

Innovation Orientation and Strategic Typology
A Study of Business firms

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Abstract: The aim of this study is to investigate the relationship between innovation orientation and strategic typology in firms such a way that a classification on the organization's orientation towards innovation and strategy could be obtained. This study was an applied research done among Iranian firms. The statistical population includes high executive managers of firms who have been acting in 4 industries of banking (B), food (F), insurance (I), and pharmacy (P), and have been the five pioneering firms in these industries. To test the hypothesis, the mean test analysis, the Goodness- of- Fit- Test, Chi- square test, and cross- tables were used and tested by SPSS₁₈ software. The results show that there is a significant relationship between the firm's orientation towards innovation and competitive strategy; the more firm's orientation toward innovation, the firms uses more prospector strategy, and their strategies have a more aggressive state. This paper provides a richer understanding of innovation orientation and strategic typology formation for similar firms.

Keywords: Innovation, Strategy, Competitive strategy, Innovation orientation.

1. Introduction

Today's firms search for a competitive advantage to distinguish themselves from others so that they could achieve a unique characteristic in their products and services in the complex and turbulent current era. As a strategic direction, innovation orientation is a method of thinking and leading that drives the firm over the long term, keeping it innovative (Siguaw *et al.*, 2006). Innovation offers vital advantages to firms like maintaining or enhancing market share and outperforming competitors (Lisboa *et al.*, 2011). Past research on innovation in firms has examined the determinants (Nystrom *et al.*, 2002), processes (Schroeder *et al.*, 2000), and consequences of innovation (Subramanian and Nilakanta, 1996). The scholars have distinguished between product and process innovation (Wong, 2012), technical and administrative innovations (Nambisan, 2013), and radical and incremental innovations (Oerlemans *et al.*, 2013). The managers are progressively looking for strategies and approaches to nurture innovation and creativity in their firms to make use of its

advantages, and using other firms' innovation, they are adopting their approaches to create competitive advantages for themselves. Since innovation could lead firms to access relatively sustainable competitive advantage, investigation on the relationship between the firm's orientation towards innovation and strategy would be beneficial. Research on innovation in organizations has generally examined the differences in the characteristics of innovative and non-innovative organizations, an endeavour that has often produced inconsistent results (Damanpour and Wischnevsky, 2006).

Brannback (1999) refer that if organizations are to attain growth within the future, innovation is that the only line of action. Therefore, some researchers of strategic management contend that innovation makes a major contribution to business performance and is considered one of the avenues to realize a competitive advantage (Tajeddini and Trueman, 2014).

The organizations want to explore the alternatives for rising innovation and their performance so as

to reply the competitive pressures. Achieving success within the innovation depends on the cooperation between marketing and technology departments. On the opposite hand, the strategic direction is crucial in the perceiving innovation of product and performance (Spanjol *et al.*, 2011).

In recent decades, several efforts created to detect the organizations' strategic orientations and plenty of strategic management frameworks developed to classify organizations' strategies. In everyone these efforts, Miles and Snow (1978) have represented 4strategies typology on the idea of managers' perceptions from environmental uncertainty (Khani and Ahmadi, 2012). Miles and Snow (1978) showed that how managers react to perceived environmental uncertainty and extended general model for this reaction and it had been named adaption cycle. The model consist three domains for organizations' strategies: the entrepreneurial, about how the organization orients itself to the marketplace; the engineering, relating the technology and processes employed in manufacturing, product and services; and also the body, hold the organization tries in coordinating and implementing its methods.

Miles and Snow (1978) Referred 4 strategic types of organizations that included; prospector, analyzers, defenders, and reactors. Miles and Snow's (1978) typology are most widely used in the literature of strategy, and is usually been supported from other researchers (Desarbo *et al.*, 2005).Strategic typology refers to a pattern of responses that a corporation makes to its operational environment so as to reinforce performance and gain competitive advantage (Hambrick, 1983).According to the mentioned topics, the aim of this study is to investigate the relationship between innovation orientation and strategic typology in organizing such a way that a classification on the organization's orientation towards innovation and strategy could be obtained. In our study, after the review of the literature, we provided a set of hypothesis that formulated to describe the innovation orientation and strategic typology. We also check the organization's orientation towards innovation use the Wang and Ahmed's (2004) questionnaire and to evaluate the type of strategy, we use the typology model of organizational strategy that extend by Miles, Snow, Meyer and Coleman's (1978) because this

model is a famous and comprehensive model that used in many theoretical and practical studies. Therefore, to assess this, the researcher attempts to find answers to their questions, which include: Is there significant relationship between innovation orientation and strategic typology? Does there have a high orientation towards innovation (rather they are innovation generating) in the firms which use the Prospector strategy? Does there have an average orientation towards innovation (they are both innovation generating and adopting) in the firms which use the analyzers strategy primarily? Does there have a low orientation towards innovation (they are innovation adopting) in the firms which use the Defenders strategy primarily? Does there have an orientation towards innovation that follows no specific pattern in the firms which use the Reactors strategy?

The Theoretical Framework

Innovation

Innovation orientation is a philosophy that promotes openness to new concepts, and reflects a firm's temperament to alter through the adoption and implementation of latest technologies, resources, skills, and administrative systems (Hurley & Hult, 1998).

Relatively few studies about innovation literature have addressed the notion of innovation orientation. The earliest of these articles is from Manu (1992), that explains the innovation orientation as encompassing "the total innovation programs of firms and is strategic in nature as a result of it provides direction in managing markets. West and Farr (1990) define innovation as "the intentional introduction and application within a role, group or organization of ideas, processes, products or procedures, new to the relevant unit of adoption, designed to significantly benefit the individual, the group, organization or wider society".

Berthon *et al* (1999) defines innovation orientation from the perspective technological excellence: companies that "devote their energy toward inventing and processing superior product".

Kundu and Katz (2003) Considered "intention to be innovative" as part of innovation orientation, since homburget *al* (2002) viewpoint innovation orientation as a Subordinate of "the number of

innovations a corporation offers, what percentage customers these innovations offered to, and how powerfully these innovations are emphasized". Hamel (2006) described innovation more broadly as "a marked departure from traditional management principles, processes and practices or a departure from customary organizational forms that significantly alters the way the work of management is performed". Hurley and Hult (1998) Showed the new concepts company culture of innovation orientation; and Atuahene-Gima and Ko's (2001) definition needs a setting that enables "employees to stay up with ever-changing technologies".

These conceptualizations powerfully imply that a learning philosophy should be an inherent element of innovation orientation. Innovation orientation is mostly considered a targeted and calculated plan or strategic intent (Worren *et al.*, 2002) which provides direction to an organization-wide commitment to a lot of and quicker innovations. As a strategic initiative, some researchers create mentally innovation orientation as broad in scope and as encompassing the full enterprise and every one functional areas of the organization instead of only one functional area, like R&D or marketing (e.g., Amabile, 1997; Worren *et al.*, 2002). Wang and Ahmed (2004) propose and define organizational innovativeness as "an organization's overall innovative capability of introducing new products to the market, or opening up new markets, through combining strategic orientation with innovative behaviour, and process." Their definition of innovativeness was multi-dimensional, as was their construct which included the dimensions of product, market, process, behavior and strategic innovation. It is also safe to say that innovation is associated with creativity and change (Drucker, 1991; Robbins, 1996; Hellriegel *et al.*, 2001; Dobni, 2010), or is regarded as something new which leads to change (West and Farr, 1990; Dobni, 2010). Thus, it would appear that the standard for innovativeness is multi-dimensional, and grounded in product/service, process, behavioral (cultural), and infrastructure aspects (Dobni, 2010). From the perspective of Sigauw *et al* (2006), innovation orientation is defined as the following: A multidimensional knowledge structure formed of a learning philosophy, strategic direction, and trans

functional beliefs that, to turn, guide and direct all organizational strategies and actions, including those embedded within the formal and informal systems, behaviours, competencies, and processes of the company to promote innovative thinking and facilitate successful development, evolution, and execution of innovations. This definition Concept innovation orientation as a set of perceptions regarding innovation built into the material of a company's knowledge structure that influences organizational activities, however, not as a specific set of normative behaviors (i.e., encouraging risk taking) as provided in most previous study.

In general, innovation orientation can be generated by a person or an organization; it can be adapted for a person or an organization, or it can be a combination of both cases, meaning that it can be taken from an organization or a person and can be promoted. There has always been a very critical question for organizations' managers, that is, should the needed organization's innovation be adapted from anywhere; or the organization or the organization's staff should generate it? Answering this question is a fundamental response which can be useful in determining the organization's overall strategy. Scholars have generally defined innovation as the development and use of new ideas or behaviors in organizations. The generation of innovation is intended to contribute to the organization's effectiveness and competitiveness by creating a new opportunity or by making use of an existing opportunity in novel ways (Drucker, 1991). The innovation-generating organizations are those that introduce products, services, or technologies that are new to the market (Hitt, *et al*, 1996). The adoption of innovation is intended to contribute to the organization's effectiveness and competitiveness by changing the adopting organization so that it can adapt to new conditions in its external environment. Change occurs when organizations evolve from old behaviors and methods of operations to new ones (Damanpour and Wischnevsky, 2006). It is a shift or transfer from the current state prior to change in the future state after the change (Nadler and Tushman, 1997). The difference between the current and future states of an organization can be a consequence of adopting innovation. From this perspective, innovation is "initiation plus

implementation,” and the adoption of innovation requires the assimilation of products, services, or technologies that are new to the adopting organization (Meyer and Goes, 1988; Klein and Sorra, 1996). The difference between innovation generating and innovation, adopting in organizations depend on various factors. Whether an organization generates innovation or adopts it, or both, depends on the organization’s primary goals and the type of its orientation. The generation process emphasizes the distinctiveness of the innovation, what makes it different from other existing products, services, or technologies, whereas the adoption process emphasizes the integration of the innovation into the organization (Tornatzky and Fleischer, 1990). In the innovation-generating organization (IGO), the critical innovation issue is to manage the innovation project in a timely and efficient fashion in order to create a new product, service or technology; in the innovation, adopting organization (IAO), it is to manage the assimilation of the innovation extensively into the organization in order to produce the desired organizational change (Damanpour and Wischnevsky, 2006). IGOs are mainly suppliers of innovation in the market and IAOs are primarily users of innovations created by IGOs. Furthermore, the categories of variables that determine the success of an innovation in the marketplace versus those that determine its successful adoption in an organization differ (Frambach, 1993). Factors that predict successful generation include business-project fit, Rand-manufacturing–marketing interaction, and the uniqueness of the innovation, the user benefit or economic advantage of the innovation, the role of an innovation champion, patent protection, and competition in the market (Frambach, 1993; Damanpour and Wischnevsky, 2006), among others. Factors that predict successful adoption include organizational complexity, centralization of decision-making, organizational members’ internal and external communication, perceived risk of the innovation, the capacity of the organization to absorb information, and the complexity of the innovation (Frambach and Schillewaert, 2002).

Strategy

Using the term strategy, some scholars consider both work consequences and the tools and approaches resulting in the goals as well as mission enforcement, whereas, another group considers strategy a process or a trend which starts with means and results in fulfilling the mission and goals (Kalt *et al.*, 2010). According to Chandler (1962), strategy means determining the fundamental goals of a firm, performing a series of actions, and allocating the needed resources to fulfill the goals. Ansoff (1965) considers strategy as the range of goods- market, the growth and promotion trend, and the advantages and competitive consequences. Andrews (1971), defines strategy as the pattern of the main goals, targets, intentions and policies. Principally, gaining a Competitive Strategy means offering a comprehensive formula to make it clear how to compete in a business and how to determine goals and the needed policies to fulfil them (Porter, 1998).

Many scholars have tried to declare the typology of applicable strategies for organizations so they could classify the organizations according to the used strategy. The two typologies of Porter (1981); Miles and Snow (1984) are more famous than others, According to Porter's framework, a business can maximize performance either by striving to be the low cost producer in an industry or by differentiating its line of products or services from those of other businesses; either of these two approaches can be accompanied by a focus of organizational efforts on a given segment of the market. In contrast, a differentiation strategy is effectively implemented when the business provides unique and superior value to the buyer in terms of facets such as product quality, special features, or after-sale service. Differentiation leads to market success not based on a competitive price, but on the demands of a sophisticated consumer who wants a differentiated product and is willing to pay a higher price (Porter, 1981). Miles and Snow's (1978) framework identified 4 strategic types: prospectors, analyzers, defenders and reactors.

- *Prospector* often changes its product and services to be first within the market. It tends to specialize in innovation and

flexibility to retort quickly to market changes.

- *The analyzer* has comparatively stable product and services because it by choice is moving into new areas. An analyzer tends to emphasis on formal designing processes and tries to balance price containment and efficiency through taking risks and innovate.
- *Defender* offers a comparatively stable set of services to outlined markets by concentrating on doing the most effective possible in its experience space. It emphasizes on a tight control and operational efficiencies to decrease prices.
- *Reactor* basically doesn't compatible strategy. Its strategy has characteristics of the previous mentioned strategies adopted in several time phases and is troublesome to categorize it clearly.

Based on Child's (1972) conceptualization of strategic choice, Miles and Snow assume that organizations act to create their own environments through a series of choices regarding markets, products, technologies, and desired scale of operations. The enacted environment is severely constrained by existing knowledge of alternative organizational forms and managers' beliefs about how people can and should be motivated (Parnell, 2002). Desarbo *et al.*, (2005) conducted a widespread test of the typology involving organizations in the China, Japan and United States. Result of their study validated the Miles and Snow business typology across countries. In this paper, we have tried to classify the firms based on Miles and Snow's typology. Based on their studies on 4 businesses, Miles and Snow categorize organizations to 4 general groups: Prospectors, Analyzers, Defenders, and Reactors. This classification depends on the firm's reaction to three critical problems: the entrepreneurial Problem, the engineering problem and administrative problem in organizations that the management should solve each of these problems simultaneously, called the adaptation circle according to Miles and Snow. The Miles and Snow's strategy is at the business and trade level,

and as the enterprise strategy says what business a firm should enter, the strategy at the business and trade level says how an organization should compete in a specific business (Hambrick, 1983). The main question by which Miles and Snow wanted to answer to offer their classification was this: What strategies do organizations employ in solving their entrepreneurial, engineering, and administrative problems? They observed that there are essentially three strategic types of organizations: Defenders, Analyzers, and Prospectors. Each type has its own unique strategy for relating to its chosen market(s), and each has a particular configuration of technology, structure, and process that is consistent with its market strategy. A fourth type of organization is Reactors. The Reactor is a form of strategic "failure" in that inconsistencies exist among its strategy, technology, structure, and process (Miles *et al.*, 1978).

Innovation, strategy and Proposed conceptual model

Empirical research on strategic typologies and innovation has shown mixed results. There is evidence to support the proposition that porter's (1981) differentiator firms and Miles and snow's (1978) prospectors are more product and service innovative than other categories in their respective typologies. For example, Frambach *et al* (2003) found that firms which were characterized as having differentiation strategies were more likely to have significantly higher levels of new product development compared to other firms that followed cost leadership strategies. Results study of Ozer and Markóczy, (2010), showed that the corporate political strategy is complementary to innovation. Also other results show that tests for the moderating effects of firm characteristics such as firm size and financial resources, and industry characteristics such as industry concentration and growth of this relationship. The findings of study indicate that firms that invest heavily in innovation strategies may also want to consider investing in a corporate political strategy to create favourable conditions for innovation. The results of research Santamaria *et al* (2010) show that open innovation strategies are highly effective tools for making

internal R&D efforts more successful, both in high- and low-tech sectors. In addition, the study finds evidence that market based strategies are positively correlated to achieving process innovations, while partnering strategies have a similar relationship with product innovations. More formalized open innovation strategies, such as joint ventures, show positive relations with the achievement of patent results.

Hsu (2011) in a study show that, firms employing different marketing strategies employed different design innovation strategies in product design. The design strategies adopted by enterprises in the market leader group incorporated aggressive innovation; those in the market focus group were characterized by focus innovation in product design; those in the market challenge group exhibited strong innovation, integrated in product design; and those in the market niche group exhibited flexible innovation in product design.

Lightfoot and Gebauer (2011) in their study, show that aligning service strategies with determinants for service innovations is complex. The configurations of the determinants are associated with the innovation success. Alternative configurations of determinants can create counterproductive effects and can limit the success of service innovation projects as well as implementation of service strategies. Also findings of this study suggest that managers contemplating a specific service strategy have to consider the service innovation and reform the determinant for service innovations accordingly. Also, companies trying to implement an after-sales service strategy should focus on a narrow range of determinants for service innovations.

Salunke *et al* (2011), in a study, indicates that firms purposefully use, create, extend and modify processes to build and nurture key dynamic capabilities.

Kumar *et al* (2012) in a study, show that while large firms operate with a “prospector” orientation, SMEs have a “defender” or “reactor” orientation. Only a small number of SMEs can innovate successfully, and an ex post facto investigation reveals that these firms follow an “open innovation model”.

Malek Akhlagh *et al* (2013), in a study showed that innovation strategies such as proactive, analyzer, futuristic and aggressive strategies

influence on the performance development of the industry. Also, strategies such as proactive, risk taking and futuristic ones are the most effective innovation strategies in the performance diversity. Also Results of their study suggest that to achieve performance, diversity and development, construction industry's policy makers and top managers should implement and promote proactive and futurity strategies, simultaneously, across the industry.

In another study Zuniga and Cespi (2013) show that innovation strategies enhance technological innovation, but their impact differs between product and process innovation. Product innovation is mainly motivated by in-house technology investments, followed by mixed strategies, whereas process innovation is basically driven by “buy” strategies.

According to the contents of the above, we can say that, strategy used in organizations is of a great importance for the organizations obtaining and implementing a suitable strategy can achieve their goals and be successful in their business. Since innovation can generate a relatively sustainable competitive advantage for the firms, organizations and their senior managers regard it so much. Thus, finding out what relationship there is between innovation orientation and strategic typology could be so useful. The research emphasizes on answering this question. First, considering Miles and Snow's typology, great attempts have been done to identify the strategy used by the organization, then, determining the innovation orientation in the organization, it has been tried to offer another classification from the innovation point of view, and finally, to study the relationship between both nations in organizational behavior, if any. Therefore, the primary goal of the research is to identify the relationship between innovation orientation and strategic typology. In addition, the proposed model of the research is shown in diagram 1. Based on this model, the following question has been raised as the main question of this research to study relationship between innovation orientation and strategic typology. Is there significant relationship between innovation orientation and c strategic typology? Also To answer this question, research hypotheses were designed accordingly.

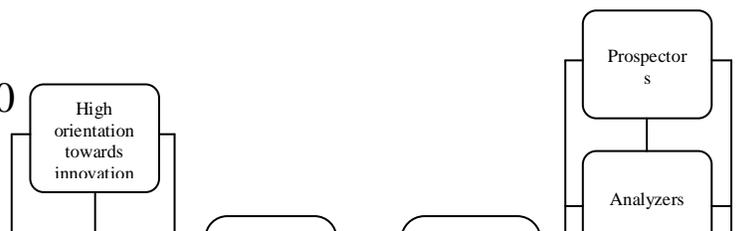


Fig. 1. Research's proposed model

Research Hypotheses

Main Hypothesis:

- There is a significant relationship between innovation orientation and strategic typology.

Sub Hypotheses:

- *The first sub- hypothesis:* the firms which use the Prospector strategy have a high orientation towards innovation (rather they are innovation generating).
- *The second sub- hypothesis:* the firms which use the Analyzers strategy primarily have an average orientation towards innovation (they are both innovation generating and adopting).
- *The third sub- hypothesis:* the firms which use the Defenders strategy primarily have a low orientation towards innovation (they are innovation adopting).
- *The fourth sub- hypothesis:* The firms which use the Reactors strategy, their orientation towards innovation follow no specific pattern.

Research methodology

The research method

The purpose of this study is to investigate the relationship between innovation orientation and strategic typology in Iranian firms. Research

method is descriptive and applied. The statistical population includes executive managers of five pioneering firms in 4 industries including banking ($B_{1,2,3,4,5}$), food ($F_{1,2,3,4,5}$), insurance ($I_{1,2,3,4,5}$), and pharmacy ($P_{1,2,3,4,5}$). We use the list of Iran industrial zones corporation for choosing industries and firms who are active during the research study. The samples of study include 105 Top managers of these firms by a random sampling at each firm and industry from 150 top managers of the firms according the Krejcie and Morgan (1970) table.

Research Variables

Variables included in this study consisted of Innovation orientation, including "High orientation towards innovation, Average orientation towards innovation, and low orientation towards innovation" and the dimensions of the Strategy type include "Prospectors, Analyzers, Defenders, and Reactors".

Measurement Instruments

The questionnaire used in the study was a combination of innovation-orientation questionnaire and the type of organization's strategy questionnaire. The questionnaire related to innovation-orientation was 29 questions plotted as closed answers designed as the Likert type five optional answers. This questionnaire was plotted by Wang and Ahmed in 2004 to evaluate the organization's orientation towards innovation. The questionnaire determining the type of strategy used has 11 questions having 4-optional answers which use the closed answers and each choice in each question denotes one of the strategies _ Prospector, Defender, Analyzer, and Reactor. This one was designed by Conant, Mokwa and Varadarajan in 1990 and evaluates the organization's strategy according to Miles and Snow's classification. The final questionnaire was distributed among 145 people of the statistical population of which 109 were answered and gathered.

Measurements

To check the validity of the questionnaire, 30 people the research's samples were taken randomly and were given the questionnaire. The Cronbach's alpha coefficient was higher than 0.7 indicating the questionnaire's reliability (Internal

consistency). In this study, descriptive and inferential statistics were used. To test the hypothesis, the mean test analysis, the Goodness-of-Fit-Test, Chi-square test, and cross-tables were used. Significance level during this study was considered 0.05 and for analyzing data SPSS¹⁸ software was used.

Results Obtained from Hypotheses Test

- Data Normality Test

To study normality hypothesis of Innovation Orientation and Strategic Typology, Kolmogorov-Smirnov (K-S) test was used and results are shown in table 2.

Table 2 Kolmogorov- Smirnov test for Innovation Orientation and Strategic Typology

Variables	Sig	Results
Innovation Orientation	0.000	Not normal
Strategic Typology	0.002	Not normal

Table 1 Descriptive statistics

Gender		Age		Education	
Level	Percent	Level	Percent	Level	Percent
Male	81.7	Under 30 years	6.5	Diploma	0
		31-40	39.4	Associate degree	2.7
		41-50	39.4	Bachelor's degree	40.6
Female	18.3	Up 50 years	14.7	master degree	36.6
				PhD	20.1
Total	100		100		100

The total of samples: 105

Results

Sample Descriptive Data

Respondents' descriptive information on the study, for Gender, Age, and Education, are explained in Table 1.

Table 1 show that most of the respondents to the questionnaire were male managers based on the "Gender". Based on the "Age" of the respondents, results show that most respondents were between 30 and 40 years and between 41 and 50 years and based on the education level, 2.70% of respondents is an associate degree, 40.60% have a bachelor's degree, and 36.60% have master's degrees and 20.10% held the doctoral degrees, which indicated the educational degree of the samples i.e. associate, bachelor and master's degree, and it can be inferred that subjects with more knowledge filled out the questionnaires.

According to the results of Table 2 because significance level for all components are lower than the error value of 0.05, As a result, these variables were not normally distributed.

-Status of Innovation in the surveyed firm

In order to investigate the status of innovation in the surveyed companies 'one-sample T test was used. Citing to the scores obtained from a sample and one-sample T test, the results of the analysis are shown in Table 3. As can be observed the value of Sig is 0.000 and smaller than the value of $\alpha = 0.05$, Therefore, the null hypothesis that innovation is equals 3 (Intermediate level) has not been confirmed. Positivity upper limit and lower limit in this distance, it also shows that the mean of innovation is greater than the number of 3, So if we according to the average of this

dimension, we consider the score of less than 2 as critical, between 2 and 3 as inappropriate, between 3 and 4 as mean and between 4 and 5 as high or well, Therefore, in terms of innovation orientation rate,

Test	Result
Chi-square	44.578
df	3
Sig	0.000

according to the statistical population average (3.26) is in the well condition (average).

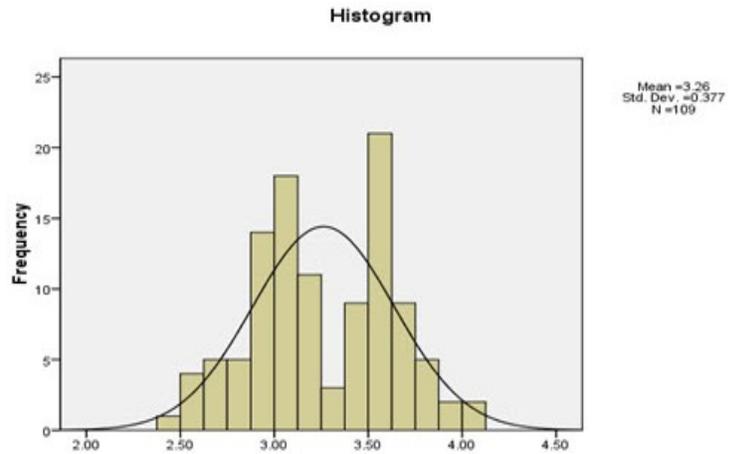


Fig. 2. Histogram diagram for Innovation

As specified in the table 3, the amount of the T test is equal to 7.24 that are larger of 1.96 and is located in the critical area of the test, In other words, the difference of mean is significant from number 3. In general, it can be said that tendency to innovate of firms in the study are type of Innovation-generating and Innovation-adopting.

Critical Inappropriate Mean High



Table 3 Results of one-sample T test ($H_0 : \mu = 3$)

Variable	Mean	SD	T	Sig	Lower limit	Upper limit	Variable status
Innovation	3.26	0.377	7.24	0.000	0.1900	0.3332	Appropriate

-Status of Strategy in the surveyed firm

In order to investigate the status of the strategy in the surveyed companies' chi-square test was used. The results of this test are shown in the tables 4 and 5.

Table 4 Results of chi-square test statistic Strategic Typology

The results of this test with the amount of chi-square = 44.578 and in the 99% confidence level, namely at the error level of 1% (Sig = 0.000) were significant.

Table 5 Result of chi-square test (goodness of fit) for Strategic Typology

Strategic groups	Number of observed	Expected number	The difference observed and expected
Reactors	4	27.2	-23.2
Defenders	24	27.2	-3.2
Analyzers	53	27.2	25.8
Prospectors	28	27.2	0.8
Total	109	-	-

The results of the Table 5 indicate that the test is significant and firm have not the same orientation to all strategy. Also, maximum orientation is related to strategic analyzers; As a result, overall firms' strategy is analyzers. Also, lowest orientation was related to the Reactors strategy and there were only 4 firms that have this orientation.

Results of Inferential Analysis

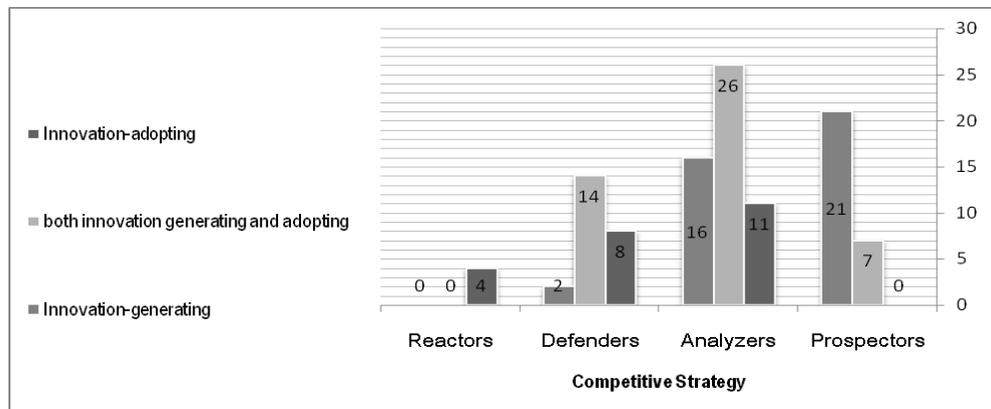
To test the main hypothesis to investigate the relationship between innovation-orientation and strategic typology, the Chi Square test and cross tables were utilized.

- H₀: there is no relationship between innovation-orientation and strategic typology.
- H₁: there is a relationship between innovation-orientation and strategic typology.

Table 2 The Chi Square test and cross table to investigate the relationship between innovation-orientation and strategic typology

The relationship between innovation-orientation and competitive strategies.			Competitive strategies					
			Reactors	Defenders	Analyzers	Prospectors	Total	
Innovation-orientation	Low	Frequency	4	8	11	0	23	
		Percent	17.4%	34.8%	47.8%	0.0%	100%	
	Mean	Frequency	0	14	26	7	47	
		Percent	0.0%	29.8%	55.3%	14.9%	100%	
	High	Frequency	0	2	16	21	39	
		Percent	0.0%	5.1%	41.0%	53.8%	100%	
	Total	Frequency	4	24	53	28	109	
		Percent	3.7%	22.0%	48.6%	25.7%	100%	
	The result of Chi Square test			$\chi^2 = 43.98$ df = 6 Sig = 0.000 P < 0.05				

Figure 2 Relationships between innovation orientation and strategic typology



Based on the results shown in Table 2, (Sig= 0.00< α =0.05), with a 99% of confidence level it could be said that zero hypothesis, meaning the independence of innovation orientation and strategic typology, has been rejected, and the contrary hypothesis, meaning the considerable

relationship between innovation orientation and strategic typology, has been accepted.

The first sub – hypothesis: generally, the firms using the Prospectors strategy have a high level of orientation towards innovation (they are rather innovation generating).

Table 3 Grouping of firm based on the type of prospectors' strategies and Amount of orientation of innovation

Strategic Type	Amount of Orientation to innovate	Frequency	Frequency percentage
Innovation-generating Innovation-adopting	B3	2	28.6
	B5	2	28.6
	P4	3	42.9
	Total	7	100
Innovation-generating	B3	4	19
	B2	3	14.3
	B5	1	4.8
	I5	6	28.6
	F3	6	28.6
	P4	1	4.8
	Total	21	100

Table 4 The distribution frequency of the Prospectors strategy and innovation orientation

Strategy type	Innovation orientation	Frequency	Frequency percentage
Prospectors	Average orientation towards innovation (Innovation-generating and adopting)	7	25%
	High orientation towards innovation (Innovation-generating)	21	75%
	Total	28	100%

According to tables 3 and 4, it could be observed that 25% of the firms following Prospectors strategy have an average orientation towards innovation, and 75% of the firms have a high orientation towards innovation, therefore, it can be said that the firms using the Prospectors

strategy have a high orientation towards innovation and are rather innovation generating.

The second sub – hypothesis: generally, the firms using the Analyzers strategy have an average orientation towards innovation (they are both innovation generating and adopting).

Table 5 Grouping of firm Based on the type of Analyzers' strategies and Amount of Orientation to innovation

Strategic Type	Amount of Orientation to innovate	Frequency	Frequency percentage
Innovation-adopting	I4	5	45.5
	F5	1	9.1
	P2	1	9.1
	P3	1	9.1
	P5	3	27.2
	Total	11	100
both innovation generating and adopting	B1	4	15.4
	B4	2	7.7
	I2	1	3.8
	I5	2	7.7
	F1	2	7.7
	F2	5	19.2
	F4	1	3.8
	P1	3	11.5
	P2	5	19.2
	P4	1	3.8
Total	26	100	
Innovation-generating	B1	1	6.2
	B2	2	12.5
	B4	2	12.5
	B5	2	12.5
	I1	4	25
	I5	4	25
	F1	1	6.2
	Total	16	100

Table 6 The distribution frequency of the Analyzers strategy and innovation orientation

Strategy type	Innovation orientation	frequency	Frequency percentage
Analyzers	Low orientation towards innovation (rather innovation adopting)	11	20.7%
	Average orientation towards innovation (both innovation generating and adopting)	26	49.1%
	High orientation towards innovation (rather innovation generating)	16	30.2%
	Total	53	100%

According to the table of 5 and 6 it could be observed that 20.7% of the firms following the Analyzers orientation have had a low level of orientation towards innovation, 49.1% of them have had an average level of orientation, and

30.2% of them have had a high level of orientation. Thus, it can be said that the firms following the Analyzers strategy have an average orientation towards innovation (they are both innovation generating and adopting).

The third sub – hypothesis: generally, the firms following the Defenders strategy have a low level of orientation towards innovation (they are rather innovation adopting).

Table 7 Grouping of firm Based on the type of Defenders strategies and amount of Orientation to innovation

Strategic Type	Amount of Orientation to innovate	Frequency	Frequency percentage
Innovation-adopting	I2	1	12.5
	F2	1	12.5
	F4	2	25
	P3	2	25
	P5	2	25
	Total	8	100
Both innovation generating and adopting	B1	1	7.1
	I2	1	7.1
	F1	1	7.1
	F4	3	21.4
	F5	3	21.4
	P1	2	14.3
	P3	3	21.4
	Total	14	100
Innovation-generating	B4	1	50
	I1	1	50
	Total	2	100

Table 8 The distribution frequency of the Defenders strategy and innovation orientation.

Strategy type	Innovation orientation	Frequency	Frequency percentage
Defenders	Low orientation towards innovation (Rather innovation adopting)	8	33.4%
	Average orientation towards innovation (Both innovation generating and adopting)	14	58.3%
	High orientation towards innovation (Manufacturer of Innovation)	2	8.3%
	Total	24	100%

According to the tables 7 and 8, it can be seen that 33.4% of the firms following the Defenders strategy have had a low level of orientation towards innovation, 58.3% of them have had an average level of orientation, and 8.3% of them have had a high level of orientation. Thus, it

could be said that the firms following the Defenders strategy have an average and low levels of orientation and are rather innovation adopting.

The fourth sub – hypothesis: the firms following the Reactors strategy, the level of their

orientation towards innovation follows no specific pattern.

Table 9 Grouping of firm Based on the type of Reactors strategies and amount of Orientation to innovation

Strategic Type	Amount of Orientation to innovate	Frequency	Frequency percentage
Innovation-adopting	I2	2	50
	F5	2	50
	Total	4	100

Table 10: The distribution frequency of the Reactors strategy and innovation orientation

Strategy type	Innovation orientation	Frequency	Frequency percentage
Reactors	Low orientation towards innovation (Rather innovation adopting)	4	4
	Total	100%	100%

It should be reminded that the firms under the study in this research following the Reactors strategy are 4 firms all having a low level of orientation and are innovating adopting. Therefore, according to table 4, no specific conclusion can be drawn about the Reactors.

Discussion and Conclusion

Based on theoretical background and proposed model, this research examined the relationship between innovation orientation and strategic typology in Iranian firms. The results of this research were similar to findings of Frambach et al (2003); Ozer and Markóczy, (2010); Hsu, (2011); Lightfoot and Gebauer (2011); Kumar et al (2012); Malek Akhlagh et al (2013) and Zuniga and Crespi (2013), in which importance and relationship between innovation orientation and strategic typology have been emphasized. Findings of descriptive statistics of research showed that 81.7% of the respondents were men and most respondents were the personnel with age of between 31 and 40; 41 and 50 years based

on frequency of age and most respondents to questioner were bachelor’s degree and master degree. As for the main hypothesis it could be said there is a considerable relationship between innovation orientation and strategic typology. Confirming the sub hypotheses, the conclusion can be drawn that the firms having a high innovation orientation use the strategies in which the orientation has been included, and these orientations as well as high innovation orientation lead the firms to use the Prospector’s strategy. Accordingly, as the orientation towards innovation generating decreases and increases towards innovation adopting, the firm’s use strategies which have an average or low orientation towards innovation that are the Analyzers and Defenders strategies respectively. The findings are in agreement with the research done by Dobni (2010) called “The Relationship between innovation orientation and strategic typology”. In his study, he investigates the relationship between the firm’s orientation

towards innovation and the kinds of the strategic typology the firm follows. The firms, having a high innovation orientation use strategies such as market sectoring, development of products and new services for the new markets, and customization of goods and services. Generally, the organizations having a low innovation orientation use strategies which are less aggressive and are internal- focused like to emphasizing on the customer service, the brand credit, and collaborating with strategies such as cooperation and coalition. The findings are in agreement with the research done by Damanpour and Wischnevsky (2006), but with the difference that in the current research the main focus is on investigating the firm's orientation towards innovation generating or adopting from the innovation point of view. As the results of their research, they claim that the innovation generating firms and innovation adopting firms have basic differences in "innovation". The generating firms generate innovation to produce a new product or technology in order to be entered into a new market or a new business or to create a new market or a new business. The adopting firms use innovation in order to simulate a new product or technology to compete and keep superiority. The innovation generating firms need capabilities to make changes, whereas the innovation adopting firms need capabilities to receive the changes. The management challenges in a generating firm focus on setting the environment to develop creativity and try to offer a reward system to boost and improve an innovation; the management challenges in an adopting firm focus on defining, choosing, and simulating the suitable innovations. Research results of the first sub-hypothesis indicate that 25% of the firms following Prospectors strategy have an average orientation towards innovation, and 75% of the firms have a high orientation towards innovation, therefore, it can be said that

the firms using the Prospectors strategy have a high orientation towards innovation and are rather innovation generating. Based on the Prospector's characteristic this conclusion sounds logical since these firms always use new technology and are high- oriented to be pioneers in the markets and to do so strive to generate innovation. Thus, the first sub-hypothesis is accepted and recommended managers use characteristics of prospector strategy and determine organizational objectives according to the criteria of Prospectors. Research results of the second sub-hypothesis indicate that 20.7% of the firms following the Analyzers orientation have had a low level of orientation towards innovation, 49.1% of them have had an average level of orientation, and 30.2% of them have had a high level of orientation. Thus, it can be said that the firms following the Analyzers strategy have an average orientation towards innovation. With regards to the traits of the firms using analyzers strategy this conclusion looks logical because these firms can be innovation generating or adopting as for their analysis of the market and their business, as well as conditions. Therefore, the second sub – hypothesis is accepted. Research results of the third sub-hypothesis indicate that 33.4% of the firms following the Defenders strategy have had a low level of orientation towards innovation, 58.3% of them have had an average level of orientation, and 8.3% of them have had a high level of orientation. Thus, it could be said that the firms following the Defenders strategy have an average and low levels of orientation and are rather innovation adopting. With regards to the trait that defenders tend more to maintain and keep their current position and their main concern is to keep the existing market, and if the market situation is suitable, they will generate innovation though small, so the third sub-hypothesis is accepted. Research results of the

fourth sub-hypothesis indicate firms that following the Reactors strategy, choose their goals and strategies with regards to the environment condition at the present time and periodically, and it is possible they show high orientation towards innovation and generate it according to the condition, but at another period of time and according to the condition of that time, they adopt innovation and take no actions to generate it. It should be noted that the firms under study that follow the Reactors strategy have been more innovation adopting and have had a low level of innovation orientation at the time of the research and that time's condition.

Limitations and further research

As with any research effort, this study is subject to several limitations. First, we adopt a cross sectional research design and as a result inferences regarding causality cannot be drawn. Future studies following a longitudinal design could provide a more dynamic perspective and contribute further to this stream of research. Second, the data for innovation orientation and strategic typology variables were reported by one manager in each firm. Third, low intensity of competition between organizations due to criteria, instructions, rules and regulations declared by the Iranian government for the coincident in the actions and the performance of state banks and state insurance firm and other private firm. Fourth, lack of clear expression of organizational strategies and orientation to innovate in the firm from the company's top management and its impact on employee perceptions, was one another of the limitations of this study. Finally, some major priorities are proposed for future research. It would be useful to replicate this study and repeat this proposed model testing approach using a completely new sample from other organizations. Interesting comparisons could then be undertaken by using an identical model for a developed country and

then comparing the results. Since this study explored the role of two important variables (innovation orientation and strategic typology) in the Iranian's firm's performance relationship, it would be interesting that the other managements in other firms are explored. The execution of such studies would facilitate theory development and contribute to the advancement of management practice in the field.

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