

Connecting the dots

The relationship among intra-organizational environment, entrepreneurial orientation, market orientation and organizational performance

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Abstract

Purpose – This paper aims to identify the intra-organizational environment factors that affect entrepreneurial orientation (EO) and examine the mediating role of market orientation (MO) in the relationship between and organizational performance.

Design/methodology/approach – The study is conducted in a less-researched area, Egypt. Data were collected using a survey from 120 large-sized manufacturing firms working in seven industries: engineering and home appliances, communication and information technology (IT), food and beverage, chemicals, furniture and decoration, clothing and smoking. The research framework was examined using partial least square approach of structural equation modeling (PLS-SEM).

Findings – The findings indicate that the intra-organizational environment factors that affect entrepreneurial orientation practices are deep locus of planning, planning flexibility, planning horizon, integration and organizational support. Also, the results show that MO mediates the relationship between entrepreneurial orientation and performance.

Practical implications – The findings provide insights about how to manage the intra-organizational environment of the firm and how to configure strategic capabilities, i.e. entrepreneurial orientation and MO, to enhance the organization's performance.

Originality/value – This paper provides a holistic approach that identifies the intra-organization environmental factors necessary to create an organizational culture that facilitates and encourages entrepreneurial orientation and MO, as well as examine the role of MO in the relationship between entrepreneurial orientation and the organizational performance.

Keywords Egypt, Market orientation, Emerging economies, Entrepreneurial orientation, Intra-organizational environment

Paper type Research paper



1. Introduction

The resource-based view of the firm argues that specific internal resources and capabilities of the firm are responsible for creating a superior performance and a competitive advantage (Wernerfelt, 1984). Two of the most important resources are entrepreneurial orientation (EO) (i.e. high levels of innovativeness, risk taking, and proactiveness) and market orientation (MO) (i.e. continuous gathering, dissemination and utilization of customers' and competitors' intelligence) (Pérez-Luño, Saporito and Gopalakrishnan, 2016; Baker and Sinkula, 2009). These organizational resources and capabilities are essential for organizations to survive and grow in turbulent environments prevalent in emerging markets. Turbulent environments are characterized by dynamism, an abundance of opportunities (or threats),

high industry growth, fierce competition, market volatility and a high demand for new products (Zahra, 1993; Antoncic and Hisrich, 2001; Johanna de Villiers-Scheepers, 2012; Shirokova *et al.*, 2016). A turbulent environment obligates the firm to act entrepreneurially to survive and create competitive advantage in the market, whereas a stable environment does not require any entrepreneurial activities, only conservative ones (Barringer and Bluedorn, 1999; Boso *et al.*, 2016).

Nevertheless, a synthesis of the previous studies in the entrepreneurial marketing literature shows some major research gaps with regard to the relationship between EO, MO and organizational performance. First, the results of the previous studies on EO and MO relationship and their impact on performance are inconsistent and fragment (Baker and Sinkula, 2009). When EO and MO are modeled separately, there is a direct positive relationship between each one of them and performance. However, when modeled together, the relationship between EO and performance disappear. Hence, some schools of thought suggest that EO might be an antecedent to MO (Baker and Sinkula, 2009). This is because MO enhances the success of entrepreneurial endeavors as MO culture is used to guide and support the organization's innovative and proactive new ventures, this high level of market-scanning activities will lead to more successful new ventures and in turn better organizational performance (Lu, 2017). This postulate is also supported by the MO framework that argues that MO-performance relationship should be preceded by behavioral antecedents such as risk taking and proactiveness (Lu, 2017; Kohli and Jaworski, 1990). Therefore, this study argues that EO precedes MO, and more specifically, MO mediates the relationship between EO and performance. However, this sequential relationship has not been adequately examined in previous studies, and most studies were conducted on small- and medium-sized companies.

Another issue with regard to the relationship between EO and performance is the intra-organizational environment required to facilitate EO (i.e. create the entrepreneurial culture that will encourage the firm to learn and challenge the *status quo* and respond proactively to changes in the external environment, thereby enhancing the organization's performance) (Vega-Vázquez *et al.*, 2016; Baker and Sinkula, 2009). Necessary organizational environment factors include planning flexibility, cross-functional integration and top management support to entrepreneurial activities. However, most of the studies on the intra-organizational environment of entrepreneurial firms are conducted in small- and medium-sized enterprises. The intra-organizational environment factors are of particular importance in large corporations because the policies, procedures and bureaucratic system in large firms might hinder the success of entrepreneurship, encouraging or discouraging risk-taking, creativity and proactiveness (Hisrich and Kearney, 2011; Sykes and Block, 1989). Therefore, there is a pressing need to examine the intra-organizational environment needed to facilitate entrepreneurial activities (Burns, 2012).

In light of the discussion thus far, the questions remain on how EO and MO are related and how they affect organizational performance. Moreover, what are the intra-organizational factors that support entrepreneurial culture in large-sized organizations? Therefore, this study aims to fill the previous research gaps by developing a holistic framework that specifies the structural relationships among organizational environment, EO, MO and organizational performance in large-sized manufacturing firms in Egypt. Specifically, the study aims to identify the intra-organization environmental factors necessary to create an organizational culture that facilitates and encourages EO, as well as examines the role of MO in the relationship between EO and organizational performance. The contributions of this study to the entrepreneurial marketing literature are twofold: to examine the theoretical and empirical configuration of the relationships among

organizational environment elements, EO, MO and organizational performance and to identify the relative importance of the three building blocks of the study – organizational environment, EO and MO – in enhancing organizational performance.

The context of this study is manufacturing firms in Egypt, a less-researched region in the entrepreneurial marketing literature, where the institutional environment and organizational culture are different from those in developed and some developing economies. For example, the Egyptian organizational culture is characterized by high power distance that might hinder the sharing of information and proactiveness (Mahrous, 2011). Moreover, centralization and formal heretical leadership may create obstacles to creativity and innovativeness (Matsuno *et al.*, 2002). Therefore, the results of this study provide Egyptian or international manufacturing firms operating in Egypt with insights into how organizations should manage and configure their organizational environment and resources to achieve superior performance.

The remainder of the paper is organized as follows. Section 2 provides a review of the literature, followed research methodology in Section 3. Section 4 presents the results, while the discussion, managerial implications, and limitations are presented in Section 2.

2. Literature review

2.1 Antecedents of entrepreneurial orientation

Entrepreneurially oriented (EO) firms are firms that have high levels of innovativeness, risk-taking and proactiveness (Covin and Lumpkin, 2011). Innovativeness refers to a firm's capability to innovate and develop new products, services and technologies for the market (Antoncic and Hisrich, 2003; Kreiser, 2011). Risk-taking is a firm's tendency to continuously seek new initiatives and pursue opportunities that have a probability of loss owing to uncertainty without the fear of failure (Lumpkin and Dess, 2001). Proactiveness refers to a firm's behavior that results in pioneering and initiative-taking in exploiting opportunities in the market, as the firm attempts to lead rather than to follow (Antoncic and Hisrich, 2003).

As previously noted, when a firm decides to act entrepreneurially, there is no guarantee that such acts adopted would result in desirable outcomes. Such organizational change might affect the firm negatively and threaten the firm's survival (Miller, 2011). The failure of EO activities usually occurs because of the absence of entrepreneurial culture, lack of support from top management to entrepreneurship activities (i.e. innovation and creativity of employees), limitation of the firm's strategic management practices at the top organizational levels and inadaptability of the firm's strategic plans to the tremendous changes occur in the external environment. However, most of the studies on the intra-organizational environment of entrepreneurial firms were conducted on small- and medium-sized enterprises (Jogaratnam, 2017; Burns, 2012). Therefore, to date, the factors that facilitate and support entrepreneurial orientation practices are still questionable (Miller, 2011). Thus, there is a call for research to study the intra-organizational environment of successful entrepreneurial activities (Lu, 2017).

Prior research has proposed some intra-organizational factors required to overcome obstacles that usually evolve while adopting entrepreneurial practices within the firm and to ensure the success and sustainability of EO practices within the firm over time. These factors are categorized into two main groups (Antoncic and Hisrich, 2004); the first group includes the factors related to strategic management practices, like locus of planning, planning flexibility and planning horizon, whereas the other group is related to the intra-organizational entrepreneurial culture, like inter-firm integration, control and organizational (management) support. Section 2.1.1 discusses how these factors are associated with EO.

2.1.1 Strategic management practices.

Deep locus of planning is defined as the amount of participation of the non-top management levels (i.e. mid- and low-managerial levels as well as employees) involved in the firm's strategic management process in general and the firm's strategic planning specifically (David and David, 2016). Strategic management process is composed of strategy formulation or planning, strategy implementation and strategy evaluation (David and David, 2016). The strategic plan of the firm becomes more customer-oriented when the organization gives lower managerial and non-managerial levels a chance to participate in the strategy-planning phase. With respect to top management levels, the non-top managerial levels are more aware of the market trends as they deal directly and closely with the customers and are more aware of the competitors' actions in the market, more aware of any changes in the demand and recognize technological opportunities and changes. Thus, the deep *locus* of planning redirects the firm's innovation to be in the customers' favor, which helps the firm take more calculated risks and become more confident when making decisions; it is critically significant if the firm would like to lead the market and become a competitively aggressive firm (Antoncic and Hisrich, 2004).

H1. A deep locus of planning is positively related to EO.

Planning flexibility shows the firm's ability to change its plans according to changes occurring in the external environment (Li *et al.*, 2009; Stevenson and Jarrillo-Mossi, 1986), whether due to environmental munificence (dynamism, changes in the demand, etc.), hostility and/or heterogeneity. This factor measures the firm's capability of adaption with its external environment in terms of speed and effectiveness in response. Previous studies show that flexibility is one of the internal environment factors that impact the implementation of corporate entrepreneurship in emerging economies like India (Bhardwaj and Sushil, 2012). Based on the literature, it is commonly accepted that entrepreneurial firms tend to be more flexible in their planning systems owing to the complexity of their external environments (Barringer and Bluedorn, 1999; Murimbika and Urban, 2014; Majid *et al.*, 2017).

Conversely, it has been theorized that the more flexible in planning the firm is, the more it tends to make the firm's administration inflexible (Mintzberg, 1994). Meanwhile, researchers contend that the rapid changes in a firm's strategic plans mean that the firm is more distracted to achieve its primary objectives and goals. Thus, changing the plans repetitively might result in undesirable outcomes and failure in the firm's entrepreneurial practices.

H2. Planning flexibility is negatively related to EO.

Planning horizon refers to the time needed to implement and achieve a plan. Because entrepreneurial firms operate in highly turbulent and uncertain environments, they tend to have a short planning horizon (i.e. less than five years) (Barringer and Bluedorn, 1999). However, a relatively long horizon is more appropriate when the firm is operating in a relatively stable environment, which means conservative firms are more inclined to have a long planning horizon (i.e. five years and more) (Murimbika and Urban, 2014).

H3. A long planning horizon is negatively related to EO.

2.1.2 *Entrepreneurial culture.* Inter-firm integration refers to the level of interconnectivity among the firm's different departments through the exchange of information among the business units and the support of each department in operations and decisions (Burns, 2012).

Integration facilitates the dissemination of all information (information about the market, competitors, technological trends, etc.) captured by some parties in the firm throughout the firm's departments and hierarchical levels (Zahra, 1991; Antoncic, 2007). Recently, integration has become easier through technological advancements in communication, as most firms tend to use intranet technologies to enhance the application of integration within the firm. Integration ensures harmony within the firm and shares new ideas proposed by the employees or any managerial levels among the firm's parties. Hence, it enhances the firm's innovativeness. Moreover, it shares the information about any changes in demand, competitive actions, heterogeneity in customers' needs, new technological opportunities and any other dynamism between the marketing department and all other departments (e.g. R&D department) that need such information to effectively develop new products matching customer and market needs that are up to date with technological advancements.

H4. Inter-firm integration is positively related to EO.

Control is an ongoing process exercised by a firm's managers to ensure that the organization's operations and activities are directed toward the organizational objectives and goals as defined in the firm's strategic plan (Barringer and Blueborn, 1999; Hisrich and Kearney, 2011). It has traditionally been proposed that control hinders the entrepreneurship process, especially in large firms (Zahra, 1991). It has recently been argued that control might facilitate the firm to act entrepreneurially, especially when EO is one of the firm's primary long-term goals (Antoncic, 2007). Control usually organizes the practices pursued by the firm to become an entrepreneurial one. To illustrate, Zahra (1991) contended that control ensures the existence of successful integration among the departments, as integration requires the extensive use of control even if it is argued that too much control hinders EO. To sum up, control might hinder EO directly, but it ensures the existence of some other antecedents (e.g. integration).

H5. Control is positively related to EO.

Organization support, also called management support, refers to the top management's encouragement of subordinates (whether managerial or non-managerial levels) to facilitate entrepreneurial activities with the firm (Johanna de Villiers-Scheepers, 2012; Garrett and Neubaum, 2013). Such encouragement might be realized in different ways, like letting the employees realize their creative ideas by supporting them with the time and resources (Burgelman, 1984; Garrett and Neubaum, 2013), launching compensation and reward systems based on performance and achievements (Hornsby *et al.*, 2002) and tolerating risk taken to help subordinates initiate ideas (Hornsby *et al.*, 2009; Goodale *et al.*, 2011). It has been empirically proven that management support is one of the main triggers behind creating an entrepreneurial friendly culture within the firm. Thus, it results in creating entrepreneurial spirit and successfully adopting EO (Hornsby *et al.*, 2009; Goodale *et al.*, 2011; Garrett and Neubaum, 2013).

H6. Organization support is positively related to EO.

2.2 Mediating role of MO in the relationship between EO and organizations' performance

MO is defined as the extent to which all operations and functions of the organization are derived by the satisfaction of customers' needs and wants (Jaworski and Kohli, 1993). To this end, MO creates a culture of continuous scanning and assessment of the external environment of the organization. It develops a set of processes and practices

that aim to continuously acquire market knowledge about customers' needs and wants along with competitors' intelligence, and it disseminates this knowledge to all functional areas of the organization to ensure that it can respond actively to those customers' needs (Mac and Evangelista, 2016; Vega-Vázquez *et al.*, 2016).

The relationship between EO and MO has been investigated in both the marketing and strategic management literature, but the results are inconclusive (Gruber-Muecke and Hofer, 2015). Both constructs have been studied separately as independent constructs affecting firm performance, and the results highlight a positive direct relationship with profitability (Baker and Sinkula, 2009). In fact, the generally positive impact of both constructs as independent constructs on performance is well recognized in the literature (Jogaratnam, 2017). However, few studies have attempted to model the two constructs together, especially in large-sized organizations (Burns, 2012). When both constructs are examined together, the relationship between EO and profitability disappears (Matsuno *et al.*, 2002; Boso *et al.*, 2012; Vega-Vázquez *et al.*, 2016).

EO is perceived as an organization's predisposition toward the three entrepreneurial dimensions (innovativeness, proactiveness, risk-taking), while MO is the organization's systems and behaviors related to customers and competitors (Matsuno *et al.*, 2002). Therefore, it has been argued that EO is an antecedent of MO (Baker and Sinkula, 2009), and the relationship between both of them is sequential (Mac and Evangelista, 2016). This study argues that EO enhances MO by providing a commitment to learning and creating a culture that appreciates and supports innovative ideas to satisfy customers' needs (Matsuno *et al.*, 2002; Baker and Sinkula, 2009). EO encourages the firm to continuously improve products and processes; in turn, MO guides EO by providing essential information about the market (customers and competitors). This kind of information is crucial to the success of innovation projects/new ventures and should thereby lead to a better organizational performance (Matsuno *et al.*, 2002; Blesa and Ripollés, 2003). Accordingly, MO is the link between EO and organizational performance. Hence, this study argues that the positive impact of EO on performance depends on the level of the organization's MO:

H7. MO mediates the relationship between EO and organizational performance.

Figure 1 depicts the key relationships examined in this study.

3. Methodology

3.1 Research context

Entrepreneurial corporations are characterized by a high level of innovation. Therefore, this study concentrates on firms in industries that have the highest level of innovation. Three indicators have been widely used to identify the firm/industry level of innovation: R&D expenditures, rate of new product/service development and number of patent rights registered (Hagedoorn and Cloodt, 2003). The only available data for the Egyptian industries is the number of patent rights registered in each industry. Using the patent rights criterion,

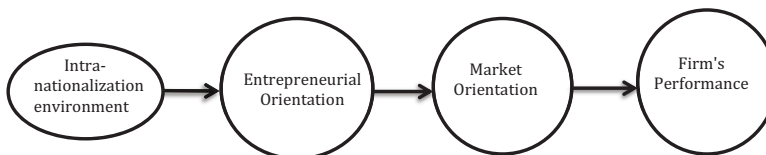


Figure 1.
Research framework

we found that the Egyptian industries that have varying levels of innovations are engineering and home appliances, communication and information technology (IT), food and beverage, chemicals (excluding pharmaceutical), furniture and decoration, clothing and smoking. Among these industries, the top industries in patent rights are the first four industries (Patent Office, Academy of Scientific Research and Technology, 2015). Accordingly, this study will consider all the industries that have patent rights as its research context because they represent a range of varying levels of innovation from high to low. For example, biochemical and pharmaceutical industries have a high degree of radical innovation that occurs less frequently while the food and beverage industry is the opposite, with a low degree of incremental innovation that is frequent. Therefore, these industries should present the right context for examining entrepreneurial and marketing orientation activities.

3.2 Measures and survey instrument

Measures of the research constructs were adopted from previous research. MO was measured using seven items from [Zhou et al. \(2008\)](#). EO was measured using nine items adopted from [Covin and Slevin \(1989\)](#). Strategic management practices, namely, deep *locus* of planning, planning horizon and planning flexibility, were measured as follows. Deep *locus* of planning (i.e. participation of middle and lower managerial levels in strategic planning and management) was measured using nine statements adapted from [Barringer and Bluedorn \(1999\)](#), planning horizon was measured using a nominal question indicating the time horizon of the plan ranging from a short-term plan (less than a year) to a long-term plan (more than five years) and planning flexibility was measured using eight statements adopted from [Barringer and Bluedorn \(1999\)](#). The organizational structure variables (i.e. inter-firm integration, control and organizational support) were measured as follows. Inter-firm integration was measured using 8 statements adopted from [Miller and Friesen \(1982\)](#), control was measured using 6 statements from [Antoncic and Hisrich \(2001\)](#) and organizational support was measured using 12 statements from [Hornsby et al. \(2009\)](#) and [Antoncic and Hisrich \(2001\)](#). Finally, performance conceptualized as a multidimensional construct included new product development (measured by three statements from [Morris and Sexton, 1996](#)), growth (measured by two statements adopted from [Gupta and Govindarajan, 1984](#)), customer-related outcomes (measured by three statements from [Gupta and Govindarajan, 1984](#) and [Stam and Elfring, 2008](#)) and new process development (measured by two statements from [Alpkan et al., 2010](#)).

The survey instrument comprised three pages and the cover page. It included 64 statements measured along a seven-point Likert scale, with 1 indicating strongly disagree and 7 strongly agree. It also included a nominal question to measure the planning horizon of the firm. We measured competitive advantage with reference to the firm's major competitors in the industry using three statements along a seven-point scale, with 1 indicating extremely low and 7 extremely high. Finally, we asked respondents to indicate the firm's name, age and industry. [Appendix](#) presents the research constructs and their measures.

3.3 Population and sample

The population of this study includes all large manufacturing firms (number of employees ≥ 500) [1] working in Egypt during the period of study (2015-2016). No comprehensive list of large companies in Egypt exists; hence, we compiled a list from the Industrial Development Authority (IDA) list, which includes 1301 companies working only in the Greater Cairo area, classified by size, industry and geographic location; and the Misr for Central Clearing, Depository and Registry (MCDR) list of 1088 corporations working in Egypt. The final list included approximately 400 large, privately owned companies classified by industry and

geographic location. Therefore, we decided to collect data from all the companies on the list. The sampling unit includes the vice president for marketing or innovation, the marketing manager or the R&D/innovation manager.

3.4 Data collection

We hired Nagy Research Co. (www.nagyresearch.com), a specialized marketing research company, to collect data. To organize the data collection process, one of the researchers met with the data collection team to explain the research purposes and describe the population and sample, the sampling unit and the survey instrument. Data were collected and verified in a two-step process. First, data were collected by professional data collectors via personal interviews with the sampling unit. Data collectors were required to get the full name and contact information (i.e. job position, phone number and email) of the respondent to the questionnaire. This process resulted in collecting 185 questionnaires. Second, after data collection, the respondents were contacted to verify the data collection process. The questionnaires of the respondents who never answered or got back to the company were discarded. In addition, incomplete questionnaires were excluded from the analysis. Accordingly, out of the 185 questionnaires collected, only 120 questionnaires were valid for analysis, representing a response rate of 30 per cent. Table I presents the sample description.

4. Results

This section reports the results of the path analysis of the conceptual framework of the study. First, the assessment of the measurement model is presented; second, the structural model (including hypotheses testing) is examined. Finally, the results of IPMA for the firm performance construct are reported.

4.1 Measurement model

The partial least square approach of the structural equation modeling (PLS-SEM) was used for the data analysis. All the measures were subjected to confirmatory factor analysis (CFA) using the PLS-SEM approach in Smart PLS 3.2.4. (Ringle *et al.*, 2015). Moreover, validity and reliability were tested. Table II reports the associated composite reliability, AVE and Cronbach's alpha of the constructs, which were found to be above the recommended criteria (Jöreskog and Sörbom, 1996). In addition, it also includes the discriminant validity expressed by the Fornell–Larcker criterion test. All minimum requirements for outer loadings were met. All factor loadings of reflective

Variable	No.	(%)
Age of the firm		
21 years or less	61	52.5
More than 21 years	39	48.5
Type of industry		
Engineering and home appliances	40	33.3
Food and beverage	41	34.2
Chemicals	16	13.3
Furniture	14	11.7
Clothes	6	5.0
Communication	2	1.7
Smoking	1	0.8
Total	120	100

Table I.
Sample description

Table II.
Composite reliability
(CR), AVE and
correlation matrix for
all the constructs

Factors	CR	AVE	Deep locus of planning	Planning flexibility	Planning horizon	Integration	Control	Organization support	EO	MO	Performance
Deep locus of planning	0.885	0.721	<i>0.849</i>								
Planning flexibility	0.917	0.612	0.205	<i>0.782</i>							
Planning horizon	1.000	1.000	-0.187	0.007	<i>1.000</i>						
Integration	0.902	0.649	0.453	0.483	-0.030	<i>0.806</i>					
Control	0.918	0.789	0.429	0.411	-0.093	0.752	<i>0.889</i>				
Organization support	0.940	0.610	0.139	0.642	0.131	0.579	0.404	<i>0.781</i>			
EO	0.933	0.637	0.540	0.279	-0.259	0.692	0.594	0.425	<i>0.798</i>		
MO	0.891	0.578	0.374	0.409	0.025	0.700	0.519	0.471	0.532	<i>0.760</i>	
Performance	0.933	0.666	0.353	0.303	-0.232	0.601	0.543	0.374	0.709	0.511	<i>0.816</i>

Note: The diagonal represents the square root of AVE (italic numbers)

indicators were higher than 0.71 (Malhotra, 2010), except for the sustainable MO item, which had a loading of less than 0.71 but more than 0.4 (Hair et al., 2014). Hence, the researchers retained it because of its relative theoretical importance, as it uniquely reflects a very critical dimension in the EM construct (i.e. the frequency of MO).

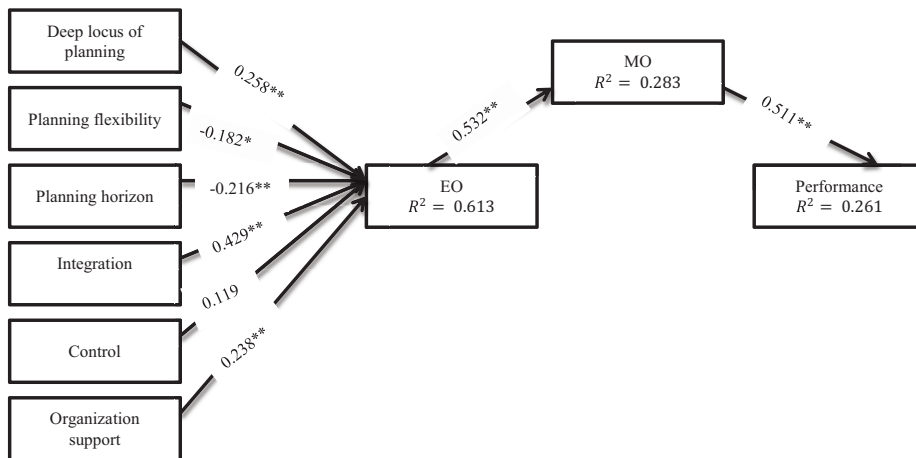
The CFA test resulted in the exclusion of some constructs' indicators. For instance, two indicators in the organization support construct were excluded because they loaded less than 0.71, as well as two indicators in planning flexibility and three indicators in the integration, control and performance constructs. Finally, the CFA test resulted in excluding one indicator from the MO construct as well as one from the EO construct.

Moreover, the value of the composite reliability (CR) was higher than 0.8, and convergent validity AVE was higher than 0.5; discriminant validity for all constructs was also established according to the HTMT criterion, and all relationships were greater than 0.85 (Henseler et al., 2015). The upper interval value of the bootstrapping for all relationships was significantly different from 1 (Hair et al., 2014). The Fornell–Larcker criterion was used to also test the discriminant validity. The square root of the AVE for all factors exceeded the correlation values of all possible pairs, thereby supporting the discriminant validity, as shown in Table II.

4.2 Structural model

The structural model addresses the impact of the intra-organization environment, i.e. strategic management practices (deep locus of planning, planning flexibility, planning horizon), and entrepreneurial culture (integration, control, and organization support) on the EO construct, which is composed of three sub-dimensions: innovativeness, risk-taking and proactiveness. It also tests MO as a mediator between EO and organizational performance as depicted in Figure 2.

Table III summarizes the results of the structural model (i.e. the hypothesis testing). The results show that the variables of the strategic management practices significantly affect EO. Specifically, deep locus of planning ($\beta = 0.258$, t -values = 3.258, $p < 0.01$), planning flexibility



Notes: Based on two-tailed tests, * indicates t-values greater than 1.96 (significant at $p < 0.05$); ** indicates t-values greater than 2.575 (significant at $p < 0.01$)

Figure 2. Relationship between inter-organization environment, EO, MO and organization's performance

Table III.

Structural model and hypotheses testing

Relationships	Path coefficient		Hypothesis testing
	Beta	t-value	
H1: Deep locus of planning → EO	0.258	3.258**	Supported
H2: Planning flexibility → EO	-0.182	1.965*	Supported
H3: Planning horizon → EO	-0.216	3.496**	Supported
H4: Integration → EO	0.429	3.397**	Supported
H5: Control → EO	0.119	0.908	Not supported
H6: Organization support → EO	0.238	2.282**	Supported
H7: EO → MO	0.532	5.855**	Supported
MO → Performance	0.511	5.060**	

Notes: Based on two-tailed tests, * indicates *t*-values greater than 1.96 (significant at $p < 0.05$); ** indicates *t*-values greater than 2.575 (significant at $p < 0.01$)

($\beta = -0.182$, *t*-values = 1.965, $p < 0.05$) and long planning horizon ($\beta = -0.216$, *t*-values = 3.496, $p < 0.01$). In addition, only two out of the three variables of the entrepreneurial culture are significantly associated with EO. These are, the inter-firm integration ($\beta = 0.429$, *t*-values = 3.397, $p < 0.01$) and organization support ($\beta = 0.238$, *t*-values = 2.282, $p < 0.01$) were significantly related to the EO of the firm. Hence, *H1*, *H2*, *H3*, *H4* and *H6* were supported. These five variables explain 61.3 per cent of the variation in the EO. However, the results also showed that control was not significantly related to the EO, thereby not supporting *H5*.

To test the mediating effect of MO in the EO–performance relationship, the Preacher and Hayes (2008) mediator testing technique was used. First, a direct path from EO to performance was established to check the path effect and its significance. The indirect effect (i.e. EO → Performance) was 0.711 and was significant at 1 per cent (i.e. $p < 0.01$). Second, the MO was inserted into the model to test the indirect effect. The path value EO → MO was 0.523, *t*-values = 5.855, significant at 1 per cent (i.e. $p < 0.01$), and the other path value MO → performance was 0.511, *t*-values = 5.060, significant at 1 per cent (i.e. $p < 0.01$). Hence, the indirect effect equaled the multiples of the two paths, which was equal to 0.268. Finally, variance accounted for (VAF) was calculated, which is equal to direct effect over total effects (i.e. direct and indirect), to check the mediation relationship. $VAF = 0.711 / (0.711 + 0.268)$, which is equal to 73 per cent. This amount indicates that MO partially mediates the EO–performance relationship. Hence, *H7* was supported. EO explained 28.3 per cent of the variation in MO, while MO explained 26.1 per cent of the variation in the organization’s performance.

4.3 Importance–performance matrix analysis

Importance–performance matrix analysis (IPMA) is an analysis technique used to show more concrete and comprehensive managerial implications. It provides guidelines for managers to follow, based on research findings, to solve their entrepreneurship-related business problems. It focuses mainly on highlighting the relative importance of the model’s constructs (whether independent or mediators) and their actual use (scores) among the firms under study to improve the firms’ performance (i.e. dependent variable). Table IV highlights the IPMA results.

Generally, the IPMA findings indicate that the factors with the highest relative importance in affecting performance are MO, followed by EO. MO is critically important for pursuing a firm’s performance (total effect = 0.663), and the Egyptian firms give great attention to MO activities (actual performance = 78.4). However, the relative importance of EO to performance is significantly less than MO (i.e. total effect = 0.240), and firms are relatively less concerned with EO (actual performance = 63.59) than applying MO. Finally,

the IPMA findings imply that the Egyptian corporations are relatively overwhelmed with the least important activities (i.e. planning flexibility and control) compared to the more important ones (i.e. inter-firm integration and deep *locus* of planning). The Egyptian corporations are highly concerned with frequently changing their strategic plan to cope with the changes occurring in the external environment. However, planning flexibility was found to be the least important variable affecting the firm's performance with respect to other antecedents. In a similar vein, integration is considered the most important antecedent in pursuing the firm's performance. However, Egyptian firms focus relatively more on other antecedents and perform poorly in it. Likewise, a deep *locus* of planning is the second most important variable among antecedents affecting a firm's performance (total effect = 0.078), but Egyptian firms perform poorly in it (actual performance = 69.669).

5. Discussion and implications

This study developed an integrated framework that delineates the antecedent intra-organizational environment factors needed to facilitate EO activities and in turn explains how MO explains the EO–performance relationship of large firms in an emerging economy (i.e. Egypt). The contribution of this research to the literature is twofold: it identifies the intra-organizational environment factors that facilitate and support the implementation of EO in manufacturing corporations in Egypt, a less researched area in the literature; and the results supports the mediation role of MO in the relationship between EO and performance.

The significant relationship of the EO–MO–performance accompanied by the IPMA results showed that MO is the most important factor for enhancing Egyptian firms' performance and that Egyptian firms give great attention to MO activities; however, the EO results indicated that EO's relative importance to performance is less than MO. This supports the notion that adopting high levels of innovations and continually developing new products, services, processes and technologies, as well as being high risk-takers and proactive in a highly turbulent environment are not enough to boost performance. Being market-oriented is more important for increasing the success probabilities of a firm's entrepreneurial activities and enhancing the firm's performance. The significant mediating role of MO in the EO–performance relationship indicates that entrepreneurial firms that invest in market intelligence systems will have superior performance than their counterpart firms because their continuous scanning of the external environment to track and predict changes in customers' needs and demands will enable them to develop new ventures/products that will give them a competitive edge in the market.

The findings related to the intra-organizational environment (i.e. strategic management practices, and entrepreneurial culture) necessary to support EO activities show that a deep

Constructs	Total effect (i.e. variables' importance)	Variables' actual performance
MO	0.663	78.400
EO	0.240	63.590
Deep locus of planning	0.078	69.669
Planning flexibility	−0.059	76.738
Integration	0.120	69.669
Control	0.030	71.789
Organization support	0.070	70.920

Note: Variables' actual performance is ranging from 0 to 100, the higher the better

Table IV.
IPMA of firm
performance

locus of planning – that is, encouraging middle and lower managerial positions as well as employees to participate in the strategic management process (determined by strategy formulation phase, strategy implementation phase and strategy control and monitoring phase) – enhances the firm's abilities to be innovative, take risks and be proactive (i.e. to be an entrepreneurial firm). Such participation supports EO activities because lower managerial and non-managerial positions are more aware of the market trends, customers' needs and competitors' actions. Thus, their participation directs the firm's activities and offerings toward the market needs. This finding supports the results of previous studies that found a positive association between a deep *locus* of planning and EO (Barringer and Bluedorn, 1999; Li *et al.*, 2009; Murimbika and Urban, 2014).

In addition, the results of the negative impact of planning flexibility on EO imply that corporations, which frequently change its strategic plans to cope with sudden changes that usually occur in highly turbulent environment, will mostly face struggles while adopting EO activities because frequent changes will distract the firm from reaching its primary goals and long-term objectives. This finding might suggest that firms should adopt a contingency plan to be implemented in abnormal situations and events rather than changing their original ones every time a sudden change happens in the market. Moreover, the findings related to planning horizon suggest that it is preferable that entrepreneurial firms should set its strategic plan for short horizons (probably less than three years) because environment turbulence shortens the product life cycles and increases the rivalry level, which in turn obligates the firm to continually scan its environment and be up to date with the newly trends to match the market changes and needs. These results are similar to those of previous studies, such as Barringer and Bluedorn (1999), Li *et al.* (2009), and Murimbika and Urban (2014).

Furthermore, with regard to organizational support, the findings show that top management's support for lower or non-managerial levels boosts the corporation's innovativeness, proactiveness and willingness to make risky decisions. Supporting entrepreneurial spirit within the firm is determined by encouraging the subordinates to propose creative and innovative ideas, offering monetary and non-monetary rewards as well as promoting subordinates who have proposed innovative ideas, being tolerant of subordinates' risky decisions and making the needed resources available for them in order to help them while implementing their ideas. Such support (also called intra-firm intrapreneurial environment) improves the firm's EO. These findings support the results of Antoncic and Hisrich (2001), Hornsby *et al.* (2002), Antoncic and Hisrich (2004), Alpan *et al.* (2010), Goodale *et al.* (2011), Johanna de Villiers-Scheepers (2012) and Garrett and Neubaum (2013).

The significant impact of inter-firm integration implies that ensuring high levels of integration among departments, whether in sharing information and resources or complementing one another's decisions, leads firms to easily bend the rigid rules, policies and procedures. Furthermore, it helps the corporation overcome the negatives of high inter-firm bureaucracy, which in turn help firms successfully adopt EO activities.

Finally, despite the previous research findings (Barringer and Bluedorn, 1999; Murimbika and Urban, 2014) that control attributes are not one of the antecedents of EO, an insignificant relationship exists between control and EO activities of the firms under study. Some previous studies conducted in developed countries, which have different institutional environments than developing economies (Antoncic and Hisrich, 2004), found a significant curvilinear relationship between control and EO; other studies found a strong positive significant relationship between control and EO. Nevertheless, the result of the current study conforms to Antoncic and Hisrich's (2001) results from an emerging economy (i.e. Slovenia), which indicates a non-significant relationship between control and EO among the Slovenian companies. These contradictory results emerge perhaps because the control mechanism in emerging economies like Egypt is set

up in a way to decrease firms' internal flexibility, thereby hindering the entrepreneurial spirit and practices within firms. However, in more developed countries, control stems from an evaluation rather than bureaucratic philosophy; effective policies and procedures are therefore adopted to evaluate the attainment of objectives and provide insights for future plans, thereby enhancing the firm's entrepreneurial practices rather than limiting them.

Considered broadly, the findings indicate that entrepreneurial firms that support the participation of lower managerial levels in strategic planning have a short planning horizon (less than three years), high inter-firm integration, high levels of organizational support and lower levels of planning flexibility; thus, they will be better able to create an entrepreneurial culture to facilitate and support the firm to be more entrepreneurially oriented (i.e. more innovative, risk-taking, and proactive). More importantly, the mediating role of MO in the relationship between EO and performance indicates that EO alone does not enhance performance or give the firm a competitive advantage. MO directs firms' entrepreneurial activities in the right direction by aligning firms' innovative activities with customers' needs and wants.

5.1 Managerial implications

The findings of this research argue conclusively for three major implications. First, the findings provide crucial insights about the configuration of the intra-organizational environment necessary to support EO activities in emerging economies (e.g. Egypt). Most of the entrepreneurial marketing literature has focused on studying antecedents of EO and the EO–MO relationship as well as their performance implications in the SME context; however, the EO–MO–performance relationship in a large firm has been meager. Generally, the findings indicate that firms should pay more attention to the intra-organizational factors with the highest relative importance on the firms' performance. However, the IPMA findings indicate that Egyptian corporations are relatively overwhelmed with the least important activities (i.e. planning flexibility and control) compared to the more important ones (i.e. inter-firm integration and a deep *locus* of planning). Therefore, the findings of the antecedents of EO activities in large firms would help companies develop the appropriate intra-organizational environment needed to successfully adopt EO activities. Firms should focus on developing an organizational structure that facilitates a deep *locus* of planning and inter-firm integration to create an entrepreneurial culture that encourages and supports EO activities. This could be achieved by adopting organic organizational structures versus functional/departmental organizational structures usually adopted by Egyptian manufacturing firms.

Second, managers are encouraged to manage (i.e. plan, design, control, measure, monitor) the EO activities on a continuous basis. They should consider EO practices as one of the firms' goals. This should enhance the application of EO activities and improve their impact on firms' performance. Finally, firms are advised to invest in developing sophisticated market intelligence systems that continuously scan the external environment (customers, suppliers and competitors) and disseminate this knowledge to concerned parties in the firms to guide their innovative products and create a competitive advantage.

5.2 Public policy implications

Policymakers can adopt several strategies and develop many initiatives to help enhance EO and MO activities of the manufacturing firms in Egypt. For example, many bodies or institutions are responsible for working with entrepreneurs to develop new technologies and then help in commercializing them. One of the prominent bodies in Egypt is the Science and Technology Development Fund (STDF). Therefore, STDF is advised to establish technology partnership programs with various industrial sectors in Egypt to boost their innovation capabilities and, hence, enhance their proactive plans to respond to changes in customers' needs. Furthermore, the

Ministry of Trade and Industry (MTI) can develop training programs on entrepreneurial skills, such as risk analysis and assessment, creative thinking and problem-solving skills, which can lead to more innovative products and/or processes. They can also establish a market intelligence unit to provide companies with insights about the recent market intelligence technologies and customers' and competitors' insights and demand forecasts.

6. Limitations and future research

One of the limitations is that the study is cross-sectional in nature; caution is advised in drawing cause-effect inferences. The results, therefore, might not be interpreted as proof of causal relationships, but rather as lending support for a prior causal scheme. Second, the study is based on somewhat a small sample of 120 firms. However any, significant effects found in such a small sample will only become more apparent in larger samples. Third, the study could not provide an exhaustive account of antecedents of EO. Finally, the study could not test the validity of the results across different industry groups because of sample size limitations.

Opportunities for future research are abundant. In addition to addressing the previous limitations, the following venues are also suggested for future research. For example, further research should also focus on the differences between large versus small firms and service versus industrial firms. Moreover, future research should focus on innovation in different industries as in our analysis; large-sized firms in this study were treated as a homogeneous group, and thus, no distinction was made between firms operating in different industrial sectors or technological fields. It is very likely that we would have obtained different results if firms were classified based on their industry or technological intensity. As well, there is a need for both researchers and managers to examine the role of strategic actions that use strategic resources in creating competitive marketing advantage and shaping superior firm performance in the business-to-business market. Future research needs to examine other constructs that are complementary to an EO such as learning orientation or learning commitment to determine how these constructs will interact and collectively affect firm's innovation capability to enhance firm performance.

Note

1. The study used the criteria of the Organization for Economic Co-operation and Development (OECD), which consider a firm to be large if the number of employees is ≥ 500 (OECD, 2005), to make the results of the study relevant and comparable with the results of the extant literature.

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Variables and statements	Loadings
<i>EO</i>	
Our company has introduced many new products or services over the past three years	0.867
Our company has made many dramatic changes in the mix of its products and services over the past three years	0.803
This company has shown a strong commitment to innovation, technological leadership, and research and development (R&D)	0.829
Over the past three years, this company has shown a strong proclivity for high-risk projects (with chances of very high return)	0.731
This company has followed strategies that allow it to exploit opportunities in its external environment	0.770
In dealing with the competitors, this company typically initiates actions to which competitors then respond to them	0.827
In dealing with the competitors, this company is very often the first company to introduce new products/services, operating technologies, etc.	0.797
In dealing with the competitors, this company typically adopts a very competitive, 'undo-the-competitor' posture	0.751
<i>MO</i>	
We have been fast to detect changes in customer product preference satisfaction	0.741
We have been fast to detect fundamental shifts in our industry (e.g. competition, technology, regulation)	0.804
We have periodically reviewed the likely effect of changes in our business environment (regulations) on customers	0.742
Customer's suggestions and comments have been disseminated at all levels in the organization in a regular basis	0.722
We have paid close attention to the changes in our customer's needs	0.827
We have been able to effectively implement a marketing plan in a timely fashion	0.717
<i>Performance</i>	
The percentage of new products/services to old ones is increasing over the past three years	0.737
This company's sales are growing over the past three years	0.771
This company's market share is growing over the past three years	0.816
This company has the ability to introduce new technology for work processes	0.811
This company's productivity rates are growing over the past three years	0.894
This company expanded the existing customer base over the past three years	0.835
This company had totally new-segmented customers over the past three years	0.841
<i>Organization support</i>	
This company's top management often encourage employees who generate innovative	0.745
This company's top management is aware to employees' ideas and suggestions	0.701
This company establishes procedures to examine new innovation ideas	0.828
This company has a major emphasis to train its employees for creativity techniques	0.805
This company often gives time to employees who have good new and innovative ideas to develop them	0.851
This company often gives additional reward for employees with successful and innovative projects or ideas	0.794
This company usually promotes its employees who developed new and innovative ideas	0.755
This company often encourage its employees to take calculated risks with new ideas	0.722
This company supports many small and experimental projects	0.785
	0.813

Table A1.
Outer measurement
model results

(continued)

Variables and statements	Loadings
This company's resources (financial and non-financial) are often available for experimental projects	
<i>Integration</i>	
This company depends on interdepartmental committees to allow departments for joint decision making	0.788
This company uses task forces to facilitate interdepartmental collaboration on specific new projects	0.797
This company has a coordinator to coordinate the efforts of several departments for purposes of specific project	0.764
This company has a great deal of departmental interaction on most decisions	0.841
This company's decisions which made in one department are complementing with other departments	0.837
<i>Control</i>	
This company's new ventures/projects are subject to continuous evaluation to determine their financial feasibility	0.901
This company conducts extensive reviews of the progress of different ventures/projects	0.912
This company's employees must follow many policies and procedures to establish and develop a new venture/project	0.851
<i>Deep locus of planning</i>	
<i>Middle management</i>	0.795
This company's middle management is involved in formulating the strategic plan	
This company's middle management is involved in implementing the strategic plan	
This company's middle management is involved in evaluating and controlling the strategic plan	
<i>Lower-level management</i>	0.924
This company's lower-level management is involved in formulating the strategic plan	
This company's lower-level management is involved in implementing the strategic plan	
This company's lower-level management is involved in evaluating and controlling the strategic plan	
<i>Employees level</i>	0.823
This company's employees are involved in formulating the strategic plan	
This company's employees are involved in implementing the strategic plan	
This company's employees are involved in evaluating and controlling the strategic plan	
<i>Planning flexibility</i>	
This company can change its strategic plan when there is emergence of new technology	0.741
This company can change its strategic plan when there is sudden changes in political conditions that affect the company's industry	0.789
This company can change its strategic plan when there is sudden changes in government policies and regulations	0.762
This company can change its strategic plan when there is changes in supplier strategies	0.767
This company can change its strategic plan when there is sudden appear of a new strong competitor	0.729
This company can change its strategic plan when there is sudden appear of unexpected opportunity in the market	0.824
This company can change its strategic plan when sudden appear of unexpected threat in the market	0.855

Table AI.

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