

Full Length Research Paper

An investigation of the relationships between industry structure, strategy type, organizational characteristics and organizational performance: A case study of the food and chemical industries of Iran

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Accepted 22 February, 2011

Studying the influence of main factors on organizational performance is an important subject in the strategic management literature. Generally, performance differentiations' resources among organizations are definable in terms of the existing industrial structure in industrial organization literature (OI) or characteristics of the organization in resource-based view (RBV). In this article, a model has been developed based on these two fundamental views after studying related literature. The proposed model has been examined in 48 chemical and 76 food industries by means of structural equations' model and based on partial least squares (PLS) methodology. Results imply that industrial structure determines organizational characteristics, which in turn leads to superior organizational performance. Non-homogeneity of organizational characteristics could be explained not only through competition intensity but also by the means of applied strategic type in an organization that shows goodness and consistency of organizational-strategy characteristics. The obtained experimental results support almost all of the hypotheses except the hypothesis related to the influence of industrial structure on strategic type.

Key words: Industrial structure, strategic type, market orientation, organizational learning, innovative culture, organizational performance.

INTRODUCTION

Strategic marketing literature reflects a growing interest in the role of competitive environment on an organization's marketing strategy and performance. For example, Gruca and Sudharshan (1995) proposed a framework for competitive environment and choice of market entry strategies. Similarly, McKee et al. (1989) examined the impact of market dynamics on an organization's strategic orientation, and Slater and Narver (1993) examined the moderating effect of competitive environment on the market orientation-performance relationship. In parallel,

for decades, there has been a substantial debate in the strategic management literature on the influence of the competitive environment on organizational performance.

In relation to competitive environment and organization capabilities, the industrial organization (IO) and resource-based views (RBV) have traditionally produced competing explanations for the persistence of unequal returns (Powell, 1996) and are seen as being at odds with each other. However, it has been suggested that in fact the two views may complement each other in explaining organizational performance (Amit and Schoemaker, 1993). Yet, empirical studies examining these complementarities have been limited (Mauri and Michaels, 1998) and some researchers have suggested that this inadequacy has

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been caused by an over emphasis on organizational-level factors. Considering such inadequacy, there have been recent attempts to examine the role of various constructs that may help further understand the relationship between industry structure and performance. For example, Weerawardena et al. (2006) examined the role of industry structure in learning capabilities, innovation and performance. They found that industry environment primarily impacts market-focused learning. Also, O'Cass and Ngo (2007a) identified competitive intensity as a factor influencing an organization's strategic type and characteristics that drive superior brand performance. They argue that the heterogeneity of organizational characteristics can be explained not only by competitive intensity, but also by the strategic type (that is, posture) adopted by the organization, representing the strategy-organizational characteristics fit (O'Cass and Ngo, 2007a). In order to explore these issues, O'Cass and Weerawardena (2010) conducted a study to measure perceived industry competitive intensity, market learning and marketing capabilities. Their findings significantly contribute to the debate on the influence of the competitive environment on an organization's internal capability development.

Overall, it seems available research resources on the subject of this article is limited, particularly in the developing countries. Meanwhile, the challenging issue that executive managers are currently encountering is to balance competition intensity of industrial structure, resources of organization and managers' task in order to have access to adaptation between the organization and the environment for enhancing the organizational performance (Hoskisson et al., 1999; Hawawini et al., 2003).

Considering the existing gap in the literature, the aim of this paper is to examine the influence of industry structure on strategy type, market orientation, innovative culture, organizational learning and organizational performance. In this context, market orientation (MO), innovative culture and organizational learning are recognized as organizational characteristics that should be incorporated into models of how organizations adapt to competitive intensity (in their environment) and how these characteristics contribute to performance simultaneously.

In the following, the complementarities between the IO and the RBV are studied. A conceptual framework is then developed for demonstrating the influence of industry competitive intensity on strategy formation and enhancement of organizational characteristics. Based on the developed model, hypotheses are defined and examined in selected chemical and food industries of Iran. Finally, the findings are discussed and conclusions are made.

INDUSTRIAL STRUCTURE

Industrial structure plays a significant role in determining

of principles of competition and strategies that are potentially accessible to the organization. Originally, importance of external forces of the industry is in a partial form. Since external forces usually affect all active organizations in an industry, it is the main factor in various capabilities of organizations in dealing with them. One cannot relate competition intensity in an industry to accident or unluckiness; rather competition in an industry has root in its basic economy structure and has higher performance compared to the existing competitors (Porter, 1980). Bain (1959) defined industrial structure as pressures of market that determine competition in an industry. Also in some researches (O'Cass and Viet, 2007a; Weerawardena et al., 2006) it has been considered as proceeding in market opportunities and non-confidence and changing of dynamism in an industry.

Industrial structure includes economical and technological dimensions in which organizations are competing (Bain, 1972).

The relation among industrial structure, organizational conduct and performance is explained in structure-conduct-performance paradigm. In brief, (S-C-P) paradigm is based on inferential logic. Industrial structure affects the types of strategic choice that organizations within the industry use to compete against each other (Porter, 1980). Structure-conduct-performance model of industrial organization that is expanded by Masson (1939) and Bain (1959) proposed that industry structural variables are the key determinants of economic performance.

The most complete framework for describing of how external factors influence the organization in a specific industry has been developed by Porter (1980).

He defines industry as "a group of organizations that produce products with high replacement capability" and specifies his ideological position in this way that "competition intensity in an industry is neither accidental nor based on chance; competition in an industry has root in its economic structure and depends on its competitors' conduct and beyond that". Competitive intensity could be different in various industries, but originally continuous competition de-creates capital return rate to a level that economists call it "total competition level". When fighting in an industry is subsidized, its intensity (followed by productivity of the industry) depends upon the effects of five competitive forces including intensity of rivalry, supplier power, threat of new entrants, threat of substitutes and buyer power.

According to Porter (1980), realizing constituent factors of an industry has much importance. At the same time, a lot of discussions have been existed over it. But, Porter's structural analysis model has ended to these discussions to some extent. The framework which has been represented by Porter in order to clarify industrial structure is applied in most recent researches (O'Cass and Weerawardena, 2010; Galbreath and Galvin, 2008; O'Cass and Viet, 2007a; Akpınar, 2007; Weerawardena

et al., 2006).

RESOURCE BASED VIEW (RBV)

According to the RBV of the organization, a strategic business unit (SBU) has competencies that may improve performance. In order to take full advantage of such resources, however, the SBU must possess capabilities, defined as bundles of skills and knowledge, so that the SBU can deploy its competencies and coordinate its activities in such a way as to create sustainable competitive advantage (Barney, 1991; Day, 1990; DeSarbo et al., 2007).

Capabilities are defined extensively as “complex bundles of skills and accumulated knowledge that enable organizations (or SBUs) to coordinate activities and make use of their assets” (Day, 1990). Capabilities reflect techniques of organization and knowledge capacity especially with regard to individuals, teams and level of the organization. Day (1994) suggest that “it is not possible to enumerate all possible capabilities, because every business develops its own configuration of capabilities that is rooted in the realities of its competitive market, past commitments, and anticipated requirements”.

In recent investigations (Jimenez et al., 2008; O’Cass and Viet, 2007a, b; Keskin, 2006; Langerak, 2003; Hurley and Hult, 1998) three organizational characteristics has been emphasized as factors influencing performance, which are market orientation, innovative culture and organizational learning. Market orientation is recalled as one of the most important capabilities of market. It is believed that innovative culture is essential to competition in the third millennium which looks for new opportunities inherently with its concentration on entrepreneurship, innovation and adaptability. Also, organizational learning is considered as one of the key characteristics of the organization which has a considerable influence on organizational performance and is necessary for customers in creating of organizational innovation and innovative development of unique ways in order to deliver value. In this article, these three factors are considered as resources of the organization affecting internal influence and organizational performance.

THE INFLUENCE OF INDUSTRY STRUCTURE ON ORGANIZATIONAL CHARACTERISTICS

Over the last two decades, industrial structure has been a dominant theme in marketing and management literature. Industrial structure that is collectively formed by five competitive forces represents rules of competition and determines attractiveness of industry. It helps in adoption of strategic type and influences performance of organization through organizational characteristics (Porter, 1980).

Theorists underline a need for strategic balance between pursued strategic orientation and organizational practices (McKee et al., 1989), especially potential links between strategic orientation and organizational characteristics representing the congruence of sub-elements within the micro system (the organization). However, this micro congruence cannot take place without responding to competitive intensity; that is, executives' perceptions of competitive intensity which drive and shape the micro congruence. Indeed, Miles and Snow (1978) suggest that organizations competing within an industry pursue different adaptive strategies, which capture the organization's adaptability to competitive intensity. Specifically, the essence of Miles and Snow's approach is that the behavioral patterns of organizations within an industry are categorized into prospectors, analyzers, defenders, and reactors according to the scope of the product-market domain and responsive postures towards competitive intensity. As such, the external adaptation provides insights into how sub-elements of the micro congruence (e.g., strategic types and organizational characteristics) adapt to the competitive intensity. The literature reveals different terms used in the context of strategy such as strategic type, strategic orientation and strategic posture. In this study, strategic type is applied.

While researchers realize that competition intensity and strategic type have direct relationship with organizational performance (Conant et al., 1990; Slater and Narver, 1993), this study argues that the two factors indirectly influence performance through organization's capabilities (that is, culture and behavior). In this regard, marketing literature addresses two relevant points. First, the organization is embedded within an environment that has a certain level of competitive intensity which influences its strategic type and the actions/characteristics it initiates in the pursuit of superior performance (Porter, 1980; Varadarajan and Jayachandran, 1999; Matsuno and Mentzer, 2000). Second, the heterogeneity in organizational characteristics can be explained by not only competitive intensity, but also the strategic type pursued by the organization representing the strategy-organizational characteristics fit (Venkatraman, 1989; Vorhies and Morgan, 2003).

Industrial structure and strategic type

Porter's (1980) theoretical framework of what was labeled as industry structure is based on the foundation built in industrial organization view by Bain (1956) and Scherer (1980). The notion of industry competitive intensity is hypothesized to comprise five competitive forces: threat of entry, threat of substitute products, power of buyers, power of suppliers and rivalry among existing organizations that are present in an organization's environment (Weerawardena et al., 2006; O’Cass and Ngo, 2007a). This view uses managerial perceptions to capture the

industry competitive intensity the organization operates within and the prior research that has examined industry effects and organizational performance have used perceptual measures (O'Cass and Weerawardena, 2010). The strategic management literature suggests that managers develop strategies after observing and enumerating environmental trends.

Akpınar (2007) has studied the relation between industrial structure and strategy of the organization in a research entitled "Institutional impacts on industry structure". His findings imply that not only industrial structure affects strategic type, but also the strategic type of the present organizations in an industry impresses structure of that industry. So, he believes that the relationship between industrial structure and strategic type mutual. O'Cass and Vit (2007a) argued that a prominent schema for managers to represent their own industry's intensity across the five forces is achieved via the use of industry competitive intensity. They concluded that it is the managers' perception of the intensity of these forces that is of paramount importance in impacting strategy development and organizational characteristics.

Indeed, proponents of IO view suggest that the role of industrial structure is critically important in developing and constraining of business strategies and reflects different strategic types (O'Cass and Viet, 2007a). As such, different strategic types adopted by organizations are expected to vary in their adaptability to the collective competitive intensity within the industry they operate.

Porter (1980) believes that the strategic type is affected by collective competition intensity of five competitive forces in a form that is perceived by managers. These strategic types include prospector, analyzer, defender and reactor (Lukas, 1999). For example, being described as proactive in searching for new opportunities and pioneering of changes in the industry, the prospector type is likely to be adopted by organizations that view the industry as intensely competitive, while organizations that view the industry as less competitive may adopt a defender type.

The Miles-Snow strategic typology (1978) is applied in this study to identify strategic type. This approach has received much attention in the marketing and management literature over the last two decades (DeSarbo et al., 2007). M-S envisions strategy as the patterns in the decisions by which a strategic business unit (SBU) aligns itself with its environment, and they categorize organizations according to these patterns. In their classic empirical study, M-S (1978) propose four strategic types as prospectors, analyzers, defenders, and reactors and suggest that the first three types will choose a different strategy with respect to products and/or markets. Prospectors will innovate technologically and seek out new markets, analyzers will prefer a "second-but-better" strategy, and defenders will focus on maintaining a secure niche in a relatively stable product or service area. They argue that all three types can be successful if the

SBU matches its strategy to the competitive environment and develops and deploys appropriate capabilities. Reactors typically lack long-term plans and any consistent strategy; instead they respond to environmental pressures as necessary (DeSarbo et al., 2007). Empirical studies suggest that prospectors, analyzers, and defenders all perform well (Conant et al., 1990; Miles and Snow, 1978) and generally outperform reactors.

Considering previous discussion, it is argued that the perceptions of competitive intensity by executives influence the patterns of responsive strategies (strategic types) adopted by organizations. Particularly, it would be expected that when a manager perceives their industry as possessing strong competitive intensity via the five forces, then such perception of pressure will be seen highest in those characterized as prospectors, moderate in analyzers/defenders, and lowest in reactors.

Industrial structure and market orientation

The incontrovertible assumption of marketing concept is that the market orientation is the cornerstone of the marketing theory. Recently, two dominant approaches have been rapidly developed concerning market orientation concept. The first approach claims that market orientation is a collection of behavioral acts (Jaworski and Kohli, 1993). The second approach considers the market orientation as an organizational culture (Narver and Slater, 1990). Jaworski and Kohli (1993), representatives of the first approach, interpret the concept of the market as a triple connection of activities specialized for creating an organization-wide generation of market intelligence concerning present and future customer needs, distributing this intelligence among different units of the organization, and organization-wide responsiveness to that intelligence. Narver and Slater (1990), representatives of the second approach, by assessing the widespread market orientation literature found out that this composition consists of three behavioral features including customer orientation, competitor orientation, inter-functional coordination, and two decision indicators, that is, long-term focus and profitability.

Environmental characteristics have a significant role in determining the degree of MO. In this regard, Katler (1977) and Porter (1980) have emphasized on the point that environmental characteristics and environmental analysis have a vital importance, as both of them refer to the strong role of the environment and need of the organization for perceiving it. Therefore, a number of environmental characteristics have been studied as constituent elements of MO (Pelham and Wilson, 1996; Avlonitis and Gounaris, 1999).

Organizations that perceive competitive intensity as stable and predictable may not have to develop a MO, while those who perceive competitive intensity as high may push themselves to undertake more marketing

activities (Miles and Snow, 1978) and be more market-oriented. Therefore, businesses which consider market as a constant collection of customers with fixed priorities in stable environments have typically less need for market orientation than those which are active in instable markets.

Industrial structure and organizational learning

During the last decade, exploration of theoretical relation between industrial structure and capabilities of the organization has established activities in order to cover this subject. One of the existing approaches in this regard is "competition leads to competence" (Barnett et al., 1994), which suggests that as organizations learn how to overcome specific competitive challenges, they develop potentially valuable resources and capabilities. A related model is "naive evolutionary model" (Barnett et al., 1994). In this model, it is emphasized that organizational learning is reinforced by competition and organizations are inclined to undertake more learning in a dynamic industrial environment.

The learning capacity of organizations has long intrigued researchers and has motivated an increasing number of studies. However, there is no extended agreement about the concept of organizational learning due to the diversity of research domains in which learning phenomena have been explored (Crossan et al., 1999). Although there is some variance in the specifics, organizational learning scholars typically conceptualize organizational learning as including four primary constructs: Information acquisition, distribution, interpretation and memory (Jimenez et al., 2008). Organizational learning needs the creation and control of both external and internal knowledge for both current and future operations. O'Cass and Wiravardena (2010) have studied the effect of industrial structure on market orientation and organizational learning and performance. According to the theory of organizational learning and competitive strategy capability view, they have claimed that organizations which perceive their environment turbulently are inclined to develop market learning and superior marketing capabilities and they will obtain better performance through them. Wiravardana et al. (2006) have studied the effect of industrial structure on organizational learning. They concluded that competition in industry results in more learning and finally organizational innovation and better organizational performance.

CONGRUENCY BETWEEN STRATEGIC TYPE AND ORGANIZATIONAL CHARACTERISTICS

Woodside et al. (1999) argue that distinct competencies of organizations affect their performance and at the same

time, competencies are imposed by means of strategic type. Also, a significant correlation has been reported between strategic type and organizational characters (O'Cass and Vit, 2007a). In this study, the relationships between strategic type and three special characters of the organization are studied.

Strategic type and market orientation

The link between strategic type and market oriented behaviors has long been discussed in the literature, often within the context of marketing tactics. Fry and Smith (1987) postulate the importance of the congruence between business strategies and marketing tactics in the development of a contingency perspective of marketing and it has been argued that "various strategy types conduct their marketing activities in distinctly different ways". Indeed, Miles and Snow's typology is related directly to marketing tactics when it is classified through adaptive capability (Lukas, 1999). The prospectors' distinctive competence is in identifying and exploiting new products and market opportunities in the quest to become first-in players in the marketplace (Slater and Narver, 1993). As such, they should be more market-oriented than analyzers/defenders and reactors who are second-in players and only change when forced to do so, under competitive pressure, respectively. The rationale for the compatibility between market-oriented behaviors and adaptive strategic order in Miles and Snow's typology is that marketing is accepted as an adaptive, boundary-spanning function (Lukas, 1999). Also this view is compatible with findings of Woodside et al. (1999), who have addressed the relationship between marketing competencies and strategic type.

Strategic type and innovative culture

Deshpande et al. (1993) categorized organizational culture (internal-external and organic-mechanistic) into four different types based on two key dimensions as clan, adhocracy, market, and hierarchy. The adhocracy type of culture is external positioning and encourages organic processes. That is organizations with a dominant adhocracy culture not only appear to foster entrepreneurship, creativity, risk taking, and the adaptability of employees, but also to facilitate flexibility and spontaneity. Innovative culture is a kind of adaptive and external positioning since it emphasizes on innovation and cultivates internally-based capabilities in order to accept new ideas, processes, and products.

Organizations with a culture that stresses innovation should maintain and use more adaptive and innovative strategies than organizations possessing a less innovative culture. An innovative culture encourages exploration and experimentation to develop new businesses and the

renewal or revival of ongoing businesses (Menon et al., 1999). Miller (1987) contends that an innovative culture is a driving force which coordinates various views in a strategic choice innovative culture, with its focus on entrepreneurship, creativity and adaptability, is inherently novel opportunity seeking (O'Cass and Vit, 2007a). Also results of some researches (Laforet, 2009; O'Regan and Ghobadian, 2005) show that pioneer organizations are more committed to innovation in product than defenders. Prospectors put more emphasis on developing modern process technologies than defenders too. Finally researchers believe that strategic type is a suitable predictor for innovation which has been proved by findings and it must be considered at compiling and developing phases of strategy.

Strategic type and organizational learning

Strategic type of an organization determines its learning capacity. Different strategies often show different ways to the organizations that depend on the environment and their view with regard to learning process. Miles and Snow's typology represents an analytical model which states that perceived need for learning and kind of learning depend upon the applied strategic type by the organization (Osland and Yaprak, 1995). Kenny (2006) has reached to this conclusion that developing of strategy is entirely related to learning. He believes if strategy is designed suitably, strategic activities will help developing of an organizational learning culture. Osland and Yaprak (1995) have performed studies about the effect of strategic type on organizational learning.

They argue organizations that adopt prospective strategy are encountered with variable and dynamic environment which requires flexibility and innovation. Prospectors have the most propensities towards marketing with regard to other strategic types and represent marketing innovations more, therefore they need more learning.

CONGRUENCY BETWEEN ORGANIZATIONAL CHARACTERISTICS AND PERFORMANCE

Unlike competitive forces approach, in resource-based view, performance is affected by internal factors and not external ones. The focus of this view is on unique resources, simulating of which is difficult for competitors and thus it could be a basis for superior performance (Barney, 1991). Resources mean basic characteristics of the organization. In fact, basic characteristics are abilities or skills which are passed like a fiber through beads of the organization's activities and link these activities with each other as a coherent collection.

In the following, the relationship among three special characteristics of organization and organizational performance is described.

Market orientation and organizational performance

It seems that organizations pursuing MO outperform others, who are less market-oriented. Indeed, Jaworski and Kohli (1993) argue that "a market orientation is frequently posited to improve business performance". The positive link between MO and organizational performance has been empirically explored in many studies (Jaworski and Kohli, 1993; Matsuno and Mentzer, 2000). Such findings are also compatible with marketing competencies and performance (Woodside et al., 1999) and as previously argued, MO is seen as key marketing competency.

Market orientation provides an integrated concentration of individuals' attempts and internal sections of the organization in order to offer value to customers and also a partial stimulant with regard to competitors' activities (Jaworski and Kohli, 1993). Therefore, a market oriented organization looks for getting access to higher levels of customer satisfaction, keeping of existing loyal customers, attracting of new customers and attaining ideal level of growth, market share and organizational performance (Langerak, 2003). Moreover, Hunt and Morgan (1995) state that market orientation creates stable competitive advantage and consequently long-term organization performance. Sorensen (2009) describes market orientation as an interpretation of marketing from performance differentiations among the organizations.

Innovative culture and organizational performance

Traditionally, organizational innovation has been concentrated on improving of organizational performance (Correa et al., 2007), so this issue requires a strong innovative culture ruling over the organization. Innovative culture strengthens capacity of the organization for innovation and creativity and through this the organization would have the capability for market orientation (O'Cass and Vit, 2007a). As such, there exists a potential in innovative culture which establishes opportunities through market orientation and representing of innovation that is resulted in better performance of the organization. O'Cass and Viet (2007b) suggest that organizations with an innovative culture will attain better performance not only through getting feedback from customers and their present competitors but also by means of the organization's capability for creative extension of unique methods for delivering special value to customers.

Organizational learning and organizational performance

A strong market orientation can be readily copied, but the learning environment that organizes and translates the output of these behaviors into a comparative advantage cannot (Dickson, 1996). Therefore, there is an increasing

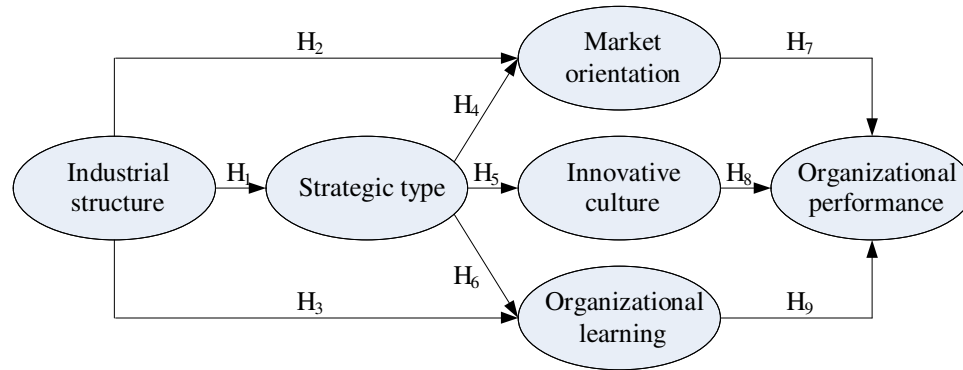


Figure 1. Conceptual framework

body of literature (Brockmand and Morgan, 2003; Dodgson, 1993; Nevis et al., 1995) that suggests that organizational learning is a complex resource of the organization that can be used to create competitive advantage and, ultimately, superior performance. Importance of organizational learning for durability of the organization and improving of its performance has been emphasized too much in strategic management literature (Correa et al., 2007). There are a lot of experimental evidences with regard to direct effect of organizational learning on financial and non-financial organizational performance (Lee and Tasi, 2005). Also a positive and direct relation has been reported among internal and external learning and organizational performance (Weerawardena et al., 2006). Correa et al., (2007) have argued that organizational learning affects performance both directly and indirectly.

RESEARCH METHODOLOGY

Based on the previous explanations, the following hypotheses are determined. Also, Figure 1 illustrates the proposed conceptual model of the relationships among the variables, that is, industry structure, strategic types, market orientation (MO), innovative culture, organizational learning as organizational characteristics of how perceptions of competitive intensity influence organizational characteristics and the role of strategic types in the links, while MO and organizational learning, along with innovative culture function as antecedents to organizational performance.

- H₁. Industrial structure has a positive influence on the strategic posture adopted by an organization.
 H₂. Industrial structure has a positive influence on the organizations' level of MO.
 H₃. Industrial structure has a positive influence on the organizational learning.
 H₄. The degree of MO is highest in prospectors, moderate in analyzers/defenders, and lowest in reactors.
 H₅. The degree of innovative culture is highest in prospectors, moderate in analyzers/defenders, and lowest in reactors.
 H₆. The degree of organizational learning is highest in prospectors, moderate in analyzers/defenders, and lowest in reactors.
 H₇. MO has a positive influence on organizational performance.
 H₈. Innovative culture has a positive influence on organizational performance.

H₉. Organizational learning has a positive influence on organizational performance.

Statistical population includes 800 organizations of the Iran's joint stock food and chemical industries which are located in large cities of Tehran, Isfahan, Mashhad, Tabriz, Shiraz and Ahvaz. Questionnaire is used as the primary means for data collection, with the data collection process following similar procedures to Jaworski and Kohli (1993). The questionnaires are submitted to 260 samples of the population using simple random sampling.

The 260 sample size is determined according to Krejcie and Morgan's rule of survey sample size (Krejcie and Morgan, 1970). Out of the 260 submitted questionnaires, 124 are returned, representing a 48% response rate, which is satisfactory.

In this study, CEOs are used as the key informants. CEOs possess the most comprehensive knowledge of the characteristics of the organization, its strategy and performance (Snow and Hrebiniak, 1980). As an additional measure, as suggested by Kumar et al. (1993), a self-assessment of knowledge ability is adopted to ensure they are knowledgeable. The research variables include: Industry structure - questions are designed to tap into Porter's (1980) five forces.

There are three new items for rivalry. Following Spanos and Lioukas (2001), the other four forces (ease of entry, threat of substitute products, bargaining power of suppliers and bargaining power of buyers) are all measured by single items.

Strategic type is measured by asking respondents to evaluate the strategic type adopted by their organization using the four generic strategies adopted from Miles and Snow's (1978) typology via descriptions of the organizational strategic types encompassing prospector, analyzer, defender and reactor.

Descriptions of these strategies are the same as those used by Conant et al. (1990). In a pioneering study, Conant et al. (1990) developed an 11-item scale for classifying M-S typology. The scale had been well validated and used in many empirical studies. Market orientation is measured by an adaptation of the MARKOR scale (Kohli et al., 1993). This scale considers the three dimensions of market orientation as intelligence generation, intelligence dissemination and responsiveness, from a market orientation related to the implementation of the marketing concept.

Innovative culture is measured via a 12-item scale, based on the earlier work of Deshpande et al. (1993) focusing on key aspects of innovativeness from a cultural perspective. They include encouraging creativity, being receptive to new ideas, decentralizing decision-making and encouraging open communication. The items are developed to tap into the adhocracy culture dimension.

Organizational learning is measured by the organizational learning scale based on the study of Pérez et al. (2004). The measures of these variables are displayed for every phase of

organizational learning, that is, knowledge acquisition, information distribution, information interpretation and organizational memory. These phases are considered to be a single construct made up of the four behavioral dimensions.

Organizational performance is gauged by three perceptual items including sales turnover, market share and profitability. Items are drawn from Spanos and Lioukas (2001). For each performance indicator, CEOs are asked to rate their performance, relative to competitors in their industry. Additionally, informants are asked to rate their performance for the previous three-year period in order to proximate a notion of sustained performance and to militate against temporal fluctuations. Although objective performance data would have been preferred, because of the inclusion of several privately-held and small organizations, large amounts of data could have been missing on the performance variables due to privacy concerns. However, subjective performance measures have been shown to be a reasonable substitute for objective measures of performance (Dess and Robinson, 1984) and have a significant correlation with objective measures of performance (Venkatraman and Ramanujam, 1987).

In order to analyze data, Partial Least Squares (PLS) is used in the analysis of structural equation modeling, which is a multivariate technique that allows for the estimation and examination of paths among latent variables which are measured via multiple indicators (Falk and Miller, 1992). The computer program, Smart PLS, is used to evaluate the theoretical model thus enabling the hypotheses of this study to be addressed. Smart PLS is a software application for the design of structural equation models (SEM) on a graphical user interface (GUI). These models can be measured with the method of partial least squares (PLS) analysis. Hence, it is possible to import data of manifest (indicator) variables in the model. This software is created in a project at the Institute of Operations Management and Organizations (School of Business), University of Hamburg (Germany).

In order to test the hypothesized relationships among the latent constructs, multiple indices which are characterized by aspects such as their quality, sufficiency to explain the data, congruence with systematic expectations and precision are needed (Lohmoller, 1989). Those indices for predictive relevance of the model include R^2 , average variance accounted for (AVA), regression weights or path coefficients (Fornell and Cha, 1994). These indices provide evidence for the existence of the relationships rather than standard statistical tests (Falk and Miller, 1992).

PLS is chosen for this study because it is relatively robust and can be applied to small sample sizes and is a powerful tool in analyzing structural models involving multiple constructs and multiple indicators.

FINDINGS

Preliminary data analysis is collected to examine the mean and standard deviation values and following this initial assessment, Pearson correlation test and reliability estimates are computed. Then, principal component analysis is undertaken. The data for this research are collected from July 6, 2009 to August 30, 2009. The descriptive statistics are presented in Table 1.

The preliminary analysis indicates that some items has moderate to high levels of skewness and kurtosis. The results in Table 2 indicate that, the factor analysis of MO produces three factors explaining 75% of the variance, with factor loadings ranging between 0.70 and 0.81 and reliability of 0.82. Organizational learning explains 69% of the variance with loadings ranging between 0.64 and

0.90 and reliability value of 0.80. Innovative culture has one factor explaining 54% of the variance with loadings ranging between 0.56 and 0.84 and reliability value of 0.90. The organizational performance analysis produces a single factor explaining 62% of the variance and a reliability value of 0.82. The factor analysis of industry structure produces five factors similar to that of Galbreath and Galvin (2008), explaining 52% of the variance, with factor loadings ranging between 0.90 and 0.52 and reliability value of 0.83. The final reliability values of all scales are higher than 0.80.

Assessing measurement validity is important. Validity needs the research tool to measure the variable the researcher is measuring (kerlinger, 1986). Fornell and Larcker (1981) argue that convergent validity is achieved if the average variance explained (AVE) in items by their respective constructs is greater than the variance unexplained (that is, $AVE > 0.50$). Therefore, in order to assess the constructs convergent validity, the squared multiple correlations from the factor analysis are used to calculate the average variance explained. All factors had an average variance explained (AVE) greater than or equal to 0.50, therefore meeting the recommended criteria for convergent validity. The calculated AVEs for each of the factors are higher than 0.50. To assess convergent validity, composite measures are computed for the constructs, and an assessment of discriminator validity as recommend by O'Cass and Weerawardena (2010) is undertaken. If the correlation between two composite constructs is not higher than their respective reliability estimates, then discriminator validity is argued to exist.

Therefore, construct correlations are examined and compared to the reliabilities calculated in the preliminary data analysis and respectively, construct correlations are examined and compared to the reliabilities calculated via Cronbach's alpha in the preliminary data analysis. Correlations are ranged from 0.31 to 0.67 and the reliabilities are ranged from 0.70 to 0.89.

The comparison of individual correlations among constructs reveals that no correlations are higher than their respective reliabilities. Consequently, the case of discriminator validity is verified.

In order to analyze the results of examining hypotheses H_1 to H_9 , the model parameters as depicted in the Figure 1 are estimated using partial least squares (PLS), a multivariate technique used for estimating path models involving latent constructs indirectly observed by multiple indicators. PLS is a variance based of SEM technique and is identified as a form soft modeling. PLS also assists in avoiding the necessity of a large sample size and is not sensitive to the assumptions of normality, thus circumventing the necessity for the multivariate normal data. Another major advantage of PLS is that the outer model formulation explicitly allows for the specification of both reflective and formative models, as well as the use of categorical variables. This allows for the recoding of strategic type into a dummy variable (0 to 1) to be used in the analysis of H_1 , H_4 , H_5 and H_6 . This procedure is

Table 1. Descriptive statistics of the samples.

Characteristics explanation		Frequency	Percent
Gender	Male	108	87
	Female	16	13
Level of education	Diploma	34	27.4
	Bachelor	63	50.8
	Master	22	17.7
	Ph. D.	5	4
Field of activity	Food	69	86
	Chemical	11	14

similar to that adopted by O'Cass and Viet (2007a) when analyzing models using partial least squares (PLS) with formative, reflective and categorical variables. Two sets of linear relationships specify the model; the outer model relationships between the latent and the manifest variables, and the inner model where the hypothesized relationships between the latent variables are specified and whose interpretation is as for standardized regression coefficients (weights). The focus here is on the inner results as they are related directly to H_1 to H_9 . The relationships are statistically analyzed in order to clearly explain the data, congruence with the hypotheses and precision. An examination of model fit is undertaken via R^2 , average variance accounted for (AVA), average variance extracted (AVE), and regression weights and bootstrap critical ratios (t-values) and path variance. The results for the outer measurement model are illustrated in Table 2.

The AVA for the endogenous variables is simply the mean R^2 of the model, which equals 0.53, and the individual R^2 s are greater than the recommended 0.10 (Falk and Miller, 1992) for all of the predicted variables except for strategic types in H_1 . As all of these R^2 are larger than the recommended levels, it is appropriate to examine the significance of the paths associated with these variables. The regression weights or path coefficients are all significant with a bootstrapping critical ratio greater than 1.96 and 1.64, except for H_1 . Table 3 summarizes the results of hypothesis testing.

In Table 3, the majority of the individual R^2 and average variance accounted for (AVA) for the endogenous variables are of an acceptable magnitude in the inner model. The strength of the paths associated with the constructs is acceptable. A reasonable criterion for evaluating their significance is the absolute value of the product of the path coefficient and the appropriate correlation coefficient (Falk and Miller, 1992). As paths are estimates of the standardized regression weights, this produces an index of the variance in an endogenous variable explained by that particular path and 1.5% (0.015) of the variance is recommended as the cut off point. The paths in Table 3

exceed this criterion except for the industry structure-strategic types path (< 0.015). Being defined as the ratio between estimate and standard errors, the critical values greater than 1.64 and 1.96 are statistically significant at 90 and 95%. As such, the bootstrap critical ratios are of magnitudes above the acceptable benchmarks for all the paths, except for industry structure-strategic types. Overall, the various results used to evaluate the hypotheses indicate that all hypotheses (H_2 to H_9) are supported, except for H_1 .

DISCUSSION

Experimental findings of this research imply significant relationship among industrial structure, organizational characteristics, strategic type and performance of the organization and therefore it seems the links in the conceptual model are approved. The main findings are twofold; (1) industrial structure is defined by means of five competitive forces where the organization is competing. It affects organizational characters that have been developed in order to gain superior performance, and (2) various types of organizational characteristics could be defined not only by industrial structure but also through strategic types.

Industrial structure is a determinant of market orientation, organizational learning and innovative culture and this finding confirms the external adaptation theory. In fact, this is consistent with research results of O'Cass and Viet (2007a) and Weerawardena et al. (2006). Contrary to O'Cass and Viet Ngo's research, no significant relation has been observed between industrial structure and strategic type. This issue reveals that external organizational factors have no influence on the strategic type in the food and chemical industries of Iran.

According to the finding, industrial structure has a direct and positive influence on developing market orientation. Organizations inclined to market perceive industrial structure more dynamic than those which have lower inclination towards the market. This result supports previous

Table 2. Component loading (reflective) and weights (formative).

Components and manifest variable	Loading	Critical ratio
Market orientation (AVE = 0.75, Cronbach alpha = 0.82)		
Intelligence generation (AVE = 0.57, composite reliability = 0.80)		
IG V1: Company performs a lot of in-house market research	0.72	9.35
IG V2: The effect of the shift in the business environment is analyzed over the company	0.73	20.04
IG V3: Company adapts quickly to the shift in the business environment	0.76	16.76
Intelligence dissemination (AVE = 0.58, composite reliability = 0.81)		
ID V4: Business unit knows what is important to a major customer	0.71	15.31
ID V5: Data on customer satisfaction is disseminated at all levels	0.80	21.42
ID V6: Once department finds out something about competitors, it quickly informs other	0.70	7.83
Responsiveness (AVE = 0.65, composite reliability = 0.89)		
RES V7: Company reacts quickly to changes in their customer's product or service needs	0.81	6.83
RES V8: Product development efforts are periodically reviewed to ensure that they are in line with what the customer wants	0.72	11.68
RES V9: If a major competitor launches an intensive campaign targeted at company's customers, a response is made immediately	0.75	11.57
Organizational learning (AVE = 0.69, Cronbach alpha = 0.80)		
Knowledge acquisition (AVE = 0.64, composite reliability = 0.84)		
KA V1: There is a consolidated and resourceful R&D policy	0.64	24.39
KA V2: New ideas and approaches on work performance are experimented continuously	0.90	11.51
KA V3: Organizational systems and procedures support innovation	0.90	2.49
Information distribution (AVE = 0.54, composite reliability = 0.78)		
ID V4: All members are informed about the aims of the company	0.66	34.12
ID V5: Meetings are periodically held to inform all the employees about the latest innovations in the company	0.78	9.11
ID V6: Company has formal mechanisms to guarantee the sharing of the best practices among the fields	0.76	7.63
Information interpretation (AVE = 0.53, composite reliability = 0.85)		
II V7: All the members of the organization share the same aim to which they feel committed	0.82	4.04
II V8: Employees share knowledge and experience by talking to each other	0.75	13.19
II V9: Team working is a very common practice in the company	0.62	12.73
Organizational memory (AVE = 0.53, composite reliability = 0.77)		
OM V10: The company has directories/e-mails filed according to the field they belong to	0.67	8.64
OM V11: The company has up-to-date databases of its clients	0.87	6.30
OM V12: Databases are always kept up-to-date	0.87	17.82

Table 2. Contd.

Innovative culture (AVE = 0.54, composite reliability = 0.90)		
IC V1: Encouraging creativity and innovation	0.56	8.62
IC V2: Being receptive to new ways of doing things	0.63	8.74
IC V3: Being an organization that people can identify with	0.73	15.0
IC V4: Stressing team working among all departments	0.58	9.45
IC V5: Giving high responsibilities to managers	0.78	16.99
IC V6: Explaining reasons for decisions to subordinates	0.81	21.23
IC V7: Allowing individuals to adopt their own approach to the job	0.56	11.28
IC V8: Improving communication between departments	0.64	9.29
IC V9: Delegating decision making to lowest possible level	0.59	7.46
IC V10: Taking a long-term view even at expense of short-term performance	0.62	12.13
IC V11: Communicating how each person's work contributes to the organization's 'big picture'	0.84	20.34
IC V12: Valuing effectiveness more than adherence to rules and procedures	0.77	21.85
Organizational performance (AVE = 0.62, composite reliability = 0.82)		
FP V1: Growing sales	0.57	5.90
FP V2: Market share	0.86	37.49
FP V3: Profitability	0.88	40.51
Industry structure (AVE = 0.52, Cronbach alpha = 0.83)		
Competitive intensity (AVE=0.53, composite reliability = 0.87)		
CI V1: The number of competitors varying for customers in the industry	0.78	17.77
CI V2: The intensity with which competitors jockey for a better position in the industry	0.90	39.91
CI V3: The extent to which price competition is used regularly in the industry	0.88	31.49
SP V1: Supplier power	0.70	5.96
NE V1: New entrants	0.60	11.89
SU V1: Substitutes	0.52	8.62
BP V1: Buyer power	0.65	11.55
Strategic type	Weight	
ST V1: Prospector	0.56	5.98
ST V2: Analyzer	0.21	6.36
ST V3: Defender	0.96	7.46
ST V4: Reactor	0.53	3.21

All figures are loadings with the exception of strategic type where weights are shown.

researches in which, a number of environmental characteristics influence market orientation.

Strategic type is another important factor that determines the degree of market orientation,

innovative culture and organizational learning. There is a significant relationship between

Table 3. Partial least squares results for the conceptual model.

Hypotheses	Predicted variable	Predictor variable	Path weight	Variance due to path	R ²	Critical ratio
H ₁	Strategic types	Industry structure	0.045	0.004	0.02	0.51
H ₂	Market orientation	Industry structure	0.63	0.042		13.49**
H ₃	Organizational learning	Industry structure	0.56	0.065	0.47	8.28**
H ₄	Market orientation	Strategic types	0.40	0.046	0.52	8.62**
H ₅	Innovative culture	Strategic types	0.63	0.043	0.40	13.56**
H ₆	Organizational learning	Strategic types	0.42	0.067		6.24**
H ₇	Organizational performance	Market orientation	0.18	0.119		1.69*
H ₈	Organizational performance	Innovative culture	0.55	0.103	0.55	5.42**
H ₉	Organizational performance	Organizational learning	0.19	0.125		1.67*
AVA					0.53	

*exceeds minimum acceptable level .05; **exceeds minimum acceptable level 0.01.

strategic type and market orientation, while market orientation of pioneers is the highest, followed by analyzers, defenders, and reactors. This is consistent with the findings of Lukas (1999) who reports that degree of market orientation is ranked from the highest to the lowest according to the strategic type. Similarly, this is true for the relationship among strategic type, organizational learning and innovative culture.

In the marketing literature, special attention has been given to this argument that systematic implementation of market orientation results in superior performance of organizations. The major effective internal theme is that probably organizations with strong innovative culture believe that having access to superior performance is not always dependent on interpretation of received feedbacks from present customers and competitors. Instead, they have admitted to the role of capability of productive units in developing and establishing of innovative ways and organizational learning in order to offer superior value to their customers and encouraging of employees to do the same task. Results of this research confirm the fact that market orientation, organizational learning and innovative culture affect performance of the organization strongly. These findings are consistent with previous researches which addressed the positive relationship between market orientation and performance on macro level; the link between innovative culture and performance of the organization; and the relationship between organizational learning and performance.

Conclusions

In this article, a model was developed for studying the relationships between industry structure, strategy type, organizational characteristics and organizational performance. The model was examined in 48 chemical and 76 food industries by means of structural equations' model and based on partial least squares (PLS) methodology.

Results imply that industrial structure determines organizational characteristics, which in turn leads to superior organizational performance. Non-homogeneity of organizational characteristics could be explained not only through competition intensity but also by the means of applied strategic type in an organization that shows goodness and consistency of organizational-strategy characteristics. The obtained experimental results support almost all of the hypotheses except the hypothesis related to the influence of industrial structure on strategic type.

The issue that whether performance of organizations is affected more by industrial structure or organizational characters has been one of the extensive subjects in the field of marketing literature. It is identified in this article that competitor industrial organization view and resource based view complement each other in organization's effort towards gaining higher performance. This article helps in understanding of the industrial structure's influence on the process of developing strategic type, market orientation, innovative culture and organizational learning for having access to superior organizational performance and the relationship of the applied strategic type with market orientation, innovative culture and organizational learning through establishing of a conceptual framework that compares two components of the competitor's models, that is, external adaptation and internal effectiveness. It is obvious that studying the links among external adaptation and internal effectiveness is necessary and has sufficient theoretical and practical importance for academics and managers.

A limitation of the study is the cross-sectional nature of the sample and the convenience sampling approach. Moreover, acquiring information from one CEO cannot be a steady basis to generalize the results, since there might exist differences between marketing managers' viewpoints and that of financial managers. Therefore, it is important to acquire other stockholders' opinions in addition to CEOs.

One of the surprising results of this investigation is rejection of the first hypothesis, that is, the relationship between industry structure and the strategic type, which is incompatible with the reviewed literature. It may be due to macro-economic reasons; for instance, Iran is a country under development and its economy's structure is less informal. Therefore, the task environment compared to general environment has less influence on the strategy structure. Consequently, it seems that examination and analysis of the influence of macro-environmental factors (public, international, economic, legal, etc.) on the strategy type of various industries and particularly in the developing countries provides a valuable opportunity for future studies.

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