ECONSTOR
Make Your Publications Visible.

A Service of

ZBW Leibniz-Informationszentrum Wirtschaft
Leibniz Information Centre for Economics

Ahmadian, Sahar; Abdolmaleki, Somayeh

Article

Network typology and international opportunity recognition: Moderating role of entrepreneurial orientation

Journal of Global Entrepreneurship Research

Provided in Cooperation with:
Springer Nature

Suggested Citation: Ahmadian, Sahar; Abdolmaleki, Somayeh (2018) : Network typology and international opportunity recognition: Moderating role of entrepreneurial orientation, Journal of Global Entrepreneurship Research, ISSN 2251-7316, Springer, Heidelberg, Vol. 8, Iss. 17, pp. 1-15,
https://doi.org/10.1186/s40497-018-0104-8

This Version is available at:
https://hdl.handle.net/10419/196951

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

https://creativecommons.org/licenses/by/4.0/

WWW.ECONSTOR.EU

Mitglied der Leibniz-Gemeinschaft

Ahmadian and Abdolmaleki *Journal of Global Entrepreneurship Research* (2018) 8:17
https://doi.org/10.1186/s40497-018-0104-8

Journal of Global Entrepreneurship Research

RESEARCH Open Access

Network typology and international opportunity recognition: moderating role of entrepreneurial orientation

Sahar Ahmadian* and Somayeh Abdolmaleki

* Correspondence:
dr.ahmadian1@gmail.com
Department of Business Management, Buinzahra Branch, Islamic Azad University, Buinzahra, Iran

Abstract

International entrepreneurship (IE) is fundamentally captured in the identification and exploitation of opportunities for international exchange. Yet little is known about the methods used by entrepreneurs for opportunity recognition. Previous work on IE emphasizes the importance of social networks for identifying opportunities in foreign markets. While business network and institutional network are less studied in previous studies, this paper aims to examine the effect of social, business, and institutional network on international opportunity recognition with the moderating role of entrepreneurial orientation. By applying network based theory to the analysis of 150 Iranians SMEs, the result indicates that; social network, business network, and institutional network positively affect international opportunities recognition. Furthermore the results show that entrepreneurial orientation moderated the effect of business, and institutional network on international opportunity recognition. While the moderating role of entrepreneurial orientation in the effect of social network on international opportunity recognition, is not supported.

Keywords: Network typology, International opportunity recognition, Entrepreneurial orientation

Background

Opportunity recognition as a crucial issue in the entrepreneurial process has been the subject of much debate in the field of entrepreneurship (Shane & Venkataraman, 2000). Literature is full of remarks about International Opportunity Recognition (IOR). Some researchers have highlighted the contribution of opportunity recognition in broadening our understanding of the internationalization behavior of firms. This issue has also raised a long debate about providing entrepreneurs with accurate means to recognize and to take a better use of new opportunities in foreign markets (Chandra et al., 2009).

Ellis (2008) conceptualizes international opportunity as the chance of being involved in exchanges with new foreign associates. He maintains that firms can go on an exchange with different types of agents for instance, collaborative venture partners, manufacturers, distributors, licensees, franchisees and clients. However, internationalization can be facilitated by establishing network ties of firms contribute to internationalization process (Coviello, 2006). Some scholars (Ozgen & Baron, 2007; Singh et al. 2000) show

Springer Open

© The Author(s). 2018 **Open Access** This article is distributed under the terms of the Creative Commons Attribution 4.0 International License (http://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made.

that there is a positive link between the number of an entrepreneur's network ties and opportunity recognition. The role of network ties as a key resource to internationalization has been well established. The ties between firms, individuals and managers or entrepreneurs are of immense value to small and medium-sized enterprises (SMEs). Similarly, the network model of internationalization proposed by Johanson and Mattsson (1988a, b) highlight that the network ties serve as a conduit to foreign markets. The more ties, firms establish, the more chances would they have for identifying new opportunities. The reason is that SEMs suffer from a deficiency of resources which are required for internationalization and such ties play an important role in spreading information on novel opportunities and the ability to identify the opportunities depends on the extent to which the ties are linked with one another (Burt, 2004).

Though the role of ties in the internationalization process of SMEs has been well discussed, our knowledge about the way SMEs identify opportunities for foreign market entry is limited. Even less exists on how network ties are used and established in recognizing such opportunities. In addition, the moderating role of entrepreneurial orientation between the network type and IOR needs more investigation. To address these issues, the following questions are of interest; Does the social, business, and institutional network effect on recognizing opportunity in foreign markets? Does the entrepreneurial orientation of entrepreneurs moderate the effect of social, business, and institutional network on recognizing opportunity in foreign market? To address the identified gap, we recruited top Iranian SMEs in Tehran city to participate in our study. In so doing, this paper hopes to contribute to our knowledge about network model of internationalization theoretically. This paper is also a response to a call for more investigation on IOR (Dimitratos & Jones, 2005; Ellis, 2008; Oviatt and McDougall, 2005a, b; Zahra et al., 2005) and the role that network ties play in the identification of opportunities for internationalization (Ellis, 2000, 2008). Moreover, this paper aims at expanding our knowledge in International Entrepreneurship (IE) by focusing on bridging networks when SMEs find a way into foreign markets (Graves & Thomas, 2004).

Theoretical background

Initially, we present the network model of internationalization, and explain terminology associated to networking. Such explanation is of great important because the terminology we found in the pertinent literature is rather fragmented. Drawing upon the available literature on IOR, we present the relevant constructs and differentiate types of network ties in the following section.

Network theory and international entrepreneurship

The network theory is a more recent internationalization theory (Hollensen, 2007). In the network theory, internationalization is seen as an entrepreneurial process that is embedded in an social, business, and institutional web which supports the firm in terms of access to information, human capital, finance, and so on (Bell et al., 2003) The network theory of internationalization was born in the late 1980s by Johanson and Mattsson. They argued that internationalization can be facilitated by establishing network ties with other firms which are themselves part of a network in a foreign market.

The ties between firms in different markets serve as conduits to get into foreign markets. According to this model, firms can cope with its limited resources provided that they promote their positions in an existing network, or develop new ties. In networks, shared interests encourage firms to establish and maintain network ties with each other to reap the reciprocal benefits of networking (Johanson and Mattsson, 1988a, b; Johanson & Vahlne, 2003).

In foreign markets, firms can establish connections with different agents, for instance with clients, competitors, suppliers, distributors, non-profit and public organizations. A thorough search of the available literature shows that the word "network" is used in different way, but all existing definitions of this word include connections between organizations or individual agents. (Coviello & Cox, 2006).

Literature shows that scholars have mainly drawn upon the network model of internationalization to investigate the interactions occurring between the organizations or by individual entrepreneurs for identifying opportunities in foreign markets. Network ties between firms or individual entrepreneurs have been classified based on different aspects of networking within each specific network association. As in the international business context, SMEs establish variety types of networks with different group of agents (Zain & Ng, 2006). For instance, some research has investigated the effect of a network interaction on the social aspect of an organization under the title of social networking (Arenius and De Clercq, 2005; Kostova & Roth, 2003). Some studies have focused on understanding the inter-connections of a mutual interaction under the headline of business networking (see Slotte-Kock, 2009) and some research has focused on connections associating with formal institutions under the title of institutional networks (Bruton et al., 2010). This study is an attempt to investigate three types of network including; social, business, and institutional networks that are between firms and between entrepreneurs to understand how SMEs are informed about international opportunities in foreign markets.

Hypothesis development

Social network and IOR

Social network refers to a set of relationships associating an individual with other people (Ellis, 2011). An important issue in the scope of social networking and entrepreneurship is how social ties, as bridges, can be used for disseminating information about new opportunities. Opportunities are exogenous occurring due to market flaws and the groundbreaking information. However, as information about opportunities spreads erratically through society, those who are the first to identify them have advantage over their competitors when it comes to exploiting opportunities. The ability to recognize novel opportunities is associated with the number of one's ties and the extent to which the ties are associated with others. As those who are linked within social groups are more likely to be aware of what others in the same group know, the information about new opportunities are likely to diffuse through the ties connecting people in separate social groups. Previous studies on internationalization of the firm have examined the effect of social ties in opportunity recognition by focusing on individual networks. More specifically, a growing number of

scholars are interested to know how entrepreneurs learn about international opportunities through their existing ties with others (Ellis, 2008). Thus, we hypothesize as follows:

H1: *Social network positively affects IOR.*

Business network and IOR

The term business network often refers to as a set of connections associating one firm with other ones (Ellis, 2011). Ford et al. (2002) defined business network as a complex network of companies, working together to accomplish certain goal. He stated that firms are inevitably part of business networks. The opportunities lie in business network and this position. Through business networks, firms can avail themselves to information, resources and opportunities and guarantee their accomplishment (Burt, 2000; Zaefarian et al., 2011; Thornton III et al., 2015). We therefore hypothesize that:

H2: *Business network positively affects IOR.*

Institutional network and IOR

Institutional networks refers to as a set of connections associating with formal institutions such as unions, governments, international development centers, innovation centers, business incubator, financial and research institutions, and etc. Institutions offer a variety of support services and in so doing they improve firms' knowledge, resource management, and internationalization behaviors (Séror, 1998). Entrepreneurship research in the framework of institutional theory can contribute to our understanding of international entrepreneurial behaviors. The theory explains how firms fix their operational positions and acquire legitimacy in variety of institutional milieu. This type of networking aims at promoting firms' activities in foreign markets and fight off the sociocultural and resource challenges that negatively influence the recognition and utilization of international opportunities in different context (Szyliowicz & Galvin, 2010; Bateman, 2000; Ceglie, 1999). Spencer, (2005) argue that institutional structures create new entry and influence both development and renewal aspects of IE. Such structures are necessary to survive in the unstable international business milieu. A careful perusal of literature shows that the discrepancies in existing innovation and expansion strategies adopted by firms are associated with the different institutional context where the business systems are located. Entrepreneurial actions are influenced by institutional factors: community norms towards entrepreneurial efforts and the extent to which governments can create and maintain an environment promoting entrepreneurship. In this study, actions undertaken by governmental and community contributors can demonstrate themselves in institutional investments and support for public and semi-public agencies that promote ground-breaking, IE (Bruton et al., 2010; McDougall & Oviatt, 2000). We thus hypothesize that:

H3: *Institutional network positively affects IOR.*

The moderating role of entrepreneurial orientation

Since Entrepreneurial Orientation (EO) was introduced by Covin and Slevin (1989), much research has been carried out in this area. EO is firms' strategy-making practices for identifying and initiating corporate business enterprise that can be manifested in the patterns of action or decision making strategies. The patterns and strategies can be generalized to other organizations. Such viewpoints are demonstrated in a firm's usual practices and corporate culture. Actually, EO stands for a mind set and a viewpoint about entrepreneurship. The positive role of EO in success and performance of firms has been well established (Gathungu et al. 2014). Firms who are targeting successful corporate entrepreneurship need to have an EO. Some scholars argue that EO as an opportunity-seeking orientation includes firms' activities for exploring market areas that could bring benefit for them (Wiklund and Shepherd 2011; Boso et al. 2013). Some researchers have examined whether EO can directly influence the performance (Rauch et al., 2009), growth and profitability of the firm (Davis, 2007; and Giudici, 2013), and sustainability (Wiklund, 1999).

A growing literature has documented a positive correlation between firms' networking practices and EO (Parida et al., 2009). Firms with more EO are expected to perform better than those who have less EO. More EO enables entrepreneurial firms to recognize and exploit opportunities in unique a way that is different from non-entrepreneurial ones (Gathungu et al. 2014). Literature also shows that inter-firm networking can positively influence EO (Davis, 2007). Wiklund and Shepherd (2003) conducted a study on the moderating role of EO in the relationship between knowledge based resources and performance. They found that this relationship was more vigorous among firms with more EO. Other studies have found that small firms can positively influence EO through their networking practices (Parida et al., 2009). Firms with more EO are able to find more opportunities in foreign markets. Therefore, this study examines the moderating role of EO in the effect of network ties including; social, business, and institutional on IOR. Drawing upon the theoretical background, we predict that;

H4: *EO moderates the effect of social network on IOR.*
H5: *EO moderates the effect of business network on IOR.*
H6: *EO moderates the effect of institutional network on IOR.*

A structural model

Based on the interrelated hypothesis, we formulate a structural model in which IOR is the dependent variable, social, business and institutional network is the independent variable, and EO is moderating variable. The model is shown in Fig. 1.

Research design

Sample and data collection

The data for the current study was gathered through an online survey in December 2016. The sample recruited in the study was 150 leading exporting SMEs who were nominated by the Iran Trade Promotion Organization (ITPO) in last 3 years. To demonstrate the national willpower of the government and people, to promote non-oil exports and economic growth, the State Council of General Culture in Iran recognized

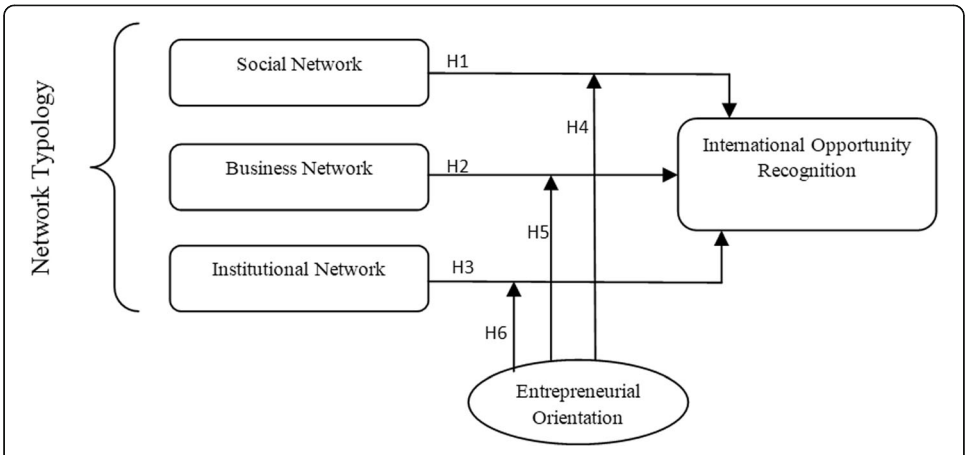

Fig. 1 A structural model of the hypothesized relations

October 21 as "National Exports Day" in 1977. National Exports Day is hosted by Iran Trade Promotion Organization and attended by the president to nominate leading exporting companies and to promote exporting culture and to encourage well-known exporting agencies and commercial and economic actors to remain highly active in their own fields.

The survey link was sent to 160 leading exporting SMEs who were nominated by this organization between 2014 and 2016. The participants we recruited were CEOs, export managers, sales managers, or the ones with the similar positions. We ensured that the participants had adequate knowledge about their firm's operations in the international market to collect the pertinent answers related to our research questions. We sent e-mail reminders to the non-responding firms and contacted SMEs via phone calls to ensure a higher response rate. Total 150 questionnaires were filled out and sent back. The average age of the participant was 30 years, and the average years of experience in international business were 4. The average number of staff was 70.

Measurement

All the variable measurements are adopted from the previous literature; the format used is a Likert scale requiring the respondents to choose a position based on a 1 to 5 range (1-strongly disagree to 5-strongly agree). (See Table 1).

Reliability and validity of scales

Although Partial Least Square (PLS) estimates parameters for both the links between measures and constructs (i.e., loadings) and the links between different constructs (i.e., path coefficients) at the same time, a PLS model is usually analyzed and interpreted sequentially in two stages as follows: (1) an assessment of the reliability and validity of the measurement model, followed by (2) an assessment of the structural model and (3) an assessment of the overall measure of the model. This sequence ensures that the researcher has reliable and valid measures of constructs before attempting to derive conclusions about the nature of the construct relationships (Hulland 1999).

Assessment of the measurement model

We evaluated the adequacy of the measurement model following the instruction of Hulland (1999). To this purpose, we calculated the reliability of each item, the

Table 1 Measurement model results

Construct and scale items	Loading	Cronbach's alpha	CR	AVE
Social Network (Adapted from Ellis 2008 and Oparaocha 2015)[a]		0.84	0.79	0.62
How much international opportunities did you recognize via:				
q1: via family and relatives	0.424			
q2: via friends	0.599			
q3: via personal contacts	0.523			
q4: via other acquaintances	0.674			
q5: via former classmates or neighbors	0.628			
q6: via colleagues in previous jobs	0.751			
q7: via employees	0.517			
Business Network (Adapted from Oparaocha 2015)[a]		0.79	0.85	0.53
How much international opportunities did you recognize via:				
q8: via business partners	0.400			
q9: via suppliers	0.764			
q10: via producers	0.704			
q11: via competitors	0.735			
q12: via customers	0.602			
q13: via other stakeholders	0.744			
Institutional Network (Adapted from Oparaocha 2015)[a]		0.84	0.83	0.57
How much international opportunities did you recognize via:				
q14: via government agencies	0.725			
q15: via business incubators	0.851			
q16: via financial institutions	0.715			
q17: via R & D institutions	0.697			
q19: via chamber of commerce[c]	0.632			
Entrepreneurial Orientation (Adapted from Shan et al. 2016)[b]		0.79	0.86	0.55
Risk taking				
q20: Export Manager in our venture, tend to invest in high-risk export projects	0.522			
q21: This business venture shows a great deal of tolerance for high risk export projects	0.547			
q22: Our export strategy is characterized by a strong tendency to take risks	0.571			
q23: Taking chances is part of our export business strategy	0.534			
Proactiveness				
q24: We seek to exploit anticipated changes in our export market ahead of our rivals	0.589			
q25: We act opportunistically to shape the export environment in which we operate	0.554			
q26: Our foresight makes us a leader in our export market	0.599			
Competitive aggressive				
q27: We typically adopt an "undo-the-competitor" posture in our export markets	0.725			
q28: We tend to target our export competitors weaknesses	0.640			
q29: We take hostile steps to achieve export competitive goals	0.597			

Table 1 Measurement model results *(Continued)*

Construct and scale items	Loading	Cronbach's alpha	CR	AVE
Autonomy				
q30: Export personnel behave autonomously in our export operation	0.589			
q31: Export personnel act independently to carry out their export ideas through to completion[c]	0.571			
International Opportunity Recognition (Adapted from Ellis 2008)[b]		0.82	0.78	0.57
Our company had greater:				
Q33: Foreign sales volumes in the past 3 years	0.565			
Q34: Foreign market share in the past 3 years	0.742			
Q35: Foreign sales agreement volumes in the past 3 years	0.539			
Our company recognized opportunities in:				
Q36: more different countries in the past 3 years	0.694			
Q37: more different cultures in the past 3 years	0.570			
Q38: more different languages in the past 3 years	0.533			

[a]Based on a five-point Likert scale, where 1 = not at all and 5 = very much
[b]Based on a five-point Likert scale, where 1 = strongly disagree and 5 = strongly agree
[c]Questions of "q18" and "q32" are removed because loading factor was under than 0.4 for these questions

convergent validity of the measures related to individual constructs, and the discriminant validity. In PLS, for evaluating the reliability of each individual item, the loadings of the measures with their respective constructs should be calculated. We eliminated those items whose loadings were below 0.4 (the threshold 0.4 is suggested for factor analysis) or 0.5 (Hulland 1999). To evaluate the convergent validity in PLS, it is need to calculate either one or more than one of the measures below: a) Average Variance Extracted (AVE), b) Cronbach's alpha, and c) Composite Reliability (CR).

We eliminated questions of 18, and 32 with loadings below 0.4 in a model and we tested the measurement model. As it is shown in Table 1 all items have loadings above 0.4 (Hulland, 1999), Cronbach's alpha is bigger than 0.7 (Cronbach, 1951), CR is bigger than 0.7 (Nunnally, 1978), and AVE stands above 0.5 (Fornel and Larker, 1981). This means that the measurement model we have proposed has adequate assessment (See Table. 1).

Assessment of the overall measure of model

To evaluate overall measure of model, we used the two-stage PLS approach. The reason is that we had moderator variables. Chin et al., (2003) were among the first scholars who proposed the two-stage approach. Later, Henseler and Fassott (2010) and Henseler and Chin (2010) elaborated what was earlier proposed by Chin and his associates (2003).

To estimate the latent variable scores, in the first-stage, the PLS path model was run. Using Henseler and Chin's (2010) procedure, we calculated latent variable scores. Our analysis at this stage shows that all paths are more than "1.96". This confirms the effects of latent variables at significant level of %95 (the minimum level) Therefore, the independent variables, namely, social, business, and institutional network influence the dependent variable or IOR (see Fig. 2). In the second-stage, for testing moderating effect, we inserted moderators and its interaction (or moderating) effects in the PSL. In

so doing, our main effects model became a moderator one and subsequently the main effect changed to single effects and the effects were interpreted (see Henseler & Fassott, 2010; Henseler & Chin 2010).

Hierarchical regression testing We analyzed the effect of EO (as a moderating variable) on three types of networks (social, institutional and business) and compared them with the results in the first phase of stage 2. Our results confirmed that EO has a moderating effect on social, business, and institutional network ties (Table 2).

The effect size of moderating variable In the second phase of stage 2, the effect size of export EO (as a moderating variable) on social network, business network, and institutional network have been estimated by path coefficient. The result shows that the effect size of export EO for social network, business network, and institutional network respectively are "0.641", "0.853", and "0,525".

Significance weight evaluating In this stage, we performed t-value testing to analyze the significance of interaction effect with predicting variable. Comparing T-values show the effect of EO on business network ($t = 2.089$) and institutional network ($t = 2.748$) in IOR is significant. However, this effect on social network ($t = 1.176$) is insignificant as the t –value is less than 1.96 (Fig. 3). In addition Confirmatory Factor Analyses (CFA) indicates that factor loading of all items exceed 0.4 which shows a very good fit.

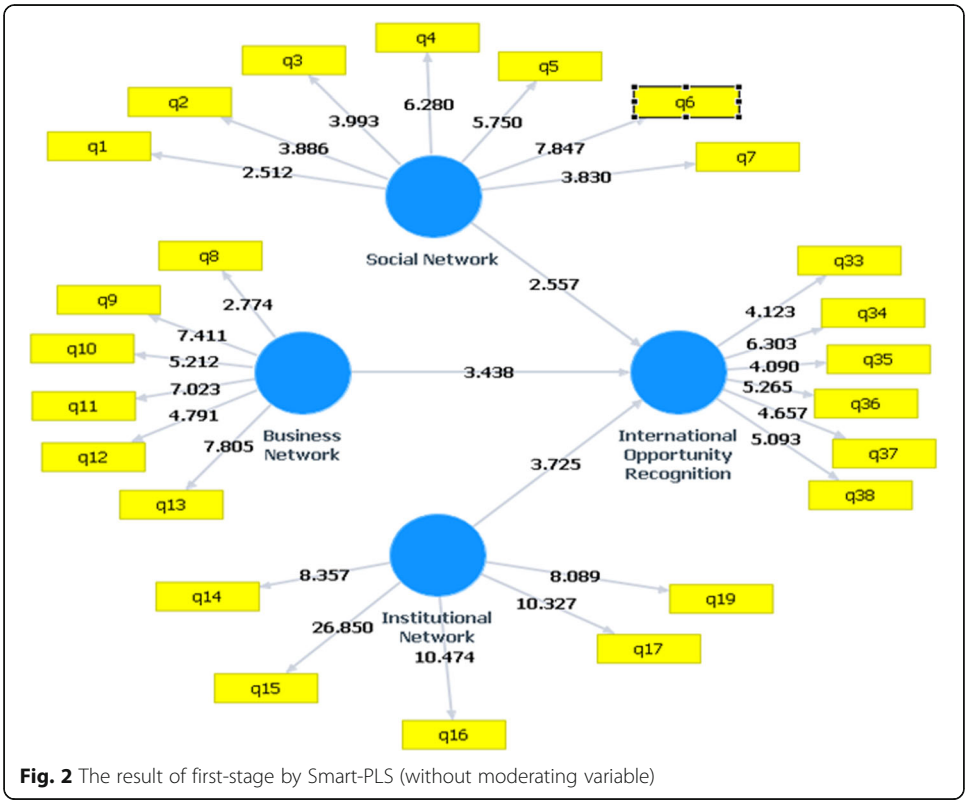

Fig. 2 The result of first-stage by Smart-PLS (without moderating variable)

Table 2 Hierarchical regression testing summary

model	R	R-Square	R^2 adjusted	ΔR^2	*F*	Sig. ΔF
1	0.620[a]	0.375	0.375	0.385	90.77	0.000
2	0.684[b]	0.439	0.439	0.083	22.62	0.000
3	0.686[c]	0.436	0.436	0.014	3.89	0.000
4	0.690[d]	0.438	0.438	0.012	3.44	0.000

[a]social network, business network, institution network, export entrepreneurial orientation
[b]social network, business network, institution network, export entrepreneurial orientation, export entrepreneurial orientation× social network
[c]social network, business network, institution network, export entrepreneurial orientation, export entrepreneurial orientation× social network, export entrepreneurial orientation× business network
[d]social network, business network, institution network, export EO, export entrepreneurial orientation× social network, export entrepreneurial orientation× business network, export entrepreneurial orientation× business network

Hypothesis testing

To test our research hypothesis, we performed the t-test (t-value) and calculated standard coefficients. In PLS, hypothesis testing is carried out when the measurement model, the structural model, and the overall measure of the model were assessed and analyzed.

Results

Statistical analysis of the data show that the t-values for H1, H2 and H3 were "4.009", "3.058" and "3.121" and standard coefficients for each hypothesis were "0.071", "0.557", "0.398" at a significance level of %99.

For the fourth hypothesis, t-value was equal to "1.176". This means H4 with the significance level of %95 is rejected. For the fifth hypothesis, t-value was "2.089", and standard coefficient was equal to "0.853" and for the sixth hypothesis, t-value was "2.747", and standard coefficient was "0.525". This means that H5 and H6 with significance level of %95 and %99 respectively are supported.

Based on our results, we can conclude that social, business, and institutional network ties are associated with international opportunities recognition. We also found that EO acts as a moderator in the relation between business, and institutional networks and the identification of international opportunity. However, EO does not play a moderating role in the relationship between social network and IOR. The results are summarized in Table 3.

Conclusion, discussion and contribution

This study aims at examining the moderating role of export EO that play between the types of network ties (social, business, and institutional networks) and IOR. The findings of this study show that social networks effects on IOR. The findings are in agreement with the idea of entrepreneurship scholars (Aldrich et al., 1986; Ellis, 2011; Ozgen and Baron, 2007; Singh, 2000; Venkataraman, 1997), who argue that opportunities are identified by individuals. Similar to previous studies, we found that entrepreneurs come to know about international opportunities via their existing ties with others (Crick and Spence, 2005; Ellis and Pecotich, 2001a, b; Harris and Wheeler, 2005; Sharma and Blomstermo, 2003; Zain and NG, 2006; Ellis, 2008; Ellis, 2011). Our findings reecho the results of the studies conducted by Ellis (2008) that show social networking can contribute to internationalization of the firms. Therefore, establishing

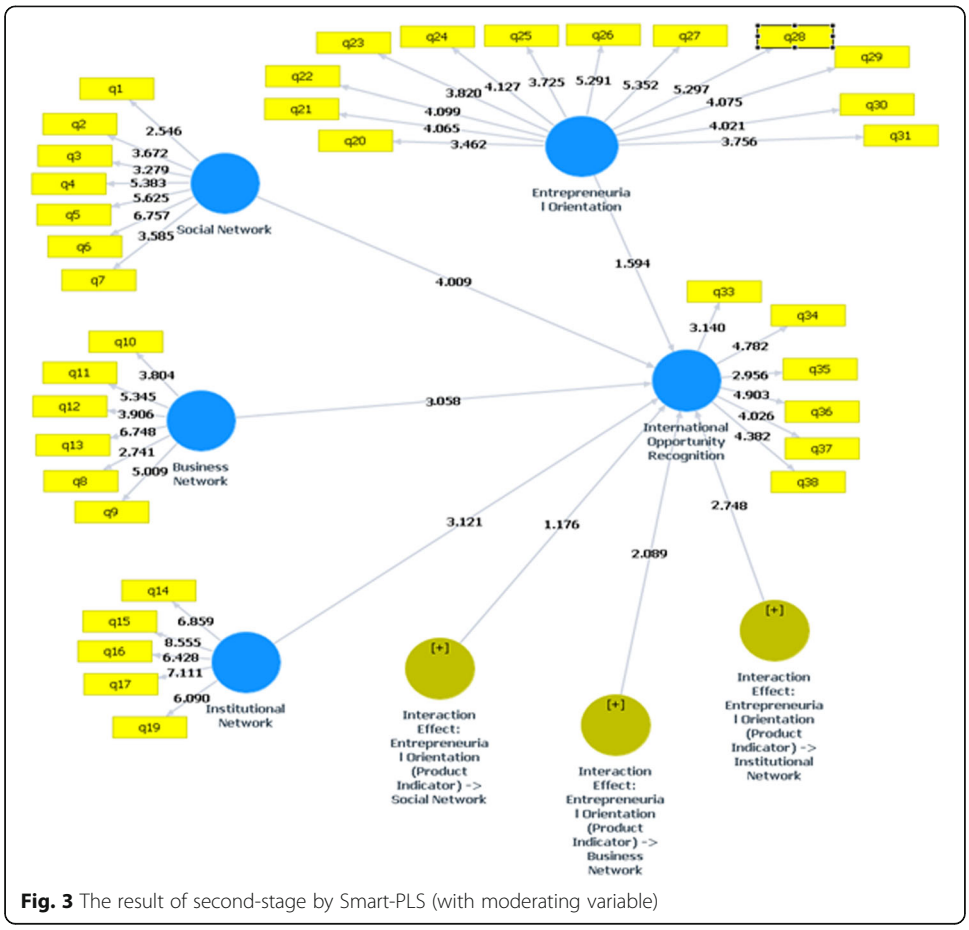

Fig. 3 The result of second-stage by Smart-PLS (with moderating variable)

social network ties between entrepreneurs would help firms to learn about opportunities in foreign markets.

The findings of the study also show that that business networks can influence IOR. The findings are in consistent with the results of previous studies (Blankenbur Holm, 1995; McDermott & Corredoria, 2010) that limitations caused by the lack of business network ties negatively influence internationalization decisions This result reechoed the by previous research (Child et al. 2002; Coviello 2006; Ellis 2008; Johanson and

Table 3 Results of hypothesis

Paths	*p*-values	T Statistics	Standard coefficients	Results
Social network————————➔IOR	0.001	4.009	0.071	Supported
Business network————————➔IOR	0.001	3.058	0.557	Supported
Institutional network————————➔IOR	0.001	3.121	0.398	Supported
The moderating role of export entrepreneurial orientation in the effect of social network on IOR	0.000	1.176	0.641	Not-Supported
The moderating role of export entrepreneurial orientation in the effect of business network on IOR	0.000	2.089	0.853	Supported
The moderating role of export entrepreneurial orientation in the effect of institutional network on IOR	0.000	2.784	0.525	Supported

Mattsson, 1988a, b; Kontinen and Ojala 2011; and Ojala, 2009) that show establishing formal ties with business associates and informal ties with trusted friends can provide firms with valuable knowledge about international opportunities.

Our findings showed that institutional network ties have a key role in the identification of international opportunity. This finding is consistent with previous research (Bruton et al. 2010; and Oparaocha 2014) that institutional resources can promote the entrepreneurial activities of SMEs at the international level. Therefore, institutional network resources can be used to improve the entrepreneurial actions of SMEs in international market (Oparaocha 2014). To have a chance to use the resources and to identify opportunities in international markets, entrepreneurs need to establish institutional network ties (e.g. government organizations, chamber of commerce). Such ties are quite important when SMES' resources are deficient (Ruzzier et al. 2006; Oparaocha 2014).

Our findings show that firms with more EO have access to more opportunities in foreign markets via business and institutional network ties. Covin et al. (2006) and Gathungu et al. (2014) found that more EO enables entrepreneurial firms to recognize and exploit opportunities in unique a way that is different from non-entrepreneurial ones The results show that SMEs with more EO are more likely to invest more efforts in exploring opportunities in foreign markets via business and institutional network ties. Interestingly, the findings show that EO doesn't play a moderating role in the relationship between social network ties and IOR. However, our study support the idea that inter-firm relations, for instance institutional and business network ties, enhance opportunity recognition in foreign markets when firms have more EO. In contrast the magnitude of EO doesn't play a moderating role in the relationship between social network ties and IOR.

As developing required resources for recognition of international opportunity is tricky and time consuming for new business enterprise and small firms, we conclude that SMEs need to use social, business, and institutional networks to overcome resource deficiencies and have access to sparse and particular resources that the firm requires for its establishment and its international growth. Firms should be aware that magnitude of EO moderates the effect of business, and institutional networks on opportunity identification in international markets. Thus, to help new business enterprises and small firms with recognition, creation and utilization of entrepreneurial opportunities, the firms need to rely on joining networks and thus gaining competitive advantages from external relationships.

The study has practical implications for policy makers and mangers of SMEs at macro and micro level. At the macro level, the findings can be used by policymakers who target to make the entrepreneurial ventures internationally recognized. At the micro level, the results can provide SMEs' managers with a better picture about international entrepreneurial capabilities and help them to cope with the challenges of international markets. Therefore, SMEs' capabilities and their internationalized their activities need to be introduced. This paper hopes to contribute to our knowledge about network model of internationalization and the impact of network ties on IOR. It is also hoped that this paper succeed in promoting international opportunities as "a unifying concept of international business and entrepreneurship in IE as a field of scholarly research," (Mainela et al., 2014).

Managerial implication

The results of the study have some other practical implications. Our study found that in SMEs, EO can facilitate the impact of business and social network ties on the identification of international opportunity.

Therefore, to promote international opportunities recognition, SMEs need to view EO as a significant strategic element while they are developing their strategies.

Moreover, SMEs need to broaden their understanding of different types of network ties. To successfully realize the opportunities implications, SMEs need to improve social, business and institutional networking. No doubt that institutional networking by SMEs can facilitate the recognition of international opportunities.

The results of the current study can be a call for SMEs to search and take a better advantage of institutional support. However SMEs cannot utilize any services/resource that they are not aware of. This implies that SMEs need to invest more effort to establish institutional network ties to exploit the related resources and get actively involved in IE.

Policy implication

Given that institutional network ties play a key role in the entrepreneurial internationalization of SMEs, the results of this study can be used by governments, policy makers and public institutions to make institutional networks accessible for the SME to ensure the international competitiveness of their national economics (Bosma and Levie, 2010; Greene and Mole 2006; Lu and Beamish 2001; Oparaocha 2015). This is consistent with the idea that SMEs who manage to access the resources needed for international growth can foster dynamic economy, because SMEs stimulate innovation and contribute to economic renewal. Nevertheless, providing SMEs with financial resources can not necessarily help them to overcome challenges associated with SMEs' resource deficiencies. Drawing upon our findings, we suggest policymakers collaborate with SMEs when developing institutional programs to make sure that SEMs are aware of, and have access to, the institutional resources that and in so doing, increase their engagement in IE.

Acknowledgments

The authors thank Prof. Nezameddin Faghih, Mohamad Reza Zali and the reviewers for their comments on the draft and their very valuable suggestions for revisions to the manuscript.

Funding

The authors declare that they have no funding for this research reported.

Availability of data and materials

The dataset supporting the conclusions of this article is available in the Iran Trade Promotion Organization [http://www.tpo.ir/uploads/1396_23312.pdf].

Duplicate publication policy

The authors declare and confirm that the content of manuscript has not been published, or submitted for publication elsewhere.

Authors' contributions

The authors confirm that manuscript for submission have approved by both authors. Both authors have substantial contributions to the conception of the work; the acquisition, analysis, interpretation of data for the work; drafting the work, revising it critically for important intellectual content, final approval of the version to be published; agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Competing interests

I confirm that I have read SpringerOpen's guidance on competing interests and have included a statement indicating that none of the authors have any competing interests in the manuscript.

Publisher's Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Received: 8 August 2017 Accepted: 6 June 2018
Published online: 26 June 2018

References

Aldrich, H, Zimmer, C, Jones, T. (1986). Small business still speaks with the same voice: a replication of 'the voice of small business and the politics of survival'. *The Sociological Review*, *34*(2), 335–356.

Arenius, P, & De Clercq, D. (2005). A network-based approach on opportunity recognition. *Small business economics*, *24*(3), 249–265.

Bateman, M. (2000). Neo-liberalism, SME development and the role of Business Support Centres in the transition economies of Central and Eastern Europe. *Small Business Economics*, *14*(4), 275–298.

Bell, J, McNaughton, R, Young, S, Crick, D. (2003). Towards an integrative model of small firm internationalisation. *Journal of international entrepreneurship*, *1*(4), 339–362.

Blankenburg Holm, D (1995). *A network approach to foreign market entry*, (pp. 375–405).

Bosma, N. S., & Levie, J. (2010). Global Entrepreneurship Monitor 2009 Executive Report.

Boso, N, Story, VM, Cadogan, JW. (2013). Entrepreneurial orientation, market orientation, network ties, and performance: Study of entrepreneurial firms in a developing economy. *Journal of Business Venturing*, *28*(6), 708–727.

Bruton, GD, Ahlstrom, D, Li, HL. (2010). Institutional theory and entrepreneurship: where are we now and where do we need to move in the future? *Entrepreneurship theory and practice*, *34*(3), 421–440.

Burt, RS. (2000). The network structure of social capital. *Research in organizational behavior*, *22*, 345–423.

Burt, RS. (2004). Structural holes and good ideas. *American journal of sociology*, *110*(2), 349–399.

Ceglie, C. Dini (1999), "Cluster and Network Development Projects in Developing Countries: Lessons Learned through the UNIDO Experience" in Boosting Innovation, The Cluster Approach.

Chandra, Y, Styles, C, Wilkinson, I. (2009). The recognition of first time international entrepreneurial opportunities: Evidence from firms in knowledge-based industries. *International Marketing Review*, *26*(1), 30–61.

Child, J, Ng, SH, Wong, C. (2002). Psychic distance and internationalization: Evidence from Hong Kong firms. *International Studies of Management & Organization*, *32*(1), 36–56.

Chin, WW, Marcolin, BL, Newsted, PR. (2003). A partial least squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and an electronic-mail emotion/adoption study. *Information systems research*, *14*(2), 189–217.

Coviello, N. (2006). The network dynamics of international new venture. *Journal of International Business Studies*, *37*(5), 713–731.

Coviello, NE, & Cox, MP. (2006). The resource dynamics of international new venture networks. *Journal of International Entrepreneurship*, *4*(2), 113–132.

Covin, JG, Green, KM, Slevin, DP. (2006). Strategic process effects on the entrepreneurial orientation–sales growth rate relationship. *Entrepreneurship theory and practice*, *30*(1), 57–81.

Covin, JG, & Slevin, DP. (1989). Strategic management of small firms in hostile and benign environments. *Strategic management journal*, *10*(1), 75–87.

Crick, D, & Spence, M. (2005). The internationalisation of 'high performing'UK high-tech SMEs: a study of planned and unplanned strategies. *International business review*, *14*(2), 167–185.

Cronbach, LJ. (1951). Coefficient alpha and the internal structure of tests. *psychometrika*, *16*(3), 297–334.

Davis, JL (2007). *Firm-level entrepreneurship and performance: An examination and extension of relationships and measurements of the entrepreneurial orientation construct*. *The University of Texas at Arlington*.

Dimitratos, P, & Jones, MV. (2005). Future directions for international entrepreneurship research. *International Business Review*, *2*(4), 119–128.

Ellis, P. (2000). Social ties and foreign market entry. *Journal of international business studies*, *31*(3), 443–469.

Ellis, P (2008). *Social ties and international opportunity recognition*. *Unpublished manuscript, Hong Kong Polytechnic University*.

Ellis, P, & Pecotich, A. (2001a). Finding international exchange partners: the role of social ties. *Global Focus*, *13*(2), 121–134.

Ellis, P, & Pecotich, A. (2001b). Social factors influencing export initiation in small and medium-sized enterprises. *Journal of Marketing Research*, *38*(1), 119–130.

Ellis, PD. (2011). Social ties and international entrepreneurship: Opportunities and constraints affecting firm internationalization. *Journal of International business studies*, *42*(1), 99–127.

Ford, D. (2002). Solving old problems, learning new things and forgetting most of them: distribution, internationalisation and networks. *International Marketing Review*, *19*(3), 225–235.

Fornell, C, & Larcker, DF. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of marketing research*, 382–388.

Gathungu, JM, Aiko, DM, Machuki, VN. (2014). Entrepreneurial orientation, networking, external environment, and firm performance: A critical literature review. *European Scientific Journal*, *10*(7).

Giudici, A. (2013). Sensing together: an exploration of the support of network intermediaries to firms' and entrepreneurs' search for new opportunities.

Graves, C, & Thomas, J. (2004). Internationalisation of the family business: a longitudinal perspective. *International Journal of Globalisation and Small Business*, *1*(1), 7–27.

Greene, F, & Mole, K (2006). Defining and measuring the small business. In S Carter, D Jones-Evans (Eds.), *Enterprise and Small Business*, (2nd ed.,). FT/*Prentice Hall*.

Harris, S, & Wheeler, C. (2005). Entrepreneurs' relationships for internationalization: functions, origins and strategies. *International business review*, *14*(2), 187–207.

Henseler, J, & Chin, WW. (2010). A comparison of approaches for the analysis of interaction effects between latent variables using partial least squares path modeling. *Structural Equation Modeling*, *17*(1), 82–109.

Henseler, J, & Fassott, G (2010). Testing moderating effects in PLS path models: An illustration of available procedures. In *Handbook of partial least squares*, (pp. 713–735). Berlin Heidelberg: Springer.
Hollensen, S (2007). *Global marketing: A decision-oriented approach*. Pearson education.
Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: A review of four recent studies. *Strategic management journal*, 195–204.
Johanson, J, & Mattsson, LG. (1988a). *Internationalisation in industrial systems–a network approach*, 287–314.
Johanson, J, & Mattsson, L-G (1988b). Internationalisation in Industrial Systems – A Network Approach. In N Hood, J-E Vahlne (Eds.), *Strategies in Global Competition*, (pp. 287–314). London: Croom Helm.
Johanson, J, & Vahlne, JE. (2003). Business relationship learning and commitment in the internationalization process. *Journal of international entrepreneurship*, *1*(1), 83–101.
Kontinen, T, & Ojala, A. (2011). Network ties in the international opportunity recognition of family SMEs. *International Business Review*, *20*(4), 440–453.
Kostova, T, & Roth, K. (2003). Social capital in multinational corporations and a micro-macro model of its formation. *Academy of Management Review*, *28*(2), 297–317.
Lu, JW, & Beamish, PW. (2001). The internationalization and performance of SMEs. *Strategic management journal*, *22*(6-7), 565–586.
Mainela, T., Puhakka, V., & Servais, P. (2014). The concept of international opportunity in international entrepreneurship: a review and a research agenda. International Journal of Management Reviews, 16(1), 105–129.
McDermott, GA, & Corredoira, RA. (2010). Network composition, collaborative ties, and upgrading in emerging-market firms: Lessons from the Argentine autoparts sector. *Journal of International Business Studies*, *41*(2), 308–329.
McDougall, PP, & Oviatt, BM. (2000). International entrepreneurship: the intersection of two research paths. *Academy of management Journal*, *43*(5), 902–906.
Nunnally, JC (1978). *Psychometric Theory (2nd Edit.)*. *Hillsdale*: McGraw-Hill.
Ojala, A. (2009). Internationalization of knowledge-intensive SMEs: The role of network relationships in the entry to a psychically distant market. *International business review*, *18*(1), 50–59.
Oparaocha, GO. (2014). SMEs and international entrepreneurship: An institutional network perspective. *International Business Review*, *24*(5), 861–873.
Oparaocha, GO. (2015). SMEs and international entrepreneurship: An institutional network perspective. *International Business Review*, *24*(5), 861–873.
Oviatt, BM, & McDougall, PP. (2005a). Defining international entrepreneurship and modeling the speed of internationalization. *Entrepreneurship theory and practice*, *29*(5), 537–554.
Oviatt, BM, & McDougall, PP. (2005b). Toward a theory of international new ventures. *Journal of International Business Studies*, *36*(1), 29–41.
Ozgen, E, & Baron, RA. (2007). Social sources of information in opportunity recognition: Effects of mentors, industry networks, and professional forums. *Journal of business venturing*, *22*(2), 174–192.
Parida, V, Westerberg, M, Ylinenpaa, H. (2009). How do small firms use ICT for business purposes? A study of Swedish technology-based firms. *International Journal of Electronic Business*, *7*(5), 536–551.
Rauch, A, Wiklund, J, Lumpkin, GT, Frese, M. (2009). Entrepreneurial orientation and business performance: An assessment of past research and suggestions for the future. *Entrepreneurship theory and practice*, *33*(3), 761–787.
Ruzzier, M, Antončič, B, Konečnik, M. (2006). The resource-based approach to the internationalisation of SMEs: Differences in resource bundles between internationalised and non-internationalised companies. *Zagreb International Review of Economics and Business*, *9*(2), 95–116.
Séror, AC. (1998). A model of institutional network dynamics and a comparative case analysis of information technology transfer. *The Journal of Technology Transfer*, *23*(3), 39–50.
Shan, P, Song, M, Ju, X. (2016). Entrepreneurial orientation and performance: Is innovation speed a missing link? *Journal of Business Research*, *69*(2), 683–690.
Shane, S, & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of management review*, *25*(1), 217–226.
Sharma, D. D., & Blomstermo, A. (2003). The internationalization process of born globals: a network view.International business review, 12(6), 739–753.
Singh, RP (2000). *Entrepreneurial opportunity recognition through social networks*. Psychology Press.
Slotte-Kock, S (2009). *Multiple perspective in network: conceptual Development, Application and Intergration in an entrepreneurial context*. Published Doctoral Dissertation, Hanken School of Economics Hessinki.
Spencer, BJ. (2005). International outsourcing and incomplete contracts. *Canadian Journal of Economics/Revue canadienne d'économique*, *38*(4), 1107–1135.
Szyliowicz, D, & Galvin, T. (2010). Applying broader strokes: Extending institutional perspectives and agendas for international entrepreneurship research. *International Business Review*, *19*(4), 317–332.
Thornton III, GC, Rupp, DE, Hoffman, BJ (2015). *Assessment center perspectives for talent management strategies*. Routledge.
Venkataraman, S. (1997). The distinctive domain of entrepreneurship research. *Advances in entrepreneurship, firm emergence and growth*, *3*(1), 119–138.
Wiklund, J. (1999). The sustainability of the entrepreneurial orientation-performance relationship. *Entrepreneurship Theory Practice*, *24*(1), 37–48.
Wiklund, J, & Shepherd, D. (2003). Knowledge-based resources, entrepreneurial orientation, and the performance of small and medium-sized businesses. *Strategic management journal*, *24*(13), 1307–1314.
Wiklund, J, & Shepherd, DA. (2011). Where to from here? EO-as-experimentation, failure, and distribution of outcomes. *Entrepreneurship Theory and Practice*, *35*(5), 925–946.
Zaefarian, G, Henneberg, SC, Naudé, P. (2011). Resource acquisition strategies in business relationships. *Industrial Marketing Management*, *40*(6), 862–874.
Zahra, SA, Korri, JS, Yu, J. (2005). Cognition and international entrepreneurship: implications for research on international opportunity recognition and exploitation. *International business review*, *14*(2), 129–146.
Zain, M, & Ng, SI. (2006). The impacts of network relationships on SMEs internationalization process. *Thunderbird international business review*, *48*(2), 183.