



Environment-Strategy and Alignment in a Restricted, Transitional Economy: Empirical Research on its Application to Iranian State-Owned Enterprises



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Successful innovation strategy relies on experience gained from a complexity of understanding, anticipating and managing the global business environment. But, although much research has examined strategies of private sector organizations in Western economies, there are relatively few studies of innovation in public sector organizations of transitional and protected economic environments, such as Iran. Consequently, this work investigates Iranian state-owned enterprises (SOEs) and how senior managers' approach towards innovativeness and learning can affect organizational performance. These managers work in an uncertain environment, regulated by the state but subject to business environment challenges created by UN sanctions, as well as global market competition. This study draws on innovation and learning orientation theory to develop a strategy-centered model based on a survey of 127 Iranian SOEs. Despite the limitations of a state-protected economy and restrictions generated by sanctions and environmental uncertainty, senior managers of SOEs can influence organizational culture for innovation, a *normative dimension*, and learning, a *cognitive dimension*. Both dimensions can relate to improvements in delivery speed, costs and quality, as well as confidence in future company performance. However, some ongoing problems arise from a highly regulated hostile business environment, forming a *regulatory dimension* that impedes organizational learning. Further research is required to understand the contextual factors that influence internal company culture, as well as how the impact of a restricted business environment appears to vary from service to retail and manufacturing industries. This research represents a rare opportunity to investigate SOE strategy in a restricted transitional economy, such as Iran.

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Introduction

A transition economy is one that is changing from a state-controlled business environment towards a less-restricted market, and a greater need for entrepreneurship and innovation to survive global competition (Ahlstrom and Bruton, 2010, 531). In the last two decades, countries in transition have sought to embrace market capitalism and abandon centralized planning. Despite successful transition cases, such as China, Vietnam, Russia and India (Guo, 2004), it appears that transitional economies in restricted markets can face severe short-term difficulties as well as constraints in business development. For example, they are more likely to experience challenges such as rising unemployment and price inflation, all of which impact upon company performance. However, a nation's culture may influence its business systems and performance, "a country institutional profile can serve as a viable alternative for exploring broad country differences" (Busenitz et al., 2000, 1000), and there are inherent national characteristics that may impact upon government policy as well as business practice (Hofstede, 2007). In this respect, organizations are defined as "regulative, normative, and cognitive structures with activities that provide stability and meaning to social behavior" (Scott, 1995, 33).

These three distinctive but related institutional profiles, or *regulatory*, *cognitive* and *normative* dimensions, can influence government policy as well as the company business environment (Peng, 2003). A *regulatory dimension* is based on formal rule systems, laws, regulations, government policies and enforcement mechanisms endorsed by the state (Busenitz et al., 2000; North, 1994). This regulatory dimension focuses on government policies and programs that provide advice and support for new businesses, offering grants and assistance to reduce the risks for startups, and leverage to facilitate entrepreneurs' efforts to acquire resources. On the other hand, a *cognitive dimension* is based on the widely shared social knowledge and skills possessed by the people in a country, as they strive to set up a new business and maintain those already established. The third *normative dimension* puts more emphasis on entrepreneurial activity, and value creative and innovative thinking (Busenitz et al., 2000). In other words, organizations in transitional economies are likely to have a distinctive, regulatory business environment to deal with as well as the normative and cognitive dimensions that reflect any inherent national

characteristics towards entrepreneurship, learning and innovation (Hofstede, 2007). Moreover, in transitional economies, innovation and learning orientation transformation may become critical factors, since the old state-owned industries (SOEs) must move to become competitive in a new, global market economy (Ahlstrom and Bruton, 2010).

However, most of our knowledge about SOEs originates from research conducted in emerging economies such as China, where organizations have adapted to meet the demands of a global business environment (Ren et al., 2006; Tan and Tan, 2005; Ahlstrom and Bruton, 2010). In fact, SOEs dominate Chinese economy and, combined with other companies and government units in a closed system, they generate more than 80% of the country's gross national product GDP (Bao et al., 2006). But, unlike SOEs in China, where the market environment mimics the competitiveness of Western economies, supported by foreign direct investment (Lin and Germain, 2003; Souitaris, 2001), the situation is very different for Iran, since despite recent government reforms, these companies still face UN economic sanctions. Although protected by the government, their isolation from environmental turbulence and global market competition severely restricts operations and performance in the long-term, if they are unable to trade outside the country. Furthermore, the managers of Iranian companies are selected by the state, often because they have a high social status rather than experience running organizations, so they may be ill-prepared to develop an appropriate strategy for innovation and learning as the business environment changes. In this respect, Iranian business appears to differ from that in the world's largest transitional economies, such as China, Russia and India, where companies have a relatively stable internal market-based economic environment that serves as a platform for trade in the global marketplace (Peng, 2003; Zhou et al., 2005). In this context, it is important to examine the strategic orientation of these companies, since this reflects how they respond to internal and external environmental factors, in terms of innovation, learning and performance (Gatignon and Xuereb, 1997; Tajeddini, 2011a; Zhou et al., 2005).

Background: state-owned enterprises (SOEs) and Iran

Iran plays a central role in the politics of the Middle East and is influential in the Muslim world (Crane et al., 2008). It is not an Arab state, yet is often perceived as such because of its location in the Middle East (Jalilvand and Samiei, 2012). Iran's leadership has been associated with the Islamic Revolution and supporting Muslim ideals. In 1980, the new revolutionary government nationalized major companies in Iran, acquiring ownership of banks, insurance companies, dams and irrigation works, large-scale manufacturers, radio and television stations, communications and transport companies, as well as a mixture of companies in other sectors (Alizadeh, 2003; Crane et al., 2008). Nationalization has given the state a large economic role as owner and manager of Iran's SOEs, which account for 70 percent of industry (including the oil and gas sector), and are the single largest employers after the government (Crane et al., 2008).

Moreover, Iran may suffer from a "curse of natural resources", since the literature on economic development reveals that countries rich in natural resources such as oil and gas tend to have slower economic growth than resource-poor countries, possibly because there may be less incentive to innovate and learn (Bjorvatn and Selvik, 2008; Sachs and Warner, 2001). In fact, although Iran is a leading exporter of oil, with the third-largest reserves in the world (Crane et al., 2008), it reflects a tendency for countries with weak government-controlled institutions and the dominance of large SOEs to have negative economic growth (Mehlum et al., 2006). In contrast, a culture of market-friendly companies that foster entrepreneurship usually leads towards economic growth and development (Peng et al., 2010). In this respect, Mostashari (2004) observes that state-owned enterprises in Iran suffer from government inefficiency in operating industries and service sectors, due to the adverse political interactions with global markets and a lack of operational strategy and transparency. Moreover, SOEs are large and complex organizations with mechanistic structures within a socialist economic system, and an important source for government revenues (Peng et al., 2004; Ren et al., 2006). Thus, it is not surprising that similar to other emerging transitional economies, a critical strategy of the reform in Iran is to move from state-owned enterprises (SOEs) to alternative ownership schemes, such as stock enterprises, joint ventures, privately owned firms, and so forth.

Theoretical background and framework

In general terms, environmental complexity refers to "the magnitude of the problems and opportunities in the organizations' environment" (Schermerhorn et al., 1995, 249). This takes the predictability, variability and dynamism of company culture into account, and the perceived frequency of change in the external business environment (Sohi, 1996). "Dynamism" refers to the speed of change, inconsistent patterns and environmental unpredictability (Dess and Beard, 1984) often influenced by competitive forces, such as the rate of technological change (Simerly and Li, 2002). On the other hand, "environmental hostility" relates to perceived threats to organizations, and is regarded as the "rate of change and innovation in an industry as well as the uncertainty or predictability of the actions of competitors and customers" (Miller and Friesen, 1983, 222). Altogether, the co-alignment or fit between company environment, culture and strategy needs to be examined, since this may have implications for performance and organizational effectiveness (Dobni and Luffman, 2000). In this way, SOEs can learn to match resources and capabilities, as well as respond to new business opportunities (Gatignon and Xuereb, 1997; Grawe et al., 2009; Narver and Slater, 1990). Thus, the development of a "strategic orientation" should meet the demands of a complex, uncertain and fast-changing business environment (Markides, 1999).

Conceptual model and hypotheses development

In this respect, any new conceptual model that impacts upon organizational strategy and orientation should take customer needs, competitor capabilities and changing market conditions into account (Narver and Slater, 1990). To develop a new model, this study adopts a framework for changing environments (*adaptive capability*), strategic orientation (*implemented innovation and learning-oriented perspectives*), organizational performance (*measured by delivery speed, cost improvements and quality*); and a set of contextual control variables (*organizational size and type*), to test some hypothesized relationships (see Figure 1). This conceptual model uses strategic orientation as an antecedent to company performance by incorporating the effects of environmental uncertainty.

Learning orientation in SOEs

In terms of the *Cognitive Dimension*, “learning” refers to the values and beliefs associated with the development of new knowledge, insights, and awareness (Sinkula, 1994). Because of its impact on an organization’s capability to contest old assumptions, a learning orientation is one of the most valuable resources for successful competition in the global marketplace (Tajeddini, 2009a; Baker and Sinkula, 1999). Senge (1994) argues that, as the world becomes more interconnected and business becomes more complex and dynamic, work must become more “learningful”. He further states that the organization that truly excels in the future will be the organization that discovers a way to tap people’s commitment and capacity to realize their highest aspirations. Numerous scholars (e.g., Hult et al., 2003; Sinkula, 1994) note that these insights have the potential to change the organization’s behavior, and can become a valuable capability in understanding different business cultures such as a *commitment to learning, shared vision, and open-mindedness*. Importantly, this can influence the creation and use of knowledge to improve company performance, as it reflects the extent to which an organization adopts a set of values to gain a competitive advantage (Tajeddini, 2009a; Hofstede, 2007; Hurley and Hult, 1998). In other words, the more a “company skilled at creating, acquiring, and transferring knowledge, and at modifying its behavior to reflect new knowledge” (Garvin, 1993, 80), the more likely it is able to respond to a rapidly changing, dynamic business environment (Davis et al., 2007). In sum, a learning orientation can be conceptualized as “the process where knowledge is communicated and distributed across the organization, as well as integrated into the strategic, operational and managerial philosophy” (Paparoidamis, 2005, 1055).

However, Yeo (2007) argues that little is known about organizational learning in the public sector or civil service, which may be constrained by a strong *Regulatory Dimension* of governmental regulations, nonparticipatory policy making, rigid organizational structures, and a culture of doing what is told rather than learning. An exception to this rule is found in China, where SOEs find themselves in intensive competition from various home and foreign non-state enterprises because of economic reform (Tan, 2002). Consequently, Liu and Shi (2000) suggest that SOE managers need to be willing to accommodate a series of learning behaviors to become successful market-oriented enterprises. Moreover, research from 304 SOEs and joint ventures companies in China, Liu et al. (2002) found that a learning orientation can mediate some negative effects customer orientation and entrepreneurship may have on profitability. Overall, learning organizations have a capacity to continually expand, as new patterns of thinking evolve and people learn to see matters as a “whole”, and are able to achieve business success, whether or not the learning orientation is viewed as privately owned enterprises (POEs) or SOEs (Hanvanich et al., 2006). Hence, this research hypothesizes:

H1: Learning orientation in SOEs has a positive impact on firm performance measured by (a) delivery speed, (b) cost improvement, (c) quality, and (d) confidence in the firm’s future performance.

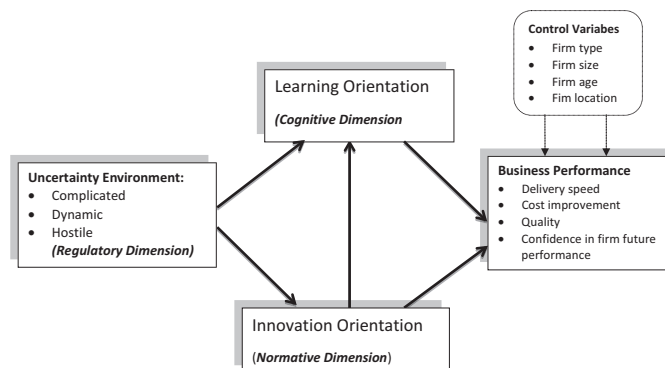


Figure 1. A strategic orientation framework for SOEs in a restricted, transitional environment

Innovativeness in SOEs

Previous research into the *Normative Dimension* has established a relationship between non-price factors, such as design, customization, quality, product variation and features, innovation, differentiation and sales growth (Trueman and Jobber, 1995). Therefore, given the importance of innovation and differentiation in a dynamic global market, organizations are compelled to be innovative if they are to be competitive in the long term (Tajeddini and Trueman, 2008, 2014). Indeed, Thompson (1993/1994, 2) defines innovation as “the ability to provide products and services differentiated from the competition and made profitable by their value to their customer,” so the innovativeness of a firm can be seen as an ability to develop new products and adopt new knowledge and technology (Tajeddini, 2010). Innovativeness is recognized as an important component in building a competitive advantage, survival and growth (Deshpandé et al., 1993; Olson et al., 2005). From a strategic and marketing perspective, Özsomer et al. (1997) define innovativeness as the ability of a firm to introduce new products and processes that take advantage of new marketplace opportunities.

Yam et al. (2004) note that the legacy of decades of top-down, *Regulatory* central government control over all aspects of the economy still impacts the business philosophies of many companies, so SOEs are not held responsible for the economic risk of innovation. In this context, a larger number of SOEs have lost their market share in the past decade, but more recently these companies and governments have sought to better understand management of technical innovation in order to survive, despite the fact that the bureaucratic nature of the SOE system can be an inhibitor of vision and innovation (Cai, 2004; Mak, 2008). Yet the transition from a centrally planned system to a market economy is not easy, and top managers need to have a more holistic view of technical innovation (Ren et al., 2006). Consequently, we argue that innovativeness, in terms of entrepreneurial activity, value creation and innovative thinking, is increasingly important for Iranian SOEs if they are to continue to play an integral part of the national economic strategy for sustainable economic growth, in the face of increased competition from private companies in the non-state sector and global markets.

However, companies need to overcome a conceptual barrier in the form of traditional Iranian management philosophy, which has focused on imitation, assembly and partial improvements rather than radical innovation. On the positive side, there is a growing interest in innovation management, and some recognition of the need for new technological innovation to improve product quality as well as cost effectiveness (Ren et al., 2006; Tajeddini, 2009b). In fact, since the Revolution, Iranian firms have strived to develop core competencies and use domestic innovation capabilities as a yardstick for successful performance. Therefore, it is not surprising that these companies are anxious to meet changing demands and see the creation of innovative new products and processes (cf. Tajeddini, 2009b). Innovativeness should have a favorable impact on business performance as well as giving new confidence in company survival in the long term (Agarwal et al., 2003; Deshpandé et al., 1993; Tajeddini, 2011b). Thus, we hypothesize:

H2: *Innovativeness in SOEs has a positive impact on firm performance, measured by (a) delivery speed, (b) cost improvement, (c) quality, and (d) confidence in firm future performance.*

Environmental uncertainty and learning orientation

In contrast to the *Regulatory Dimension*, the notion of competencies is rooted in the resource-based, dynamic capability and knowledge-based theories (Acur et al., 2010). Organizational learning is a dynamic capability that may reconfigure core competencies, and reflects more of a *Cognitive Dimension*. Kenny (2006) argues that flexibility in organizational structure and process is a necessary condition for effective performance in volatile global markets. If organizations can change to cope with rapid and unexpected environmental uncertainty, they require a continuous and appropriate learning capability (West, 1994). Although Keck and Tushman (1993) argue that rapid environmental change may impede successful organizational learning, Milliken and Lant (1991, 146) contend that these changes offer “equivocal experiences and opportunities” in learning for the organizations, and, if they persist, they are more likely to expect these changes as normal rather than exceptional. This notion is at odds with a *Regulative Dimension* that is more likely to be opposed to an innovation, learning and change orientation.

At the same time, traditional organizational structures, training and development practices may not prepare companies to meet the challenges and customer demands for high-quality products and services, so they must “re-examine continuously employees’ knowledge, skills and cognitive abilities to guarantee they can keep up with the competitive environment” (Zhang et al., 2004, 259). Consequently, this research argues that it is imperative for SOEs to build a learning orientation for survival in uncertain, complex, dynamic and hostile environments. Hence, we predict:

H3: *The more (a) complex, (b) dynamic, and (c) hostile the environment, the higher the learning orientation of SOEs.*

Environmental uncertainty and innovativeness

Organizational innovativeness is a dynamic capability and is associated with the *Normative Dimension* in terms of entrepreneurship and creative thinking. This dimension is concerned with how internal company culture and knowledge impact

upon the demands of an uncertain, external market, and the needs of a rapidly changing business environment (Un, 2002; Eisenhardt and Martin, 2000). To this end, Langerak et al. (1997) suggest that successful new product development must recognize business opportunities associated with a creative “flash of genius,” as well as responding to technological and industry developments (Barringer and Bluedorn, 1999, 436; Trueman and Jobber 1998). Similarly, Duhé (2008) sees organizations as complex adaptive systems that generate outcomes based on interactions of unpredictable heterogeneous agents such as employees and customers. However, to compete within external political and economic forces, SOEs have been given more autonomy and flexibility to build resources and capabilities, and been more willing to be innovative and proactive, taking on more risks than their predecessors (Tan and Tan, 2005; Jefferson and Rawski, 1994). But, in a comparative study among Privately-owned enterprise (POEs), Collectively-owned enterprise (COEs), and Foreign-invested enterprise (FIEs), Peng et al. (2004) found that SOEs are less willing to take risk, less proactive, and less aggressive, indicating a strong defender orientation. However, although it may appear there is only one possible solution, because the external business environment is hostile or constraining, research has found that managers in different companies are able to make different choices in order to overcome problems (Helfat and Peteraf, 2003, 1004; Branzei and Vertinsky, 2006). For example, Gatignon and Xuereb (1997) note that successful innovation often depends upon company ability to respond to demand uncertainty from a customer orientation perspective. Hurley and Hult (1998) show that in a dynamic environment, firms with a high innovation orientation compete more successfully in the long term. In this light, we adopt the policy of Tuominen et al. (2004), and assume that managers in SOEs should adjust company strategic orientation according to changes in the business environment to enhance innovation potential. Thus:

H4: *The more (a) complex, (b) dynamic, and (c) hostile the environment, the more the innovation orientation of SOEs.*

Innovation and learning orientation

If companies employ both *Cognitive* and *Normative* dimensions, innovative organizations are likely to continuously assess product, process and service quality, and enhance customer value, by searching for new ideas, adopting open search strategies, and using a wide range of external factors and sources, as well as learn from that experience (Tajeddini, 2009a). In fact, organizational learning requires companies to gain knowledge through the acquisition, dissemination, interpretation and storage of knowledge (Huber, 1991). Previous research suggests firms with a high learning-orientation culture are likely to seek innovative new work practices, process and products (Hofstede, 2007; Hanvanich et al., 2006). This is consistent with the notion that *cognitive* learning only occurs if a firm recognizes the need to change and acquire new knowledge, since innovative firms have the ability to seek novel ideas, to accept innovation, and to support idea generation (Huber, 1991; Hargadon and Fanelli, 2002). Similarly, SOEs that support innovation and change through *normative*, creative action can often produce customized solutions and meet client demands (Perez-Freije and Enkel, 2007).

In this respect, learning organizations can adopt a “*learn by doing*” approach and continually modify products and services over time (von Hippel, 1986), but this may depend on inherent national characteristics as well as the regulatory environment of a country that can influence the disposition of employees and managers towards or away from learning and adopting new innovations (Hofstede, 2007). Similarly, the notion of whether a company adopts a market leader or follower approach can be influenced by the prevailing business environment of each country, since the decision-making functions of the SOEs are limited if they operate within a high-level bureaucratic structure less able to respond to change (Bao et al., 2006). In this regard, Iranian state policies have tried to encourage SOEs to be more innovative and combat the impact of international economic sanctions. As a result, these companies may adopt an organizational culture of questioning the status quo, creating and acquiring knowledge, and building skills in learning (Ratten, 2008). Therefore, we hypothesize:

H5: *Innovativeness in SOEs has a positive impact on learning orientation.*

Research method

Data Collection. A survey questionnaire to test these hypotheses on Iranian SOEs was first developed in English and then was translated into the Persian Language. Back translation was done next to ensure accuracy of the original scales, by following the guidelines suggested in the literature (Bao et al., 2006). Exploratory and confirmatory factor analyses were conducted to verify the reliability of the scales. Some SOE managers were contacted by personal visits and questionnaires pre-tested, using four Iranian academics to ensure the meaningfulness of the final version in Persian. As a result, modifications were made, and a second pre-test with eight SOE managers was carried out to ensure question clarity, consistency and meaning. Next, 500 survey questionnaires were distributed to senior level managers such as CEOs, planning, finance, HR and marketing managers of Iranian SOEs in three major developed cities (Tehran, Isfahan and Shiraz) and three developing cities (Arak, Karaj and Saveh). Care was taken to include only respondents who had a significant decision-making role and knowledge about their respective companies. Strategies were used to increase the response rate, such as a personalized cover letter, a promise of feedback about study results, and an assurance of strict confidentiality, and to show our appreciation for

participation in the study, each respondent was sent a teabag to enjoy drinking tea while completing the survey. Finally, some face-to-face interviews were conducted with local scholars and researchers to underpin findings and ascertain information validity.

In total, 127 completed questionnaires were returned and considered valid for further analysis, representing a response rate of 25.4 percent. Non-response bias was tested using the method advocated by Armstrong and Overton (1977). The first 32 respondents (25%) were compared with the last 32 respondents on the mean responses to each variable. The results of the independent samples t-tests showed no significant differences between these two groups with all p-values being above $p > 0.05$, leading us to conclude that the probability of a non-response bias was minimal.

Measures. All measurement scales were selected from previous studies; the constructs used are considered appropriate in the context of Iranian SOEs. Previous research shows that transformations in administrative processes are imperative for SOEs to adapt to uncertain environments (Zhou et al., 2005). Therefore, we adapted the measures of innovativeness from the work of Hurley and Hult (1998) and Zhou et al. (2005), which reflects an *innovation orientation* and supportive leadership. This scale has been used and validated in a number of other studies related to innovation orientation in SOEs (e.g., Bao et al., 2006; Zhou et al., 2005). *Learning orientation* denotes the extent to which “corporate commitment systematically challenges established basic creeds and practicality” (Lin et al., 2008, 758) and is measured by using four items derived from Hult (1998), Hult et al. (2000), and Sinkula et al. (1997). These items emphasize the essence of reflection and measure the degree of achieved strategy-driven organizational learning and the propensity of a SOE to proactively pursue new knowledge and challenge the status quo (Tajeddini, 2010).

Following Lukas et al. (2001), *environmental uncertainty* is measured using three dimensions of complexity, dynamism, and hostility, where “*complexity*” assesses the predictability of competition, technology, regulation and international developments; “*dynamism*” reflects changes in customers, technology, regulation and suppliers; and “*hostility*” measures the impact of customers, economy, socio-cultural requirements and international developments.

SOE *performance* has been defined in various ways (Alizadeh, 2003; Bao et al., 2006; Tan and Tan, 2005; Gross and Huang, 2011), but most definitions include the dimensions of cost, quality, flexibility and delivery performance, since these measures are related to process capabilities and indicate organizational efficiency and effectiveness (Bates and Flynn, 1995; Vickery et al., 1993). This scale reflects business philosophy in line with Dess and Robinson (1984), Slater and Narver (1994), and Matsuno et al. (2002), who argue that the objectivity (i.e., certifiable by a third party) of performance measures is virtually impossible to obtain at the business unit level, whereas subjective measures have been shown to correlate to objective measures (Sin et al., 2005). Accordingly, four performance measures of “cost improvements”, “quality”, “delivery speed”, and “future confidence” have been adopted. *Cost improvements* are seen as a two-year improvement in manufacturing as a percentage of sales; *quality* as the percentage of product passing final inspection without rework; *delivery speed* as the time taken to deliver new products; and, *confidence* as stakeholder perception of future performance, using Zhou et al. (2005) confidence scales. Altogether, these constructs provide an indication of the business environment, and SOE performance in terms of cost improvements, quality, delivery speed and perceived organizational confidence.

Respondent and Organizational Profiles. Table 1 provides information about the respondent demographic characteristics as well as organizational characteristics. Of the 127 respondents, 109 (86%) were male and only 18 (14%) female, representing a disproportionate gender distribution within Iranian SOEs. Over two-thirds (65%) were less than 53 years old, and the majority 71% of respondents had more than 11 years of company experience, while many (66%) had qualifications at degree level or higher. Of these only 15% were CEOs, but many (47%) were managers or planning directors, 21% marketing managers, while others (17%) were in roles such as finance and HR. Nearly half the companies (48%) were in the service sector, 42% in manufacturing, and the remainder (10%) in retailing, distribution and construction. However, an overwhelming majority of SOEs in this sample frame (97%) have 500 or fewer employees. In all, these Iranian companies represent a rare insight into company culture in a protected contextual environment (Hofstede, 2007, Johns, 2006).

Controls

Control variables included in the study were company location, type, age, and size, with “location” coded as a dummy variable, where the most-developed areas of Tehran, Isfahan and Shiraz were coded as “1”; and all others as “0”. Similarly, manufacturing SOEs are coded as a dummy variable “type 1”, while service and other state-owned enterprises as “type 0”. Finally, company age represents the number of years a firm has been in operation, and size by the number of employees.

Measure validation

Table 2 reports the means, standard deviations, correlations, and shared variances between constructs, but the measures based on the Iranian socioeconomics have been modified and existing dimensionality proofs may not apply (cf. Bao et al., 2006). Therefore, the procedure recommended by Anderson and Gerbing (1988) has been adopted, to test the validity of our seven-factor measurement model.

First, an exploratory factor analysis (EFA) was conducted through principal component analysis (PCA) to identify the measurement structure, followed by a confirmatory factor analysis (CFA) of all perceptual measures. As a result, five variables were deleted due to poor performance, low t-values, and factor loadings (Anderson and Gerbing, 1988). The CFA model resulted in a reasonable fit to the data, with comparative fit index [CFI] = .97; incremental fit index [Delta2] = .97; (exceeding

Table 1
Profile of respondents (Demographic Variables) (n = 127)

Characteristics	Relative Freq. (%)	Frequency	Characteristics	Relative Freq. (%)	Frequency
Gender			Education		
Male	85.8	109	Business/Management	22.8	29
Female	14.2	18	Finance/Accounting	28.4	36
Age			Economics	8.6	11
30<	1.5	2	Engineering	22.1	28
30–35	11.9	15	Humanity Science	11.0	14
36–41	14.9	19	Basic Science	4.7	6
42–47	16.6	21	Others	2.4	3
48–53	19.7	25	<i>Median</i>	<i>Finance/Accounting</i>	
54–59	12.6	16	Size of the firm		
60–65	13.4	17	<50	17.3	22
<i>Median</i>	48–53		50–100	15.7	20
Experience (years)			101–150	9.5	12
5<	9.4	12	151–200	11.8	15
5–10	16.5	21	201–250	8.8	11
11–16	18.2	23	251–300	11.0	14
17–22	22.8	29	301–350	7.9	10
23–28	18.9	24	351–400	6.3	8
>28	14.2	18	401–450	4.7	6
<i>Median</i>	17–22		451–500	3.9	5
Qualification degree			>500	3.1	4
Diploma (12yrs)	9.4	12	<i>Median</i>	<50	
Bachelor	65.5	83	Type of firms		
Master level	20.4	26	Manufacturing	41.7	53
Higher than Master	4.7	6	Services	48.0	61
<i>Median</i>	<i>Bachelor</i>		Retailing, distribution, construction, and other businesses	10.3	13

.90) and goodness-of-fit index [GFI] = .86; Chi-square [χ^2] = 202.42; degree of freedom [df] = 136 (Gerbing and Anderson, 1992). Also, a root mean square error of approximation [RMSEA] = .06 value close to .05 (cf. Browne and Cudeck, 1993) indicates a close fit (Table 3).

The reliability estimates were assessed for different multi-item constructs, where an overall score of Cronbach’s alpha coefficient for each construct reflected a high level of reliability with a value greater than the suggested cutoff level of 0.7 (Nunnally, 1978). Composite reliabilities (CR)¹ were calculated using the procedures suggested by Fornell and Larcker (1981). The CR for the seven constructs range from .79 to .87, and all exceeding 0.7, which is the acceptable CR level suggested by Bagozzi and Yi (1988). The values for average variance extracted (AVE)² from each construct (ranging from .65 to .75), exceeding the threshold level (0.5). Calculating the shared variance between each pair of constructs to determine if they were lower than the average variance extracted for the individual constructs assessed discriminant validity in all scales. As shown in Table 2, the shared variances for the scales used in the study ranged from a low of 14% to a high of 46%, with the average variances extracted ranging between 65% and 75%, indicating discriminant validity between all constructs, because the average variance extracted is much higher than its shared variance with other constructs (Fornell and Larcker, 1981). Finally, all item loadings ranging from .66 to .97 are significant at 1%, indicating convergent validity (Bagozzi and Yi, 1988).

Common Method Variance. Because of Campbell and Fiske’s (1959) concern about self-reported measures and the data for each variables is from a single respondent, a common method bias may occur due to influences such as self-desirability or ambiguity, leading to some inflated estimates of hypothesized relationships and misleading interpretations of findings (Podsakoff et al., 2003). Therefore, we employed Harman’s one-factor test within a CFA setting (Podsakoff and Organ, 1986). This resulted in six factors with eigenvalues greater than 1.0, which accounted for 74.395 % of the total variance, with Factor 1 representing 19.954 % of this variance. Because a single factor did not emerge, and Factor 1 did not explain most of the variance, a common method bias is unlikely (Podsakoff and Organ, 1986). In addition, a one-factor model was provided to compare with the measurement model, yielding a $\chi^2 = 931.31$ with 259 degrees of freedom, and indicates that common method variance is not a serious threat.

Hypothesis Testing. Due to small sample size limitations, a multiple regression analysis with hierarchical method of entry was performed to test the hypothesized relationships. First, the control variables were entered as a block followed by the main variables, resulting in the hierarchical regression analysis shown in Table 4 (about the dummy variables and strategic orientation), and in Table 5, reflecting the internal and external contextual environment.

¹ $CR_{\eta} = \frac{(\sum \lambda_{\gamma i})^2}{(\sum \lambda_{\gamma i})^2 + (\sum \epsilon_i)^2}$ where CR = composite reliability for scale η ; $\lambda_{\gamma i}$ = standardized loading for scale item γ_i , and ϵ_i = measurement error for scale item γ_i (Fornell and Larcker, 1981).

² $V_{\eta} = \frac{\sum \lambda_{\gamma i}^2}{\sum \lambda_{\gamma i}^2 + \sum \epsilon_i}$ where V_{η} = average variance extracted for η ; $\lambda_{\gamma i}$ = standardized loading for scale item γ_i , and ϵ_i = measurement error for scale item γ_i (Anderson and Gerbing 1988).

Table 2
Basic descriptive statistics of the constructs

Construct	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Learning orientation	1												
2. Innovativeness	.684**	1											
3. Complicated environment	.586**	.598**	1										
4. Dynamic environment	.600**	.635**	.539**	1									
5. Hostile environment	.379**	.414**	.635**	.439**	1								
6. Delivery speed	.529**	.513**	.633**	.492**	.569**	1							
7. Cost improvement	.523**	.546**	.663**	.486**	.598**	.573**	1						
8. Quality	.464**	.474**	.554**	.414**	.494**	.587**	.612**	1					
9. Confidence in firm future performance	.478**	.496**	.558**	.435**	.495**	.669**	.644**	.627**	1				
10. Firm Age	.108	.117	.190*	.137	.122	.145	.151	.170	.158	1			
11. Firm location	.068	-.111	-.048	.040	-.082	.006	.003	.081	.080	.096	1		
12. Firm type	-.146	-.083	-.075	-.041	-.046	-.217*	-.185*	-.184*	-.143	-.198*	-.024	1	
13. Firm size	-.041	.018	.063	-.006	-.135	.000	-.006	.034	.059	-.041	-.050	.039	1
Mean	4.42	4.48	4.41	4.42	4.37	4.53	4.53	4.49	4.46	30.20	.52	.35	2.42
Standard deviation	.48	.59	.61	.57	.67	.54	.55	.63	.66	14.11	.50	.48	.79

Sample size = 127.

*: $P < .05$ (two-tailed test).

** $P < .01$ (two-tailed test).

Regarding Hypothesis 1, that learning orientation in state-owned enterprises would positively influence business performance in terms of (a) delivery speed, (b) cost improvement, (c) quality, and (d) confidence in firm future performance, supporting H1a,b, and c respectively (see Table 4). Delivery speed is recorded as ($\beta = .350, p < .001$), cost improvement ($\beta = .299, p < .001$), quality ($\beta = .336, p < .05$), and confidence in firm future performance ($\beta = .373, p < .05$). This suggests that those SOE managers who are committed to learning as a key resource, are able to achieve delivery speed, cost improvement, quality, and confidence in future performance goals. This is illustrative of the *Cognitive Dimension*, or learning orientation, of SOE managers who took part in this research. Similarly, Hypotheses H2a, b, c and d show that innovativeness has a positive effect on delivery speed, cost improvement, quality, and confidence in future performance goals respectively. Following controls for size, type, location and age, company performance is measured by delivery speed ($\beta = .260, p < .01$); cost improvement ($\beta = .332, p < .001$); quality ($\beta = .314, p < .01$); and confidence in future performance ($\beta = .337, p < .001$), supporting H2a, b, c and d respectively. Hence, managers of SOEs who are open to new ideas, new technologies, processes and products are able to achieve delivery speed, cost improvement, quality and confidence in performance goals, reflecting the *Normative Dimension* and innovative orientation of these managers.

In terms of H3a, b and c, the results show that environmental complexity ($\beta = .247, t\text{-value}=2.71, p < .001$) and dynamism ($\beta = .227, t\text{-value}=2.74, p < .01$) have a positive impact on learning orientation; but that there is no significant relationship between the hostile environment and a learning orientation ($\beta = -.048$), perhaps reflecting the negative impact of UN Sanctions. It may also illustrate some barriers to learning inflicted by the *Regulatory Dimension* experienced by Iranian SOEs that have to work in a complex, dynamic and sometimes hostile environment. In contrast, H4 examines complexity (H4a), dynamism (H4b) and hostility (H4c) in terms of innovativeness, and finds that SOE managers who recognize environmental hostility are more committed to learning and sharing knowledge; so, ironically, the more complex ($\beta = .370, t\text{-value}=4.13, p < .001$) and dynamic ($\beta = .443, p < .001$) environments may have a positive influence on innovativeness. Finally, as hypothesized in H5, an innovation orientation can have a significant influence on learning orientation ($\beta = .412, t\text{-value}=4.78, p < .001$), indicating that innovativeness and learning are closely linked in Iranian SOEs, in line with findings from Hurley and Hult (1998).

Discussion and conclusions

This study has examined how Iranian State-Owned Enterprises compete in the face of environmental uncertainty in terms of a *regulatory dimension* that can be complex, dynamic and hostile while UN Restrictions are in place. It has focused on the relationship between this uncertain external business environment, company strategy and performance. More specifically, we examine how the external *regulatory* environment can influence corporate strategic capabilities of innovativeness and learning. To this end, “innovativeness” is seen as a *normative dimension* that reflects an ability “to provide products and services differentiated from the competition and made profitable by their value to the customer” (Thompson, 1993/1994, 1004); whereas, a “learning orientation” is a *cognitive dimension* that indicates organizational competencies, structure and processes necessary to perform effectively in response to a dynamic business environment (Kenny, 2006). These strategic capabilities operate collectively to influence firm performance indicators that have been measured in terms of (a) delivery speed, (b) cost improvement, (c) quality, and (d) perceived confidence in future business performance. Adopting a reductionist perspective of co-alignment, five main hypotheses were developed. Firstly, both learning or *cognitive* orientation (H1), and innovativeness or *normative* orientation (H2), have a positive impact on company performance in terms of a, b, c and d

Table 3
Summary statistics of the measurement analysis

Variable	Factor loading	t-value	Composite reliability	Average variance extracted	Coefficient alpha
Learning orientation			.82	.75	.888
LO1	.89	8.74			
LO2	.97	9.10			
LO3	.78	7.81			
LO4	.66	*			
Innovativeness			.79	.65	.876
INN1	.76	7.47			
INN2	–	–			
INN3	–	–			
INN4	.96	22.57			
INN5	.92	*			
Dynamic environment			.82	.74	.861
DYN1	.96	12.73			
DYN2	–	–			
DYN3	–	–			
DYN4	.97	*			
Hostile environment			.87	.75	.885
HOE1	.92	16.81			
HOE2	.88	15.35			
HOE3	.93	*			
HOE4	–	–			
Complicated environment			.84	.71	.759
COEV1	.87	8.89			
COEV2	.75	7.97			
COEV3	.76	8.07			
COEV4	.73	*			
Performance					
Quality	.81	15.26			
Confidence	.74	12.31			
Delivery speed	.97	40.21			
Cost improvement	.97	*			

Fit statistics: $\chi^2 = 202.42$; $df = 136$; $CFI = .97$; $GFI = .86$; $IFI = .97$; $RMSEA = .06$; $RMR = .02$

Notes: Deleted scale items are in italics.

*; = item was equated with 1 to set the scale;

Table 4
Dummy Variables and Strategic Orientation: Standardized estimates and hierarchical regressions

Variables	Organizational performance							
	Delivery speed (a)		Cost improvement (b)		Quality (c)		Confidence in firm future performance (d)	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Firm size	.004 (.003)	.002 (.003)	.005 (.004)	.002 (.003)	.006 (.004)	.004 (.004)	.006 (.004)	.004 (.004)
Type of firm	–.009 (.096)	.010 (.083)	–.014 (.099)	.018 (.084)	.085 (.113)	.118 (.101)	.091 (.117)	.128 (.104)
Location of firm	–.223 (.102)	–.158* (.086)	–.188 (.105)	–.123 (.088)	–.210 (.119)	–.146 (.105)	–.162 (.124)	–.093 (.1080)
Firm age	.008 (.061)	.011 (.051)	.003 (.062)	.004 (.052)	.040 (.071)	.040 (.062)	.060 (.074)	.061 (.064)
Learning orientation (H1)		.350** (.118)		.299** (.120)		.293* (.144)		.311* (.148)
Innovation orientation (H2)		.260** (.095)		.332*** (.096)		.336** (.116)		.373*** (.119)
R ²	.058	.347	.048	.357	.059	.295	.047	.309
Adjusted R ²	.027	.315	.017	.325	.028	.259	.016	.274
F-value	1.886	10.636***	1.542	11.124***	1.915	8.353***	1.514	8.923***

Note: Unstandardized coefficients are displayed in the table with standard errors in parentheses.

*** P < .001 (two-tailed test), ** P < .01 (two-tailed test), *; P < .05 (two-tailed test),

above. Next, the more complex, dynamic and hostile the *regulatory* business environment, the more likely the organization will have a learning orientation (H3), or become more innovative. Finally according to (H5), innovativeness has a positive influence upon learning.

Interestingly, the results show that for H1 there is a *positive* association between a learning orientation and company performance, indicating that, despite operating in a harsh (*regulatory*) business environment, the Iranian SOEs in our sample frame were able to develop competencies, structures and processes to enhance performance. This suggests that company

Table 5
Internal and External Contextual Environment: Standardized estimates with hierarchical regressions

Variables	Dependent variables							
	Learning orientation				Innovation orientation			
	Coefficients				Coefficients			
Independent variables	B	Std. Error	Beta	t-value	B	Std. Error	Beta	t-value
Complicated Environment	.193	.071	.247	2.715***	.358	.087	.370	4.134***
Dynamic Environment	.190	.069	.227	2.741**	.463	.080	.443	5.759***
Hostile Environment	-.034	.057	-.048	-.595	-.014	.075	-.015	-.185
Innovation orientation	.331	.069	.412	4.784***	–			
R ²	.544				.496			
Adjusted R ²	.529				.484			
F-value	36.443***				40.333***			

Note: *** P < .001 (two-tailed test), ** P < .01 (two-tailed test).

managers who are committed to learning can improve company performance, and contradicts Keck and Tushman's (1993) observation that rapid environmental change is likely to impede organizational learning. Similarly, H2 shows that some companies have become innovative in order to enhance performance, despite the regulatory restrictions imposed and protections provided by the state that focus on delivery rather than creativity and innovation.

But, although the findings show that H3a (environmental complexity), and H3b (environmental dynamism), can enhance company learning orientation, in contrast, hypothesis H3c reveals a *negative association* between a hostile business, *regulatory* environment and the ability of a company to learn. This may reflect how UN economic sanctions experienced by Iran have a negative impact on the *cognitive dimension* of the SOEs in our sample frame. In other words, for Iranian companies these sanctions may represent a hostile environment that does not apply to other transitional economies entering the global market, such as China and Brazil, although all learn from the complexity and dynamism of global business transactions. In fact, hypothesis H4 reveals a positive relationship between a complex, dynamic and hostile environment and innovativeness, perhaps indicating that managers have to be innovative to survive.

In other words, Iranian SOEs operate and adapt in a protected economic environment that faces significantly different challenges from other market systems. More specifically, this research has explored the impact and contextual role of these environmental variables on SOE innovativeness and learning orientation and, ultimately, company performance. The findings indicate managers appear to be able to influence organizational culture through learning orientation and innovativeness, *but* there remains a strong negative influence from the challenging business and trading environment that can severely restrict organizational learning (Jensen and Tarr, 2003). Covin and Slevin (1989) support these findings, arguing that, although hostile environments present uncertainty, intense competition, difficult business climates and limited opportunities, such environments may force organizations to be more learning- and innovation-oriented. Considering significant variations that exist among SEO internal environments, further qualitative research may prove to be valuable in providing in-depth understanding of the role of contextual and internal factors on organizational culture (Johns, 2006; Hult et al., 2004; Jensen and Tarr, 2003).

Study findings reveal learning orientation and innovativeness as two major capabilities that should be encouraged to be adopted by the SOEs. The positive and significant impact of learning and innovativeness should be reflected in the fundamental value systems of these organizations towards commitment to learning and openness to new ideas, processes and products. Therefore, pursuing excellence in both orientations are associated with improved business performance. In this sense, the degrees to which an organization values and promotes learning, as well as the degree of openness to innovation, are likely to enhance the perceptual and financial performance.

While the results show the positive impact of environmental complexity and dynamism on innovativeness and learning orientation, hostile environment did not have any statistically significant influence on learning nor innovativeness orientations of Iranian SOEs. These results point to the assumption that the SOEs become more innovative and learning-oriented, as they perceive the external environment as turbulent and complex, but no major behavioral change under hostility. This conclusion is reflected by Iranian SOEs being more committed to learning; higher emphasis is placed on learning and communicating a shared vision, along with being more open to new ideas and processes in the organization. In such systems, the complex and hostile environments encourage the managers of SOEs to equip themselves with knowledge and to think out of the box. Over time, this knowledge prepares them to better understand the role of these external factors and forces on their overall business system. In addition, this knowledge allows them to make better predictions about organizational outcomes and future orders. Thus, they are able to reduce the impact of sudden and unexpected changes for their organizations, which leads to more stable and balanced business operations. In addition, it appears that organizations where information flows among agents (cognitive complexity), and which also provide a structure for interactions between agents exchanging information (relational complexity), tend to be more learning- and innovation-oriented. The finding is that environment-strategy co-alignment has mixed strategic implications in the context of SOEs in Iran. As predicted, the impact of environmental dynamism is contingent on the level of innovativeness and learning orientation.

In this research, we assert that SOEs should be reformed not only to focus on domestic market, but also to make themselves efficient to compete successfully in international markets of utmost importance for the sustained growth of the Iranian economy. Overall, a restricted economic environment, coupled with high rates of unemployment and cost of living, have made it increasingly difficult for Iranian SOEs, forcing them to become more innovative and learning-oriented, or else go out of business. Managers should realize, the benefits delivered by their organizations would depend on how well the SOEs are equipped to add economic value, manage its diverse workforce, and create jobs for a rapidly expanding, well-informed, young and educated population.

Study implications

The results of this study offer a number of implications for researchers, practitioners, and policy makers with an interest in transitional economies. Most studies focus on firm performance differences influenced by internal and external contextual factors, in terms of the Cognitive and Normative Dimensions, and may not consider restrictions as well as opportunities presented by a Regulative Dimension, such as that experienced by Iranian SOEs. These companies need to respond and react to changing environmental turbulence and uncertainty, offering opportunities for researchers to design empirical studies that examine the role of critical factors on organizational performance cited in the literature. These insights into Iranian SOEs indicate they operate in a restricted business environment different from the rapidly expanding Asian markets and China.

In short, the findings show that if Iranian SOEs adapt and adjust their organizational strategy in uncertain economic environments, they are likely to achieve improvements in delivery speed, costs and quality, as well as confidence in company performance. In general, these results confirm that, if organizations possess strategic capabilities such as innovativeness and learning orientation, they tend to be more successful. In this respect, managers and policy makers should develop reward and incentive systems to encourage innovativeness and learning orientation for SOEs. Such policy changes could be implemented without significantly altering the purpose and mission of these organizations.

Limitations and future research

We recognize several limitations for this research. First, there is a need to compare these findings with other SOEs in transitional, protected economies. According to Souitaris (2001, 32) innovation process in different countries depends upon four “socio-economic” dimensions: technological heritage, administrative heritage, market structure and regional entrepreneurship, as well as national characteristics that influence core values (Hofstede, 2007). Thus, a comparative analysis of the strategic determinants of Iranian SOEs with other transitional economies would provide a deeper understanding of the socio-economic factors that underpin innovativeness and learning. Secondly, another survey of the same SOEs would present data to establish whether the cultural change is transient, or represents a long-term shift towards innovativeness and learning. Thirdly, since cultural norms and values about incremental and radical innovation vary between different demographic, gender, hierarchical and ethnic groups, additional research could examine the extent to which these variables influence innovativeness and learning within the internal company environment (Johns, 2006). Fourthly, a larger sample size would present a more reliable and representative data set, as well as the opportunity to make cross-regional comparisons. There might also be an opportunity to make a comparative analysis between Iranian SOEs and companies in the private sector, which by definition are less likely to receive state protection. And, fifthly, there is a need for a qualitative case study analysis of five or six deliberately contrasting SOEs in different industries, in order to ascertain the robustness of the research model, data, and principles about organizational strategy for innovativeness and learning in the long term.

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