Influence of social network structure on entrepreneurship participation --A study of 20 national cultures

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Abstract
By investigating differences in social networks among entrepreneurs in 20 cultures, this paper contributes to the debate on whether there is universality in the process of entrepreneurial networking. Representative samples of entrepreneurs were identified in the same manner in 20 countries from 2000 to 2004 (N=304,560). The sampling methodologies and the questions asked were similar across all countries. Logistic regression was used to test for significant regional interaction effects involving personally knowing an entrepreneur. Results are contrary to the existence of any mono-dimensional form of networking practice but do strongly support the existence of both variform universality (culture moderates the importance of networking) and functional universality (cultural similarities in networking practice
exist).

Keywords: culture, entrepreneurship, global entrepreneurship monitor (GEM), social network, universality.

Importance of entrepreneurial networking

This study contributes to the debate on whether there is universality in the process of entrepreneurial networking by investigating differences in social networks among entrepreneurs in 20 cultures.

Recent entrepreneurship literature has changed from viewing entrepreneurs as autonomous and rational decision makers toward viewing entrepreneurs as embedded in social networks (Hoang and Antoncic 2003). As a reaction to the former atomistic and under-socialized view of the entrepreneur, often taken in the psychological perspective (e.g., Brockhaus 1980), an increased recognition of the importance of social networks has developed since the mid 1980s.

Social networks (in diverse ways) provide entrepreneurs with a wide range of valuable resources not already in their possession and help them achieve their goals (e.g., Hansen 1995; Jenssen 2001; Ripolles and Blesa 2005; Welter and Kautonen 2005). Among the most important resources that networks can provide are:

- Information (sensible as well as non-sensible, diverse as well as non-diverse)
- Access to finance
- Access to skills, knowledge and advice (all aids to competency)
- Social legitimacy
- Reputation and credibility

Although difficulties exist in terms of how to measure social capital, it is more and more often argued that social capital is the value generated by social networks (Burt 1992). Burt argues that capital can be divided into three categories. Human capital is the knowledge and capacity within human beings; financial capital is the money in people's pockets; and social capital is the value of resources generated by people's social networks (Burt 1992).

Embeddedness and entrepreneurial participation

For decades sociologists have been interested in how people's social networks influence their status attainment (e.g., Granovetter 1973; Bourdieu 1983). Over these decades three propositions have been formulated: (a) social networks affect the outcome of instrumental actions, (b) the nature of resources obtained from social networks is affected by people's original position, and (c) the nature of resources obtained from social networks is affected by the strength of ties (Lin 2001). This interest in how social networks affect status attainment has also occupied entrepreneurship scholars (e.g., Aldrich and Zimmer 1986; Greve 1995). Entrepreneurship research shows that social networks affect opportunity recognition (Singh 2000), entrepreneurial intention (Hmieleski and Corbett 2006), entrepreneurial orientation (Ripolles and Blesa 2005) the vocational decision to become an entrepreneurs (e.g., Davidsson and Honig 2003; Morales-Gualdron and Roig 2005; De Clercq and Arenius 2006) and growth (Lee and Tsang 2001).

One of the essential results, which previous entrepreneurship research on social networks has shown, concerns embeddedness. People embedded in networks containing entrepreneurs tend to be more entrepreneurial oriented. People who have

close family members in business (Matthews and Moser 1995; Sanders and Nee 1996; Davidsson and Honig 2003; Menzies et al. 2006) or personally know someone who has started a business (Davidsson and Honig 2003; Morales-Gualdron and Roig 2005; Arenius and Kovalainen 2006; De Clercq and Arenius 2006; Menzies et al. 2006) seem to have a better chance of becoming entrepreneurs.

Davidsson and Honig (2003) found in their study in Sweden that people who have parents in business or have close friends or neighbours in business are more likely to become nascent entrepreneurs. In respect to personally knowing people who have started a business, De Clercq and Arenius (2006) found positive correlations in both their Belgium and their Finish sample. In an analysis of the 2001 global entrepreneurship monitor (GEM) database, considering a sample drawn across 29 countries, Morales-Gualdron and Roig (2005) also concluded that personally knowing someone who has started a business has a positive impact on people's decisions to become entrepreneurs. Analysing a similar sample, but only the Nordic countries and only women, Arenius and Kovalainen (2006) found the same relationship. Thus, previous research has strongly supported the proposition that personally knowing someone who has started a business is positively correlated with the decision to become an entrepreneur. In this paper we extend the existing results by adding a cultural perspective. The main proposition is that the effect of personally knowing someone who started a business in the past 2 years varies across cultures. This paper therefore contributes to the discussion on whether or not there is universality in the process of entrepreneurial networking.

Culture and entrepreneurial networking

Many previous empirical studies have investigated the impact of social networks in different contexts. Some have investigated specific industries and some have investigated specific regional areas. These context specific studies have given birth to a debate on the universal nature of social networks. In this context, 'universality' is a concept akin to 'mono-dimensionality'. It is argued that the forms, structures and nature of the networking process tend to be the same irrespective of the environment (particularly national environment) in which they take place. In particular it is argued that the networking process is essentially the same in every country.

In the context of received theory and research, two extreme ideal typical positions can be identified, although research places itself in between these extremes. They are to be perceived as pure thoughts on each end of a continuum. One extreme position argues that social networking plays a generic and universal role regardless of the culture and the industry in which entrepreneurs operate. There might be differences in how social networking is practiced, however, the role of research, according to this position, is to explore the common and generic elements across contexts. Greve and Salaff's (2003) comparison of Italy, Norway, Sweden and USA is along these lines. In contrast, the other extreme position argues that social networking is context determined. Here, networking differs dramatically depending on the culture and the industry in which entrepreneurs operate. According to this stream of arguments, it does not make sense to search for any generic, universal, mono-dimensional nature of entrepreneurial networking. Dodd et al. (2002) comparison of Scotland, Ireland, Greece, Japan, USA, Italy and Sweden follows this train of thought. Between these

extremes, the really interesting research question asks: 'to what extent is entrepreneurial networking either completely mono-dimensional or completely situation-specific?'

Although, the debate on the nature of entrepreneurial networking has continued for nearly two decades, empirical research still appears only occasionally. Except for a few studies (e.g., Freeman and Ruan 1997; Johannisson and Mønsted 1997), only one group of studies has specifically dealt with the issue of culture and entrepreneurial networking. This group of studies has used various surveys to collect more or less similar data on entrepreneurs' social networks in different nations: USA (Aldrich et al. 1989), Italy (Aldrich et al. 1989), Norway (Greve 1995), Sweden (Johannisson and Nilson 1989), Northern Ireland (Birley et al. 1991), Japan (Aldrich and Sakano 1995), Canada (Staber and Aldrich 1995), Scotland (Dodd et al. 2002) and Greece (Dodd and Patra 2002). Interest in most of these studies focused on international comparisons. The main research question was to investigate "... how culturally diverse entrepreneurial networks are" (Dodd and Patra 2002; 119). However, other research agendas influenced data collection in the different countries (Dodd and Patra 2002). Some studies focused specifically on young entrepreneurs, some on women, and some on urban or rural groups (Dodd and Patra 2002). Sample selection and questionnaire administration techniques also differed among the studies.

Even though these limitations have to be acknowledged, some international comparisons have been possible using this group of studies. Staber and Aldrich (1995) argued that: "at least some aspects of business networking are generic and that owners approach some tasks in similar ways in different environments" (Staber and Aldrich 1995; 443). Further, Dodd and Patra (2002) summarise the studies' results in the following manner: "In summary, the results from this series of linked (although not methodologically identical) studies indicate some homogeneity, suggesting a degree of generic universal entrepreneurial behaviour, and some heterogeneity, highlighting the importance of cultural differences" (Dodd and Patra 2002; 119).

Taking this analysis further a Greece-based study argued that cultural differences substantially alter the nature of entrepreneurial networks (Dodd and Patra 2002). A less conclusive argument was put forward in the same year by Dodd et al. (2002) arguing that "... while the general picture of a degree of broad international homogeneity in networking, offset by specific areas of national idiosyncrasy, continues to hold true, the network characteristics and activities of Scottish entrepreneurs display some interesting differences" (Dodd et al. 2002; 217). Greve and Salaff (2003) analysing the Norwegian, the Italian, the Swedish and the US data also acknowledge that differences exist, but concluded that "... cultural differences do not play a major role in networking" (Greve and Salaff 2003; 17).

Clearly, research in this area is struggling on how to interpret its results. Sometimes emphasis is put on similarities among entrepreneurial networks across countries, and argument for a degree of generic entrepreneurial networking is put forward. At other times, with the focus on dissimilarities, entrepreneurial networking is viewed as a culturally influenced phenomenon. The problems with reaching an agreement might be due to the high degree of cultural commonality among the countries that so far have been investigated—a view first advanced by Dodd and

Patra (2002). This suggests that when investigating the interrelationship between culture and entrepreneurial networks, more focus on cultural diversity is necessary.

The research conducted by researchers to date has been valuable because it has raised the essential issue of culture and social networks. However, future research needs more cultural diversity in order to improve our knowledge of the effect of culture on entrepreneurial networking. Further, greater homogeneity in sampling methodology is needed. Similar samples of entrepreneurs in each nation need to be compared if the research interest is about measuring the effect of culture. Otherwise, differences in samples might be due to the variation in sampling methodology.

The study presented in this paper investigated differences in entrepreneurial networking activities among entrepreneurs in 20 European countries. Representative samples of entrepreneurs were identified in the same manner in these countries and respondents were asked the same question regarding their social networks. The next section presents the hypotheses. Then the applied methodology is described before the findings are outlined. The paper ends with a discussion of the implications of the findings.

Hypothesis development

Entrepreneurial network theory

Some people have entrepreneurs in their social networks and some do not. Personal knowledge of an entrepreneur has been shown to be associated with a statistically significant increase in the likelihood that a person undertakes entrepreneurship him or herself (Davidsson and Honig 2003; Morales-Gualdron and Roig 2005; Arenius and Kovalainen 2006; De Clercq and Arenius 2006;). It may therefore be assumed that people who have entrepreneurs in their social networks have access to valuable resources. These resources vary and include: knowledge on the start-up processes; access to business contacts; and emotional support from people with similar career interests. These resources are not easily obtained by people without entrepreneurs in their social networks and our first hypothesis suggests that it is less likely for these people to become entrepreneurs.

Hypothesis 1 Belonging to a social network that includes one or more entrepreneurs increases an individual's likelihood of becoming an entrepreneur.

The cultural influence

Studies on cultural differences among nations are common as are studies on cross cultural management (e.g., Dickson et al. 2003). It is beyond the scope of this paper to review all this literature, however, recognition of established knowledge on cultural differences is appropriate. Hofstede's (1980) research is probably the most widely known and cited within the area of business ethics. He developed four dimensions to distinguish national cultural distinctions and collected data from IBM employees in 50 different countries. *Power distance* is the first dimension. It is a measure of the degree to which less powerful members of a society accept that

power is distributed unequally. The second dimension—*uncertainly avoidance*—measures the degree to which people in a society feel threatened by uncertainty. *Individualism*—the third dimension—measures the degree to which people in a society are concerned for their own and their immediate family members' well being. The final dimension—masculinity—measures the degree to which the dominating values in a society are achievement and success, as opposed to caring for others and quality of life.

One of the weaknesses of the previous research on entrepreneurial networking and culture is the cultural commonality among the cultures that were investigated. When more diverse cultures are investigated with respect to Hofstede's dimensions a cultural effect on entrepreneurial networking is expected.

Hypothesis 2 The impact of entrepreneurial networking on the likelihood of entrepreneurship depends on culture.

Methodology

Data: GEM

The GEM (Minniti et al. 2006) is an international project trying to detect whether and to what extent entrepreneurial activity varies across countries; what makes a country entrepreneurial; and how entrepreneurial activity affects a country's rate of economic growth and prosperity. The project was launched in 1999 with ten countries and since then new countries have joined the project each year. The project has generated an extensive database on a wide range of issues and factors germane to entrepreneurship worldwide. Every calendar year, each participating nation completes a GEM National Population Survey embracing a minimum of 2000 *randomly selected* adult respondents who are asked a variety of questions regarding their engagement and attitude towards entrepreneurship.

In this study 20 European countries are selected for investigation. The selected countries are those European countries that have participated in Global Entrepreneurship in at least one of the years from 2000 to 2004. Fifteen of the twenty nations investigated in this study have also been part of Hofstede's study of national culture. From his data, it is revealed that these countries represent a variety of cultures. They clearly show cultural differences among the countries. Some countries are similar on one or more dimension, but each country still possesses its own uniqueness in the way it blends all four cultural elements. A broad range of European regions are represented including Scandinavia, South Europe, East Europe, Central Europe, Great Britain and the Balkan States.

Accordingly, this study uses nation as a surrogate of culture. This is in line with Hofstede's (1980) approach to culture and follows the stream of research that has previously been completed on entrepreneurial networking and culture. Cultural diversity is more pronounced in this study compared to the cultural diversity observed in previous networking research suggesting that this study will detect cultural differences in entrepreneurial networking.

The cumulative number of GEM respondents in the selected countries for the 5 years (2000–2004) is 304,560 people of which 23,938 (8%) were classified as entrepreneurs. Some countries participated in each of the 5 years whereas others only took part some of the years. A contentious discussion takes place in entrepreneurship research concerning the definition and operationalisation of entrepreneurship. Broadly, this discussion can be divided into two perspectives. The first perspective (the opportunity perspective) argues that entrepreneurship is about discovery, evaluation, and exploitation of opportunities (Shane and Venkataraman 2000). It puts emphasis on entrepreneurship as a disequilibrium activity. The second perspective (the emergence view) regards entrepreneurship as 'firm emergence' or 'firm creation' (Gartner 1993). It emphasises evolutionary and dynamic aspects of entrepreneurship and focuses on organizing activities in a Weickian sense (Davidsson 2004). For its analytical purposes, the study reported in this paper took a very broad emergence perspective and focused on participation in ownership of new ventures as its definition of entrepreneurship.

Variable description

Dependent variable

The dependent variable is *entrepreneurship participation*. Respondents are engaged in entrepreneurship if:

1. they within the next 3 years alone or with others expect to start a new business, including any type of self-employment (discovery), or
2. if they alone or together with others actively are trying to start an independent new business they at least will own part of (start-up), or
3. if they alone or together with others currently own at least a part of the business they help manage from which they have not received salary for more than 42 months (young business).

Independent variables

The GEM data set used for this study contained questions capable of producing measures of the five independent variables classified below.

Know an entrepreneur (entrepreneurial networking) This binary variable is based on the 'yes' or 'no' answer to the following question: 'Do you personally know someone who started a business in the past 2 years'. This is the variable that is at the heart of our investigation. Previous research shows that 'know an entrepreneur' is a strong predictor of entrepreneurial participation, although previous studies have not investigated any cultural differences (Morales-Gualdron and Roig 2005; Arenius and Kovalainen 2006; De Clercq and Arenius 2006). The point of the statistical testing conducted in this study was to try to determine the effects of networking (isolated from the compounding influence of other factors) upon the three dependent variables and to investigate how culture moderates this effect. The remaining independent variables function as control variables.

Gender Peoples' gender was coded 1 for male and 2 for female. The entrepreneurial network literature indicates that gender influences entrepreneurial networking. Although results from all studies are still not thoroughly consistent, predominant emerging results indicate that female entrepreneurs have different social networks to male entrepreneurs (e.g., Runyan et al. 2006).

Age A respondent's exact age was recoded using two indicator variables—one for the age group between 30 and 49 years old and another for the age group at least 50 years old, with a reference group of younger than 30 years old. Previous literature shows that age affects how entrepreneurs use and activate their social networks (e.g., Greve and Salaff 2003). Entrepreneurs' age influences the resources already in their possession, and thus, the resources entrepreneurs need to obtain from their social networks. Entrepreneurs' age may also influence the generation of the general network from which resource persons can be activated.

Competence This binary variable is based on the 'yes' or 'no' answer to the following question: 'Do you have the knowledge, skill and experience required to start a new business'. The entrepreneurship literature argues that competence (otherwise called 'human capital') impacts on entrepreneurship (Davidsson and Honig 2003; Cuervo 2005). The purpose of social networking is to gain access to resources not already held by the entrepreneurs. Thus, competence impacts on which resources are needed and thus how social networking is practiced.

Alertness This variable identifies people who think that in the next 6 months there will be good opportunities for starting a business in the area where they live. Discoveries of new opportunities are crucial to the entrepreneurial process (e.g., Shane and Venkataraman 2000). Being alert to opportunities seems to have a positive impact on entrepreneurship (e.g., Ardichvile and Cardozo 2000). Entrepreneurial networking is a way of stimulating alertness. Research has shown that social networks are important, influential factors in opportunity recognition (Ardichvili and Cardozo 2000).

Statistical analysis

In order to test the two hypotheses, logistic regression (Hosmer and Lemeshow 2000) was used as the principal statistical technique of the study. Specifically, interactions effects were used to test for cultural differences in networking activity (Cozby 1997).

Findings

Descriptive statistics

The mean age of entrepreneurs in the 20 European countries is 36 years, with a range from 31 years old in Portugal to 39 year old in the Netherlands and United

Kingdom. 36% of the entrepreneurs in the sample were female, ranging from 31% female entrepreneurs in Sweden to 42% in United Kingdom. However, Minniti et al. (2005) suggest that women may have been over sampled in this GEM sample. The percentages of entrepreneurs who are networking (also termed *networking entrepreneurs* further on in this paper), in that they have a personal relationship with someone who started a business in the last 2 years, ranged from 48% in Greece to 82% in Iceland with an average of 64% throughout the 20 countries.

The importance of personally knowing an entrepreneur

The logistic regression results reported in Table 1, tested the relationship between knowing an entrepreneurs and the participation in entrepreneurship after controlling for gender, age, competence and alertness. The regression in Table 1 predicting entrepreneurship participation also includes interaction effects used to test hypothesis 2. Although, it is normal procedure to separate main and interaction effects, this is not done in this paper. The specific parameter estimates are only slightly different when including interaction effects and their directions and significance levels are the same. Thus, analysis of only main effect yielded the same conclusions.

Table 1 shows that among the independent variables, having the knowledge, skills and experience required to start a business (competence) is the strongest predictor of entrepreneurship participation. Controlling for the effect of the other variables, people who think they have the knowledge, skills and experience required to start a business have 4.68 times better odds of entrepreneurship participation ($p<0.01$), compared to people who do not think they have this competence. Being a female reduces the odds of being an entrepreneur by about 32% ($p<0.01$) if we control for the effect of the other variables and age also seems to have a significant negative impact on entrepreneurship with the odds of entrepreneurship 74% lower for people aged 50 and older compared to people under 30. Finally, the last control variable—*alertness*—also seems to be a strong predictor of entrepreneurship participation ($p<0.01$), increasing the odds of entrepreneurship by a factor of 1.85 when we control for the other variables. All these results concerning the control variables support previous research.

When we control for the above variables, knowing a person who started a business in the past 2 years is also a strong predictor of whether people are entrepreneurs. The coefficient *B* for knowing an entrepreneur is positive, which shows that having entrepreneurs in one's social network increases the probability or the odds of being an entrepreneur.

For networking people the odds ratio is a significant 2.65 ($p<0.01$). This means that for entrepreneurial networking people the odds of being an entrepreneur are 2.65 times higher than the odds for non-networking people. In other words, personally knowing someone who started a business in the past 2 years increases the odds of being an entrepreneur by 165% (holding the other conditions constant). Thus, Table 1 confirms previous research arguing that social networks impact upon a person's tendency to be an entrepreneur, supporting the first hypothesis.

Supplemental analyses, dividing entrepreneurship participation into three succeeding stages of entrepreneurship participation or three stages of the entrepreneurial

Table 1 Interaction model for entrepreneurship participation

	Discovery (N=123,047; R^2=0.23)		Start-up (N=157,435; R^2=0.18)		Young (N=157,435; R^2=0.17)		Entrepreneurship participation (N= 125,657; R^2=0.25)	
	B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)
Networking	0.94**	2.57	1.10**	3.01	0.94**	2.57	0.98**	2.65
Gender	−0.36**	0.70	−0.34**	0.71	−0.35**	0.70	−0.38**	0.68
Age (reference is young)								
Mid (30–49 years old)	−0.56**	0.57	0.08*	1.09	0.22**	1.25	−0.37**	0.69
Old (50 years old)	1.57**	0.21	−0.59**	0.56	−0.64**	0.53	−1.33**	0.26
Competence	1.80**	3.97	1.75**	5.77	1.97**	7.15	1.54**	4.68
Alertness	0.66**	1.93	0.71**	2.04	0.38**	1.47	0.62**	1.85
Interaction network effect (reference is Germany)								
Greece	−1.13**	0.33	−1.24**	0.29	−1.64**	0.19	−1.29**	0.28
Netherlands	0.13	1.14	−0.31	0.74	−0.41*	0.66	−0.10	0.90
Belgium	−0.06	0.95	−0.62**	0.54	−0.06	0.94	−0.13	0.88
France	0.02	1.03	−0.40*	0.67	0.32	1.38	−0.05	0.95
Spain	0.09	1.10	−0.55**	0.58	−0.60**	0.55	−0.22**	0.80
Hungary	0.20	1.22	−0.33*	0.72	−0.19	0.83	0.05	1.05
Italy	−0.32*	0.72	−0.89**	0.41	−0.36	0.70	−0.40**	0.67
Switzerland	−0.36	0.70	−0.60*	0.55	−0.25	0.78	−0.43**	0.65
U. Kingdom	−0.00	1.00	−0.22*	0.80	−0.06	0.94	−0.03	0.97
Denmark	−0.19	0.83	−0.69**	0.50	−0.32	0.72	−0.29*	0.75
Sweden	−0.28**	0.76	−0.18**	0.83	−0.16	0.86	−0.27**	0.76
Norway	0.11	1.11	−0.48*	0.62	−0.28	0.75	−0.01	1.00
Poland	0.14	1.15	−0.42	0.66	−0.34	0.71	−0.10	1.11
Portugal	−0.20	0.82	−0.76**	0.47	−0.63*	0.53	−0.47	0.63
Ireland	0.12	1.12	−0.09	0.92	−0.01	0.99	0.13	1.13
Iceland	−0.35*	0.71	−0.98**	0.38	−0.62**	0.54	−0.54**	0.58
Finland	0.03	1.03	−0.57**	0.57	0.02	1.02	−0.12	0.89
Croatia	−0.16	0.85	−0.51	0.60	0.07	1.07	−0.29	0.75
Slovenia	−0.23	0.79	−0.53	0.61	−0.16	0.85	−0.28*	0.76
Constant	−2.62**	0.07	−4.45**	0.01	−4.98**	0.01	−2.48**	0.08

Source: International GEM population surveys 2000–2004. The effects from nations are not shown in the regressions

*P<0.05

**P<0.01

process (discovery stage, start-up stage, young business stage), reveal that entrepreneurial networking plays a different role at different stages of the entrepreneurial process. In the discovery stage, for networking people the odds of being an entrepreneurs are 2.57 times higher than for non-networking people (p< 0.01), while the odds in the start-up stage is 3.01 (p<0.01) and in the young business stage 2.57 (p<0.01).

As noted, the results from Table 1 support hypothesis 1 arguing that social networks impact upon a person's tendency to be an entrepreneur. However, the variations in odds ratios for networking across the different stages of the entrepreneurial process suggest that this impact is greatest in the start-up stage and lowest during the discovery stage and the young business stage.

Culture influence

In order to investigate cultural impacts on the relationship between entrepreneurial networking and entrepreneurship, interaction effects between networking and country have been added to the regressions. An interaction effect is "... the differing effect of one independent variable on the dependent variable, depending on the particular level of another independent variable ..." (Cozby 1997; 314). Thus, with use of interaction effects it is possible to investigate the effect of country on the impact of networking on entrepreneurship participation. The different interaction effect variables are obtained by multiplying networking with each of the country indicators. Networking Germans were chosen as the reference group because there is a good sample of data for this country making the results more reliable and because its entrepreneurship characteristics can be considered average rather than extreme. Three countries, United Kingdom, Germany and Sweden, are particularly well represented in the GEM population surveys. However, the United Kingdom is unusual when compared to other countries in that the entrepreneurs tend to be older, more likely to be female and less likely to undertake entrepreneurial networking. Sweden is also somewhat unusual in that it has the lowest percentage of female entrepreneurs. This left Germany as the best option for the reference group. Table 1 shows the results of the regression model for entrepreneurship participation, allowing for country interaction effects with networking, while Table 2 ranks the countries in terms of their networking odds ratios.

Table 1 shows that for Germans knowing an entrepreneur increases the odds of entrepreneurship by 165%. It also indicates that the effect of knowing someone who started a business within the last 2 years differs significantly among European countries. In Greece ($p<0.01$), Spain ($p<0.01$), Italy ($p<0.01$), Switzerland ($p<0.01$), Denmark ($p<0.05$), Sweden ($p<0.01$), Iceland ($p<0.01$) and Slovenia ($p<0.05$) the effect of knowing someone who started a business recently differs significantly from the effect in Germany. Thus, hypothesis 2 arguing that the impact of entrepreneurial networking on the likelihood of entrepreneurship participation depends on culture can not be rejected.

Supplemental analyses: Dynamic patterns

Supplemental analyses looking separately at each of the three succeeding stages of the entrepreneurial process reveal that every country, except Ireland, Croatia and Slovenia, differs significantly from Germany in at least one of the three stages. In the discovery stage the effect of knowing an entrepreneur on entrepreneurship participation does not differ significantly between entrepreneurs in Germany and entrepreneurs in the Netherlands, Belgium, France, Spain, Hungary, Switzerland, United Kingdom, Denmark, Norway, Poland, Portugal, Ireland, Finland, Croatia and Slovenia, whereas entrepreneurs in Greece ($p<0.01$), Italy ($p<0.05$), Sweden ($p<0.01$) and Iceland ($p<0.05$) have significantly weaker networking effects than Germany with odds ratios of respectively 0.83, 1.86, 1.93 and 1.80 compared to Germany's odds ratio of 2.57. In the start-up stage more countries differed from Germany in networking effect than in the discovery stage. Only for entrepreneurs in the Netherlands, Sweden, Ireland, Croatia and Slovenia was there no significant

Table 2 National comparison for the importance of the networking/entrepreneurship relationship

	Discovery			Start-up			Young			Entrepreneurship participation		
Overall network effect	*B*	Order	Exp (*B*)	*B*	Order	Exp (*B*)	*B*	Order	Exp (*B*)	*B*	Order	Exp (*B*)
Greece	−0.19	20	0.83	−0.14	20	0.87	−0.70	20	0.50	−0.31	20	0.73
Netherlands	1.07	3	2.92	0.79	4	2.20	−0.53	16	1.70	0.88	7/8	2.41
Belgium	0.88	11	2.41	0.48	15	1.62	0.88	6/7	2.41	0.85	10	2.34
France	0.96	8	2.61	0.70	7	2.01	1.26	1	3.53	0.93	6	2.53
Spain	1.03	6	2.80	0.55	12	1.73	0.34	17	1.40	0.76	11	2.14
Hungary	1.14	1	3.13	0.77	6	2.16	0.75	10	2.12	1.03	2	2.80
Italy	0.62	17	1.86	0.21	18	1.23	0.58	15	1.79	0.58	16	1.79
Switzerland	0.58	19	1.79	0.50	14	1.65	0.69	11	1.99	0.55	17	1.73
U. Kingdom	0.94	10	2.56	0.78	5	2.18	0.88	6/7	2.41	0.95	5	2.59
Denmark	0.75	13	2.12	0.41	16	1.51	0.62	13	1.86	0.69	14/15	1.99
Sweden	0.66	16	1.93	0.92	2	2.51	0.78	8/9	2.18	0.71	12	2.03
Norway	1.05	5	2.86	0.62	9	1.86	0.66	12	1.93	0.97	4	2.64
Poland	1.08	2	2.94	0.68	8	1.97	0.60	14	1.82	0.88	7/8	2.41
Germany	0.94	9	2.57	1.10	1	3.01	0.94	4	2.56	0.98	3	2.66
Portugal	0.74	14	2.10	0.34	17	1.40	0.31	19	1.36	0.51	18	1.67
Ireland	1.06	4	2.89	0.91	3	2.48	0.93	5	2.53	1.11	1	3.03
Iceland	0.59	18	1.80	0.12	19	1.13	0.32	18	1.38	0.44	19	1.55
Finland	0.97	7	2.64	0.53	13	1.70	0.96	3	2.61	0.86	9	2.36
Croatia	0.78	12	2.18	0.59	10	1.80	1.01	2	2.75	0.69	14/15	1.99
Slovenia	0.71	15	2.03	0.57	11	1.77	0.78	8/9	2.18	0.70	13	2.01

Source: International GEM population surveys 2000–2004

difference from German entrepreneurs. Meanwhile, entrepreneurs in Greece ($p<0.01$), Belgium ($p<0.01$), France ($p<0.05$), Spain ($p<0.01$), Hungary ($p<0.05$), Italy ($p<0.01$), Switzerland ($p<0.05$), United Kingdom ($p<0.05$), Denmark ($p<0.01$), Norway ($p<0.01$), Poland ($p<0.05$), Portugal ($p<0.01$), Iceland ($p<0.01$) and Finland ($p<0.01$) all had weaker networking effects than entrepreneurs in Germany. No countries had significantly stronger networking effects than Germany in the start-up stage. In the young business stage the effect of networking on entrepreneurship participation did not differ between entrepreneurs in Germany and entrepreneurs in Belgium, France, Hungary, Italy, Switzerland, United Kingdom, Denmark, Sweden, Norway, Poland, Ireland, Finland, Croatia and Slovenia, whereas entrepreneurs in Greece ($p<0.01$), the Netherlands ($p<0.05$), Spain ($p<0.01$), Portugal ($p<0.05$) and Iceland ($p<0.01$) all had significantly weaker networking effects than Germany with odds ratios of respectively 0.50, 1.70, 1.40, 1.36 and 1.38 compared to the German odds ratio of 2.57.

Thus, the supplemental analyses show that the cultural impact on the effect on entrepreneurship participation varies across the entrepreneurial process, indicating some dynamic patterns.

Empirical results support that the effect of personally knowing someone who started a business in the last 2 years differs among entrepreneurs in different countries. The ranking of networking importance in Table 2 shows that the ranking of some countries differ dramatically among the three stages. Overall Ireland has the

strongest relationship between knowing an entrepreneur and entrepreneurship participation while Greece has the weakest relationship. Indeed Greece has the weakest relationships between networking and entrepreneurship participation in all three stages of the entrepreneurship. In the discovery stage Hungary has the strongest relationship; in the start-up Germany has the strongest relationship, while France has the strongest relationship in the young business stage.

Some countries are consistently ranked near the bottom (e.g., Greece and Finland) or the top (e.g., Ireland), whereas other countries vary in their ranking across the three stages. For instance, the Netherlands is ranked third and forth in the discovery stage and the start-up stages, but 16th in the young business stages. Sweden is ranked 16th in the discovery stage, second in start-up stage and 8th/9th in the young business stage. And, as a final example, Croatia is ranked 12th in the discovery stage, 10th in the start-up stage and second in young business stage. Accordingly, it seems that the effect of personally knowing an entrepreneur follows different patterns in different countries. Table 3 identifies the five different networking patterns that were found in this study.

Table 3 presents five different networking patterns among groups of countries. To some countries (the Netherlands, Spain, Hungary, Poland and Portugal) networking—or personally knowing someone who started a business in the past 2 years—is most important in the discovery stage, second most important in the start-up stage and least important in the young business stages. To entrepreneurs in Italy, United Kingdom, Denmark, Norway, Ireland, Iceland, Finland and Belgium networking is also most important in the discovery stage, but second most important in the young business stage and least important in the start-up stage. The third pattern of networking applies to Greece and Germany. Here knowing an entrepreneurs is most important in the start-up stage, second most important in the discovery stage and least important in the young business stage. In France, Croatia, Slovenia and Belgium networking is most important in the start-up stage, second most important in the young business stage and least important in the discovery stage. In the fifth and last group including only Sweden, networking is also most important in the young business stage, but second

Table 3 Different networking patterns

Networking pattern	Ranking of networking importance	Countries
A	Discovery stage; start-up stage; young; business stage	Netherlands, Spain, Hungary, Poland, Portugal
B	Discovery stage; young business stage; start-up stage	Italy, United Kingdom, Denmark, Norway, Ireland, Iceland, Finland, (Belgium)
C	Start-up stage; discovery stage; young business stage	Greece, Germany
D	Start-up stage; young business stage; discovery stage	France, Croatia, Slovenia, (Belgium)
E	Young business stage; discovery stage; start-up stage	Sweden

Source: International GEM population surveys 2000–2004

most important in the discovery stage and least important in the young business stage. Thus, the supplemental empirical results suggest not only that the effect of knowing an entrepreneur varies among countries, but also that these variations depend on stages of the entrepreneurial process.

Discussion and conclusion

In general, the empirical results show that entrepreneurship participation is significantly increased by knowing someone who started a business in the past 2 years. However the impact from networking changes across culture and during the entrepreneurial process. At some stages of the entrepreneurial process entrepreneurs in some countries apply similar networking practice, whereas other countries exhibit different networking practice. The similarities and differences in networking practice among entrepreneurs in different countries also differed during the entrepreneurial process.

We recognise at the outset that it is a major limitation of this study that the data set only contains one question associated with social networks. Despite this limitation, the study is potentially valuable for its power of falsification. With respect to hypothesis 1 it could be argued that if it turned out that there is no difference between entrepreneurs and non-entrepreneurs as to whether their network includes an entrepreneur or not, one would be very hard-pressed to remain comfortable with the assumption that networks matter at all to entrepreneurship participation. Further, with respect to hypothesis 2 it could be argued that if it turned out that there is no difference in the effect of knowing an entrepreneur in different countries one would be very hard-pressed to remain comfortable with the assumption that networking behaviour is cultural dependent. In short, even with only a single question concerning social networks this study provides support for the importance of entrepreneurial networking as cultural dependent behaviour.

Thus, the results presented in this study to some extent confirm previous evidence of cultural differences in networking practice adopted by entrepreneurs (e.g., Staber and Aldrich 1995; Dodd and Patra 2002) and argue against simple universal networking activity. The study indicates that entrepreneurial networking behaviour might differ among entrepreneurs living in different cultures, but not among all cultures. It also indicates that such differences vary throughout the entrepreneurial process.

In 1980 Lonner introduced different universal relationships into the cross-cultural management literature. The term ‘simple universal’ means a phenomenon is constant worldwide. ‘Variform universal’ refers to a general relationship that holds across countries, but which is moderated by culture. ‘Functional universal’ refers to situations where relationships are the same within groups. These three dimensions allow researchers to think more carefully and with greater sophistication about the nature of universality (Dickson et al. 2003). It is not longer a matter of either being totally universal or totally cultural determined.

This study supports the existence of variform universality. It suggests that cultural differences exist in networking practice. The study also indicates the existence of functional universality of entrepreneurial networking. This means, that although

differences exist in networking practice across cultures similar patterns within certain groups of cultures can be found.

Admittedly, it is difficult to identify the cultural similarities within the five groups from Table 3 which perhaps suggest that is not only the culture associated with the countries that determines the networking patterns but other phenomena and combinations of phenomena linked to each country, such as economic development, population density, physical infrastructure, entrepreneurship policy and programs or technological development. Using other factors on the national level, including those just suggested, in order to explain how networking practice differ across countries is an important task for future research.

The mechanisms within culture have not been directly investigated in this study. Future research is therefore needed to investigate not if networking differs among cultures, but rather what mechanisms drive the diversity of entrepreneurial networking. Future research should address which values enforce networking in different stages of the entrepreneurial process. This will move research closer to explain the specific and distinct nature of entrepreneurial networking behaviour in different cultures. It is also essential that other dimensions of social networking are investigated. For example it would be useful to study how various structural characteristics such as network size, network density, structural holes, etc. vary across cultures. Also how relational characteristics vary across culture is essential for future research. And finally, in line with this study it would be useful to study the impact of knowing an unsuccessful entrepreneur as opposed to knowing a successful entrepreneur.

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