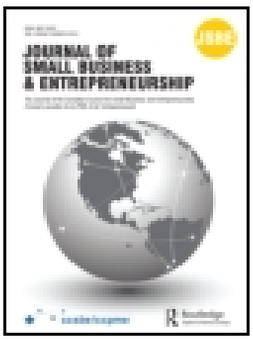

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Antecedents of corporate entrepreneurship in Iran: the role of strategic orientation and opportunity recognition

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In a study of 130 Iranian small- and medium-sized enterprises (SMEs), we predict and find that market orientation, learning orientation, and their interaction are positively related to opportunity recognition, which impacts firm-level corporate entrepreneurship positively. This study makes two important contributions to the corporate entrepreneurship literature. First, the majority of studies on corporate entrepreneurship concern western economies or China; as such, we broaden research on the international context of corporate entrepreneurship by examining a unique dataset of Iranian SMEs, which have grown significantly in recent years during their transition to knowledge-based enterprises. Second, we build upon previous literature on corporate entrepreneurship antecedents by explicating and testing the relationships of how and when learning orientation and market orientation affect opportunity recognition and the development of corporate entrepreneurship.

Keywords: market orientation; learning orientation; corporate entrepreneurship; opportunity recognition; Iran; organizational learning; knowledge-based enterprises; small and medium-sized enterprises

Cette étude conduite sur 130 PME en Iran nous a révélé que l'orientation de marché, l'orientation sur l'apprentissage et leur interaction sont positivement liées au repérage des débouchés, ce qui a un impact positif sur l'entreprenariat d'entreprise. Elle contribue de deux manières importantes à la littérature sur l'entreprenariat d'entreprise. Premièrement, la plupart des études sur l'entreprenariat d'entreprises sont en rapport avec les économies occidentales ou la Chine; ainsi, nous élargissons la recherche au contexte international de l'entreprenariat d'entreprise en examinant un ensemble unique de données sur les PME en Iran qui ont considérablement grandi ces dernières années, au cours de leur transition vers l'entreprenariat fondé sur les connaissances. Deuxièmement, nous nous appuyons sur la littérature déjà publiée sur l'entreprenariat d'entreprise en explicitant et en analysant les rapports entre la manière et le moment selon lesquels l'orientation sur l'apprentissage et l'orientation de marché influencent le repérage des débouchés et le développement de l'entreprenariat d'entreprise.

Mots-clés: Orientation de marché; Orientation sur l'apprentissage; Entreprenariat d'entreprise; Repérage des débouchés; Iran; Apprentissage organisationnel; Entreprises fondées sur les connaissances; Petites et Moyennes Entreprises

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Introduction

In recent years, the nature of competitive markets and changes across industries have propelled firms to adopt corporate entrepreneurship (CE), a process of renewal activities that enhance a firm's ability to compete and take risks (Tajeddini and Mueller 2012; Zahra et al. 2000). CE allows the use of new resource combinations, increased flexibility, and engagement in new activities that are different from existing competencies (Carrier 1996; Huse et al. 2005). It is essential for firms seeking to capture value from current opportunities that have been recognized through market learning activities and for organizational renewal (Burgelman 1983; Barringer and Bluedorn 1999). While there is a plethora of research on CE, this research has primarily examined western economies or China (Yang et al. 2007; Luo et al. 2005; Zahra et al. 1999). Given the importance of CE to economic growth, national prosperity, and firm competitiveness (Tajeddini and Mueller 2012), there is a need to expand research to firms that operate in other economies. The central focus of this study is Iranian high technology small- and medium-sized enterprises (SMEs).

Iran is a unique context to study the effects of Corporate Entrepreneurial orientation because only in January 2016 did the UN lift it sanctions on Iran, which were mostly imposed in the last five years. The sanctions cut off the country of 80 million people from the global financial system, reduced oil exports, and imposed severe economic hardship on Iran (Reuters 2016). Iran has historically been a centrally run economy with 60% of its economic activities centrally planned. Currently, however, the president and central government is pushing greater privatization in the hopes that Iran will be one of the 10 largest economies in the next 30 years. Entrepreneurship and strategic entrepreneurial strategies are essential to achieving these aggressive growth targets and a result of the opening of the economy due the removal of the UN sanctions and push to privatize businesses. SMEs have been referred to as 'the life blood of modern economies' (Arasti and Zandi 2014), and will no doubt play a role in Iran's response to the opening of its economy, fostering income stability, growth, and employment. SMEs account for approximately 90% of all enterprises in Iran (Bayati and Taghavi 2007; Valmohammadi 2010). Moreover, research suggests that Iranian SMEs are transitioning to a new model of thinking towards a knowledge-based paradigm to remain competitive, reduce firm mortality and differentiate themselves among competitors (Jafari et al. 2007). Provided that CE is a means to accomplish organizational renewal and improve the likelihood of achieving current and future competitive success (Kuratko 2010), Iran provides an interesting context to study CE. Furthermore, examination of Iranian SMEs will help overcome limitations of extant research regarding antecedents of CE and test the generalizability of theories in a cultural context very different than those that have already been studied. Additionally, the study will assist to further our understanding of CE across national boundaries.

Research on the antecedents of CE has been fruitful (Barringer and Bluedorn 1999; Zahra 1991; Hornsby et al. 2002; Kuratko 2010), but there is a dearth of studies on how the strategic orientation of the firm impacts the implementation of CE (see Barrett and Weinstein (1998) and van Wyk and Adonisi (2012) for exceptions) to take advantage of market opportunities. The strategic orientation of the firm is essentially how a firm organizes and deploys resources to recognize opportunities and implement strategies to compete effectively to enhance firm value (Gatignon and Xuereb 1997; Atuahene-Gima and Ko 2001). In this research, we examine two strategic orientations and their joint impact on the firm's ability to recognize opportunities and implement CE as strategy.

First, market orientation (MO) refers to the implementation of the marketing concept and consists of intelligence generation, intelligence dissemination and organization-wide

responsiveness (Jaworski and Kohli 1993). Market oriented firms seek to enhance value for current and future customers by scanning the environment, identifying latent needs and developing products to meet those needs (Slater and Narver 1995). Second, learning orientation (LO) is a measure of a firm's learning capability as reflected by the values routinely associated with it – commitment to learning, open-mindedness and shared vision (Sinkula et al. 1997; Baker and Sinkula 1999). Firms with high LO encourage, or possibly mandate, employees and managers to question norms and procedures that guide market information processing activities and strategic action (Sinkula et al. 1997; Baker and Sinkula 1999). The impetus of an LO is to identify trends and opportunities in the marketplace, thus potentially enhancing opportunity recognition (Slater and Narver 1995). This research suggests that both MO and LO, individually and jointly, act as learning mechanisms to recognize opportunities and subsequently implement strategic programs (i.e. CE) to capture value and remain competitive.

The objective of this study is to evaluate MO, LO and their joint impact on the ability to recognize opportunities and subsequently implement CE as a strategic response, drawing on data collected from 130 SMEs in Iran. This study seeks to contribute to the CE literature in two ways. First, recent discourse on CE has suggested that the majority of studies examine the relevant constructs in the context of western economies, with a growing body of literature focusing on China (Yang et al. 2007); as such, we extend CE research by examining a less-researched emerging economy, Iran. Second, we extend research on antecedents of CE by examining how the strategic orientation of the firm, namely MO and LO, impacts opportunity recognition and the probable development of CE, which is deemed a requisite to capturing value from marketplace opportunities (Zahra et al. 1999).

Using a three-stage least-squares (3SLS) model, we analyzed a unique primary data set from 130 Iranian SMEs. The findings of this research support the premise that high MO and LO, individually and jointly, are positively related to the recognition of market opportunities. The results show that opportunity recognition is indeed positively related to CE, suggesting that the SMEs in this study implement CE as a mechanism to capture perceived opportunities. Furthermore, results from a bootstrapping mediation procedure show that the relationship between the two strategic orientations and CE is mediated by opportunity recognition, thus furthering understanding of the mediating mechanisms that assist in the implementation of CE.

Literature review and hypotheses

To ease the interpretation of our conceptual framework and research hypotheses, the model identifying the variables and relationships is presented in Figure 1.

Corporate entrepreneurship

The study of CE has attracted the attention of scholars for more than three decades. Burgelman (1984) refers to CE as 'extending the firm's domain of competence and corresponding opportunity set through internally generated new resource combinations' (154). Essentially, its implementation is meant to capture value in the marketplace and take advantage of opportunities generated through the market learning process. CE is valuable to firms as it assists in stimulating innovation and encourages calculated risk to take advantage of market opportunities (Zahra et al. 2009). Previous research on CE has explicated an abundance of advantages to small and large firms alike, including the

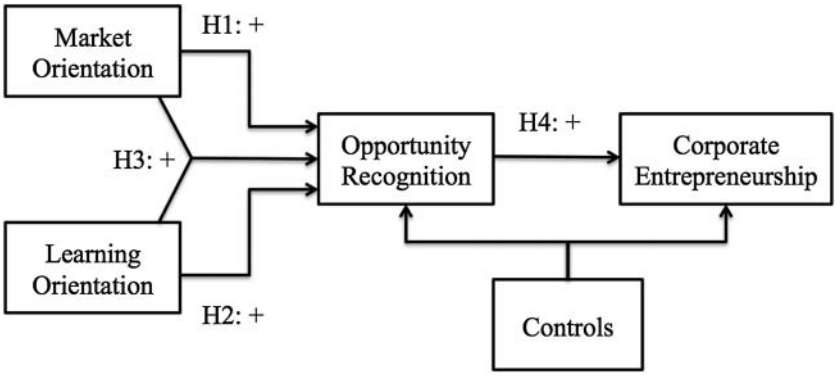

Figure 1. Conceptual framework and research hypotheses.

development of new technologies, firm renewal and explanation of variance in firm performance (Bierweth et al. 2015; Zahra 1991). While studies have shown the numerous positive outcomes of CE, its antecedents are relatively less explored. Extant research on antecedents of CE has primarily focused on environmental factors (Barringer and Bluedorn 1999), organizational structure (Zahra 1991) and management factors (Hornsby et al. 2002). Of the two studies found that focus on the strategic orientation of the firm as an antecedent of CE, MO was the only orientation explored, specifically examining how it directly impacts levels of CE (van Wyk and Adonisi 2012; Bennett and Weinstein 1998). Moreover, research suggests that the relationship between MO and CE is poorly understood (Baker and Sinkula 2009) and more research is needed to more fully understand the intricacies of this relationship.

The strategic orientation of the firm is essentially how a firm deploys its resources and capabilities to gain and sustain a competitive advantage (Jimenez-Jimenez and Cegarra-Navarro 2007). Furthermore, it is understood as a philosophy or behavior of social learning and selection mechanisms that aim to align management's strategic intent and organizational activities (Atuahene-Gima and Ko 2001). Market-oriented behaviors provide the firm with an externally focused organizational learning mechanism. With a strong focus on intelligence generation, dissemination and the firm's response, high MO firms seek to develop strong relationships with customers to meet current needs and potentially recognize latent needs of customers (Kohli and Jaworski 1990; Morgan et al. 2015). Alternatively, LO focuses on behaviors internal to the firm and is an indirect measure of a firm's learning capability (Santos-Vijande et al. 2005). While research suggests that both MO and LO are mechanisms for organizational learning and provide partial capabilities for sustainable competitive advantage (Baker and Sinkula 1999), their joint impact may be essential for adaptive learning where the firm's dominant logic can be an effective guide for opportunity recognition (e.g. through customer insights) and generative learning where a firm questions existing mental models or new ways of interpreting information (e.g. recognize opportunities that are not currently fulfilled in the marketplace) (Wang 2008; Baker and Sinkula 2007). Given that Iranian SMEs are transitioning to a more knowledge-based strategy (Valmohammadi 2010), it is essential that the firms deploy the appropriate learning mechanisms in order to recognize opportunities and develop the proper strategic response (e.g. CE) to them.

MO and LO have been shown to provide an abundance of benefits such as increased performance, greater innovativeness and the survival and growth of the firm (Calatone

et al. 2002; Jimenez-Jimenez et al. 2007). Research suggests that jointly the two orientations generate superior organizational learning abilities, which enable fulfillment of current customer needs while also questioning current mental models to identify latent opportunities (Santos-Vijande et al. 2005). While opportunity recognition is a major aspect of organizational learning, MO and LO have not been explicitly examined in this context. High MO firms are focused on intelligence generation to develop value propositions that meet needs of current and future customers (Narver and Slater 1990), whereas high LO firms seek to develop high levels of learning capabilities, foster a learning culture and have a desire to remain competitive through organizational renewal so as to not succumb to inertial factors (Baker and Sinkula 1999). Moreover, previous research suggests that the joint combination of MO and LO foster higher levels of learning and the development of the necessary capabilities to remain competitive in the marketplace (Santos-Vijande et al. 2005). With MO's focus on intelligence generated external to the firm and LO's focus on fostering the development of the firm's existing and future dominant logic, there is reason to believe that the joint impact of MO and LO will lead to greater levels of opportunities for firms and the subsequent development of CE to capture value in the marketplace.

The effect of market orientation on opportunity identification

MO refers to the implementation of the marketing concept and consists of intelligence generation, intelligence dissemination and organization-wide responsiveness (Jaworski and Kohli 1993). Through intelligence generation, MO firms generate information from market research and access knowledge about external stakeholders to identify current and future needs. Extant MO research suggests that firms with high levels of MO place the customer at the top of the organizational chart (Zhou et al. 2005) and seek to generate information to provide value. A primary focus of MO firms is to generate intelligence from the marketplace in order to understand target segments' current and latent needs to build goods and services to meet those needs. In this regard, a high MO firm deploys resources to identify, analyze, understand and answer user needs and recognize opportunities. High MO assists the firm in learning what problems their target markets have and enables the recognition of solutions to these problems (Gatignon and Xuereb 1997; Morgan et al. 2015). The intelligence dissemination process is critical to the end result of the utilization of information (Maltz and Kohli 1996). Without the proper mechanisms in place, firms may lack the ability to disseminate information across departmental boundaries and fail to understand opportunities as an organization. Essentially, MO is a mechanism to gain intelligence of the external environment and consists of a continuous and proactive disposition to meet customer needs and emphasizes information to understand opportunities available to the firm (Kirca et al. 2005). More formally:

H1: Market orientation is positively related to opportunity recognition.

The effect of learning orientation on opportunity identification

LO refers to the degree to which a firm commits proactive learning and is attentive to its set of values that impact creation and usage of knowledge (Sinkula et al. 1997). Moreover, it assists in organizational learning capabilities in regard to renewal, competitiveness and firm performance. A firm's commitment to learning embraces learning at all levels of the firm and encourages employees to identify problems in the environment and

internally to which the firm may implement solutions to capture value or reduce costs associated with processes and procedures (Baker and Sinkula 1999). Essentially, a firm's commitment to learning embraces a strong learning culture within a firm (Sinkula et al. 1997) and fosters open-mindedness in regard to the formation of attitudes and dominant logic toward a market. It encourages employees and managers to 'think outside the box' in terms of creative solutions to internal problems (current or future) and the environment. This value is a cornerstone for proactively questioning long-held beliefs and routines needed to change in a given environment (Sinkula et al. 1997). By thinking more creatively about current and future problems, a greater level of opportunity recognition may arise. Furthermore, high LO firms have been shown to have a shared vision in regard to the direction of learning (Nasution et al. 2011). As such, identification of organizational expectations, measurement of outcomes and potential change can be achieved by individuals through shared vision. Substantively, by fostering and embracing learning, the firm may be better equipped to generate more opportunities with greater ease. More formally:

H2: Learning orientation is positively related to opportunity recognition.

The interplay between market orientation and learning orientation

While both MO and LO may be advantageous to recognizing market opportunities, previous research suggests that the synergistic effects may be maximized when firms possess high levels of both orientations (Jimenez-Jimenez and Cegarra-Navarro 2007; Sinkula et al. 1997). As suggested by Bell and colleagues (2002), high LO firms can utilize firm culture and norms as valuable resources to effectively respond to market needs generated through market intelligence and information formulation. Previous research on the MO−LO interplay suggests that the two orientations complement each other and stimulate the presence of the other (Santos-Vijande et al. 2005; Baker and Sinkula 1999; Hurley and Hult 1998). Given an MO firm's propensity to generate market intelligence and disseminate it across boundaries, high levels of LO may assist in the dissemination and responsiveness of intelligence as high LO firms have a shared commitment to learning and vision. Moreover, the opportunities identified under high conditions of MO may be dependent on certain aspects of LO to detect and correct errors of processes and procedures internal to the firm if there is a viable chance to pursue the opportunity. Conversely, under conditions of low MO and low LO, the intelligence from current market segments will not be a high priority of the firm and market information may not be disseminated across departmental boundaries. The commitment to learning to implement new solutions for internal problems or for external stakeholder benefits will be deemed less important. Following Baker and Sinkula (1999), being high on either MO or LO and low on the other may negate any benefits that may be derived from the commitment to delivering value to market segments or reaping an internal culture to recognize and pursue opportunities. More formally:

H3: The interaction between market orientation and learning orientation is positively related to opportunity recognition.

The effect of opportunity recognition on corporate entrepreneurship

Firms implement CE to enhance firm performance through strategic renewal and the creation of new venture opportunities (Lumpkin and Lichtenstein 2005). Following

Burgelman (1983, 1984), CE can be considered a strategic response to opportunities available to the firm. CE is considered to be a formal and informal activity that focuses on the discovery and pursuit of new business opportunities (Bierweth et al. 2015). Opportunity recognition and evaluation of current changes in the firm's environment may lead to greater levels of CE implementation. CE is suggested to be a response or reaction to the changes in order to sustain growth and competitive advantage (Zahra 1991; Zahra 1996). Moreover, research suggests that regardless of size, firms will implement the proper strategic response when management identifies opportunities that are perceived to be viable and attractive (Kuratko and Audretsch 2013). Substantively, through the opportunity recognition process, firms will implement processes and procedures that allow the firm to remain competitive and to enhance organizational growth and renewal (that is, CE). More formally:

H4: Opportunity recognition is positively related to corporate entrepreneurship.

Research methodology

Sample

The sample for this study was collected via email survey and on-site survey implementation. In total, data was collected from 130 Iranian SMEs located in 12 science and technology parks in Tehran, Iran. Surveys were administered to entrepreneurs and top managers of the science and technology firms. When available, more than one respondent from each SME was requested to fill out the survey. In total, 240 questionnaires were completed and used for the analysis, thus providing 1.85 surveys from each firm on average. Although having two or more respondents per firm provides greater validity (Podsakoff et al. 2003), previous research in similar contexts has used less than two respondents per firm without sacrificing the validity of the findings (Morgan et al. 2016; Baker and Sinkula 2007; Narver and Slater 1990; Wang 2008; Santos-Vijande et al. 2005; Nasution et al. 2011). Moreover, provided the limited number of mid-level to senior-level management positions in SMEs, the ability to obtain two or more responses per firm is deemed difficult or unobtainable in some firms (Baker and Sinkula 2007; Narver and Slater 1990; Slater and Narver 2000).

Out of the 240 completed surveys, a total of 50 respondents completed the survey online and the remaining 210 completed the survey on-site. The response rate for the online survey was 50%. An examination between groups in the dataset does not show statistically significant differences. Additional analysis examined the difference between early and late responders and similarly there was no difference found. Common method bias was also examined using two methods. First, the Harman one-factor test showed that approximately 30.5% of the variance is explained by the first factor, well below the threshold of 50%. To provide robustness to the common method bias check, we also examined the common latent factor method, which shows that approximately 11.8% of the variance is explained by the method and is under the suggested threshold (Podsakoff et al. 2003). As such, common method bias is deemed not to be a threat to this study. The demographic of participants and characteristics of sample firms is as follows:

(1) Gender – male (73.2%) and female (26.8%)
(2) Age of respondent – <25 (16.7%); 25 – 35 (55.5%); 36 – 45 (17.1%); >45 (10.7%)
(3) Education – diploma (5.4%); Bachelor's (45%); Master's (35.5%); PhD (14.1%)

(4) Firm age in years – <5 (62.7%); 5 – 10 (17.3%); 11 – 15 (3.8%); >15 (16.2%)
(5) Number of employees – <20 (78.4%); 20 – 30 (4.3%); 31 – 40 (8.1%); >40 (9.2%)

Measures

Corporate entrepreneurship

CE is measured by semantic differential items from the ENTRESCALE (Knight 1997) and by Likert scales from the CE scale (Zahra 1993). This scale considers the four dimensions of CE: new business venturing, innovativeness, self-renewal and proactiveness. Each item measures CE on a five-point scale (1 = strongly disagree, 5 = strongly agree). In total, CE was measured using an 18-item scale and all items loaded onto the respective latent factor ($\alpha = 0.89$).

Opportunity recognition

Opportunity recognition is measured using the scale adopted from Schwartz and colleagues (2005) that utilizes an 11-item scale that identifies how the respondent perceives potential market opportunities for new products in the target market for new products. Each item measures opportunity recognition on a five-point scale (1 = strongly disagree, 5 = strongly agree). The 11 items loaded onto their respective factor and showed good reliability ($\alpha = 0.82$).

Market orientation

MO is measured using the MARKOR scale adopted from Kohli and colleagues (1993). This scale considers three dimensions of MO: intelligence generation, intelligence dissemination and responsiveness. Each item measures MO on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). In total, MO is measured on a 9-item scale. After deleting one item for reliability concerns (that is, factor loading <0.40), all remaining items loaded onto the respective latent factor and showed good reliability ($\alpha = 0.77$).

Learning orientation

LO is measured by using the scale from Sinkula and colleagues (1997). This scale considers three dimensions of LO: commitment to learning, open-mindedness and shared vision. Each item measures LO on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). In total, LO is measured on a 13-item scale and all items loaded onto their respective latent factor ($\alpha = 0.89$).

Covariates

In order to make the proper inferences in regard to the variables of interest, we sought to control for other variables that may explain variance in the dependent variable. As such, firm age, self-efficacy, adversity quotient response, social capital and social skill were controlled for in the analysis. The self-efficacy scale was adopted from Chen and colleagues (2001) and all items loaded onto their respective latent factor and showed good reliability ($\alpha = 0.76$). The adversity quotient response measure was adopted from Stoltz (1997) and all items loaded onto their respective latent factor and showed good reliability

($\alpha = 0.91$). The social capital scale was adopted from Onyx and Bullen (2000) and all items loaded onto the social capital latent variable and showed good reliability ($\alpha = 0.75$). Last, social skill of the respondent was measured using the scale adopted from Baron and Markman (2003) and was measured using an 11-item scale. After removing two items for low factor loadings, the factor analysis showed that the social skill items loaded onto two different factors, which we use as Social Skill 1 ($\alpha = 0.74$) and Social Skill 2 ($\alpha = 0.75$) in the analysis. The summary statistics and correlations table can be seen in Table 1.

Analysis

Due to the model having multiple independent and dependent variables present, 3SLS regression analysis is used to test the hypotheses (Elberse and Eliashberg 2003). 3SLS leads to consistent and efficient parameter estimates when endogeneity between variables may be present in a system of equations and error terms are correlated (Maltz and Kohli 1996). We tested the appropriateness of the use of 3SLS by two methods. First, we conducted a Breusch−Pagan test to detect contemporaneous correlations between the error terms (Drechsler et al. 2013). The test statistic from the Breusch−Pagan test in the system of equations was significant ($\chi^2_{(8)} = 29.79$, $p < .001$). Second, we compared the standard errors from OLS regression to the 3SLS equations. The results show that the standard errors are greater in the OLS models. Both methods provide support that 3SLS is a more appropriate method than OLS for the system of equations.

Results

The system of equations showed a good overall fit to the data [(Equation (1): Wald $\chi^2 = 292.16$, $p < .001$; Equation (2): $\chi^2 = 175.74$, $p < .001$; Equation system: $F_{(16,\ 480)} = 28.93$, $p < .001$, system adjusted $R^2 = .43$) Greene 2000]. Hypothesis 1 tests the main effect of MO on firm opportunity recognition. The results show that MO is indeed positively related to a firm's propensity to recognize opportunities in the marketplace ($\beta = 0.35$, $p < .001$). This supports Hypothesis 1. Hypothesis 2 tests the main effect of LO on firm opportunity recognition. The results show that LO is positively related to opportunity recognition, ($\beta = 0.33$, $p < .001$). This supports Hypothesis 2. Hypothesis 3 tests the interaction of MO and LO on opportunity recognition. As expected, as when firms have greater levels of MO and LO, the intelligence generation and dissemination coupled with the firm's learning capability enhances its ability of opportunity recognition ($\beta = 0.09$, $p < .001$). This supports Hypothesis 3. Hypothesis 4 tests the main effect of opportunity recognition and its relationship with the establishment of CE. As expected, the greater levels of opportunity recognition is positively related to a firm's levels of CE ($\beta = 0.67$, $p < .001$). This supports Hypothesis 4. Results of the analysis are shown in Table 2.

Although not formally hypothesized, we conducted a mediation analysis to examine the indirect effect of MO, LO and their interaction on CE. While Baron and Kenney's procedure is an alternative for testing mediation effects, extant research suggests that the bootstrapping procedure is more appropriate as it reduces type I error rate and has a higher level of statistical power (Preacher and Hayes 2008; Hayes 2009; Thomas 2013). The results of the Preacher and Hayes bootstrapping procedure show that opportunity recognition partially mediates the relationship between MO and CE ($z = 4.06$, $p < .001$) and the relationship between LO and CE ($z = 4.24$, $p < .001$), respectively. The analysis does

Table 1. Descriptive statistics and correlations.

		Mean	St. dev.	1	2	3	4	5	6	7	8	9
1	Corporate entrepreneurship	3.84	0.55									
2	Opportunity recognition	3.91	0.54	0.59***								
3	Learning orientation (LO)	4.07	0.55	0.66***	0.61***							
4	Market orientation (MO)	3.82	0.49	0.65***	0.67***	0.67***						
5	Firm age	5.31	5.91	0.05	0.04	−0.10	−0.03					
6	Self-efficacy	4.08	0.49	0.41***	0.45***	0.39***	0.41***	−0.05				
7	Adversity quotient response	3.94	0.73	0.26***	0.27***	0.34***	0.36***	−0.06	0.31***			
8	Social capital	3.90	0.50	0.44***	0.34***	0.53***	0.41***	−0.03	0.53***	0.35***		
9	Social skill 1	3.73	0.61	0.50	0.45	0.58	0.52	−0.02	0.56	0.41	0.65***	
10	Social skill 2	3.75	0.74	0.07	0.06	0.07	0.09	0.04	0.05	0.01	0.17**	0.29***

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Table 2. Models results.

	Dependent variables	
Independent variables	Opportunity recognition	Corporate entrepreneurship
Opportunity recognition		0.67***
		0.12
Learning orientation (LO)	0.33***	
	(0.05)	
Market orientation (MO)	0.35***	
	(0.05)	
LO * MO	0.09***	
	(0.03)	
Firm age	0.08*	0.14
	(0.04)	(0.06)
Self-efficacy	0.24***	−0.15†
	(0.06)	(0.09)
Adversity quotient response	0.00	−0.05
	(0.05)	(0.07)
Social capital	−0.12†	0.17†
	(0.06)	(0.09)
Social skill 1	−0.01	0.09
	(0.07)	(0.10)
Social skill 2	0.00	−0.04
	(0.05)	(0.07)
Constant	−0.06	−0.00
	(0.04)	(0.06)
Test statistic	$\chi^2 = 292.16^{***}$	$\chi^2 = 175.74^{***}$
Model R^2	0.55	0.41
System adjusted R^2 [$F_{(16,\ 480)} = 23.93^{***}$]	0.43	

Standard errors in parentheses
† $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < .001$

not provide support that the relationship between the MO × LO interaction term and CE is mediated by opportunity recognition ($p > .05$).

Discussion and implications

We have drawn upon the strategic orientation of the firm, namely MO and LO, to argue that both individually and jointly may help assist firms in recognizing a greater number of opportunities in the marketplace and initiating strategic action, CE, to seek to capture value. In this paper, we set out to explore this particular issue in the context of Iranian SMEs, which account for approximately 90% of firms in Iran and have been suggested to be transitioning to a more knowledge-based paradigm (Bayati and Taghavi 2007; Valmohammadi 2010; Jafari et al. 2007). While there is a plethora of research on the antecedents of CE, it has primarily focused on factors relevant to the external environment and top management of the firm (Zahra 1991). Provided the numerous positive outcomes of CE and its ability for firm renewal, factors leading up to the development of

CE is of high importance. Furthermore, research has suggested that the relationship between MO and CE is not well understood and research needs to explore this avenue further (Baker and Sinkula 1999). This study contributes to the growing body of literature on the antecedents of CE and suggests that by deploying resources and capabilities into market learning activities and fostering a learning culture, firms are better able to recognize opportunities in the marketplace and initiate proper strategic response to them.

Overall, our results extend CE research by examining how MO and LO both individually and jointly impact the opportunities available to firms and the development of CE that seeks to gain competitive advantage. While positive consequences of MO and LO have been explored extensively (Hult et al. 2004; Santos-Vijande et al. 2005), research has much to gain by explicating how and why firms develop CE. Moreover, Baker and Sinkula (2009) suggest that the relationship between MO and CE is still unclear; it may be possible that the presence of other strategic orientations (e.g. LO) and mediating processes can help bring clarity to MO's role in the development of CE. This is an important avenue for research to explore to help understand antecedents of CE along with resource deployments. While previous research suggests MO learning capabilities are dependent on the LO of the firm, this research shows that individually MO helps recognize opportunities in the market and the joint impact with LO is beneficial. By focusing on intelligence generating processes, firms are able to understand latent needs of customers and the opportunities available to the firm to enhance the value proposition. Moreover, high LO firms are able to generate more creative solutions for market segments and increase the level of opportunities available to the firm. While this research suggests only positive benefits of strategic orientation and the impact on CE, future research may benefit by examining other orientations to determine if there are alternative impacts coupled with MO or LO.

Substantively, the results highlight that MO and LO both benefit a firm's ability to identify opportunities in the marketplace. Organizational learning theory suggests that for higher learning to take place within the firm, both adaptive and generative learning processes must be present (Wang 2008; Baker and Sinkula 2007). From an adaptive learning perspective, MO helps facilitate the generation of market knowledge based on identifying current customer needs (Wang 2008; Morgan et al. 2015) whereas LO assists MO in adaptive learning while also helps question current mental models or the dominant logic of the firm. This in turn helps generative learning to occur (Baker and Sinkula 2007). Both are necessary for the sustainability of competitive advantage and higher organizational learning to occur. In this study, the results suggest that firms are able to develop a greater understanding of marketplace opportunities through the process of which organizational learning occurs. Consequently, the development and implementation of CE is a strategic response to perceived opportunities available to the firm. While not formally hypothesized, this research uncovered a mediating process that CE occurs. Opportunity recognition was shown in the analysis to mediate the process of the individual orientations and their relationship with CE. While their joint impact was not mediated by opportunity recognition, future research should explore this notion further.

The results of the study have important implications for general management, especially those in Iranian SMEs that deal with a high level of firm-size homogeneity in their respective markets. Implementing and managing the proper philosophies and strategic behaviors of the firm is paramount to enhancing the competitiveness of the firm. Knowledge generated and derived from customers, suppliers and competitors is beneficial for recognizing potential opportunities for current and latent customer needs. Moreover, the development and use of MO and LO assist employees to direct activities and processes in

a coordinated manner in order to attain firm goals (Jimenez-Jimenez and Cegarra-Navarro 2007). With a greater number of SMEs and large firms recognizing the strategic impact of CE, the results of this study suggest certain learning behaviors of the firm and strategic posture may help assist in the development of the appropriate mechanisms for greater market competitiveness and performance. The learning organization provides a plethora of benefits to differentiate among competitors and assists Iranian SMEs in their transition to knowledge-based mental models and helps in becoming more competitive in the global marketplace for which they are currently entering. A key component that helps assist firm managers to recognize opportunities in the market is both through capitalizing on existing paradigms (such as customer focus), but continually question the firm's current mental models in order to avoid falling victim to inertial factors. This higher order learning may occur through proper resource deployment and social behaviors internal to the firm. Overall, higher order learning of the firm, partially developed through MO and LO individually and simultaneously, assists in the encouragement of the knowledge creation process, allows the development and differentiation of new products and improvement of competitive positions. All are paramount in an economy that consists of 90% SMEs and a high degree of homogeneity. While the context of this study is specific to Iran, future research should explore similar relationships utilizing alternative economies, industries and firm sizes.

Limitations

The results need to be interpreted in light of the study's limitations. Cross sectional data was used for the analysis. It is possible that while the variables are related, panel data may show different results. Although there is strong theoretical support for the causal argument of MO and LO impacting CE, the study design limits the causal inferences we can make. Another limitation is that on average, there were less than two respondents per firm. Although we have more than one respondent per firm, it would still be best to have at least two respondents per firm to assist validating the findings. Additionally, there may be a self-report bias: respondents in the study may hold positive bias towards the firm's internal resource deployments, what it perceives as viable opportunities and the level of CE the firm implements. The limitations of the data also do not allow us to control for additional factors that may explain variance in the dependent variables, such as industry data or innovation propensity of the firm. An additional limitation in this study is the sole focus on the antecedents of CE. Future studies may wish to explore the nomological network further to understand the relationships among the variables in this study and outcomes for the firm, such as performance, innovation rates and new product performance. Finally, we did not use management experience of the respondents in the analysis. It is possible that greater experience, particularly from a managerial perspective, explains partial variance of our dependent variables of interest. Future research should explore this notion further.

Disclosure statement

No potential conflict of interest was reported by the authors.

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