See discussions, stats, and author profiles for this publication at: https://www.researchgate.net/publication/259007403

Effects of entrepreneurs' networking with national values on job growth expectations: A two-level analysis for the MENA region and Denmark

Article in International Journal of Business and Globalisation - January 2013 DOI:10.1504/IJBG.2013.056879

CITATIONS		READS	
9		288	
2 authoi	s:		
	Tareq Sadeq		Zakia Setti
	Birzeit University	25	Ecole des Hautes Études Commerciales
	7 PUBLICATIONS 10 CITATIONS		16 PUBLICATIONS 81 CITATIONS
	SEE PROFILE		SEE PROFILE

Some of the authors of this publication are also working on these related projects:

Early Childhood Development Investment Case, Costing and Financing Strategy for children from 0 to age 8 in the West Bank and the Gaza Strip View project

Project

Global entrepreneurship monitor View project

Effects of entrepreneurs' networking with national values on job growth expectations: a two-level analysis for the MENA region and Denmark

Tareq Sadeq*

Mathematics Department, Birzeit University, P.O. Box 14, Birzeit, West-Bank, Palestine E-mail: tsadeq@birzeit.edu *Corresponding author

Zakia Setti

Department of Sociology, University of Alger 2, Boulevard Djamel Eddine El Afghani, Bouzareah, 16032, Algiers, Algeria E-mail: zsetti@gmail.com

Abstract: Over the last three decades, the literature has dealt with the roles of networks and advisors in business success. This paper investigates the effect of networking on job growth aspirations of early-stage entrepreneurs in Denmark and 14 countries in the Middle East and North Africa (MENA) region. Data are provided by the Global Entrepreneurship Monitor (GEM) teams in these countries. The paper uses a two-level hierarchical linear regression model. The results highlight the important factors affecting growth expectations, including networking effects. These results are consistent with the literature findings and may also add new features to entrepreneurship research.

Keywords: networking; growth expectation; hierarchical linear model.

Reference to this paper should be made as follows: Sadeq, T. and Setti, Z. (2013) 'Effects of entrepreneurs' networking with national values on job growth expectations: a two-level analysis for the MENA region and Denmark', *Int. J. Business and Globalisation*, Vol. 11, No. 4, pp.443–459.

Biographical notes: Tareq Sadeq is an Assistant Professor of Applied Mathematics and Statistics to Economics. He is a member of the GEM-Palestine team. His research interests are entrepreneurship, labour market and macroeconometrics.

Zakia Setti is a Teaching Assistant at the University of Algiers 2, Faculty of Humanities and Social Science, Department of Sociology. She is an Associate Researcher at the Center of Research in Applied Economics for Development (CREAD) and member in the division 'Firm and industrial economy'. Her research interests are unemployment and social exclusion, youth, and entrepreneurship.

1 Introduction

In recent years, a particular interest in networks has pervaded entrepreneurship research. This literature assumes that the entrepreneur is embedded in a given social context, wherein he is connected by networks of relationships. These relationships provide the necessary resources to launch and perform business (Granovetter, 1985, 1995). Many studies confirm that networks, among other things, contribute to the growth of businesses (Birley, 1985; Aldrich and Zimmer, 1986), by providing valuable resources required during different phases of their development. Klyver et al. (2008) identified the most important resources provided by social networks and contributing to the performance of business: information, access to finance, access to skills, knowledge and advice, social legitimacy, reputation and credibility.

Growth, or business performance, can be measured in two ways: the increase in the number of employees and the increase in the business turnover (Janssen, 2004). However, most economists and sociologists (Janssen, 2004; Delmar, 2006) argue that job growth is typically the most important measure of business performance; it estimates the economic contribution of entrepreneurship to the common welfare (Dunkelberg and Cooper, 1982).

In this study, we are interested in testing the impact of social networking on growth expectations for early-stage entrepreneurs in Denmark and the MENA region. Here the question is about the way in which entrepreneurs, networking in their national context, affect the entrepreneurial growth expectation.

2 Literature review

The network approach has become one of the most popular theoretical perspectives in debating entrepreneurship and small business. The approach "focuses on entrepreneurship as embedded in a social context, channeled and facilitated or constrained and inhibited by people's positions in social networks" [Aldrich and Zimmer, cited in Premaratne (2002, p.4)]. Thus, entrepreneurial behaviour should not be viewed as an isolated and autonomous individual act, but as an act embedded in social networks. Following this argument, networks have been considered as a key concept for investigating the creation and development of new ventures. Thus networks have been shown as the best solution for entrepreneurial effectiveness (Donckels and Lambrecht, 1995; Birley and Cromie, 1988) by providing access to the valuable resources and competitive advantage required in different phases. Firms, being evolutionary in nature (Aldrich and Ruef, 2006), face different problems and need different resources and support during different stages of business growth. Hence, networks are dynamic not static (Butler and Hansen, 1991) and change with the development of the business.

Butler and Hansen (1988) claim that social networks are very important in initialising the entrepreneurial process and add that "... different types of networks have to be developed in a more proactive manner as the functional and strategic needs of the organization develop". In the analytic model of network development, entrepreneurial networks are divided into two generic types (Birley and Cromie, 1988; O'Donnell et al., 2001): personal networks and professional networks. The first includes all those family, friends and acquaintances, referred to by others as informal networks (Birley, 1985; O'Donnell et al., 2001). Professional networks or formal networks include all those

individuals or organisations, such as banks, accountants or lawyers with whom the entrepreneur has a relationship, primarily concerned with his business.

Indeed, the model of network development proposed by Birley and Cromie (1988) presumes the move from the start-up networks, where informal or personal relationships predominate, to the growth network where professional networks prevail. When the entrepreneur expresses an aspiration of growth, the advice and assistance offered from the personal network become less relevant or inadequate.

According to Martinez and Aldrich (2011), it is not only that the intensity of entrepreneurs' networks affects the entrepreneurial process, but also that the diversity of networks affects entrepreneurial performance at all stages of development of the business.

Gender differences in networking are a common issue in the entrepreneurship literature. Many studies (Aldrich, 1989; Aldrich and Ruef, 2006; Manolova et al., 2007) have discussed gender differences in the composition of networks; where women's networks are more biased than men's towards a private or personal environment. Manolova et al. (2007) find that the networking effect on growth expectations is significantly higher for females than for males in Bulgaria.

Private or personal environment networks are important social capital inputs in the entrepreneurial process, since they provide services and financial possibilities that do not exist in the market. However, a few studies (Platteau, 2000; Hoff and Sen, 2006; Luke and Munshi, 2006) identify an adverse effect of private networking, where it can be considered as an obstacle to entrepreneurial growth. Entrepreneurs in modern and high growth sectors may be confronted with having to share knowledge with less successful individuals. Gargiulo and Benassi (1997) argue that the strength of family ties may limit entrepreneurs' ability to control the business composition and tasks.

Both endogenous growth theory and evolutionary growth theory emphasise that the traditional factors of production such as labour or capital are subject to diminishing returns, while investment in knowledge has increasing returns, due to knowledge spillovers between economic actors (e.g., Romer, 1990). Endogenous growth theory argues that the most advanced economies with their superior systems of innovation, profit more from investment in knowledge than less advanced economies. R&D efforts and scientific research are still overwhelmingly concentrated in the most advanced economies (Szirmai, 2008, 2011).

Beside the influence of social networks on the entrepreneurial process, several studies have shown the influence of cultural values on entrepreneurial activity. In many cases cultural variables have been theorised and modelled as moderating of entrepreneurial outcomes (Hayton et al., 2002).

Indeed, the contextual factors (Acs and Autio, 2009) and national values have an important effect on entrepreneurial growth aspirations. According to Acs and Autio (2009) the entrepreneurial behaviours cannot be fully understood without giving due attention to the context in which these behaviours are anchored.

The literature covers neither topics related to entrepreneurial growth in the Middle East and North-Africa (MENA) region, nor the effect of networking on entrepreneurial decisions concerning growth. The Global Entrepreneurship Monitor GEM-MENA regional report for 2009 (IDRC, 2010) shows that MENA entrepreneurs are receiving advice mainly from family and friends (51%), while only 5% of early-stage entrepreneurs receive advice from professional sources.

3 Conceptual model

Our model explains the variations in employment growth expectations of early-stage entrepreneurs, which is the dependent variable. The concepts of the model are extracted from the research questions of how model predictors, including entrepreneurs' networking, affect growth expectations in their regional and national contexts. The model controls for the type of networking to study i.e. which type of networking has more effect on growth expectations. Moreover, the model analyses how risk aversion, another controlling variable, affects the impact of networking on growth expectations.

We also study how national values, such as the Human Development Index (HDI), policies promoting economic growth, trust, and traditional values, influence the effect of networking on growth expectations.

4 Hypotheses

Our research focuses on the effect of networking on growth expectations, and tests the effect of the density and diversity of networks. Martinez and Aldrich (2011) support the hypothesis that the diversity of networks has a positive effect on entrepreneurial performance.

- H1 Density of entrepreneurs' networks has an effect on their growth expectation.
- H2 Diverse (or heterogeneous) networks positively affect the growth expectation of entrepreneurs.

Gender differences as discussed in the literature are not only at a marginal level; the networking effect is different between males and females (Manolova et al., 2007).

H3 Females are more affected than males by networking

Acs and Autio (2009) argue that national values of taxation and intellectual property protection have not only significant marginal effects on growth expectations, but they also moderate the effect of individual education and income. Schøtt (2010) argues that entrepreneurs' networks are affected by cultural values. This paper focuses on the effects of networking; we thus include other national variables related to culture and development of the country; specifically secular rationalism, mean years of schooling and the HDI. Thus, the following hypotheses are investigated.

- H4 Entrepreneurs' networking has a greater effect on growth expectations in more secular (less traditional) societies.
- H5 Entrepreneurs' networking has a greater effect on growth expectations in more developed economies.

5 Methodology

The methodology used in this paper is similar to that used by Autio and Acs (2010). Two-level mixed linear regression models are estimated on panel data (cross-sectional

and cross-countries). The different models will be estimated by Restricted Maximum Likelihood estimation method.

In this paper, we use Global Entrepreneurship Monitor (GEM) data, at the individual level, for early-stage entrepreneurs in 14 countries in the MENA region in addition to Denmark over the years 2009, 2010 and 2011. The 15 country data sets are pooled into one data set to estimate a hierarchical model (cross-sectional and country level); variations across years are ignored. The following table explores the number of observations for each country.

Country	Year .	survey was adminis	Total		
Country –	2009	2010	2011	10101	
Algeria	595	0	1,592	2,187	
Denmark	229	303	187	719	
Egypt	0	996	0	996	
Iran	664	1,308	1,319	3,291	
Jordan	326	0	0	326	
Lebanon	610	0	0	610	
Morocco	477	0	0	477	
Pakistan	0	877	657	1,534	
Palestine	331	726	0	1,057	
Saudi Arabia	0	278	0	278	
Syria	309	0	0	309	
Tunisia	0	643	0	643	
Turkey	0	0	680	680	
United Arab Emirates	0	0	254	254	
Yemen	570	0	0	570	
Total	4,111	5,131	4,689	13,931	

Table 1Number of observations by country and year of survey

In the baseline model, the dependent variable is the expected jobs growth rate in five years by early-stage entrepreneurs. Based on the literature, fixed effect variables are: gender, age, education level dummies, fear of failure dummy (risk aversion), income level dummies, number of owners, firm age, log of firm percentage of customers outside the country (exports), number of people who provided advice from the private environment (family or friends), number of people who provided advice from the work environment (work colleagues or current boss), number of people who provided advice from the professional environment (somebody with business experience, researcher, inventor, bank, lawyer, accountant, or public advising services for business), number of people who provided advice from the market environment (someone who is starting a business, collaborating firm, competing firm, suppliers, or customers), and number of people who provided advice from the international environment (somebody in another country or somebody who came from abroad). In addition to these individual-level variables, the model contains country-level variables: HDI, country mean years of schooling, and country ranking of secular rationalism. The model controls for the variable country as a random effect variable. The intercept coefficient is assumed to be

variable across countries, where it is composed of a fixed effect coefficient (γ_0) and a random effect component (u_i). For the random effect, we report the estimated variance.

$$\beta_{0j} = \gamma_0 + u_j \tag{1}$$

6 Results

Before studying the research hypotheses, we explore early-stage entrepreneurs' networks. In the MENA region, networks are denser in private and work environments compared with the more skilled environments: 85.1% of early-stage entrepreneurs use private networks, 48.6% use work environment networks, 22.5% use professional environment networks, 25.8% use market environment networks, and only 14.5% use international environment networks. However, in Denmark, networks are denser in professional and market environments; 74.3% of early-stage entrepreneurs use private environment networks, 69.5% use work environment networks, and 58.8% use professional environment networks, 69.5% use market environment networks, and 58.8% use professional environment networks, and 25.6% use international environment networks, and 25.6% use international environment networks.

Figure 1 Growth expectation rate (vertical axis) vs. HDI (horizontal axis) (see online version for colours)



When we explore correlations between national-level variables and growth expectation rates, we find that HDI is negatively correlated to growth expectation rates. This contradicts our earlier belief and theories discussed in the literature, notably Szirmai (2008, 2011). Thus, a scatter diagram between growth expectation rates and the HDI (Figure 1) finds that Yemen is an extreme case with a low HDI and a high growth expectation. Yemen changes the result, where a positive correlation between HDI and growth expectations is found after excluding Yemen. Similarly, Yemen is an extreme case in the relationship between growth expectations and mean years of schooling (Figure 2). The correlation coefficient is negative when Yemen is included, but close to

zero when Yemen is excluded. Moreover, the relationship between growth expectations and secular rationalism (Figure 3) differs if Denmark is included, where a negative correlation is found when Denmark is included, but a positive correlation is found if Denmark is excluded. To control for these two extreme values (Denmark and Yemen), we add to the list of control variables one dummy variable for Denmark and one dummy variable for Yemen.

Figure 2 Growth expectation rate (vertical axis) vs. mean years of schooling (horizontal axis) (see online version for colours)



Figure 3 Growth expectation rate (vertical axis) vs. secular rationalism (horizontal axis) (see online version for colours)



The baseline model estimation results, reported in Table A1 in the Appendix, illustrates that entrepreneurs who are risk-averse expect lower growth of jobs in the next five years, while there are no significant differences in growth expectation rate due to gender. The growth expectation rate is lower for all education levels than that for graduate and/or experience level. There are significant differences in growth expectation rates relative to the highest educational attainment (graduate and/or experience), except for the post-

secondary category. However, the gap is decreasing for higher education levels. Income is found to be a significant factor, where the lowest income category has a significantly lower growth expectation rate. Older entrepreneurs and owners of older enterprises have lower growth expectations for the next five years, while entrepreneurs who have more partners expect higher growth rates, by 1.27%, for each additional owner.

Density of networks in professional and international environments has a positive significant impact on growth expectation rates. However, private networking negatively affects growth expectations. This result means that family, friends, and neighbours networking, may hinder early-stage entrepreneurs from expansion. Private networking may render entrepreneurs more risk-averse. As a result, evidence is found for the adverse effect of private networking discussed in the literature review.

In the same Table A1 national-level variables are not significant, thus there is not enough evidence to support national values impact. Although we only have 15 countries, which is insufficient to test for significance, we do notice that the HDI and country mean years of schooling provide rather more evidence (less p-value) supporting significance than other national-level variables. HDI has a positive impact on growth expectation, which means that more developed economies have higher job growth expectations. While educational attainment was found to have a positive impact on growth expectation at the individual level, the opposite is found at the national level, where countries with a higher educational level mean exhibit lower growth expectations. This result is known as ecological fallacy (Robinson, 2009; Piantadosi et al., 1988).

To test the second research hypothesis (H2), we add two-way interaction effects between the numbers of advisors in all environment types to the baseline model. All interaction variables are found to be non-significant in Table A2, except for the interaction of private and international environments, which is negative. This adds to the adverse effect of private networking, in that entrepreneurs with strong family ties are confronted with social opposition to international advice. Since this interaction effect is significant, it is added into the estimation of all subsequent models.

Gender difference (Table A3) in the effect of networking on growth expectations is significant for market networking, where females are more affected by market sources of networking than males. Thus, hypothesis H4 is valid for market networking.

Regarding hypothesis H4, Table A4 illustrates that the interaction of secular rationalism and density of networks has significant impact on the growth expectations for international environment networks. More secular (less traditional) societies are found to have higher impact of international networking than societies with high national values of traditionalism. Schøtt (2010) finds that the salience of the private networks environment is higher in more traditional societies. Our result adds that international networking is more effective in increasing growth expectations in more secular (less traditional) societies.

Finally, Table A5 illustrates that the interaction between the HDI and professional networking may be marginally significant. Professional networks have more effect on growth expectations in more developed countries.

7 Conclusions

In this study, we have investigated the effect of entrepreneurs' networking, with national values, on job growth expectations in the MENA region and Denmark. We used GEM

data to test our hypotheses. The GEM data for early-stage entrepreneurs in 14 countries in the MENA region in addition to Denmark over the years 2009, 2010 and 2011 was consolidated into one dataset. Our findings indicate that entrepreneurs' networks have a direct effect on the growth expectations of the firm; however, entrepreneurs who limit their networks to the private environment are less liable to make their firms grow. The density of private and international networks exhibits a negative influence on entrepreneurial growth aspirations. The professional and the international networks may, to some extent, make entrepreneurs more alert to growth opportunities. The connections and the experiences arising from interaction with these two environments may render entrepreneurs more confident in their choice and less risk averse concerning the firm's growth. Furthermore, new entrepreneurs have a greater expectation that their firm will grow in the next five years compared with mature entrepreneurs. The likely explanation for this observation is that mature firms have already been exposed to market conditions, to some extent; they have a precise knowledge of their production capacity and the available market opportunities. Their growth expectations are more precise and realistic than the newest firms.

Contrary to customary findings, we noted in this study that the education levels have a negative effect on entrepreneurial growth aspirations at the national level, but a positive effect is found at the individual level.

Our findings show that the country-level HDI may influence the growth aspirations of new entrepreneurs in the MENA region. However, secular-rationalism has non-significant impacts on growth expectations. However, international networking may have a higher impact on growth expectations in more secular countries. Furthermore, our results show that there is a significant and positive relationship between household income level and growth expectation. Entrepreneurs from high-income households are more likely to make their businesses grow, because they can rely on their own or their family's savings when firm growth requires more financial resources. Karadeniz and Ozdemir (2009) and Karadeniz and Özçam (2010) pointed out that the link between household income and growth expectation reveals some interesting implications for policy makers. In general, the access to debt capital in the MENA region is difficult and very costly for entrepreneurs. Thus, it seems to be important for these countries to develop financing models, which could aid and/or encourage entrepreneurs to grow their firms.

Acknowledgements

We are thankful to IDRC-Canada for sponsoring this research. We also acknowledge the efforts of Thomas Schøtt and Mahdokht Sedaghat for providing technical assistance. We thank all participants of the Amman workshop for helpful comments.

References

Acs, Z. and Autio, E. (2009) 'Determinants of entrepreneurial growth aspirations: multilevel model', Paper presented at the DRUID-DIME Academy Winter 2009 PhD Conference on Economics and Management of Innovation, Technology and Organizational Change, Aalborg, Denmark.

- Aldrich, H.E. (1989) 'Networking among women entrepreneurs', in Hagan, O., Rivchun, C. and Sexton, D. (Eds.): *Women-owned Businesses*, pp.103–132, Praeger, New York.
- Aldrich, H.E. and Ruef, M. (2006) Organizations Evolving, 2nd ed., Sage Publications Ltd., London, UK.
- Aldrich, H.E. and Zimmer, C. (1986) 'Entrepreneurship through social networks', in Sexton, D. and Smilor, R. (Eds.): *The Art and Science of Entrepreneurship*, Ballinger Publishing Company, New York.
- Aldrich, H.E., Reese, P.R. and Dubini, P. (1989) 'Women on the verge of a breakthrough: networking among entrepreneurs in the United States and Italy', *Entrepreneurship and Regional Development*, Vol. 1, No. 4, pp.339–356.
- Autio, E. and Acs, Z. (2009) 'Determinants of entrepreneurial growth aspirations: multilevel model', paper presented at the DRUID-DIME Academy Winter 2009 PhD Conference, Economics And Management Of Innovation, Technology And Organizational Change, Denmark, http://www2.druid.dk/conferences/viewpaper.php?id=5290&cf=33.
- Birley, S. (1985) 'The role of networks in the entrepreneurial process', *Journal of Business Venturing*, Vol. 1, No. 1, pp.107–117.
- Birley, S. and Cromie, S. (1988) 'Social networks and entrepreneurship in Northern Ireland', paper presented at *Enterprise in Action Conference*, Belfast, September.
- Butler, J. and Hansen, G.S. (1991) 'Network evolution, entrepreneurial success and regional development', *Entrepreneurship and Regional Development*, Vol. 3, No. 1, pp.1–16.
- Delmar, F. (2006) 'Measuring growth: methodological considerations and empirical results', in Davidsson, P., Delmar, F. and Wiklund, J. (Eds.): *Entrepreneurship and the Growth of Firms*, Edward Elgar Publishing, Cheltenham, UK.
- Donckels, R. and Lambrecht, J. (1995) 'Networks and small business growth: an explanatory model', *Small Business Economics*, Vol. 7, No. 4, pp.273–289.
- Dunkelberg, W.G. and Cooper, A.C. (1982) 'Patterns of small business growth', Academy of Management Proceedings, No. 1, pp.409–413.
- Gargiulo, M. and Benassi, M. (1997) 'The dark side of social capital', working paper, Lazarsfeld Center at Columbia University.
- Granovetter, M. (1985) 'Economic action and social structure: the problem of embeddedness', *American Journal of Sociology*, Vol. 91, No. 3, pp.491–510.
- Granovetter, M. (1995) 'The economic sociology of firms and entrepreneurs', in Portes, A. (Ed.): *The Economic Sociology of Immigration: Essays in Networks, Ethnicity and Entrepreneurship*, Russel Sage Foundation, New York.
- Hayton, J.C., George, G. and Zahra, S.A. (2002) 'National culture and entrepreneurship: a review of behavior research', *Entrepreneurship Theory and Practice*, Baylor University.
- Hoff, K. and Sen, A. (2006) 'The kin as a poverty trap', in Bowles, S., Durlauf, S.N. and Hoff, K. (Eds.): *Poverty Traps*, Princeton University Press, New York.
- IDRC (2010) Global Entrepreneurship Monitor: Rapport Régional GEM-MOAN 2009 (Moyen-Orient et Afrique du Nord), Centre de recherches pour le développement international (IDRC) and Institut de recherche sur la politique économique palestinienne (MAS).
- Janssen, F. (2004) La conceptualisation de la croissance : l'emploi et le chiffre d'affaires sont-ils des critères interchangeables? 7ème Congrès International Francophone en Entrepreneuriat et PME, Montpellier.
- Karadeniz, E. and Özçam, Ö. (2010) 'The determinants of the growth expectations of the earlystage entrepreneurs (TEA) using the ordinal logistic model (OLM): the case of Turkey', *Economic and Business Review*, Vol. 12, No. 1, pp.61–84.
- Karadeniz, E. and Ozdemir, A. (2009) 'Entrepreneurship in Turkey and developing countries: a comparison of activities, characteristics, motivation and environment for entrepreneurship', *Management of International Business and Economic Systems*, Vol. 3, No. 1, pp.30–45.

- Klyver, K., Hindle, K. and Meyer, D. (2008) 'Influence of social network structure on entrepreneurship participation – a study of 20 national cultures', *International Entrepreneurship Management Journal*, Vol. 4, No. 4, pp.331–347.
- Luke, N. and Munshi, K. (2006) 'New roles for marriage in Urban Africa: kinship networks and the labor market in Kenya', *Review of Economics and Statistics*, Vol. 88, No. 2, pp.264–282.
- Manolova, T., Carter, N. Manev, I. and Gyoshev, B. (2007) 'The differential effect of men and women entrepreneurs' human capital and networking on growth expectancies in Bulgaria', *Entrepreneurship Theory and Practice*, Vol. 31, No. 3, pp.407–426.
- Martinez, M.A., and Aldrich, H.E. (2011) 'Networking strategies for entrepreneurs: balancing cohesion and diversity', *International Journal of Entrepreneurial Behaviour & Research*, Vol. 17, No. 1, pp.7–38.
- O'Donnell, A., Gilmore, A., Cummins, D. and Carson, D. (2001) 'The network construct in entrepreneurship research: a review and critique', *Management Decision*, Vol. 39, No. 9, pp.749–760.
- Piantadosi, S., Byar, D.P. and Green, S.B. (1988) 'The ecological fallacy', American Journal of Epidemiology, Vol. 127, No. 5, pp.893–904.
- Platteau, J-P. (2000) Institutions, Social Norms and Economic Development, Harwood Academic Publishers, Amsterdam.
- Premaratne, S.P. (2002) Entrepreneurial Networks and Small Business Development: The Case of Small Enterprises in Sri Lanka, Technische Universiteit Eindhoven, Eindhoven.
- Robinson, W.S. (2009) 'Ecological correlations and the behavior of individuals', *International Journal of Epidemiology*, Vol. 38, No. 3, pp.337–341.
- Romer, P. (1990) 'Endogenous technological change', *Journal of Political Economy*, Vol. 98, No. 5, pp.71–102.
- Schøtt, T. (2010) 'Training and network organization in entrepreneurship in Denmark 2010 studied via global entrepreneurship monitor', University of Southern Denmark.
- Szirmai, A. (2008) 'Explaining success and failure in development', Working Paper 2008-013, UNU-MERIT, Maastricht.
- Szirmai, A. (2011) 'Explaining success and failure in economic development', in van Ark, B. and Prasada Rao, D.S. (Eds.): *World Economic Performance, Past, Present and Future*, Edward Elgar, Cheltenham.

Appendix

Table A1 Baseline model estimation

Parameter	Estimate	Std. error	P-value (one-tailed)
Intercept	1.03	1.61	0.27
Dummy for Denmark	0.49	1.84	0.40
Dummy for Yemen	0.71	0.63	0.15
Fear of failure	-0.10	0.03	0.00
Gender (1 female, 0 male)	-0.05	0.03	0.08
Education			
None	-0.19	0.08	0.01
Some secondary	-0.16	0.08	0.02
Secondary	-0.16	0.07	0.01
Post secondary	-0.06	0.07	0.19
Income			
Lowest 33 %tile	-0.16	0.05	0.00
Middle 33 %tile	-0.04	0.03	0.14
Number of advisors in network environments			
Private	-0.02	0.01	0.02
Work	0.02	0.02	0.07
Professional	0.06	0.02	0.00
Market	0.03	0.02	0.06
International	0.05	0.03	0.04
Log of age	0.05	0.05	0.14
Log of firm age	-0.50	0.01	0.00
Log number of owners	0.13	0.03	0.00
Exports: Log of % customers outside the country	0.03	0.01	0.00
HDI	3.67	2.99	0.13
Secular rationalism	-0.23	0.65	0.37
Country mean years of schooling	-0.22	0.18	0.13
Random effects (variance)			
Residuals	0.77	0.02	
Country	0.13	0.08	

Effects of entrepreneurs' networking with national values

Parameter	Estimate	Std. error	P-value (one-tailed)
Intercept	0.93	1.63	0.29
Dummy for Denmark	-0.42	1.86	0.41
Dummy for Yemen	-0.74	0.63	0.14
Fear of failure	-0.10	0.03	0.00
Gender (1 female, 0 male)	-0.05	0.03	0.08
Education			
None	-0.10	0.08	0.11
Some secondary	-0.16	0.08	0.02
Secondary	-0.16	0.07	0.01
Post secondary	-0.07	0.07	0.19
Income			
Lowest 33 %tile	-0.15	0.05	0.00
Middle 33 %tile	-0.03	0.03	0.17
Number of advisors in network environments			
Private	-0.01	0.02	0.29
Work	0.06	0.04	0.05
Professional	0.11	0.04	0.00
Market	0.01	0.04	0.39
International	0.17	0.08	0.01
Log of age	0.05	0.05	0.16
Log of firm age	-0.50	0.01	0.00
Log number of owners	0.12	0.03	0.00
Exports: Log of % customers outside the country	0.03	0.01	0.00
HDI	3.69	3.02	0.13
Secular rationalism	-0.22	0.65	0.37
Country mean years of schooling	-0.22	0.18	0.14
Interaction of networking environments			
Private*Work	-0.01	0.01	0.18
Private*Professional	-0.02	0.01	0.12
Private*Market	0.01	0.01	0.15
Private*International	-0.04	0.02	0.05
Work*Professional	-0.01	0.01	0.32
Work*Market	0.00	0.01	0.39
Work*International	0.00	0.03	0.44
Professional*Market	0.00	0.01	0.41
Professional*International	0.02	0.02	0.15
Market*International	-0.02	0.02	0.16

 Table A2
 Estimation results of the baseline model with interactions between networking environments

 Table A2
 Estimation results of the baseline model with interactions between networking environments (continued)

Parameter	Estimate	Std. error	P-value (one-tailed)
Random effects (variance)			
Residuals	0.77	0.02	
Country	0.13	0.08	

 Table A3
 Estimation results of the baseline model with interaction between networking environments and gender

Parameter	Estimate	Std. error	P-value (one-tailed)
Intercept	0.97	1.63	0.29
Dummy for Denmark	0.46	1.86	0.41
Dummy for Yemen	0.73	0.64	0.15
Fear of failure	-0.10	0.03	0.00
Gender (1 female, 0 male)	-0.06	0.07	0.18
Education			
None	-0.12	0.08	0.08
Some secondary	-0.17	0.08	0.01
Secondary	-0.17	0.07	0.01
Post secondary	-0.08	0.07	0.16
Income			
Lowest 33 %tile	-0.16	0.05	0.00
Middle 33 %tile	-0.04	0.03	0.15
Number of advisors in network environments			
Private	-0.01	0.01	0.18
Work	0.03	0.02	0.04
Professional	0.07	0.02	0.00
Market	0.01	0.02	0.26
International	0.19	0.06	0.00
Private*International	-0.05	0.02	0.01
Log of age	0.05	0.05	0.14
Log of firm age	-0.50	0.01	0.00
Log number of owners	0.12	0.03	0.00
Exports: Log of % customers outside the country	0.03	0.01	0.00
HDI	3.73	3.02	0.13
Secular rationalism	-0.23	0.65	0.37
Country mean years of schooling	-0.22	0.18	0.13
Gender*Private networking	0.00	0.03	0.50
Gender*Work networking	-0.03	0.04	0.20

Effects of entrepreneurs' networking with national values

Table A3	Estimation results of the baseline model with interaction between networking
	environments and gender (continued)

Parameter	Estimate	Std. error	P-value (one-tailed)
Gender*Professional networking	0.00	0.04	0.50
Gender*Market networking	0.06	0.04	0.08
Gender*International networking	0.03	0.07	0.33
Random effects (variance)			
Residuals	0.77	0.02	
Country	0.13	0.08	

 Table A4
 Estimation results of the baseline model with interaction between networking environments and secular rationalism national values

Parameter	Estimate	Std. error	P-value (one-tailed)
Intercept	0.94	1.62	0.29
Dummy for Denmark	-0.42	1.85	0.41
Dummy for Yemen	-0.72	0.63	0.15
Fear of failure	-0.10	0.03	0.00
Gender (1 female, 0 male)	-0.05	0.04	0.09
Education			
None	-0.11	0.08	0.09
Some secondary	-0.17	0.08	0.02
Secondary	-0.16	0.07	0.01
Post secondary	-0.07	0.08	0.17
Income			
Lowest 33 %tile	-0.16	0.05	0.00
Middle 33 %tile	-0.04	0.03	0.15
Number of advisors in network environments			
Private	-0.03	0.02	0.13
Work	-0.01	0.03	0.43
Professional	0.08	0.02	0.00
Market	0.03	0.03	0.16
International	0.25	0.07	0.00
Private*International	-0.05	0.02	0.01
Log of age	0.05	0.05	0.15
Log of firm age	-0.50	0.01	0.00
Log number of owners	0.13	0.03	0.00
Exports: Log of % customers outside the country	0.03	0.01	0.00
HDI	3.72	3.00	0.13
Secular rationalism	-0.21	0.65	0.38

Table A4	Estimation results of the baseline model with interaction between networking
	environments and secular rationalism national values (continued)

Parameter	Estimate	Std. error	P-value (one-tailed)
Country mean years of schooling	-0.22	0.18	0.13
Secular rationalism*Private networking	-0.01	0.02	0.27
Secular rationalism*Work networking	-0.02	0.02	0.13
Secular rationalism*Professional networking	0.01	0.02	0.26
Secular rationalism*Market networking	0.00	0.02	0.45
Secular rationalism*International networking	0.06	0.04	0.04
Random effects (variance)			
Residuals	0.77	0.02	
Country	0.13	0.08	

Table A5 Estimation results of the baseline model with interaction between networking environments and country HDI

Parameter	Estimate	Std. error	P-value (one-tailed)
Intercept	1.02	1.63	0.28
Dummy for Denmark	-0.45	1.85	0.41
Dummy for Yemen	-0.73	0.63	0.15
Fear of failure	-0.10	0.03	0.00
Gender (1 female, 0 male)	-0.05	0.03	0.08
Education			
None	-0.11	0.08	0.09
Some secondary	-0.17	0.08	0.02
Secondary	-0.16	0.07	0.01
Post secondary	-0.07	0.07	0.18
Income			
Lowest 33 %tile	-0.16	0.05	0.00
Middle 33 %tile	-0.04	0.03	0.14
Number of advisors in network environments			
Private	-0.07	0.08	0.20
Work	0.09	0.09	0.15
Professional	-0.05	0.10	0.30
Market	0.12	0.10	0.11
International	0.13	0.25	0.30
Private*International	-0.05	0.02	0.01
Secular rationalism*International	0.04	0.04	0.13

Effects of entrepreneurs' networking with national values

Parameter	Estimate	Std. error	P-value (one-tailed)
Log of age	0.05	0.05	0.13
Log of firm age	-0.50	0.01	0.00
Log number of owners	0.12	0.03	0.00
Exports: Log of % customers outside the country	0.03	0.01	0.00
HDI	3.59	3.01	0.14
Seular Rationalism	-0.24	0.65	0.36
Country mean years of schooling	-0.22	0.18	0.13
HDI*Private networking	0.08	0.12	0.25
HDI*Work networking	-0.10	0.13	0.23
HDI*Professional networking	0.18	0.14	0.10
HDI*Market networking	-0.15	0.15	0.16
HDI*International networking	0.15	0.31	0.32
Random effects (variance)			
Residuals	0.77	0.02	
Country	0.13	0.08	

Table A5	Estimation results of the baseline model with interaction between networking
	environments and country HDI (continued)