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An Investigation of the Impacts of Strategic Intelligence on Improving Organizational Innovation

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Abstract

Today, strategic intelligence can be defined as "what an organization should learn from its business environment in order to gain an understanding of its current processes, predict and manage future changes, and adopt appropriate strategies to create value for the customer and develop profitability in current and new markets." Strategic intelligence, as a determining factor in successful decision making, requires describing threats, risks and opportunities in a useful way, so that the organization's programs and policies can be developed. On the other hand, teamwork and human resource participation are considered to be key or basic activities. Team-based organizations are able to make good use of human resources in a desired way and provide a good platform for competition in the market. The main objective of this study was to investigate the effect of strategic intelligence of managers on organizational innovation in Sina Insurance Company, Karaj. The research was of applied type and was performed via a correlation method. The statistical population of this research consisted of 152 employees at Sina Insurance Company in Karaj city, as 111 people were selected as a sample using Morgan Table. The standard Strategic Intelligence and Organizational Innovation Inventories were used to collect information, the validity of which was confirmed by professors and experts, with their reliability being 0.745 and 0.802, respectively using Cronbach's alpha test. Statistical tests of correlation coefficients and linear regression were used to analyze and test research hypotheses. For this purpose, SPSS statistical software was used. The results from testing hypotheses demonstrated that strategic intelligence and its components had a significant effect on organizational innovation at Sina Insurance Company in Karaj. According to the results, suggestions were made for the statistical community and managers of the organization.

Keywords: *Strategic Intelligence, Organizational Innovation, Managers, Employees, Sina Insurance Company*

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I. Introduction

Strategic intelligence, being a type of intelligence, represents an evaluation of changes in competitive strategy within a specific period of time that results from changes in structure, competitors, new product alternatives and newcomers to the industry (Vazifeh Doust and Ghasemi, 2008). What results from strategic intelligence is strategic leadership. Strategic leadership is a process to influence the desired success of the vision used by leaders and is associated with influencing organizational culture, resource allocation, policy guidance, and consensus over a complex, ambiguous, and unreliable global environment (Sohrab Poor and Moradi, 2007, 82). In general, strategic intelligence indicators can be summarized as follows: 1) futurism 2) social insight 3) synergy 4) future-building 5) Holism 6) philosophical attitude 7) discernment 8) predictive power 9) ambiguity inference 10) adaptation 11) mental analysis 12) integration and 13) innovation. It is in the light of strategic intelligence that a full picture of the current and future state of the competition scene facing managers gets shaped so that they can develop their organization by quick and timely decisions. For Gardner, insight is related to one's feelings as they happen, controlling emotions (the power of self-calming during events to make the right decisions), regulating relationships with others, self-spontaneity-making, and vision to the feelings of others being dimensions of interpersonal intelligence (Hassanzadeh et al., 2009, 23). The inside and outside setting of the organization contains a lot of endless information. Organizations are required to monitor their internal and external environment and analyze information from unpredictable environmental changes today, so that they can respond in a timely manner to opportunities and threats; therefore, adopting an appropriate decision making depends on the degree to which managers of an organization think about the present and future of their organization and to degree to which they make use of new strategies and processes for the success of the organization. One of these new and useful strategies is the application of strategic intelligence. Strategic intelligence determines what managers should learn from their environment to be able to gain an insight into the current processes of the organization, to predict and direct future changes, to adopt appropriate strategies to create value for customers, and to develop and improve profitability in the present and future. In other words, in the present era, in order to remain in the competition cycle, the presence of managers with the power to create effective strategies is key and the use of strategic intelligence is viewed to be as one of the factors optimizing managers' decisions. In knowledge management, competitive intelligence and business intelligence synergy, strategic intelligence is considered to be as one of the key determinants in successful decision making. The synergy among these three areas and concluding based the best models and participating in regulating "strategic intelligence" improve the strategic decision-making capabilities of the organization. Competitive intelligence helps assess competition and market conditions. Knowledge management can help the power of knowledge influence both inside and outside the organization and reach out to customers and stakeholders. Business intelligence can lead to internal focus on implementing data warehousing and data mining techniques to avoid hidden patterns without coverage in large volumes of data. Since many factors affect organizational innovation at Sina Insurance Company, the present study sought to investigate the impacts of strategic intelligence components on organizational innovation at this Company in Karaj. To this end, the theoretical framework of strategic intelligence was taken from a three-dimensional model by Libuitz's (2006) strategic intelligence. Therefore, in this study, the impacts of strategic intelligence components on organizational innovation at Sina Insurance Company was investigated and tested.

II. Theoretical Foundations

Strategic intelligence

An organization should be informed of its business environment (measures, resources, markets, customers, products, services, and expenditure) to plan for its present and future success. This knowledge, which provides for the successful operation of the organization, must be disseminated at the organization level. For this, one of the main challenges facing senior management is to lay preparations in order to predict the current and future trends and directions of the organization (Tom and Kim, 2002).

Strategic intelligence can be defined as "what an organization should learn from its business environment in order to gain an understanding of its current processes, predict and manage future changes, and adopt appropriate strategies to create value for the customer and develop profitability in current and new markets." (Tom and Kim, 2002).

Marchend and Hayek (2009) state that strategic intelligence means to have the right strategic information in the minds of the right people is at the right time for those who make conscious business decisions about the future. Marchend and Hayek (2009) posit that information is the basis of strategic intelligence, and without proper information, it is difficult for the employees to make the right decisions needed to achieve sustainable market leadership. Therefore, one can understand that organizations with effective strategic intelligence processes are those who can manage information and use it to successfully anticipate and respond to opportunities (Marchand & Hayek, 2009).

Strategic intelligence comprises of a set of different intelligence that creates a synergy between business intelligence, competitive intelligence and knowledge management and provides information and knowledge with added value for strategic decisions at the organizational level (Figure 1). Strategic intelligence implies the creation and conversion of information or knowledge to be used at a high level of decision making. It is indeed an emphasis on the best possible position of the organization to meet future challenges and opportunities and to maximize the success of the organization (Libowitz, 2006). Combining business intelligence, competitive intelligence and knowledge management, strategic intelligence, as a strategic performance of the organization, can strengthen the process of organizational innovation with better awareness. Strategic intelligence is created by applying internal and external information of business intelligence, competitive intelligence and knowledge management, to help maximize the mission and vision of the organization (Libowitz, 2006).

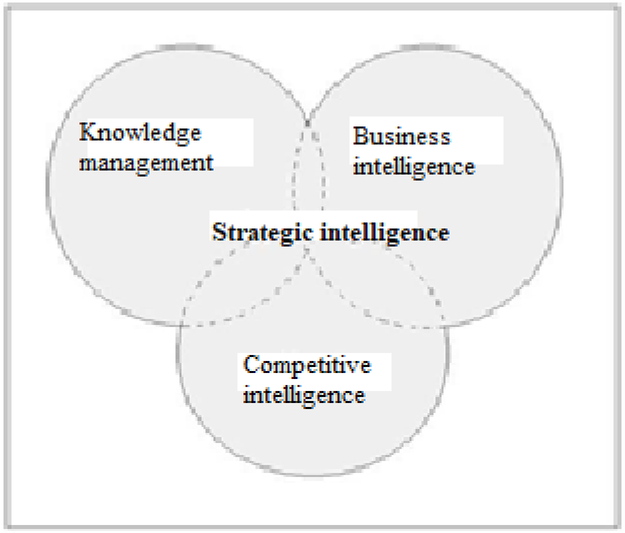

Figure (1) Strategic Intelligence (Liboitz, 2006)

Montgomery and Weinberg (1998) state that strategic planning is an essential managerial task, and a strategic plan is nothing than the information underlying that plan. Besides, they also acknowledge that enough focus on selecting, gathering and analyzing the information needed for strategic planning is made by applying un-strategic intelligence systems. The number of strategic planning tools has been increasing dramatically since recent decades, but for some organizations, gathering information to establish these hand tools has become tedious and ineffective (Montgomery and Weinberg, 1998).

Innovation:

Innovation is the process of taking an innovative idea and turning it into a new product, service and method of operation (Robbins, 2017: 121).

Innovation can be defined as any new idea about an organization or an industry or a nation or the world as a whole (Khodadad Hosseini, 1999: 48) which is found to be effective in furthering the work of managers as they should pay attention to it.

Innovation is turning creativity (new idea) into action or result (profit) (Shahr-Arai and Madanipour, 2016: 28).

Innovation is using new knowledge to offer a new product or service that the customer wants (Afah, 2017:29).

Innovation denotes a significant change made to strengthen organizational services and processes and to create new values for organizational stakeholders as it focuses on organizational leadership to meet new performance dimensions (Forrest Bo et al., 2007).

Innovation refers to the application of new ideas from creativity that can be a new product, new service or new solution to do things (Rezaian, 2018: 98).

By innovation, it is meant some manifested creativity reaching the stage of action; in other words, innovation means fulfilled creative thought; it is introducing a new product, process and service to the market; it is using mental abilities to create a new thought or concept (Sam Khanian, 2002: 107).

The renowned Austrian economist Joseph Schumpeter defined "innovation" as follows: Creating new business using one of the following items:

1- New materials or parts;

2- Providing new processes;

3- Creating new markets;

4- Using new organizational structures.

According to this definition, innovations combine two categories called business category and technical category. When a change is made to technology, Schumpeter calls it an invention, and when this change arrives in the business world, innovation is fulfilled (Johnson, 2004: 4).

Kanter (1989) considers innovation to be a process of gathering any new and useful ideas to solve a problem stating that innovation involves taking the idea, accepting it and implementing it (Ahmadi and Pishdar, 2010: 34).

Zheng (2008) views innovation as abandoning old patterns as it is the most important capability for the development and expansion of the organization. For him, today, innovation is increasingly viewed as one of the main factors for maintaining competitive advantage and long-term success of the organization in competitive markets. To Jimenez and Cegarra (2008), the reason for this is that organizations that have the capacity to innovate will respond to environmental challenges faster and better than non-innovative organizations, in turn strengthening organizational performance. Therefore, it is critically important how to manage it. Innovation is often associated with change and is seen as something new leading to change; however, for Martin and Treblanch (2003), not every change is an innovation for it may not include new ideas or lead to organizational improvement. In sum, one can say that innovation is a new, constructive and successful change in the market that strengthens the level of performance of the organization.

Organizational Innovation:

Amabill defines organizational innovation as the successful implementation of creative ideas in the organization.

For Armbroster et al. (2008), organizational innovation involves changes in the structure and processes of an organization in order to apply new management, labor and operational concepts such as using groups in production, supply chain management and quality management systems. Hence, according to the findings by Baker et al. (2005), organizational innovation is defined as applying ideas that are new to the company, whether being new in products, processes, management systems or in marketing activities.

As Drucker has put it, from a managerial point of view, innovation refers to a change that creates a new dimension of performance, but from an organizational point of view, it denotes utilizing a new idea (Drucker, 1999: 37) (Haslebin, 2002: 47). In reality, innovation refers to the process of creating, developing and implementing a new idea or behavior. It should be noted that innovation is considered as organizational change to respond to or influence an external environment (Anderson et al., 2004: 158).

Organizational innovation is viewed as a new invention of knowledge or the development of new information including a concept, theory or hypothesis; put it differently, organizational innovation means something new to use. Organizational innovation requires ideas to turn into usable organizational forms as this idea is used to promote organizational performance (Damanpour et al., 2008: 55).

Conceptual model of research

The conceptual model of this research was designed based on the components of strategic intelligence and innovation. The research hypotheses were determined and tested based on the modified model (Figure 2).

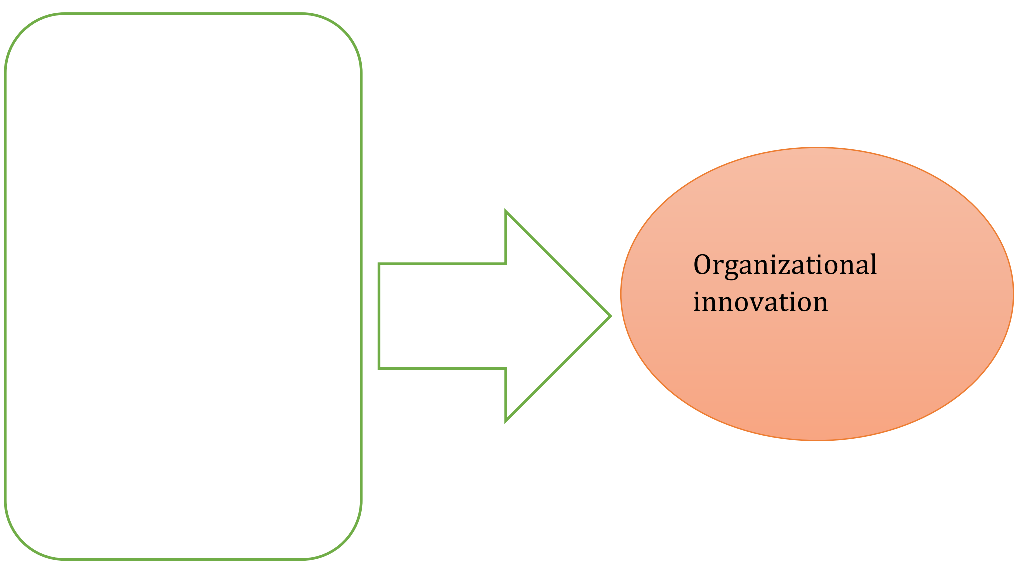

Figure 2: Conceptual model of the research

Hypotheses

1. Strategic intelligence affects the organizational innovation of the employees at the Sina Insurance Company in Karaj.

2. Business intelligence affects the organizational innovation of the employees at the Sina Insurance Company in Karaj.

3. Competitive intelligence affects the organizational innovation of the employees at the Sina Insurance Company in Karaj.

4. Knowledge management affects the organizational innovation of the employees at the Sina Insurance Company in Karaj.

III. Research Methods

This study aimed at investigating the effects of strategic intelligence components on organizational innovation of employees at Sina Insurance Company in Karaj, to identify opportunities and threats to the global environment and its effects on their innovation. Therefore, according to the objectives, nature of the subject, statistical population, and temporal and spatial conditions, the present study was of a survey type, a field branch while being applied in terms of nature and cross-sectional from a temporal perspective. The statistical population of this study consisted of 152 employees at Sina Insurance Company in Karaj, and 111 people were selected through Morgan Table as the sample size. As this study was descriptive in nature, a questionnaire was used to collect the initial data needed for this study. The questionnaire of this research, developed based on Kruger's questionnaire (2010), consists of 5 sections: organizational innovation, business intelligence, competitive intelligence, knowledge management and strategic intelligence, in line with the components of strategic intelligence and application of these components in innovation. This inventory was based on a five-point Likert scale (from strongly disagree to strongly agree, or from very low to very high), as was distributed among employees. Content validity was used to estimate the validity of the questionnaire in this study and Cronbach's alpha coefficient was used to show its reliability. The internal consistency of each part of the questionnaire was examind separately and the Cronbach's alpha reliability coefficient was found to be high (higher than 0.70), meaning that each section as having good internal consistency. SPSS software and regression and correlation coefficient tests were used to test the hypotheses.

IV. Research findings

Main hypothesis:Strategic intelligence affects the organizational innovation of the employees at the Sina Insurance Company in Karaj.

To evaluate the effect, the regression model was analyzed for fitting, which is discussed below. Therefore, in order to review and present the model between strategic intelligence (Y) and organizational innovation (X), which are given in the table below, the processed model is presented after investigating the model adequacy indicators.

Table 1. Fit of the regression model between strategic intelligence and organizational innovation

Correlation coefficient	**Determination coefficient**	**Adjusted determination coefficient**	**Error deviation of standard**
0.216	**0.047**	**0.038**	**0.541**

The correlation between the independent variables and the dependent variable is 0.216. The coefficient of determination is 0.047 and this value indicates that 4.7% of the changes in strategic intelligence are related to existing organizational innovation. Because this value does not take into account the degree of freedom, so the adjusted coefficient of determination is used for this purpose, which in this test is 3.8 percent. According to the mentioned indicators, the model has the necessary sufficiency.

Table 2. Organizational innovation regression equation

	Model	**Non-standard coefficient**		**Standard coefficient**	T	Sig
		B	Std. Error	Beta		
1	Constant value	49.38	10.33	0.216	4.82	0.024
	Strategic intelligence	0.374	0.163		2.29	

Dependent variable: organizational innovation

The variable entered in the regression equation is the core of regression analysis, which is shown in the table above. The regression equation can be calculated using the column of non-standardized coefficients as follows:

Organizational innovation= 49.38 + (0.374) Strategic intelligence

One can argue that by raising one unit of each independent variable to the written coefficient, the dependent variable will rise. In other words, by raising one unit of strategic intelligence, 0.374 units of standard deviation of organizational innovation will rise, thus both having a positive relationship. The t-test for regression coefficients is also shown in this table for the independent variable. This value is 0.024 for this variable, thus being effective in organizational innovation.

First hypothesis:Business intelligence affects the organizational innovation of the employees at the Sina Insurance Company in Karaj.

To evaluate the effect, the regression model was analyzed for fitting, which is discussed below. Therefore, in order to review and present the model between Business intelligence (Y) and organizational innovation (X), which are given in the table below, the processed model is presented after investigating the model adequacy indicators.

Table 3. Fit of the regression model between Business intelligence and organizational innovation

Correlation coefficient	Determination coefficient	Adjusted determination coefficient	Error deviation of standard
.265	.070	.068	9.29

The correlation between the independent variables and the dependent variable is 0.265. The coefficient of determination is 0.070 and this value indicates that 7% of the changes in Business intelligence are related to existing organizational innovation. Because this value does not take into account the degree of freedom, so the adjusted coefficient of determination is used for this purpose, which in this test is 6.8 percent. According to the mentioned indicators, the model has the necessary sufficiency.

Table 4. Organizational innovation regression equation

	Model	Non-standard coefficient		Standard coefficient	T	Sig
		B	Std. Error	Beta		
1	Constant value	66.50	9.27	0.265	5.17	0.049

Business intelligence	0.248	0.366	3.21

Dependent variable: organizational innovation

The variable entered in the regression equation is the core of regression analysis, which is shown in the table above. The regression equation can be calculated using the column of non-standardized coefficients as follows:

Organizational innovation= 66.50 + (0.248) Business intelligence

One can argue that by raising one unit of each independent variable to the written coefficient, the dependent variable will rise. In other words, by raising one unit of Business intelligence, 0.248 units of standard deviation of organizational innovation will rise, thus both having a positive relationship. The t-test for regression coefficients is also shown in this table for the independent variable. This value is 0.049 for this variable, thus being effective in organizational innovation.

Second hypothesis:Competitive intelligence affects the organizational innovation of the employees at the Sina Insurance Company in Karaj.

To evaluate the effect, the regression model was analyzed for fitting, which is discussed below. Therefore, in order to review and present the model between Competitive intelligence (Y) and organizational innovation (X), which are given in the table below, the processed model is presented after investigating the model adequacy indicators.

Table 5. Fit of the regression model between Competitive intelligence and organizational innovation

Correlation coefficient	**Determination coefficient**	**Adjusted determination coefficient**	**Error deviation of standard**
.351	.123	.115	8.72

The correlation between the independent variables and the dependent variable is 0.351. The coefficient of determination is 0.123 and this value indicates that 12.3% of the changes in Competitive intelligence are related to existing organizational innovation. Because this value does not take into account the degree of freedom, so the adjusted coefficient of determination is used for this purpose, which in this test is 11.5 percent. According to the mentioned indicators, the model has the necessary sufficiency.

Table 6. Organizational innovation regression equation

	Model	**Non-standard coefficient**		**Standard coefficient**	T	Sig
		B	Std. Error	Beta		
1	Constant value	43.75	7.53	0.351	5.80	0.000
	Competitive intelligence	1.40	0.361		3.87	

Dependent variable: organizational innovation

The variable entered in the regression equation is the core of regression analysis, which is shown in the table above. The regression equation can be calculated using the column of non-standardized coefficients as follows:

Organizational innovation= 43.75 + (1.40) Competitive intelligence

One can argue that by raising one unit of each independent variable to the written coefficient, the dependent variable will rise. In other words, by raising one unit of Competitive intelligence, 1.40 units of standard deviation of organizational innovation will rise, thus both having a positive relationship. The t-test for regression coefficients is also shown in this table for the independent variable. This value is 0.000 for this variable, thus being effective in organizational innovation.

Third hypothesis:Knowledge management affects the organizational innovation of the employees at the Sina Insurance Company in Karaj.

To evaluate the effect, the regression model was analyzed for fitting, which is discussed below. Therefore, in order to review and present the model between Knowledge management (Y) and organizational innovation (X), which are given in the table below, the processed model is presented after investigating the model adequacy indicators.

Table 7. Fit of the regression model between Knowledge management and organizational innovation

Correlation coefficient	Determination coefficient	Adjusted determination coefficient	Error deviation of standard
0.393	0.155	0.152	9.27

The correlation between the independent variables and the dependent variable is 0.393. The coefficient of determination is 0.155 and this value indicates that 15.5% of the changes in Knowledge management are related to existing organizational innovation. Because this value does not take into account the degree of freedom, so the adjusted coefficient of determination is used for this purpose, which in this test is 15.2 percent. According to the mentioned indicators, the model has the necessary sufficiency.

Table 8. Organizational innovation regression equation

	Model	**Non-standard coefficient**		**Standard coefficient**	T	Sig
		B	Std. Error	Beta		
1	Constant value	65.78	7.34	0.393	8.95	0.000
	Knowledge management	0422	0440		0.958	

Dependent variable: organizational innovation

The variable entered in the regression equation is the core of regression analysis, which is shown in the table above. The regression equation can be calculated using the column of non-standardized coefficients as follows:

Organizational innovation= 65.78 + (0.422) Knowledge management

One can argue that by raising one unit of each independent variable to the written coefficient, the dependent variable will rise. In other words, by raising one unit of Knowledge management, 0.422 units of standard deviation of organizational innovation will rise, thus both having a positive relationship. The t-test for regression coefficients is also shown in this table for the independent variable. This value is 0.000 for this variable, thus being effective in organizational innovation.

V. Conclusion

In the present article, the impacts of managers' strategic intelligence on organizational innovation were investigated and it was stated that using strategic intelligence was considered to be one of the optimization of managers' decisions. Also, strategic intelligence systems were explained, which was considered to be a determining factor in successful decision making as a result of synergy among knowledge management, competitive intelligence and business intelligence. The synergy among these three areas and making a conclusion out of the best models and participating in regulating strategic intelligence improves the strategic decision-making capabilities of the organization. Competitive intelligence will help appraise competition and market settings. Knowledge management can help the power of knowledge influence inside and outside the organization and reach out to customers and beneficiaries. Business intelligence can also focus internally on implementing data warehousing and data mining techniques to avoid hidden patterns without coverage in large volumes of data.

The business intelligence component has a positive effect on the organizational innovation of the employees at Sina Insurance Company in Karaj city. Put it differently, from the point of view of the employees at Sina Insurance Company in Karaj, internal information gives awareness informs of domestic and foreign clients, affiliated organizations, etc., empowering managers to make effective, important and often strategic decisions. By analyzing past and present information, conditions and performance metrics, managers as company decision makers can have a valuableinsights allowing them to be more conscious of organizational innovation. Despite the fact that competitive intelligence has an acceptable level among the employees of the organization, but from the perspective of these employees, the component of competitive intelligence has no impact whatsoever on their organizational innovation. In sum, the employees of Sina Insurance Company in Karaj city do not use the information of external business environment, industry environment and competitors as well as analysis tools for gaining this information in organizational innovation.

Component knowledge management has a positive effect on the organizational innovation of the employees at the Sina Insurance Company in Karaj. In other words, employees make use of active and systematic management of ideas, information and knowledge in employees, under the title of knowledge management in organizational innovation. Presence of management information systems has provided access to data and information for managers. As well, using knowledge management and the existence of knowledge management systems within the organization provide the opportunity for employees to record and share their knowledge in the system. Attendance in the annual appraisals of the country's knowledge management for granting award as one of the main contenders has also created more dynamic conditions for this system.

Strategic intelligence as fund to have a positive effect on the organizational innovation of the employees at the Sina Insurance Company in Karaj. In other words, strategic intelligence is viewed one of the components for optimizing managers' organizational innovation. Creating synergy of knowledge management, competitive intelligence and business intelligence, strategic intelligence plays a key role in successful organizational innovation.

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