepreneurship, which is negative, but insignificant in the low growth group.

Table 6. OLS models of the entrepreneurship variables' and a control variable's influence on population growth of Sweden's municipalities 1998-2009, all municipalities and divided by population growth.

	All			High growth			Medium			Low growth		
	St.Err	Beta	t	St.Err	Beta	t	St.Err	Beta	t	St.Err	Beta	t
Economic Enterpren	.018	.335	5.779**	.031	.565	3.402**	.015	.273	2.097**	.016	-.115	-1.113
Academic Entr. Access.	.022	.252	5.807**	.027	.160	1.512	.016	.193	<i>1.889*</i>	.042	.292	3.269**
Civil Entr. Index	.005	-.036	-.924	.013	.085	.808	.003	.096	.951	.003	-.060	-.735
Innovative Entrep.	.018	.009	.216	.047	-	-.119	.008	.043	.400	.019	-.088	-1.055
Social Entrepreneurship	.097	-.228	-5.155**	.269	-	-2.694**	.082	-	-1.603	.061	.115	1.183
Political Entrep.	.048	-.022	-.528	.076	-	<i>-1.863</i>	.032	.151	1.472	.042	.212	2.351**
Population 1998	.000	.047	1.038	.000	.004	.039	.000	.055	.491	.000	.028	.284
Small house prices, 2000	.001	.337	5.259**	.001	.007	.045	.002	.289	2.472**	.003	.572	5.575**
			R ² = .66			R ² =.41			R ² =.29			R ² =.56

Bold**= Sig. < 0.05 *Italics*= Sig. < 0.1

The results of the regression analyses in Tables 5 and 6 clearly show the positive impact of economic entrepreneurship on population development on local government level. This confirms the general opinion on positive effects of entrepreneurship and supports the priority that public policies are giving to entrepreneurship promotion. The positive impact of accessibility to academic entrepreneurship is also obvious in several cases. Here it can of course be questioned if it really is the academic *entrepreneurship* that supports the positive development or if it is the general advantage of having a university or college (supply of educated labor, attractive, young cultural environment, etc.) within commuting distance that is the important factor.

Social entrepreneurship seems to exert a significant negative influence on population development, with the exception for low growth and sparse rural municipalities (where it is positive but insignificant). However, this is probably a reversed interpretation. A more reasonable interpretation is of course that social entrepreneurship is a reaction against social problems and poor development, but that this reaction as such is not sufficient to change the problematic circumstances. The dual character of political entrepreneurship is not necessary so puzzling as it may seem. The significant negative connection between the variable and population growth in high growth and metropolitan municipalities is probably a reflection of the fact that these local government areas are growing mainly thanks to their geographical location in regions that are expanding on market reasons. Just like social entrepreneurship, political entrepreneurship in these regions is probably a reflection of social problems and lower growth than would be expected. In the low growth and sparse rural municipalities political entrepreneurship seems to play a positive role for population development. This suggests that public policies in general and political

entrepreneurship in particular play a positive role in that they compensate for market driven development.

The total lack of significant results for civil and innovative entrepreneurship respectively can be interpreted in several ways. One explanation might be that these variables simply lack systematic couplings to population growth. Another possible explanation can be that these variables do not have any influence on local level but might have it on e.g. regional level.

Table 7. OLS models of the entrepreneurship variables' and a control variable's influence on the employment growth of Sweden's municipalities 2000-2008, all municipalities and divided by types.

	All			Metropolitan			Urban			Rural			Sparse rural		
	St.Err	Beta	T	St.Err	Beta	T	St.Err	Beta	T	St.Err	Beta	T	St.Err	Beta	T
Economic Ent.	.168	.473	5.694	.673	.668	<i>2.034</i>	.387	.553	2.669	.239	.223	2.214	.325	.326	1.836
Academic Ent.	.194	.218	3.609	.498	.036	.165	.386	.055	.346	.438	.119	1.512	2.012	.049	.289
Civil Ent.	.046	-.012	-.222	.303	.091	.491	.158	.174	.957	.053	-.070	-.884	.128	.165	.996
Innovative Ent.	.166	-.083	-1.468	.731	-.193	-.877	1.144	-.071	-.435	.173	-.071	-.903	1.103	-.117	-.703
Social Ent.	.906	-.084	-1.300	5.916	.133	.681	3.428	-.294	<i>-1.764</i>	1.725	.050	.601	1.515	.216	1.192
Political Ent.	.422	.137	2.435	1.662	-.145	-.624	1.071	.141	.762	.541	.138	<i>1.793</i>	1.303	.120	.812
Level of employment	.797	-.092	-1.554	3.438	-.323	-1.321	2.266	-.231	-1.282	1.016	-.101	-1.219	3.533	-.273	-1.472
Small house prices	.010	.010	.110	.026	-.552	<i>-1.717</i>	.034	.042	.186	.026	.311	3.056	.117	.554	3.358
	R ² = .31			R ² = .30			R ² = .42			R ² = .25			R ² = .68		

Bold**= Sig. < 0.05 *Italics*= Sig. < 0.1

Table 8. OLS models of the entrepreneurship variables' and a control variable's influence on the employment growth of Sweden's municipalities 2000-2008, all municipalities and divided by employment growth growth.

	All			High growth			Medium growth			Low growth		
	St.Err	Beta	T	St.Err	Beta	T	St.Err	Beta	T	St.Err	Beta	T
Economic Ent.	.168	.473	5.694	.312	.500	2.774	.230	.397	3.251	.253	-.074	-.594
Academic Ent.	.194	.218	3.609	.275	.059	.511	.246	.002	.018	.741	-.071	-.577
Civil Ent.	.046	-.012	-.222	.129	.035	.303	.056	.162	1.630	.052	-.033	-.301
Innovative Ent.	.166	-.083	-1.468	.492	-.217	<i>-1.804</i>	.130	-.044	-.438	.349	-.207	<i>-1.725</i>
Social Ent.	.906	-.084	-1.300	2.665	.087	.633	1.331	.098	.904	1.055	.178	1.383
Political Ent.	.422	.137	2.435	.736	.112	.923	.514	.304	3.084	.662	.076	.687
Level of employment	.797	-.092	-1.554	1.475	-.267	-2.214	1.049	-.180	<i>-1.823</i>	1.233	-.295	-2.392
Small house prices	.010	.010	.110	.014	-.289	<i>-1.732</i>	.024	-.033	-.307	.044	.262	2.093
	R ² = .31			R ² = .33			R ² = .33			R ² = .22		

Bold**= Sig. < 0.05 *Italics*= Sig. < 0.1

The results presented in Tables 7 and 8, with employment growth as the dependent variable principally confirm the results in Tables 5 and 6, even if some deviations can be noted. Economic entrepreneurship has a positive, significant influence on employment growth in all municipality types but one (the third with the lowest employment growth). Accessibility to academic entrepreneurship is positive and significant when all municipalities are included, but non-significant when the municipalities are divided in groups. The positive influence of political

entrepreneurship that was shown for sparse rural and low growth municipalities considering population growth is, as shown in Tables 7 and 8, stronger and more general when it comes to employment growth. This is a result that gives additional support to the interpretation that local politics seem to play a role for local development outside the metropolitan areas.

Also, the lack of significant results for civil and innovative entrepreneurship is in the main confirmed, but it should be noted that innovative entrepreneurship have a negative sign throughout Tables 7 and 8 and that this even is significant on 10%-level on two occasions. Another deviation from Tables 5 and 6 is that civil entrepreneurship is very close to being significant (positive) on 10%-level for the medium growth municipalities. Finally, social entrepreneurship, that showed significant, negative impact on population development in urban and high growth municipalities, does not show any significant impact at all on employment growth.

4. Concluding Remarks

Based on the definition of entrepreneurship as ‘the discovery, evaluation and exploitation of opportunities’, this paper is a first attempt to theoretically and empirically analyze entrepreneurship as a multidimensional concept. As a pilot study, it has merely skimmed the surface and the needs for deeper theory development and improved empirical measurements are obvious. Nevertheless, this paper has been able to put a number of scattered entrepreneurship concepts under a common general definition and shown that it is possible to operationalize and measure them empirically, and to analyze their mutual relations and their connections to local growth and development. Thus, this might become a new, interesting field of entrepreneurship research.

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Appendix. Construction of indexes

Civil entrepreneurship index

The index is based on selected questions in Statistics Sweden's Survey on Living Conditions (Undersökningen om Levnadsförhållanden, ULF) 2001-2007. Questions that were considered to reflect civil entrepreneurship, i.e. whether people or groups discover, evaluate and exploit opportunities within the civil society, were the following:

Have you during the last year a) participated in protest marches, b) written letters to the editor, c) signed petitions, d) spoken on a meeting? Have you e) appealed against decisions by local authorities, f) contacted local officials or g) had other communication with decisionmakers?

Are you h) active in a political party, i) trade union, j) in other organizations or k) in political discussions?

For each local government area, the share of respondents replying 'yes' to the abovementioned questions were summarized. Due to the small number of survey respondents in many small local government areas, the index was constructed as a combination of the values for each local government area (50% weight) and the average value of all local government areas of the surrounding region (county) (50% weight) – assuming that there exist some degree of spatial spillovers and thus that civil entrepreneurship in a local government area is affected by its relative occurrence in surrounding local government areas.

Political entrepreneurship index

In order to measure the level of entrepreneurship in the local government organizations, a web-survey with questions about how local government aimed at discovering, evaluating and exploiting development opportunities was elaborated. The survey aimed at measuring the following components of local political entrepreneurship:

- | | |
|--|-------------|
| - Cooperation with local industry | 0-8 points |
| - Measures for strengthening local business climate | 0-13 points |
| - Co-financing of development projects with local industry | 0-3 points |
| - Cooperation with other municipalities | 0-2 points |
| - Development projects (co-financed by EU and national agencies) | 0-11 points |
| - Benchmarking, learning and competence development activities | 0-9 points |
| - Marketing | 0-7 points |

The survey was sent out to the directors of all Swedish local governments (municipalities and cities) in June 2009 and was followed up by telephone interviews. The response rate was 83%.

Score range: 0-53 points

Average: 31 points

Maximum: 50 points

Minimum: 11 points