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MASTER THESIS

**Topic: The Effect of Knowledge-based Leadership on Organizational Innovation
Through Knowledge Management Capabilities Mediator in the Iran Insurance Company**

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Abstract

The organization and realization of the predetermined goals, as well as the effective leadership styles, are amongst guiding factors from which depends the success of each organization. One of the major roles of managers in organizations is to play an effective role as a leader. Knowledge-based leadership can affect organizational performance, decision-making process, and thus open organizational innovations. It is an increasingly effective component of organizational innovation, which, for its turn, is an aim of each organization. Knowledge-based management leadership is a new policy presented by the managers, an inclusive approach, strategy based upon organizational innovation, which brings maximum participation of different actors. The aim of this thesis is to define the impact of knowledge-based leadership through knowledge management capabilities on organizational innovation. Knowledge-based management has positive impact on certain crucial managerial issues, and this is regarded to the necessity of the improvement of managerial plans of Iranian Insurance Companies. In an absence of a specific plan to develop knowledge-management capabilities and organizational innovation, it is imposed an analyses on how knowledge-based leadership through the variable of knowledge management capabilities affects organizational innovation in these companies.

Key words: knowledge management. organizational innovation, leadership, organizational performance,

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Chapter 1 Study Framework

1.1 Introduction and Statement of the Problem

Today, organizations need effective and efficient managers and employees in order to reach the peak of determined goals for all-around growth and development (Delgado et al., 2011). It should be stated that the success of each organization is dependent on the realization of predetermined goals and management method and effective leadership styles (Zoe et al., 2012). Managers' enjoyment of appropriate behaviors in the organization leads to the creation of high morale and motivation among the staff and increases the rate of their satisfaction with their occupation so that they can take steps to develop organizational innovation with all their power (Hedayati et al., 2016). Today, one of the major roles of managers in the organization is to play an effective role as a leader. This view in advanced countries has brought numerous research backgrounds, resulting in useful achievements (Rowold et al., 2014). The results of these studies carried out in a variety of ways have demonstrated that knowledge-based leadership can affect organizational performance, decision-making process and thus open organizational innovation (Sun et al., 2012). Knowledge-based leadership is an increasingly effective component of organizational innovation. If power is defined as the ability to mobilize people to get things done, then the employees are powerful when they have access to lines of information, support, resources and learning and growth opportunities; but if these lines or resources are not available, there is no power and it is not possible to do the jobs effectively (Hoseinzadeh & Saeidi, 2015).

However, due to the attention of service companies to the promotion of open organizational innovation, managers present a new policy in the form of a new agenda called "knowledge-based management leadership" through assessment and pathology of knowledge management (KM), programs and measures taken in different areas and also full awareness of issues and problems faced by managers while understanding the existing difficulties, challenges and capacities (Farzaneh et al., 2016). This is an inclusive, participatory and process-based approach which is a strategy based on open organizational innovation and brings with it the maximum participation of activists and stakeholders, especially the staff, at all levels (Salahi & Muraki, 2016). Therefore, given the role of knowledge-based leadership in policies and

approaches of managers as a new wave in organizational policies, one can witness the fluctuating trend of this sector over the past few years. Nevertheless, managers of the insurance services company are faced with major challenges in this regard. One of the primary problems is the lack of an appropriate strategy based on the knowledge management capabilities approach and despite the existing problems, managers of insurance services company could not match their plans with the development of open organizational innovation, resulting in reduced gap between organizational goals and objectives based on the development of open organizational innovation; this factor has led to decreased efficiency in this respect. However, it is essential to evaluate and analyze the effectiveness of the measures taken in this area in different units of the organization and finally compare the strategies and executive practices in terms of knowledge sharing and type of the prevailing culture so that more innovative, less costly and more efficient ways of developing open innovation are identified and introduced. Employees' participation and involvement in the process of preparing and implementing planning schemes will ensure the success of the management of service companies (Yazdani et al., 2015).

Hence, the problem facing this research is as follows: Despite the fact that one of the factors influencing the development of organizational market innovation is the knowledge-based leadership behavior, presently most of company managers have no fixed and specific plan to develop knowledge management capabilities and organizational innovation in this field. This critical issue, in addition to creating the cost of lost opportunities resulting from the absence of knowledge management capabilities and factors related to organizational innovation, has caused that organizational managers and policy-makers in service areas often operate without any specific program and strategy and, in some cases, have reasonable and even contradictory and inconsistent measures. Consequently, they have provided an inconsistent, contradictory and distorted picture of their company instead of a clear and coherent image. In this context, the rate of applying any of the indicators studied by the researcher in the status quo and the importance of each in the waiting state in Company will be tested. Thus, the writer's goal is to answer the fundamental question as to how knowledge-based leadership through the variable of knowledge management capabilities affects organizational innovation.

1.2 Importance of the Research

Today's organizations believe that in order to achieve the organizational goal and promote employee knowledge, greater attention should be paid to the synergy of knowledge management capabilities and it should be used to develop organizational innovation (Sun et al., 2012). One of the most important factors in this field is knowledge-based leadership because Knowledge leadership, in addition to inspiration, empowerment and persuasion of employees, can integrate human resources and knowledge capabilities in organizations by adopting specific measures and achieve predetermined goals (Farzaneh et al., 2016).

In this research, it is assumed that knowledge-based leadership through knowledge management capabilities is one of the most desirable ways to achieve organizational innovation. That is, most probably one cannot expect innovation from an organization which is not able to create knowledge or organize and lead the existing knowledge for exploitation in the present and future since such an organization is not only incapable of leading its knowledge but also does things over and over again and will lose a lot of time and energy.

However, an initial study of the research theoretical foundations confirms that knowledge-based leadership and development of open organizational innovation in the current space are of great importance and dynamically addressing these issues in the field of organization is an ever-increasing environmental requirement and from this view, further analysis is needed in the theoretical and conceptual field. In other words, the existence of this conjecture that a concept can explain part of the causes of the emergence of another concept can be the basis for a correlational research, which is true of the variables of this study.

On the other hand, few studies have been devoted to knowledge management capability approach, open organizational innovation and knowledge-based leadership in the operational field and what has been practically investigated, especially in domestic resources and this explicitly reveals the need for further study, investigation and interpretation concerning this issue.

Thus, although this research is of great importance, the number of studies conducted in this area is very limited. Therefore, with regard to the company's approach, the proper understanding of this approach to the development of open organizational innovation should be seriously considered.

1.3 Research Goals

1.3.1 Main goal

The main goal is to determine the impact of knowledge-based leadership on open innovation through knowledge management capability.

1.3.2 Secondary Goals

- Determining the impact of knowledge-based leadership on open innovation
- Determining the impact of knowledge-based leadership on knowledge management capability
- Determining the impact of knowledge-based leadership on open innovation through knowledge management capability

1.3.3 Practical Purposes

- Moving towards a knowledge-based organization
- Continuously improving knowledge management methods and processes
- Providing services through new methods of knowledge management and open innovation with reliance on the role of knowledge-based leadership
- Increasing knowledge and empowering the staff and managers with the aim of creating a knowledge-based organization.

1.4 Research Variables

1.4.1 Knowledge-based Leadership

Conceptual Definition: It is aimed at formalization and access to experience, knowledge and elaborate views followed by new capabilities, higher efficiency, innovation encouragement and increased customer value (Sun, 2012: 9).

Operational Definition: In this study, standard questionnaire by Jassim et al. (2017) is applied to measure the variable of knowledge-based leadership, which is answered by the respondents on a 5-point Likert scale, ranging from totally disagree (1) to totally agree (5).

1.4.2 Open Organizational Innovation

Conceptual Definition: Promoting and pursuing a wide range of opportunities for innovation and conscious integration and distributing them according to the company's capabilities and resources and vastly exploiting these opportunities through various channels (Jassim et al., 2017).

Operational Definition: In this study, standard questionnaire by Jassim et al. (2017) is used to measure the variable of open organizational innovation, which is rated on a 5-point Likert scale, ranging from totally disagree (1) to totally agree (5).

1.4.3 Knowledge Management Capability

Conceptual Definition: It encompasses a set of common perceptions in relation to providing the ground for employee access to relevant information and using knowledge network in the organization (Wu et al., 2012).

Operational Definition: In this study, standard questionnaire by Jassim et al. (2017) is applied to measure the variable of knowledge management capability, which is rated on a 5-point Likert scale, ranging from totally disagree (1) to totally agree (5).

1.5 Research Hypotheses

1. Knowledge-based leadership has a positive impact on open innovation.
2. Knowledge-based leadership has a positive impact on knowledge management capability.
3. knowledge management capability has a positive impact on open innovation.
4. Knowledge-based leadership through knowledge management capability has a positive impact on open innovation.

Chapter 2 Literature Review

2.1 Introduction

Today, organizations, especially universities, have great differences with past organizations due to the nature of the era in which they exist. The 21st century organizations are characterized by accountability, autonomy, risk-taking, and instability. Future environment may not be a calm environment, but it is a very human environment. Leadership theories and research, despite their importance to organizations, have a long history but the expression of the role of leadership in knowledge management has begun recently. Contemporary management scientists often emphasize the effectiveness that is created by the acquisition, development and use of knowledge and believe that the acquisition of new knowledge depends on the transformation of organizations and leadership activities and leads to compatibility with changing organizational conditions. Ultimately, during the last two decades of the twentieth century, organizational effectiveness has become a basic concept in organizational theory.

Further, in contemporary management research, it has been least considered. Given that knowledge leadership lays stress on the production, application and sharing of learning and knowledge and thought in the organization, it can be concluded that the confluence of knowledge leadership and knowledge management is the production and use of new knowledge and ideas in the organization and if these two factors enhance each other's effectiveness, one can witness the improvement and development of the organization.

2.2 Leadership and Its Nature

Throughout history, it has been proved that success or failure in battles, business affairs, sports competitions and offensive political groups is, to a large extent, related to their leadership. In spite of considering the importance of leadership, this issue still remains a mystery. Recently, some theorists have emphasized the difference between managers and leaders. For example, Bennis (2006) argues that to survive in the 21st century, we need a new generation of leaders (leaders not managers); the distinction between the two is important (Spector, 2009).

Leaders overcome turbulent, vague and unstable environments and sometimes, their activities appear to be plotting against us. But if we assign the job to them, chaos is definitely suppressed while managers surrender. Basically, leadership is considered as the art of influencing others, meaning that the followers obey the leader arbitrarily not by force. Additionally, leadership is one of the tasks of management. Therefore, one can have this art without being able to fulfill the administrative goals (meaning that he is not a manager) (Tisai, 2008).

A person may be a disciplined manager, but employees carry out their duties under compulsion and fear (meaning that he is not a manager). In addition to influence, leadership has been defined based on group processes, personality, satisfaction, particular behaviors, persuasion, power, objective achievement, interaction, role distinction, invention (structural innovation) or a combination of two or more of these. What matters is to change leadership by virtue of a particular theoretical framework and the recognition of the effectiveness of the leader's job (Razak, 2010).

In the table below, some differences between managers and leaders are mentioned.

Manager	Leader
He is an inventor	He is a director
He is arrogant	He is an imitator
He is a developer	He is conservative
He focuses on people	He focuses on structures and systems
He relies on trust	He relies on control
He is forethoughtful	He has a near-future thinking
He asks what and why	She asks how and when
He looks to the future	He looks to the present
He is a founder	He is a follower
He tries to get better	He accepts the situation as it is
He believes in himself	Everyone is good
He does the right thing	He does the job properly

Table 2.1 Difference between leader and manager (Spector, 2009)

2.2.1 Definition of Leadership

As soon as anyone begins to define leadership, it is immediately realized that leadership has different definitions. In the last fifty years, over sixty-five different systemic classifications have been presented to define leadership standards (Monavvarian, 2010).

There are many definitions of leadership. One group has described leadership as influencing individuals to perform their duties willingly. Another group has defined leadership as influencing subordinates (Shirzad et al., 2011).

In another definition, while emphasizing the relationships between people, leadership has been expressed as influence on subordinates through establishing communication with them in realizing administrative goals. Saheb Nazari sees leadership as the relationship between people in a group in which one person tries to push others toward a certain goal. In George Artery's (2007) opinion, leadership is the act of influencing individuals so that they willingly work for group purposes. Robert Tenn Baam defines leadership as influencing people which is applied in conditions where it is directed by the process of communication towards the realization of certain goal(s). In another definition of leadership provided in management, it is stated as the process of guiding and influencing the activities of the group and members of the organization (Redmond et al., 2010).

Lin (2000) has defined leadership as influencing people for making them follow and achieving a common purpose. Other definitions, with minor differences, have also referred to leadership for influencing subordinates through communication and motivation.

Simply put, leadership is a process in which administrative management attempts to perform its duties for the purpose of realizing administrative goals by creating motivation and effective communication and to persuade employees to do their jobs willingly (Tisai, 2008). Hence, leadership in its administration meaning is not raised as the independent part of management but is considered as one of its major tasks. Every manager, in addition to tasks such as planning, organizing and controlling, should assume this duty of the people of the administration.

As seen in the definition of leadership, the most important point in leadership is to direct and influence the members of the administration. Leadership requires influence on individuals and a director in the role of a leader is one who can influence people under his supervision and in other words, subordinates accept his power and influence (Khodadad, 2006).

In connection with leadership, Terny (2004) states that exchange is a face-to-face leadership that brings close together the individuals with different experiences, talents, intelligence and interests and encourages them to take steps for assuming responsibility and continue their progress and have full-fledged behavior with their colleagues. Coaching is not limited to review of the techniques and perfect planning and systemic performance, but it includes paying real attention to people, attracting people's tendency and employing them through human relationships. Outstanding coaches usually take inspiration from their students and develop their psychological skills, including the way of dealing with people.

Researcher(s)	Definition of leadership
Shirzad et al., 2011	Influencing people in carrying out their duties willingly
Redmond et al., 2010	The process of guiding and influencing the activities of the group and members of the organization
Harold Kuntz & Cyril O'Donnell, 2000	Influencing people for making them follow and achieving a common purpose
Tisai, 2008	A process in which administrative management attempts to perform its duties for the purpose of realizing administrative goals by creating motivation and effective communication
Khodadad, 2006	A leader is one who can influence people under his supervision and in other words, subordinates accept his power and influence.

Table 2.2 Definitions of Leadership

2.2.2 Meaning of Leadership

Leadership is a term with universal application and there are numerous materials about it in scientific and research journals and literature. Despite the abundance of writings about it, scholars and writers still ask people for a serious effort to understand it. Leadership is a very valuable and complicated structure. Over the years, leadership has been defined and summarized in various forms. The common view in most of the materials collected about leadership is that

leadership is an effective process that helps groups and individuals go toward the set goals (Bull, 2009), especially that this goal is also a common goal. Since leaders and followers are both part of the leadership process, it is necessary to properly identify and study the cases that make leaders and followers against each other. Leaders and followers need to be well known by each other (Bass, 2003).

In the initial research, many look at leadership studies from a personality perspective. Personality perspective claims that modern humans have leadership attributes with which they were born and these attributes make them a leader. This definition limits leadership only to those who possess the personality traits of leadership and were born with them. On the contrary, a process view points out that leadership is a process that can be learned by everyone and is accessible to everyone (Terny, 2004). Leadership and management are two distinct categories that overlap considerably with each other. Their difference arises from the fact that managers often rely on their traditional tasks such as planning, management, staffing and control whereas leadership emphasizes the process of general changes. According to some researchers, management often seeks to create stability and order while leaders are looking for constructive change (Bass, 2003).

Other researchers have even gone so far as to say that basically, managers and leaders are different human beings. Managers are more responsive and less emotional, but leaders are more supportive of followers and more emotional. The main common point of leadership and management is how to make changes in the group in order to achieve the predictable goals (Khodadad, 2006).

2.2.3 Organizational Leadership

Leadership is a fundamental process in any organization and the success or failure of any organization is attributed to its leadership. Thus, when it comes to the organizational success or failure, the organization's leadership is usually considered. Accordingly, it can be said that the views of people in the organization depend on the style of leadership in the organization. Leadership in an organization is the role with the following tasks (Bass, 2007):

- Explaining the organizational vision
- Sharing it in a way that people eagerly participate to reach it
- Providing information, knowledge and methods required to access it
- Balancing the conflicting interests of stakeholders in the organization

Some experts regard leadership as the relationship between people in a group, during which one person tries to push others toward a certain goal. Besides, in simpler terms, leadership can be defined as a process during which the organization's management tries to persuade employees to perform organizational tasks willingly through creating motivation and effective communication and to facilitate the achievement of organizational goals. However, scholars argue that leaders are ahead of the group and help the members achieve the desired objectives by utilizing their maximum abilities. The leader's method of using his power and influence is called leadership style. Now, one might ask this question as to how to influence others. The answer is that influence is exerted through creating the notion of power. Creation of power requires access to resources and it is divided into two categories (Epeteropaki, 2005):

1. Powers that are based on the position of managers
2. Powers that are based on the leader's personal abilities, as observed in the following figure. (Source: Yukle Gray, 2003)

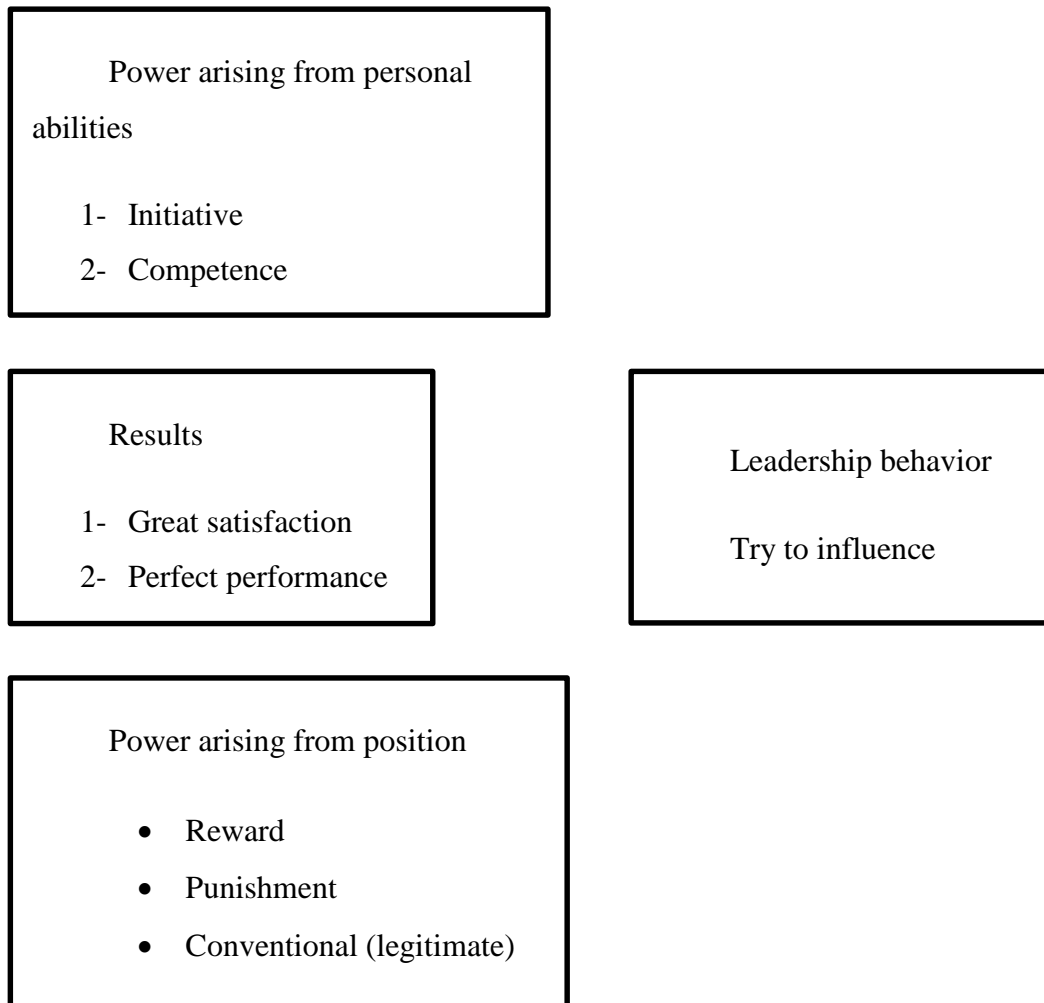


Figure 2-1 Leader's use of power and influence

2.2.4 Knowledge Leadership

Although the first research on leadership was published in 1904, the most important movements in this field took place during the First World War. The first force in the organizational effectiveness lies in leadership. Leadership is about transforming and motivating humans and is particularly sensitive in the management of educational organizations. In order for an organization to remain successful, existence of leadership is essential. From Stagdil's perspective, leadership is the process of influencing the activities of the group to determine and achieve the goal. Leadership is the process of social influence, which consists of both emotional and rational elements (Fong, 2009).

Lkeshmane (2012) defines leadership as the process of influencing others by understanding why and how activities and goals must be realized. According to Shin, leadership means the ability to step outside the culture and initiate change processes that are more consistent. Review of the texts and writings of leadership suggests that information and knowledge management is important in leadership functions. Different approaches to leadership study emphasize that knowledge and information management and the knowledge gained by leaders are important for the realization of organizational functions. Organizational leaders can be effective in knowledge transfer processes. Knowledge is a vital asset and a success factor in the environment and is created in two dimensions: Explicit and implicit knowledge. Explicit knowledge can be widely transmitted with data and can be divided into written and spoken forms. Implicit knowledge is partly or completely semi-conscious and it is difficult to separate it from human assets (Azma, 2012).

Mibi et al. (2012) defines knowledge leadership as follows: Any attitude or practice (group or individual, explicit or implicit) that stimulates new and important knowledge in the way that ultimately leads to collective thinking and consequences so that it is created, shared and used.

Some researchers have recently identified the role of leaders at various levels of different processes of organizational learning and management in the organization. In most of the recent studies, scholars express knowledge leadership by focusing on behaviors and leadership styles toward followers at a micro level. But there are researchers who emphasize the macro level of the organization by providing suggestions on the critical role of information and knowledge management in leadership, which can have an important effect on the organization (Azma, 2012).

Four broad approaches examine leadership, including (Singh, 2009):

- 1- Leadership traits approach
- 2- Behavioral approach
- 3- Ad hoc approach
- 4- Charismatic and transformative approach

Leadership traits approach has identified commercial knowledge as a key feature of effective leaders and suggests that the knowledge gained by leaders is one of the key components of leadership. Behavioral and ad hoc approaches suggest that leadership should look for information, gain it and use it. In the behavioral approach, knowledge and information are emphasized, which can make an important impact on organizational effectiveness. Charismatic and transformative approach involves information acquisition and analysis, which is important for the development of insight in organizations (Revilla, 2010).

Most leadership theories put stress on both leaders and followers who are the core of leadership processes. Lourd (2011) believes that to understand the relationship between leadership and knowledge, we must take into account the assumptions and information of leaders and followers.

In relation to knowledge leadership, Sarbia (2007) presents two cycles, comprising four elements. These elements include leadership, knowledge, culture and learning. Although writings and texts on the performance of top-level managers have identified and emphasized the importance of the informative role and the importance of information by inventing an insight, these efforts do not focus on information management or knowledge management as key leadership roles. Despite the vital impact of knowledge leadership on successful innovation, a new meta-analysis revealed that the effects of leadership rarely remain hidden in research (Zack, 2009).

2.2.4.1 The Role of Knowledge-based Leadership in Value-creating Organizations

A value-creating organization provides unparalleled knowledge leadership for its customers in order to face unpredictable challenges. By unparalleled knowledge leadership, it means to maintain the competitive status among competing organizations in the field of production and acquisition of “commercial knowledge”, which causes the superiority of organizations over each other in the production of goods or the provision of services in sensitive and challenging situations. Promotion of customer perceptions of the working and economic conditions of the sub-industrial age, human-dependent knowledge work and integrated services operations account for all the efforts of a value-creating organization and cause customer loyalty

to that organization in the long run. The constant flow of challenges causes that the practitioners of such organizations are constantly studying and researching in order to find new ways to meet customer updated needs. In this way, value-creating organizations unwittingly reinforce their knowledge talent and this increases the customers' trust in them (Azma, 2012).

Improved performance, productivity, increased production capacity and employee satisfaction with work are other goals sought by a value-creating organization. Thus, value-creating organizations can be, above all, the focus of attention and interest of industrial and manufacturing enterprises since these organizations give priority to things that are of interest to industrial institutions. Another noteworthy point is that value-creating organizations can provide the necessary mechanisms and frameworks for industrial enterprises in the form of software packages. The formal knowledge for such institutions turns into applied knowledge. Hence, the question that is often raised by Knowledge economy practitioners as to “whether knowledge can be sold like a product” is followed by a positive answer in the form of an applied methodology (Brackett, 2013). The true meaning of value-creating organizations becomes evident when these organizations assume the training of industrial institutions and train active human resources in them based on flexible market strategies. Value-creating organizations in the education dimension follow three main goals:

- A) Providing new business perspectives for people under education in a way to increase their business intelligence (Azma, 2012).
- B) Deepening their organizational thinking and business management
- C) Encouraging them to share knowledge between colleagues and team members

2.2.5 Who is the Knowledge Leader?

Undoubtedly, knowledge leaders are a new form of corporate managers. These managers do not fit perfectly into the common organizational charts. This group of managers is often found at the connection points within the organization and right on the border of the overlap between the organizational sections and units. Command and control posts of the organization are not usually empty of these types of managers. Providing a definition for a knowledge leader requires

acceptance and realistic understanding of this title. Moreover, it requires that an educated person, when hearing this term, consider the responsibilities of knowledge management focused on the development of KM functions and solutions. The question that arises right here is as follows: “Do we really need knowledge leadership?” or “what kind of knowledge leadership do we need?”

By knowing the types of knowledge leaders, we can provide the correct definition of each based on their role and use them according to our organization’s need (Zack, 2009).

In a multilateral study conducted by the Delphi group, it became clear that practically, the knowledge leader embraces a wide range of organizational posts regardless of the accepted organizational title and includes similar functions and features. The most prominent feature comprises the combined experience of business and information technology, which requires at least ten years of work experience in both areas, plus having organizational thinking and an interest in a level of work and activity, one of whose inevitable consequences is development. These leaders, while observing current communications in the organizational hierarchy, should strengthen informal networks in order to create informal and hidden organizations. Through all of these channels, knowledge leaders can introduce new methods and systems to encourage scholars to compete with knowledge providers (Miller, 2007).

Why do organizations need knowledge leaders? Such a need is obvious because they should overcome the natural barriers to knowledge sharing in the big business environments. This, indeed, is the extract of knowledge management. Organizations of any size and expertise have come to believe that the exchange of experiences, and not just the application of technology, is the heart and center of the ability to manage knowledge in providing business goals and needs of users and customers. This, especially in a free culture, is realized by strengthening communication channels. Knowledge leadership is needed to facilitate the creation of the space required for knowledge sharing. To prove this point, it should be noted that the knowledge leaders who appeared prominently in this study showed special characteristics such as knowledge gathering skills, organization, classification and organizational relationship.

They benefited from other advanced skills such as information technology to achieve their success. Although today it is impossible for organizations to make their knowledge penetrable without using information and communication technologies, it is always expected from managers to enjoy essential management skills more than anything else and further network-based negotiations and communications along with face-to-face communications (Fink, 2011).

2.3 Knowledge Management

Study of the subject entitled knowledge management began for the first time with the 1994 annual report of a Swedish company called Scandia which was leading in financial services. This report contained a series of financial analyses that attempted to quantify the value of intellectual capital of the company and knowledge assets. The company achieved a non-quantified aspect that has been considered from the past: Intellectual capital is at least as important as traditional financial capital in providing sustainable income. Scandia has proved something that many directors suspected for years: Knowledge is a valuable asset that, like other assets, requires management, growth and utilization (Rading, 2004). But the emergence of knowledge as a vital factor in maintaining the competitive advantage of enterprises is not new. More than a century ago, Alfred Marshall (2005), in a book entitled “Principles of microeconomics”, stated that “knowledge is the strongest engine of production”. Additionally, after World War II, several scholars have emphasized the importance of the role of knowledge in the economy. Since knowledge management has been studied with different approaches, numerous definitions of it have been provided. Thus, no definition can be found over which there is a global agreement. Davenport (1998) argues that “knowledge management is an attempt to discover the hidden asset in the minds of individuals and turn this hidden treasure into organizational assets so that a large number of people involved in the decision-making of the organization have access to this wealth and are able to utilize it”. Another writer defines knowledge management as follows: Knowledge management is an attempt to turn employees’ knowledge (human capital) into the joint organizational asset (structural intellectual capital) (Azizi, 2010).

In Schein’s (2002) view, knowledge management is a process that allows the organization to employ new knowledge in the form of creation, validation, dissemination and application and

in this way, improve a range of organizational features by enabling the company to “function more intelligently”.

Knowledge is a key economic resource (and even the only key resource) to gain competitive advantage. Organizations can turn their employees into knowledge workers through effective knowledge management, production or acquisition of new knowledge and knowledge sharing and application. Such employees are considered as the most important capital of an organization. Not only management researchers but also employees in organizations put great emphasis on the process of knowledge management which includes knowledge acquisition, use and sharing and place knowledge management in the position of the most important organizational factor to gain competitive advantage (Kor & Maden, 2013).

Knowledge management includes the most important fundamental questions about organizational adaptation for survival and high competence due to changes in the business environment (Malekipour, 2012). Knowledge management has been implemented with the aim of meeting the current needs and using knowledge capital and developing new opportunities (Amalia & Nugroho, 2010). The KM system is defined as a kind of information system that deals with the creation, protection and sharing of organizational knowledge (Fadaei et al., 2011). Knowledge has been recognized as an important source of competitive advantage and value creation and an essential element for sustainable development and generally as a decisive factor for companies. Besides, knowledge that companies identify is a dynamic resource which needs nutrition and accurate management (Mir Fakhreddini, 2010). Knowledge management is a range of activities applied for management, exchange, creation or promotion of intellectual capital in an organization and there is no collective agreement on what knowledge management is. Many definitions of knowledge management have been published. Knowledge management is a clever design of processes, tools, structures, etc. with the intention of increasing renewal, sharing or improving the use of knowledge, in each of which the three elements of intellectual capital, namely, structural, human and social, are manifested. In Sinotte's (2004) view, the solution to the puzzle of defining knowledge management is that remove the category into which knowledge management does not fall (Piri & Asefzadeh, 2006). Knowledge management involves managerial actions in facilitating knowledge acquisition activities, creating sharing storage,

distributing, developing and using knowledge by individuals and groups (Zheng et al., 2010). Knowledge creation refers to a process in which knowledge is acquired by the organization from external sources and knowledge use which is also called knowledge application or knowledge implementation is applied to a process that is set and adjusted for the actual and available use of knowledge (Ramachandran et al., 2009). Furthermore, knowledge management processes include knowledge creation, absorption, organization, storage and dissemination and its application among the private and public sectors has significant differences. Marra et al. (2012) point out that effective flows of knowledge management and knowledge sharing process among supply chain competitors are accompanied by interesting characteristics of agility, adaptability and alignment and prepare the ground for the processes of coherence, improved participation and knowledge absorption and organization (Quaddus & xu, 2005). KM has been defined as an information system that deals with the creation, protection and sharing of organizational knowledge. Blant (cited in Afje'ei & Soltani, 2011: 86) believes that Knowledge management is the process through which organizations use their collected information and it is a response to the concern that people should be able to transform their learning into usable knowledge. Knowledge undergoes various changes and part of the information is lost. Thus, loss of useful information should be prevented. Knowledge is strategically an important organizational capital based on which organizations use intangible capabilities and resources as competitive tools. The major part of knowledge is considered as a source of competitive advantage (especially implicit knowledge) whose development and sharing are very difficult due to the nature of the members and the existence of different experiences (Whelan & Carcary, 2011). Nevertheless, knowledge as an organizational capital is managed fairly effectively. Organizations rely primarily on productivity improvement and some other focus on workgroup (for knowledge sharing).

On the other hand, we witness extensive investments by some organizations in the field of education, development and adjustment of knowledge structure. Their main goal is to achieve flexibility and change. This diversity of management practices reflects the major differences in the performance of organizations. Therefore, organizations should use more strategic methods for knowledge management of employees as the optimal performance associated with implicit (tacit) knowledge, employee retention or survival and the continued increase in expertise and

skills. Any organization seeking to create innovations in its knowledge management should develop, for organizational knowledge management, a series of basic goals, which are complemented by other organizational goals. This organization should make a proper evaluation of the efficiency of its objectives in the field of knowledge management innovations and its specific interests (which are usually indirect) and ultimately, the relationship between corporate revenue and organizational knowledge, which is a difficult task. Organizational knowledge management is an essential element in achieving and maintaining a competitive advantage in the organization. The concept of knowledge management provides different types of knowledge to support the organization's macro strategy, assess the current state of knowledge management, transfer the current knowledge basics in the organization to new and powerful knowledge bases and compensate and improve the client's deficits in this area (Rodriguez, 2007). In today's electronic economy, knowledge is considered as a helping tool and KM implementation supports an organization in developing new products and making critical decisions in the field of strategic management. The first important issue in knowledge management is the organization, dissemination and refining of knowledge. Concerning knowledge management, an important task is to turn hidden knowledge into explicit knowledge. Using the data mining method, one can obtain customer knowledge (supplier and consumer) from different market segments or gain it through the experts and improve and clarify it (Naqqadeh, 2012).

Knowledge management is a systematic, integrated approach to produce, detect, achieve, share, register and maintain intangible assets for earning interest in the organization (Aqa Davoud, 2008).

The definitions and concepts presented on knowledge management partly express the principles of KM. However, Davenport and Prusok (1998), in their writings, introduce knowledge as follows:

- 1- Knowledge originates from thoughts and exists in their thoughts.
- 2- Knowledge sharing requires trust.
- 3- Technology makes new knowledge behaviors possible.
- 4- Knowledge sharing is encouraged and rewarded.

- 5- Support for managers and resources is essential.
- 6- Knowledge is created and encouragement of individuals causes knowledge to develop in unexpected ways.

According to Nanoka and Takeuchi (1995), knowledge creation means providing a capability throughout the organization, through which one can create and disseminate new knowledge in the organization.

2.3.1 History of Knowledge Management

A great theory that has emerged in the field of knowledge management so far is a special theory that has been able to gather a set of exercises related to knowledge management. These exercises are rooted in the diversity of regulations and the scope of each of them. “Where does the KM come from and where will it go?” was published for the first time in the journal of smart systems and their applications. In the mid-1980s, the importance of knowledge as a competitive asset among organizations became evident while classical economics was still incomplete in relation to its management methods and this negligence still exists for some organizations (or another method, 2003). Study of the subject entitled knowledge management began for the first time with the 1994 annual report of a Swedish company called Scandia which was leading in financial services. This report contained a series of financial analyses that attempted to quantify the value of intellectual capital of the company and knowledge assets. The major effort in this regard began in 1991. The obtained result was that intellectual capital is at least as important as traditional financial capital in providing sustainable earnings (Amirkhani, 2005: 132).

Knowledge can be encoded and transmitted only after it has been created and the importance of knowledge creation is emphasized (Za’farian et al., 2008: 78). Knowledge management is based on the classification made by experts. 1980s is the decade of quality movement, confirmation of power utilization and mental abilities of personnel in order to achieve better quality. 1990s is the decade of reengineering (using technology to enhance the process of work and reduce costs). And finally, 2000s is the decade of knowledge management (Allameh et al., 2011).

2.3.2 Evolution of Knowledge Management

Knowledge management was introduced from the late 1970s. The process of emphasizing it was such that in the mid-1980s, its importance doubled by revealing its position and its impact on the power of competition in the economic markets. In the 1980s, systems based on artificial intelligence and intelligent systems were applied to manage knowledge. Concepts such as knowledge provision, knowledge engineering, knowledge-based systems and so on became prevalent. In the late 1980s, an upward trend can be seen in the publication of articles on knowledge management in the journals related to the fields of management, experiences, library science and information supply. In these periods, the first books on this field were published. At the beginning of the 1990s, the vast activity of American, European, and Japanese organizations in the field of knowledge management has increased dramatically. The advent of the World Wide Web in the mid-1990s gave fresh impetus to the field of knowledge management.

International Knowledge Management Network in Europe and the United State knowledge management forum expanded their activities on the Internet. In 1995, the European Union, under a program called esprit (European strategic program on research in information technology), allocated significant budgets for implementing KM projects. Gradually, big companies such as Ernest and Young Boz Allen and Hamilton and dozens of other companies commercially entered the field of knowledge management. Today, knowledge management in the early years of the 21st century is, for many advanced countries, a symbol of competition and a factor to achieve power and development. From 2000 onwards, European corporations have allocated about 55 percent of their revenue to knowledge management. Tusong (2008) states that from the mid-1990s onwards, the progress of knowledge management focused on pragmatism and search for better ways to manage organizational knowledge. In this context, many definitions of knowledge management were prescriptive and instructional and focused on specific activities facilitated by information technology. But in recent years, knowledge management has been stressed. In this period, knowledge was at the center of attention and intellectual capital was considered as the key reserves of the organization. For this reason, we witness the organizations' widespread appreciation for knowledge management in order to preserve, maintain and enhance these key reserves. The evolution of knowledge management can be divided into three periods. The first

period was from 1990 to 1995 which is called the first generation of knowledge management. The influence of artificial research in knowledge management, especially in the field of knowledge provision and storage, can be found in the first generation of knowledge management evolution. It is referred to as the scientific use of knowledge management. Many organizations began knowledge management implementation in this period. The topics discussed in KM studies in this period focused more on business development, organization development, framework development, development of operations and processes and technological advancement. The beginning of the third generation of knowledge management dates back to 2002 when the focus of research was on analyzing the relationship between knowledge and practice using structural models (Mahmoud Salehi et al., 2012).

Now, knowledge management in the early years of the 21st century is, for many advanced countries, a symbol of competition and a factor in gaining power and development. From 2000 onwards, European corporations have allocated about 55 percent of their revenue to knowledge management. Table (2-3) provides a summary of knowledge management timeline (Yousefi et al., 2012).

Decade	The process of developing the concept of knowledge management
1970s	Knowledge management was introduced.
1980s	The importance of KM was added and publications related to KM gained an upward trend.
Early 1990s	The activities of American, European and Japanese companies intensified in the field of knowledge management.
Mid 1990s	International knowledge management network emerged.
Late 1990s	KM was considered among the business activities of large organizations
Third millennium	Large European organizations allocated about 55 percent of their revenue to knowledge management.

Table 2.3 Knowledge Management Timeline

2.3.3 Importance of Knowledge Management

Intellectual component is part of the products and services obtained in the importance of developing knowledge management and is the basis for superiority in organizations. Certainly, knowledge management has become more important in today's economy. Knowledge creation

and development are recognized as key factors in organizations' achievement of competitive advantage. In fact, how is the level of knowledge used in the company? And how fast does knowledge increase to create competitive advantage? According to Davenport and Prusok (1998), modern organizations in the knowledge age are examined based on knowledge and remembering and practicing it and the best ways to make knowledge available. The broadest approach to the concept of KM is composed of three components: People, processes and technology. The most important use of knowledge management is its application in decision-making. The concept of knowledge management implies the necessity of increasing information in a short time and everyone can make the best decisions about market conditions, products, services, and planning for activities that contribute to the success of companies in competition or any other important operation (Malekipour, 2012). Research in the past decades has shown that the importance of knowledge management has increased significantly among academic staff and managers. Today, knowledge is considered to be the fundamental basis for competition and a source of profit advantage. Nevertheless, the implemented measures about knowledge processing alone do not guarantee a strategic advantage and knowledge should be managed from different aspects. The organization must have complete mastery of knowledge management from the executive aspect. This becomes important when they seek to maintain their survival in a competitive environment as well as development. Hence, many organizations have sought to actively manage their knowledge and intellectual capital (Nicolas & Cerdan, 2011). For the process of intra-organizational knowledge transfer, researchers identified five key elements based on studies. The source, channel, message, transmitter and receiver and knowledge acquisition not only embrace some of the knowledge flowed into subsets but also include the exploitation of the subsets (Chang Jang, 2011).

Allen and Alvarez (1998) maintain that the use of KM technology prevents the uselessness of huge knowledge capital, expertise, skills, ideas, beliefs and hidden insights. To this end, a new approach to management has been recommended which is called “knowledge management” and deals with free distribution of knowledge in organizations and somehow breaks down the traditional and hierarchical organization. Knowledge managers are effective in all organizations and cause mobility, innovation and development of talents and creativity. In general, the purpose

of the formation of universities and higher education centers is to conduct research and generate and transfer knowledge and provide the training needed for education of specialized people and present scientific, professional and advisory services to communities. Knowledge management acts as a soul in the body of this physical set which is unique.

2.3.4 Classification of Types of Knowledge

One of the first knowledge classifications was presented in 1948, which divided knowledge into two categories of implicit (tacit) and explicit knowledge. Explicit knowledge is the knowledge that can be encoded and expressed in the written form. Explicit knowledge can be converted into words and numbers and also product characteristics, instructions and work rules. But implicit knowledge is personal knowledge that can hardly be documented and encoded. For this reason, its transfer is very difficult. This type of knowledge results mostly from employee experiences and skills (Sharifzadeh & Mowlaei, 2008).

The various types of knowledge are divided as follows:

- **General knowledge:** It is the knowledge that is determined as mutual compatibility in the social institution.
- **Personal knowledge:** It is the knowledge that belongs to a single person and is not shared with others.
- **Internal knowledge:** It is the knowledge that is accessible only within a specific social institution.
- **External knowledge:** It is the knowledge that is accessible only outside a specific social institution.

Abtahi quoted by Rene Jurna mentions three types of knowledge in an article entitled “Types of knowledge and various organizational forms”:

- 1- **Hidden knowledge:** It is the knowledge that cannot be observed and lies in the experiences, culture and values of an individual or organization.
- 2- **Explicit knowledge:** It is the encoded knowledge.

- 3- **Theoretical knowledge:** Knowledge that derives from the profound expertise of individuals and the features of this type of knowledge are more like hidden knowledge (Abtahi & Salavati, 2006).

The leading strategy among competitors is the pioneering use of existing knowledge and creation of knowledge faster than the competitors. A dynamic strategy is used and appropriate in communication-based organizations that exploit knowledge while extracting and discovering new concepts (A'rabi & Mousavi, 2009).

2.3.5 Types of Knowledge

All sources of knowledge are likened to an iceberg whose obvious part is explicit knowledge. This part of knowledge is easily accessible, identified and shared. The hidden part of this iceberg is implicit or tacit knowledge. This part reminds us of the famous statement of Michael Polanyi (1966) who said: "We know more than we can say". Explicit knowledge is the knowledge that can be encoded (Rahmani, 2009). Instances of this kind of knowledge are books, articles, lectures, codified organizational methods and other similar documents. In contrast, implicit knowledge is the knowledge that cannot easily be encoded. This knowledge is usually hidden within human beings, organizational practices and even the culture of societies and organizations. Nonako and Kuna (1998) argue that tacit knowledge is largely personal and abstract and is difficult to be expressed and described. For this reason, they have emphasized the difficulty of tacit knowledge dissemination and believe that experience is one of the main sources of knowledge creation. Although tacit knowledge management is far more difficult than explicit knowledge management, its value to gain competitive advantage in the organization is greater (Baylor, 2002). For efficient knowledge management, capturing both implicit and explicit knowledge is imperative. The real challenge of knowledge management is in the ability to detect and capture tacit knowledge so that it can be retrieved when needed. Most organizations focus solely on explicit knowledge management which is readily available knowledge and forms only 20% of the entire knowledge of the organization and leave the use of tacit knowledge to its accidental occurrence. The conversion of implicit knowledge to explicit knowledge is difficult but not impossible (Dika, 2011).

2.3.6 Knowledge Management Benefits

Measurement of the benefits of knowledge-based capital has become one of the most difficult and challenging issues of today's knowledge-based businesses. It is impossible to quantify knowledge, and measurement of the direct results of knowledge management is not easy. Benefits of using knowledge management activities from the technical level to the strategic level will affect the culture and productivity of the whole organization. Some of the benefits include (Kushingen, 2008):

- **Improved Competitive Response:** Empowering organizations to respond to market changes and accelerating the timing of delivering managerial products to the market.
- **Reduced Costs and Prevention of the Loss of Intellectual Capital:** Applying tacit knowledge allows the organization to use that knowledge so that processes are maintained for future applications and the costs of retraining the staff and specialists are eliminated.
- **Fulfilling the Need for Global Action:** Geographically dispersed operations require specific challenges in the field of culture and knowledge management. Organizations that have an effective culture in the field of knowledge management can maximize the efficient use of scattered resources (Sharif, 2006).
- **Job Effectiveness:** The use of knowledge management infrastructure eliminates traditional constraints, increases knowledge sharing among the staff and improves the efficiency.
- **Organizational Effectiveness:** The tools, patterns, and best uses of knowledge management that come with knowledge sharing culture form a collaborative environment and enhance organizational effectiveness.
- **Determining Strategic Direction:** The use of knowledge culture promotes creativity and innovation and thus influences the strategic direction.

2.3.7 Fundamentals of Knowledge Management Infrastructure

Knowledge infrastructure is the mechanism through which the organization manages knowledge and people in different parts share their knowledge so that members are able to make effective use of that knowledge. This infrastructure causes that the necessary knowledge processes take place with maximum efficiency, technologies such as hardware and software be used more efficiently and knowledge creation, sharing and application be carried out. The main goal of this infrastructure is nothing but the flowing of knowledge in the veins of the organization's work processes (Nonako, 2009).

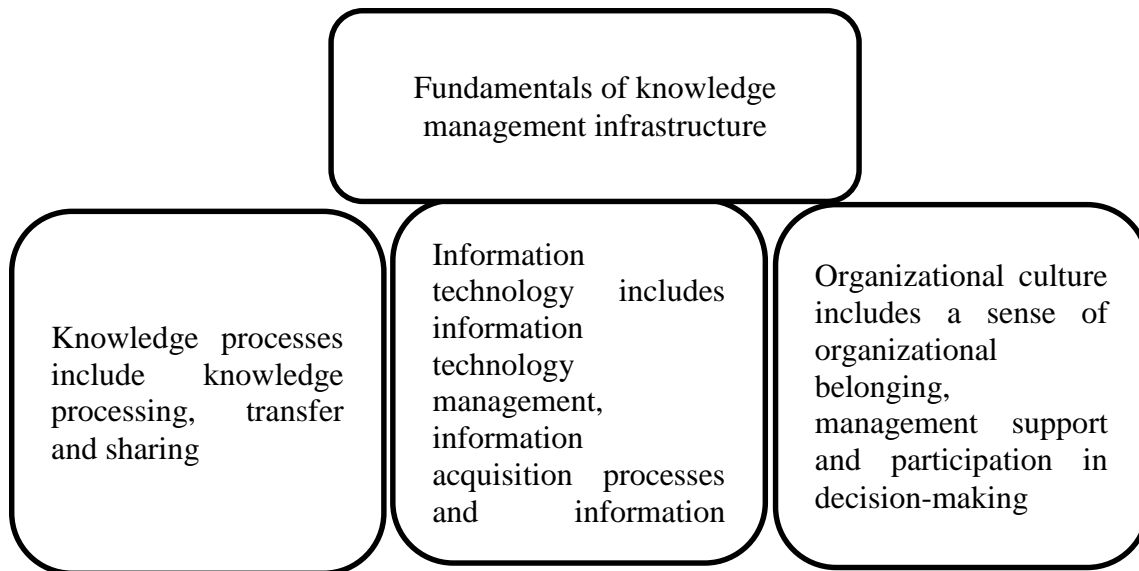


Figure 2-2 Fundamentals of Knowledge Management Infrastructure

As can be observed in the above figure, fundamentals of knowledge management infrastructure include knowledge processes, information technology and organizational culture.

A strong knowledge infrastructure is built on strong fundamentals that lead to full use of knowledge. Meanwhile, knowledge management focuses on individuals and their interactions.

Knowledge creation and sharing are the result of human interactions during work. Thus, in knowledge management, people should first be linked to the information. This relationship involves processes and encouragement not merely for creating trust and using the existing information but for contributing to the global information source. Then, people need to be connected. They should be able to find each other and be comfortable in requesting and receiving assistance and sharing their experiences. This makes them feel that they always contribute to the realization of the organization's strategic goals (Movahhedi, 2011). Knowledge management should not be mistaken for data management. Data management focuses on process and technology whereas the components of knowledge management are individuals and their collective ability for rapid and effective cooperation. Without data management, knowledge management will not be successful. Filling the gap between these two requires a commitment to a knowledge sharing culture. To achieve this, an organization has no choice but investment and commitment to creating a desirable organizational culture (Davenport, 1998). Knowledge infrastructure will not succeed without people's commitment to knowledge and acceptance of current knowledge activities. Further, knowledge infrastructure does not work properly without having a technology infrastructure that is strong enough to support knowledge activities and as long as the processes are not based on knowledge, knowledge management has no proper infrastructure for action (Lindner, 2011).

2.3.8 Knowledge Management Implementation Methods

2.3.8.1 Knowledge Processes

Knowledge is not a linear and static process but is a dynamic and cyclic process and needs the employees who constantly deal with information, acquire new knowledge and apply it to modify the decisions. By processes in knowledge management, it means to collect and organize the organizational knowledge and to exploit and protect these knowledge assets. Knowledge management processes in an organization should have the ability to effectively and efficiently process the knowledge required to realize business processes of the organization. Knowledge

practitioners raise various types of basic knowledge process which consists of the following steps: Selection, storage, processing, transfer and sharing of knowledge (Wig, 1999).

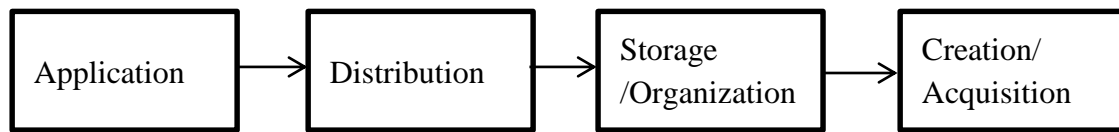


Figure 2-3 Knowledge management processes

Wig (1999) quotes the following processes for knowledge management initiative from knowledge management experts:

- Knowledge creation: Learning, innovation, research and use of important and superior knowledge
- Recording and storing knowledge for reuse
- Organizing and transforming knowledge for widespread access and its creation
- Deployment of knowledge for the use of people, technology, products and services
- Applying and exercising the power of knowledge for continuous, effective and successful action

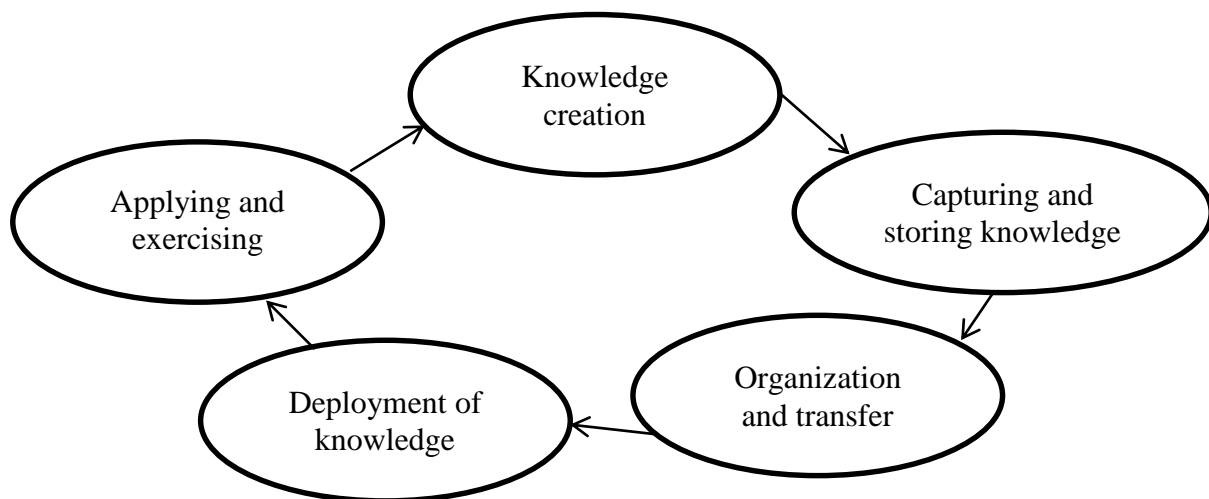


Figure 2-4 Knowledge management processes (adapted from Whig, 1999)

2.3.8.2 Knowledge Processing

Raw knowledge in the stage of processing turns into knowledge with organizational value. Processing involves storing, refining, organizing, analyzing, comparing, correlating, exploring, or a variety of techniques. This goes a little beyond giving a title to knowledge so that people can easily retrieve it when needed. Or it requires a complex, advanced and statistical analysis in order to reveal the hidden relationships and insights in it. Specifically, two kinds of processing are needed to speed up the process of knowledge creation from raw data (Abzari, 2007):

Extraction:

It refers to the process of defining target data and getting them from the production systems and databases where the data are located. The aim is to extract only the optimal data, not all other data.

Transformation or conversion:

It is the process of converting the raw data extracted into formats adaptable to other data and information in the data warehouse. Data conversion, data warehouse access and their processing are accelerated and in parallel, part of that data is finally transformed into knowledge (Abtahi, 2006).

2.3.8.3 Knowledge Transfer

Knowledge, whether we control the process of transferring it to the organization or do not have a role in this regard, will be transferred to the organization. By knowledge transfer, it means increasing the organization's ability to do things and, ultimately, raising its value. Overall, the richer and more intangible the knowledge is, more technology should be used to transfer it to allow its requesters to share it immediately. But the values, norms, and behaviors that make up the culture of a company are key determinants of successful transfer of valuable knowledge. The main factor in the success of any type of knowledge transfer project is the creation of a common language among colleagues (Ahmadpour, 2010).

The emphasis by Nonaka and Takeuchi on the repeatability or overlapping of specialized fields and Thomas Allen's discussion about cultural incompatibilities as barriers to technology transfer reveal the need for access to a common language. According to Allen, if people convert cultural signs of two different cultures or environmental signs of two different regions into understandable boundaries, a common language and consequently the ground for establishment of communication and exchange of knowledge will be provided (Rahmani, 2009).

2.3.8.4 Knowledge Sharing

In order to make optimum use of knowledge management, institutions should perceive the need to create a knowledge sharing culture among employees through a process called institutionalization of knowledge management. The importance of institutionalization of knowledge management in an institution is that first, the employees' misunderstanding of knowledge management is corrected and second, they are assisted in understanding the benefits of knowledge sharing in the organization (Goudarzi, 2008).

Research suggests that the most important obstacle to the effective implementation of knowledge management in the organization is the lack of a knowledge sharing culture due to poor communication among employees. Knowledge sharing culture in the organization depends on the attitudes of people who have created this culture. If the employees are not willing to share knowledge with other organization members, it would be very difficult to expand a sharing knowledge culture among them through the reward system or legal requirements. Creation of a knowledge sharing culture in an organization requires the training of managers and employees and the process of change management. Leaders play a key role in changing attitudes of employees and successfully creating a knowledge sharing culture and institutionalizing knowledge management in the organization (Davenport, 1998). Today, most institutions have realized that chief knowledge officer can play a role as a potential leader to improve the process of discovering and disseminating knowledge in the organization and encourage employees with different personalities in order to accept the knowledge sharing culture (Nonako, 2009).

2.3.8.5 Knowledge Organization

Knowledge measurement has been included in the knowledge management system for assessing, storing and utilizing the knowledge. The manner of reaching specific goals and using its results as feedback to determine or modify the goal are related to this section. Therefore, it is necessary to evaluate them with respect to quantitative results and costs incurred in this field.

2.3.8.6 Knowledge Acquisition

By asking the question as to whether we know what we know, we should start this task of knowledge management. For businesses that want to remain in the competition field, the discovery of the knowledge required to support competitive strategies is essential (Tasang, 2002).

2.3.8.7 Knowledge Creation

This step encompasses the activities related to the entry of new knowledge into the system and includes knowledge development, discovery and capture. Knowledge creation is a dynamic process that results from the interaction between tacit and explicit knowledge at various levels of the organization. The created knowledge can be transmitted from one person to another or be stored at the individual, group or organizational level (Ahmadpour, 2011).

2.3.8.8 Knowledge application

Knowledge is not invaluable on its own. It will be valuable when it is applied. The knowledge of a scientist who does not use it is definitely not valuable for others. Generally, organizational knowledge should be applied to the services, processes and products of the organization. If an organization cannot easily identify the correct form of knowledge in its proper place, it may face difficulty in maintaining its competitive advantage. When innovation and creativity are the path to victory in today's world, the organization should accelerate the search for the correct type of knowledge in an appropriate manner (Movahhedi, 2011).

2.3.9 Important Steps of Knowledge Leaders in Paving the Way for Organizational Knowledge Management

Organizations have different methods to use their knowledge resources. For example, we can obtain the existing knowledge from various internal contents, adopt suitable measuring standards and encourage and train people to think creatively and apply their understanding to improve the products, services and processes of the organization (Monavvarian, 2010). It has been several years that the term “knowledge management” has gone beyond the field of theoretical discussions and has attracted the attention of many managers and experts of the country’s organizations. Fortunately, a significant number of these enthusiasts have more or less realized the meaning and significance of this approach. But their fundamental question, and that of many other young and interested managers, is how to implement at least the fundamentals of organizational knowledge management in one’s own organization. Indeed, they ask if in today’s knowledge-based world, the restoration and growth of an organization depend on the effective management of organizational knowledge, then how can we think about practical solutions in this path or, at least, manage the existing knowledge of the organization in more effective ways; especially with regard to the newly emerged concepts of KM, the complexity of these topics and above all, the current difficulties of management in Iran?

2.3.9.1 First Step

Change your fundamental beliefs. See yourself in the position of a leader. Do not forget that only leaders can influence others and make changes (whether they are a manager or not). Thus, to start this route, you must once again review the basic differences between management and leadership in order to find yourself in the position of a leader more than the past. The fact is that the accessibility of management tools and the difficulty of leadership are the most important factors in our diversion from the leadership path and turning to management (Mohammadi, 2010).

According to John Maxwell, leadership is a complicated art that has different aspects: Respect, experience, emotional ability, the art of association with people, order, aspiration, dynamism, punctuality and so on. When the official rules and regulations of the organization are

available to us as a means of controlling and directing employees and we have not strengthened our leadership skills over time (especially the aspects mentioned above), we obviously turn to this old tool. When we can force employees to accept our demands by the elimination of overtime work, written notice and beyond that, non-extension of the contract by the end of the year, obviously we will less notice our leadership weaknesses. In this way, things will go ahead but with previous practices and without leadership and no change will be made. Now, think about the following solutions (Lin, 2008).

- 1- Before any action, you must make sure that you have fully understood the role, necessity and importance of knowledge management in your organization.
- 2- Believe that your personality and identity lie in your thoughts and actions. In this way, the imagination of losing the current position will not be hard and worrying for you.
- 3- Be sure that a change in the organization toward organizational knowledge management is a possible achievement despite all threats of the internal and external environments and all the limitations and weaknesses in society, the administrative system and organization since many of the country's managers have achieved change and success in this difficult atmosphere.
- 4- Try to evaluate and analyze your past decisions and find out their strengths and weaknesses.

2.3.9.2 Second Step

- 1- Change employees' beliefs with reliance on formal and informal training. First of all, imagine an attractive and achievable vision of your organization future or the organizational unit. If you believe to reach this position, you can transfer this vision through lectures, meetings and face-to-face talks with different groups of employees (Miller, 2009).
- 2- Do not forget that trust in the organization flows from top to bottom and if senior executives are trustworthy, a sense of trust will penetrate to the low levels of the organization. Hence, except for some exceptional cases, to obtain information about the company's financial status or other information affecting the organization's activities (including future government policies, rivals' programs, etc.), trust in the expert levels

of the organization so that the flow of organizational knowledge management is facilitated in this way.

- 3- Try in a variety of ways to create a friendly and cordial atmosphere in the organization and in this way strengthen openness, honesty and mutual trust. For this purpose, do not forget about the direct confrontation and direct dialogue with the various levels of staff, even as many as a few sentences. Additionally, to create vitality and joy among your employees, use the humors that are close to their minds (Monavvarian, 2010).

2.3.9.3 Third Step

- 1- Skill training and education of the staff (for empowerment, delegation of authority and team building).
- 2- An essential prerequisite for moving towards organizational knowledge management includes empowering employees and enhancing a sense of competence, having the power to choose and being a source of effectiveness, value and security among them. The research by Kanter, Bandura, Hackman, Oldham and others showed that there are at least nine specific solutions to foster employee empowerment and create and enhance the mentioned feelings among them. These solutions are as follows:
- 3- Clearly identifying the perspectives and objectives (complementary to the phase of explanation and outlook transfer)
- 4- Strengthening a sense of ability and personal control in the staff
- 5- Modeling (displaying correct behavior patterns)
- 6- Praise, encouragement and social support
- 7- Emotional arousal in the staff (through making the workplace attractive and vibrant instead of bad temper, threat, fear and worry)
- 8- Providing employees with information
- 9- Providing the resources necessary for the success of the staff
- 10- Knowledge management means improved knowledge work processes and requires greater trust in employees, reduced top-down interference and, in brief, delegation of authority, and effective delegation of authority is the inevitable result of empowerment. Therefore, if you have taken the nine solutions for empowerment, you will soon be

able to enter the field of delegation of authority. In this stage, do not forget the principles of delegation of authority (think about the end from the beginning, allow to participate in the assignment, support the assigned jobs).

- 11- With the beginning of the third stage, the time has come to start group work training and team building in the organization. Remember that to effectively manage organizational knowledge, the existence of efficient and flexible work teams is a vital necessity. In this path, you may need to transfer a few completely inflexible employees to other organizations and attract the required human capital with the purpose of new knowledge entry into the organization (Hasan Beigi, 2010).

2.3.9.4 Fourth Step

- 1- Plans to facilitate knowledge creation in the organization
- 2- With the proper establishment and effective motivation of specialized research and development units or problem-finding teams, facilitate problem-solving in the organization.
- 3- Do not overlook brainstorming sessions at different levels of your organization.
- 4- Give your employees the opportunity to study and be creative.
- 5- In any circumstances, consider granting different types of rewards for employee innovations (Zack, 2009)

2.3.10 Knowledge Management Models

The complexity of the concept of knowledge and the existence of different approaches to knowledge management have caused that no single attitude towards knowledge management is formed. First, we need to know the following: What is knowledge management? Where does it come from? And why is it important?

KM approaches are dependent on the management perspective. Differences can arise from information-based, technology-based and culture-based perspectives. The information-based perspective considers information access. The technology-based perspective focuses on IT tools and the culture-based perspective pays attention to knowledge dissemination. The main focus in choosing these approaches depends on the status of the companies. According to Gottschalk

(2005: 409), if re-creation of information plays an important role in the organization, then the information-based perspective is important. If technology in the organization does not even have the ability to provide basic services to knowledge users, the technology-based perspective is focused. If knowledge workers (KWs) in the organization are isolated and reluctant to create and disseminate knowledge, the culture-based perspective is important.

2.3.10.1 Hales Model

Steve Hales (2001: 5) raises the concept of knowledge management in relation to the concepts of data, information and knowledge. He argues that the main problem in KM is that organizations do not know how to turn data into information and information into knowledge. Thus, many organizations remain at the level of data management and information management. Hales considers knowledge management as the process by which organizations develop the ability to turn data into information and information into knowledge and are able to apply the acquired knowledge in their decisions effectively.

Hales (2001: 6) states that knowledge management is a process based on four pillars:

- 1- Content: It is related to the type of knowledge (tacit or explicit)
- 2- Skill: Achieving skills for knowledge extraction
- 3- Culture: The culture of organizations should encourage the distribution of knowledge and information
- 4- Organization: Organizing the existing knowledge

2.3.10.2 Nonaka and Takochi Model

Nonaka and Takochi (1995) divided knowledge into two groups: explicit and implicit knowledge. The first category exists in books, reports and the like. In other words, explicit knowledge is the knowledge that can be easily transferred and encoded with the help of signs (letters, numbers, etc) in the form of writing, sound, image, photo, software and codified databases. For this reason, explicit knowledge sharing is easily possible. Usually, explicit knowledge in organizations appears in the form of rules, procedures and routines, based on which each of the employees performs his duties. But implicit knowledge includes feelings,

perceptions, beliefs, intuition, and insight that are not easily transmitted and understood. Implicit or hidden knowledge is subjective and personal knowledge that cannot be easily transferred, shared and formulated and is not acquired through observation and imitation. This type of knowledge is the foundation of creativity and innovation (Maine Ajmal et al., 2009).

Libowitz (2005) has demonstrated the concepts of data, information, knowledge and organizational processes in a knowledge management model. According to this model, data is converted into applied information, information is transformed into knowledge and finally, knowledge is involved in improving individual and organizational processes. In this model (Fig. 2-5), learning is influenced by subject, culture, evaluation systems and individual perceptions (Maine Ajmal et al., 2009: 119-132).

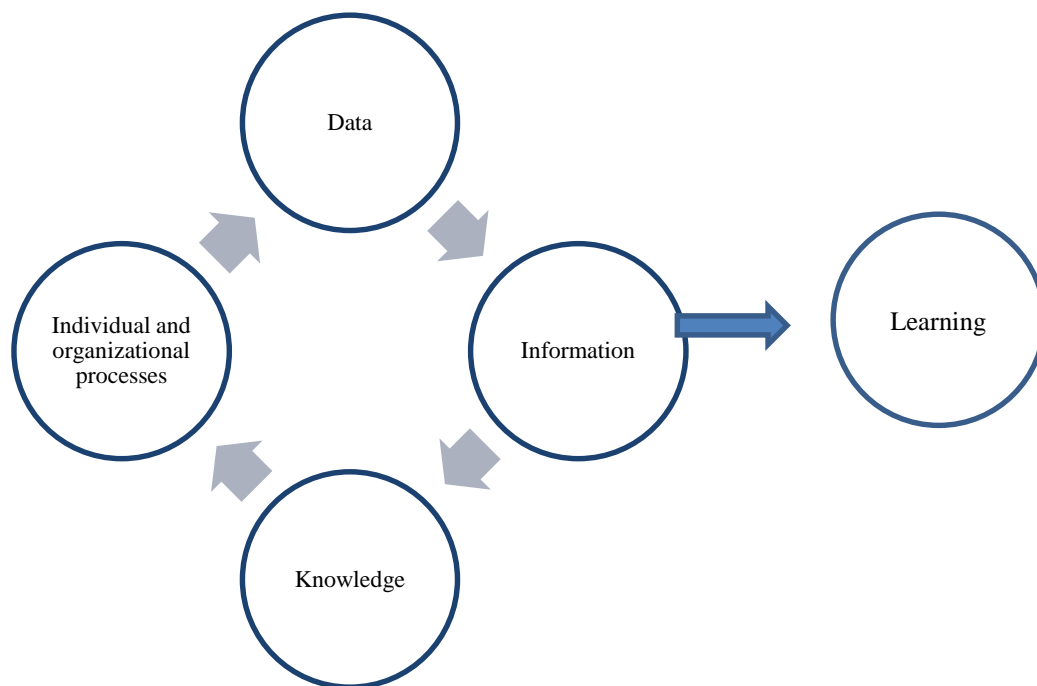


Figure 2-5 Libowitz's (2005) Knowledge Management Model

2.3.10.3 Building Stones of Knowledge Management Model

This model is named by Probest, Rub and Rumhard (2002) as the building stones of knowledge management model. As shown in Figure (2-7), designers of the aforementioned

model see knowledge management as a dynamic cycle that is in constant rotation. The steps of this model include eight components consisting of two internal and external cycles.

- Internal cycle is built by the blocks of discovery (identification), acquisition, development, sharing, use (exploitation) and maintenance of knowledge.
- External cycle includes the blocks of knowledge objectives and evaluation and determines the cycle of knowledge management. “Feedback” completes these two cycles.

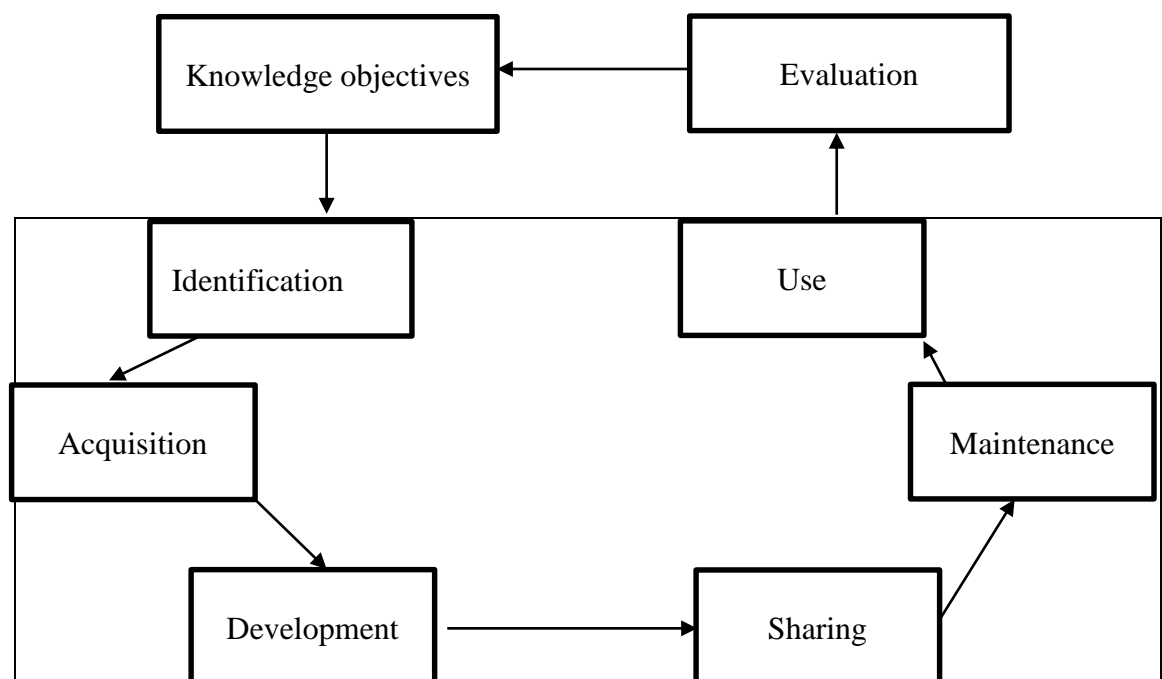


Figure 2-6 Building stones of knowledge management model (Probest, 2002; cited in Afrazeh, 2006)

2.4 Innovation

2.4.1 Meaning of Innovation

Innovation can be described as follows (Bui, 2001):

Innovation is the manifested creativity that has been put into practice. In other words, innovation means creative thinking realized in organizations. It is the provision of new products, processes and services to the market and also the application of mental abilities to create a new thought or concept. Innovation includes a new and creative product provided by an organization. Creative products can comprise software such as services (like educational services, health services, administrative services, etc.) and hardware such as goods (like industrial products, pharmaceutical products, food products, etc.) (Ardakani, 2010). As can be observed, definitions of creativity and innovation include conceptual elements such as novelty, freshness, being the first one and also usefulness. Therefore, types of scientific discoveries of scientific theories (theories and hypotheses), innovations and inventions as well as artistic and literary works such as the discovery of chemical elements of Newton's laws of motion, the differential and integral calculus, Planck's quantum mechanics theory, Einstein's relativity theory, Piaget's cognitive theory, general theory of systems, theory of infinitely extended particles, Walton and Crick DNA molecular structure model, Schrodinger equation, Mona Lisa painting of Leonardo da Vinci, cubism painting style, Ferdowsi's Shahnameh, Hafez's sonnets, Shakespeare's works, steam engine invention, invention of electric lamp, radio and television, telephone, airplane, transistor and Internet, creation and design of new products, quality problem-solving and productivity of the organization and so on are the manifestations of creativity and innovation. Innovation is the manifested creativity that has been put into practice. In other words, innovation means realized creative idea. It is the provision of new products, processes and services to the market. Innovation is the application of mental abilities to create a new through or concept and also the process of acquiring creative thoughts and turning them into a product and service or a useful operational method (Mir Kamali, 2011). The term innovation has been defined as follows (Chen, 2004).

2.4.1.1 Innovation in the Meaning of Objective Creativity

In this definition, innovation has the meaning of operationalization and the implementation of new ideas. From this view, innovation can be considered objective creativity as the executed and realized form of subjective creativity. Thus, as can be observed, the two words of creativity and innovation have two distinct but, at the same time, interconnected meanings.

2.4.1.2 Innovation in the Meaning of a New Product at the Organization Level

In this definition, innovation refers to a new creative product provided by an organization. Creative products can comprise software such as services (like educational services, health services, administrative services, etc.) and hardware such as goods (like industrial products, pharmaceutical products, food products, etc.) (Hermans, 2010). Innovation is the manifested creativity that has been put into practice.

In other words, innovation means realized creative idea. It is the provision of new products, processes and services to the market and the application of mental abilities to create a new thought or concept. Innovation is the process of gaining a creative thought and turning it into a product and service or a useful operational method (Wang, 2008).

2.4.2 Types of Innovation

In accordance with the applications and levels under study, innovation is divided into different types. Usually, researchers believe that they have understood the meaning of the innovation process. But indeed, many studies conducted in different fields related to innovation have provided different definitions and classifications of innovation. The innovation process is defined as radical or incremental innovations, imitative or completely new innovations, improvement or revolutionary innovations, technological or organizational innovations and many other types. Generally, there are two important factors in determining the type of innovation (Naqavi, 2011).

- 1- The degree of innovation novelty
- 2- Being new in products, services, processes, or otherwise

Based on the first factor, i.e. novelty, innovations are categorized into different groups, the most important of which divides innovation into incremental and radical innovations. By radical innovation, it means new changes in products, processes or organizational structures. However, there is disagreement among scholars over what is meant by radical changes. But usually any change by which new knowledge is created or the existing knowledge is used in new technologies is among the radical innovations. Given the level at which innovation is studied

(corporate, regional, national or global level), the degree of radicality also varies (Jeminse, 2008).

For example, the use of laser in medical equipment was, for the first time, a radical innovation at the global level that was able to promote new technology with the help of the existing knowledge. But the production of new goods, such as bicycles, in a match-building factory is considered a radical innovation at the corporate level. Incremental innovation is usually defined as major changes in the existing goods or structures. This concept is closely linked to continuous improvement. In other words, changes in the current situation leading to new applications are called incremental innovation. That is to say, innovation, if created based on the market pull, is an incremental innovation and if it is based on technology push, it is a radical innovation (Hong, 2007).

An important point to consider is the false view that has caused the failure of many innovation strategies. According to this view, we should only consider radical innovations and pay no attention to incremental innovations while many market innovations are the result of incremental innovations. In another classification that has been highly considered, innovation is categorized as follows (Jimins, 2008):

- 1- Technological innovation
- 2- Organizational Innovation

The above classification is based more on 5 groups of innovation introduced by Shuchiti. Accordingly, the first group is considered among technological innovations and the last three groups are regarded as organizational innovations. In other words, creation of new products, services or processes or development of the existing products, services and processes is called technological innovation and any innovation other than that is called organizational innovation (Livie, 2011).

2.4.3 Technological Innovation Process Evolution Models

Technological innovation is the process of transforming a new idea into a product or service or a new or fully developed process. According to Freeman, innovation is a set of

technical, industrial and commercial operations. So, it simply cannot be defined as simple linear formats. But until 1980s, it was assumed that the models presented for the process of innovation based on the simple linear process begin with the basic research and lead to the creation of ideas and, finally, the production of new goods or processes. But with wider research and scrutiny of the behaviors of the innovation process under different conditions, complexities were observed that could no longer be summed up in a linear process. Therefore, nonlinear processes were evaluated and various researchers tried to identify innovation processes (Askling, 2008).

2.4.3.1 Science Push Model

During the years 1950-1960, the innovation process was defined on the basis of a linear model. In this simple model, it is assumed that innovation begins with a new scientific research and in the later stages, it reaches the development of products, production and marketing. And finally, a new product, service or process will be sold successfully. According to this model, it is stated that to create a leading market, scientific research should be improved and developed and the focus is on research and development, and market demand has been defined with regard to research and development activities and has no independent nature. That is, the key to successful innovation, according to this model, is the huge investment in research and development. In this model, no feedback is given between stages. Therefore, the only responder will be simple industries like petrochemicals (Salajeqeh, 2008).

2.4.3.2 Market Pull Model

Since the early 1960s, the second linear model of innovation was developed with respect to economic perspectives. In this model, innovations were the result of market demand, and market demand directly created the new need for development of companies' technology. In the mentioned model, most innovations are the result of units that are directly related to the customer because these units better understand the customer's needs and demands and better identify the location of investments. In this model, the market determines in which research and development projects, investment should be made and the emphasis is on the market and customer needs (Hass, 2007).

2.4.3.3 Connection Model

By examining the two simple linear models mentioned above, many researchers came to the conclusion that the process of innovation cannot be clearly expressed in the form of linear models. But sometimes scientific research leads to new products in the market and sometimes, market demand forces the research unit to innovate. Indeed, the purpose of the third model is to show the sequence of operations in innovation and the existence of feedback between the research and development unit and the market. That is, sometimes and in some industries, market demand presses the research and development sector to do new scientific research and sometimes, innovation has been the result of independent research and development activities (Livie, 2011).

2.4.3.4 Integrated Network Model

The third model did not respond to many innovations at the corporate level (or even at the national level). Thus, the fourth and fifth generation models were formed with short intervals and in new models, more attention has been paid to the feedback between the stages. In the fourth generation, the parallel development of each stage is considered alongside horizontal integration and there is more focus on customer and customer needs. The resources of suppliers have also been considered as part of the resources of the companies. In this model, the emphasis is on research and development and production (productionable designs). In the fifth generation model, most of the goal was to integrate development strategies among different domestic and foreign organizations of companies (Hass, 2007) so that the stakeholders of a product or service have close strategies. By using new organizational techniques such as parallel development, instead of sequential development, towards organizations with process views, this new innovation perspective can be achieved. The emphasis of this model is on the flexibility of the company against the changes and speed of development and the focus is on quality rather than the actual cost.

2.4.3.5 Value Chain Model

Perhaps the best nonlinear model that describes the various elements of the innovation process is the Rosenberg-Klein model. This model summarizes the process of innovation in four phases (Franklin, 2006):

- 1- Understanding the potential and labor market need
- 2- Inventing or creating an analytical plan for the production of a new product
- 3- Designing with details, testing the designs and re-designing
- 4- Production

Thus, the most important activities influencing the innovation process, according to this model, are:

- 1- Research and development
- 2- Equipping and engineering industries
- 3- Launching production and the works before production
- 4- Marketing new products
- 5- Acquiring physical and non-physical technologies
- 6- Designing

2.4.4 Factors Affecting the Formation of Innovation Processes

By summarizing the investigations carried out for this research, in general, the parameters and factors affecting the innovation processes of companies can be divided into two main groups:

- A) Internal factors of companies
- B) External factors of companies

Internal factors are called “innovation engine”, which include the complex system of internal factors influencing the innovation process. Internal factors consist of the companies’ ability to learn to develop and create new products and processes. External factors are also the

capabilities that expand the power of competition and supply tailored to the needs of customers. Andreas Hermann, Thurston Tamzak and René Bourfort, in their research results, announced the internal factors affecting innovation to be the organization's technological ability, managers' and employees' willingness to abandon their existing knowledge, the strategic relationship between the organization and the customers, suppliers and competitors, lack of special investment in previous technologies, focus on customer demands, focus on the market by relying on core competencies and market orientation and learning capability of the organization (Mir Kamali, 2010).

In Lind Holm's (2004) view, the innovation process consists of five steps, each of which is described below (Fig. 2-7).

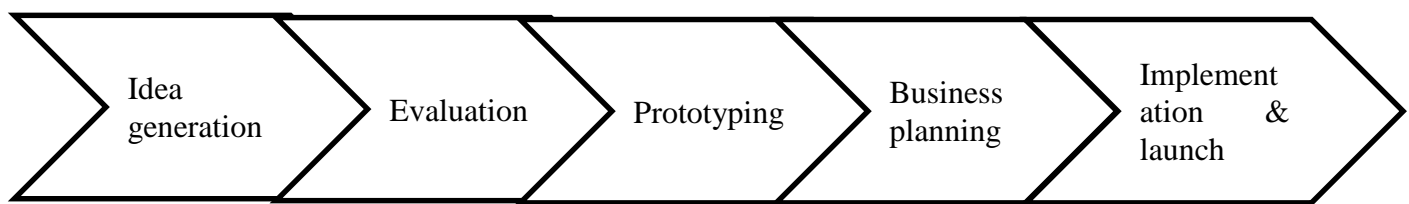


Figure 2-7 Steps of innovation processes

Second step: Evaluation (Idea selection & Concept)

This is the first test after idea generation in which better ideas are chosen and inappropriate ideas are removed.

Third step: Prototyping

In this step, ideas and concepts are tested in real situations to examine their strengths and weaknesses.

Fourth step: Business planning (Final Alignment with Corporate Strategy)

In this step, business innovation programs are tested in terms of alignment with the organization's strategy.

Fifth step: Implementation and Launch (Sending the Product to the Market)

The last step is to operate and apply the idea and sell the product on the market (Hermans, 2006).

2.4.4.1 Types of Companies in Terms of the Need for Change and How to Create It

As to the need for change and how it is created, companies are divided into four types as follows:

- A) The first type of companies: They do not know the type of change and how it is created.
- B) The second type of companies: They recognize the type of need for change but do not know how to reach it.
- C) The third type of companies: They know the type of need for change and possess some abilities to create it.
- D) The fourth type of companies: They know the type of need for change and, based on the existing technological capacity, have the capability to fully develop it (Amirkhani, 2010).

Many of the studies conducted in various fields related to innovation have provided different definitions and classifications of innovation. Some of these classifications are mentioned below:

Schumpeter's Classification

Schumpeter summarizes innovation in the following five cases:

- A) Inventing a new product
- B) Inventing a new production method
- C) Opening a new market
- D) Opening a new source of supplying raw materials or semi-manufactured goods
- E) Managing a new organization of an industry that considers the first two groups as the technological innovation and the last three groups as the organizational innovation (Pourdariani, 2008).

The innovation classification is presented based on the intensity and speed of the changes (Betze 2005). In this classification, four groups of innovation can be identified as follows:

1- Radical Innovation: This type of innovation provides a completely new functional capability which is, indeed, a discontinuity in current technological capabilities. This new function provides opportunities for the formation of new businesses and even new industries (Salajeqeh, 2010).

2- Incremental Innovation: These innovations enhance the functional capability of an existing technology through improvements in performance, safety, quality or cost.

3- System Innovation: It is a type of radical innovation that provides new functional capabilities by reconfiguration of the existing technologies.

4- Next Generation Technology Innovation: Gradual innovation in a system can sometimes create new technical generation of a system. Such innovations are still a kind of system innovation but are not regarded among radical innovations. Thus, some have called them new generation technology innovation. Overall, it can be said that the two main groups in this classification are radical innovation and incremental innovation, the features of which have been provided below (Lin, 2008).

Incremental innovation	Radical innovation
Gradual improvement of product and process	Immediate progress of product and process
Maintaining a competitive position in an industry	Creating or changing an industry
Specifically being created in an industry	Specifically outside the existing companies in an industry
Almost common	Almost rare
Improving the performance of the existing companies	Creating opportunities for small companies to enter an industry

Table 2.4 Features of radical and incremental innovations

2.4.4.2 The Role of Innovation Strategies in Organizational Performance

The importance of innovation for industries and companies is growing to gain competitive advantage because innovation is the competition engine and determines their competitive position. Today, due to the complex and dynamic nature of the environments, it is hard to find an industry that has not entered a continuous or periodic innovation in renewing its path. Further, in order to grow, sustain the development of performance and create diversity in performance in such dynamic environments, the most important way is to create innovation (Bolton, 2004).

In other words, to enjoy new competitive advantage in corporate dynamic environments, innovative capacity should be strengthened because innovation is the most important strategic tool for gaining competitive advantage in such complex environments or is one of the most important factors in the competitiveness of nations, regions and corporations. For this reason, companies have accepted that innovation is a strategic requirement not a strategic choice. Besides, it is generally accepted that innovation is the implementation of new processes, products or management approaches in companies in order to increase their efficiency (i.e. improved quality and reduced production costs) or increase effectiveness (i.e. more market share and customer satisfaction). Overall, some researchers have identified and classified key and important innovation goals as follows:

- Producing completely new products
- Introducing products with better position
- Improving the manufacturing process
- Maintaining and increasing the market share
- Exploiting domestic and international markets
- Improving production quality
- Improving the existing technology to reduce dependence on imports
- Reducing the consumption of raw materials and energy
- Improving the working conditions and reducing the costs

However, researchers believe that the success of innovation depends on the support of a team of senior corporate executives and their strategic orientations and without strategies for innovation, improved performance and innovative capabilities will not be possible since the innovation strategy reflects the company's tendency to engage in and support new ideas, newly emerged phenomena and creative processes that may lead to new products, services and technological processes. Innovation strategy is a managerial concept and includes activities that increase the capacity for improvement and development of companies and determine the path of business innovation and, if properly developed, can act as an essential prerequisite for the creation and use of innovation (Cohen, 2007) because they help the industries and companies in finding new opportunities for development. Innovation strategy assists the companies to choose, integrate and renew their technological, managerial and knowledge capabilities and allows them to maintain and improve sustainable competitive advantage. Thus, the industries that attempt to implement the innovation strategy and invest in research, development and innovation or want to invest will remain in the scene of competition (Rhee, 2010).

2.4.5 Effects of Product Innovation on Organizations

Innovation at the corporate level involves creating new products (product innovation) and using new production processes (process innovation). Companies should be aware of the fact that these two forms of innovation are interdependent and there is a delay between the lifecycle of the product and the process. In the early stages of the product lifecycle, the level of innovation is high. They improve their products to create a dominant plan that best addresses the needs of potential consumers. This stage is called the fluid model. When a dominant plan is formed, the process innovation is emphasized to allow for mass production. This clearly requires a shift from general equipment to specialized equipment. The course, in which the level of product innovation declines dramatically, is called the “transition model”. Ultimately, the product enters a special pattern of its lifecycle. This step involves gradual process innovation that makes the production process more specific in order to decrease the costs and increase the quality (Jukka, 2008).

The realization of organizational goals is improved when employees use innovative knowledge efficiently. Undoubtedly, in organizations that comply with the KM system, organizational performance is under the influence of innovative management (Mone et al., 1998). The development of learning in its various forms (individual, team, organizational) has been a critical factor in the economic success of organizations (Huyley & Hult, 1998). In today's interconnected world with sophisticated and dynamic businesses, doing things requires learning and organizations that know how to apply the commitment and capacity of employees to better identify their demands will be superior in the future. Organizations committed to learning are likely to be able to gain innovation capabilities in products and processes by obtaining the power of changing the technology, and innovation ability improves performance. To put it another way, innovation is considered as an important force in developing companies and improving their performance (Xu, 2010). The results indicate that bigger companies need less use of knowledge resources in management innovation. This proves a positive relationship between management innovation and organizational performance, meaning that new management practices will increase the competitive advantage of an organization (Alvani, 2004: 223). Creativity and innovation have become so entangled that it is difficult to make an independent definition of each one. But to clarify the mind, they can be defined in a separate way. Creativity is the emergence and production of a new thought and idea while innovation is the implementation of that thought and idea. In other words, creativity refers to the power of new ideas and innovation means the application of those new thoughts and ideas. (A'laei et al. 2012) maintain that innovation refers to the introduction of a new set of important factors of production in this system. Investment in innovation includes the ability to detect, organize and implement research and development as well as create new technologies to meet customer needs. Davenport defined organizational innovation as compromise with a new thinking or behavior for organizational compliance, which comprises all organizational dimensions and activities, such as a new product or service, a new production process and its technology, a new structure or the executive system of a plan or a new program in the organization (Nelson et al., 2012).

2.4.6 The Relationship Between Knowledge Management and Innovation

Carneiro (2000) states that innovation involves trying to search and discover and test and develop new technologies, new products and services, new production processes and new organizational structures. The result of these efforts seems to be the raw material of the information industry. New managers are aware that information is the result of the gradual evolution of knowledge, and a strong network is developing between mental efforts and technological innovations. Innovative efforts are the direct result of investing in knowledge and knowledge workers. Knowledge alone is not an important source for an organization. Knowledge is not for knowledge but it is important for action and performance improvements. Accordingly, innovation should be sought at the heart of knowledge management since sustainable competitive advantage is hidden in innovation. Knowledge innovation is active in practice with knowledge and as it is born of knowledge, it possesses all of its characteristics. However, innovation prevents knowledge stagnation and brings knowledge movement on the path for the organization and society. In this way, today innovation is essential for the life of organizations in the dominant technological space of the 21st century. They must be continually innovating to survive. Realization of this goal again makes imperative the establishment of knowledge management as the main capability of the organization (Dehqan Najm, 2009: 50-51).

The first step in product innovation is team building for product innovation. The product innovation team is formed within the R & D unit and assumes the task of developing and innovating the new product. The major part of R & D activities in product innovation includes idea generation and determination of product strategies. The team should be composed of people with a variety of tasks, knowledge and abilities. The use of multifunctional teams directly contributes to the overall effectiveness of product innovation. Besides, flexible teams with cross-functional tasks are more successful in developing new activities because they have a new knowledge composition and offer new capabilities to organizations. These teams increase the ability for problem-solving when implementation is faced with problems and obstacles. Organizations with integrated and cross-functional tasks perform development projects faster and with less effort compared to the companies that are functionally separate (Salimi & Nasiri, 2007).

Nonaka (1995) argues that organizations capable of boosting or improving their social capital knowledge are more prepared to face today's rapid changes and innovation in the area in which they want to invest. Managers need to know that human resource skills lead to creative suggestions, different plans and research activities for innovation development. With regard to knowledge management, a creative knowledge worker can encounter a problem that needs a new solution, a situation that calls for innovative approaches and the relationships that need to be covered in the complex market environment. Knowledge development in the field of technological innovations, especially in the business process and innovative products, is a powerful source for competition. The success of an innovative product is clearly linked to research activities and situational changes.

On the other hand, these two factors depend on knowledge development and innovative efforts of knowledge workers and employees of the organization (Karnirou, 2000).

Taylor Parbai (2000) states that knowledge management includes gaining insights and experiences to make them available and usable at any time and place in which they are needed. KM provides easy access to experience and knowledge. Knowledge management confirms decision-making with a higher quality and assures that values and partnerships of mental assets are efficient enough and lead to exploitation. If knowledge management is positively affected by innovation, investment in the development of new knowledge may push companies into a new business in the market. To achieve better results, innovative efforts must be combined with a competitive orientation. This combination essentially depends on the high levels of people's knowledge and technology base. KM focuses on innovation and creates an environment that is favorable and suitable for the occurrence of innovation (Plessis, 2007).

A'laei et al. (2012) believe that knowledge management does not rely on the role of organizational innovation but includes an ideal environment for creating innovation. These effects are as follows:

1- Creation of a Sustainable Competitive Advantage: The primary role of knowledge management in the innovation of today's business environments is to create a competitive advantage using collaborative methods of knowledge acquisition.

2- Reduced Complexity of the Innovation Process: The second role of knowledge management is to moderate the innovation process. It is believed that increasing the amount of knowledge in organizations leads to increased complexity in the design and management of new products. But this complexity is easily identifiable based on knowledge management and knowledge-based units of the organization.

3- Integration or Coherence of Tacit Knowledge in the Organization: This integration will make the knowledge and information easy to access.

4- Creation of Explicit Knowledge: The fourth role of knowledge in the process of innovation is the grading of explicit knowledge. Although explicit knowledge, like tacit knowledge, is readily available to competitors, it is one of the most important components of innovation.

5- Participation in the Sharing of Goals: Participation is defined as the ability of consumers, suppliers and employees to create knowledge sharing conditions within the organization's internal and external boundaries. This makes it possible for the members to participate in business goals. Therefore, it can be inferred that participation in the organization appears in both internal and external forms. This plays an important role in the transfer of tacit knowledge and the creation and gathering of skills.

6- Coherence and Preservation of the Knowledge Process: The sixth role of knowledge in the process of innovation is different management activities in the life cycle of knowledge management, which includes creation, gathering, sharing and application of knowledge. Knowledge management plays an important role in ensuring the organizational solidarity through the organizational structure. Innovation is an important factor in supporting innovative efforts and contributes to the definition of people's personality. In fact, innovation is presented by an institution to the market and may be the result of the creativity of its knowledge workers.

According to Darroch and Mcnaughton (2002), Knowledge management as an important concept is often raised as a prelude to innovation. Effective and efficient knowledge management acts as a guiding business philosophy and affects the strategies selected by managers within the

organization. Effective knowledge management has been introduced as one of the methods to improve innovation and performance in the organization. In particular, knowledge dissemination and response to knowledge are raised as two dimensions with the greatest impact on the creation of competitive advantage. Studies in the field of knowledge acquisition have found a positive relationship between the acquisition of market knowledge (external knowledge) or employee knowledge (internal knowledge) and innovation.

Lin et al. (2000) suggest that the new knowledge acquired will interact with the prior knowledge of the organization and will change the overall knowledge reservoir of the organization. Due to the existence of a relationship between the existing knowledge at different levels of the organization, the generated knowledge is used as the basis for creating new mental models and affairs. Hence, the flow of knowledge coming from outside the organization is an opportunity to re-combine the existing knowledge and create new knowledge. According to this view, new ideas about the development of processes, products and services emerge through this new knowledge. Although any acquired knowledge may not be directly related to advantages such as innovation, it can act in a supportive role and increase the overall organizational performance. Extraction of the employees' reservoir of intellectual capital and knowledge sharing in the organization are among the basic tasks of management and are a prelude to innovation. Acquisition of knowledge about the market is a pre-source for innovation development which well satisfies the customers' needs (Allameh & Zare', 2008). Knowledge dissemination and response to knowledge have the potential to create competitive advantage for innovative companies and for response and knowledge dissemination, the company is dependent on a particular combination of formal structure, informal relationships, skills and experiences of individuals. Therefore, dissemination and response to knowledge behaviors are unique and specific to any organization and are difficult to imitate. Because of these features, knowledge dissemination and response to knowledge have a direct relationship with the organization's innovation and performance.

A new fundamental issue for companies in pursuit of organizational innovation is how to attract external knowledge and how to integrate it with the existing knowledge and creativity and how to create new techniques, products and management styles. By creating a superior

knowledge management system, the organization is provided with the opportunity to effectively and efficiently use its resources. Consequently, it can integrate management experiences of the business and achieve its objectives for organizational innovation (Chang & Lee, 2008).

Uterieck (1971) indicated that market turbulence will make companies adopt newer techniques for gaining competitive advantages. Whenever the competition becomes more intense and the amount of competition faced by organizations is increasing, companies are more inclined to choose new and innovative techniques. The degree of competition in the industry is positively related to organizational innovation. During an effective search of knowledge, companies can follow the development of a new product or product line. They raise the level of their capability and implement new developments plan in their current business processes and these developments provide the basis for the production of a new product. After integrating the knowledge, companies systematically distribute knowledge in their different units. With this knowledge distribution, the level of cost is reduced. Companies gain a higher level of innovation and have access to market and technological capabilities. Development of executive capabilities and organizational performance promotes R & D and customer needs are better recognized, which is essential for product innovation. Companies gain better opportunities through effective knowledge search, which realizes the advantage of product innovation (Dong Yang, 2011).

2.5 Research Background

2.5.1 Domestic Research

Farzaneh et al. (2016) investigated the mediating role of knowledge management in the relationship between transformational leadership and organizational innovation. The results of Pearson correlation test showed that there is a significant positive relationship between transformational leadership and innovation. The relationship between transformational leadership and knowledge management was positive and significant and a significant positive relationship was also found between knowledge management and innovation. Moreover, the path analysis results demonstrated that transformational leadership mediated by knowledge management directly ($\beta=0.71$) and indirectly ($\beta=0.20$) affects innovation (totally, $\beta=0.91$). Knowledge management also has a significant effect on organizational innovation ($\beta=0.28$).

Yazdani et al. (2015) examined the impact of leadership style and organizational climate on knowledge management with regard to the mediating role of organizational structure and social interaction (a survey on Mellat Bank headquarters). The research findings revealed that the leadership style has no significant positive effect on knowledge management. But organizational climate has made a significant positive impact on knowledge management. On the other hand, the leadership style has a significant positive effect on organizational structure, and the organizational structure makes a significant positive effect on social interaction. But the mediator variables in this research have not been able to play a facilitating role in the leadership style influencing knowledge management.

Qanbari (2013) conducted a study on the relationship between knowledge leadership and intellectual capital management. Results of this research suggested that there is a significant positive relationship between knowledge leadership and intellectual capital management. The results of multiple regression analysis indicated that among the components of knowledge leadership, the component of supporting the individual and group learning process has the greatest impact on predicting intellectual capital management.

In an article entitled “The role and influence of organizational leaders in institutionalizing knowledge management”, Hatami Nasab (2011) argued that instead of using the legal power and authority to make cultural changes among employees, it is better that the organization desirably and efficiently implement the process of institutionalization of knowledge management by highlighting the role and functions of organizational leaders.

Nikbakht et al. (2010) investigated the relationship between knowledge management and leadership styles of the directors of educational departments from the perspective of faculty members in Isfahan University of Medical Sciences. The results showed that there is a significant relationship between the components of KM and transformational leadership style, but no significant relationship was observed between KM with transactional leadership and non-interventionist leadership.

2.5.2 Foreign Research

Jassim et al. (2017) assessed the role of knowledge-based leadership in open innovation through the mediating role of knowledge management capability. This study was about the mediating role of the ability for knowledge management in the relationship between knowledge-based leadership and open innovation in French firms. Data were collected from 172 companies and were analyzed using the structural equation modeling method. The results uncovered that a higher level of knowledge-based leadership can enhance the ability to manage knowledge and improve the outcomes of open innovation, meaning that knowledge-based leadership has a direct and positive impact on knowledge management and open innovation. However, the ability to manage knowledge for a link between leadership and open innovation has been reported to be successful. This study provides useful insights for managers who are willing to increase innovation. Innovative activities in technology-based companies provide useful guidance for international scholars and further encourage them to describe and investigate these variables.

Maria Donet (2015) examined the role of knowledge leadership in innovation and corporate performance. The results of this research show that the existence of knowledge leadership causes that the development and use of knowledge management in line with organizational productivity be done properly. In addition, development and use of knowledge management practices will enable companies to improve their performance in product innovation.

Sojinda (2014) carried out a study in which the leadership role in implementing knowledge transfer in creative organizations was investigated. The results suggested that leadership in the creative organization is closely linked to human resource management practices. It also facilitates the method of implementing knowledge management in the organization and is effective in enhancing the performance of long-term projects.

Birsnow (2013) conducted a study and examined the role of leadership and knowledge management of transformation processes in product forecast and innovation. The findings displayed that knowledge transfer has a significant impact on the relationship between transformational leadership and product innovation as well as the relationship between

knowledge acquisition and knowledge application. Moreover, there is a significant relationship between transformational leadership and product innovation.

In a research performed by Lucia (2012), innovation in destination management was assessed with an emphasis on the role of knowledge management processes and leadership in destination tourism. According to the results, leadership acts as a coordinator by the knowledge center. This contributes to social cohesion and promotion of service orientation among various operators and institutions, citizens, government and business. Leadership plays a useful role in promoting and improving tourism destinations. Further, it causes to develop and expand the service culture on the soil for all destination tourists.

2.6 Research Conceptual Model

This study investigates the effect of knowledge-based leadership through the knowledge management capability on organizational innovation, which has been examined and measured in the form of the following conceptual model (Fig. 2-8).

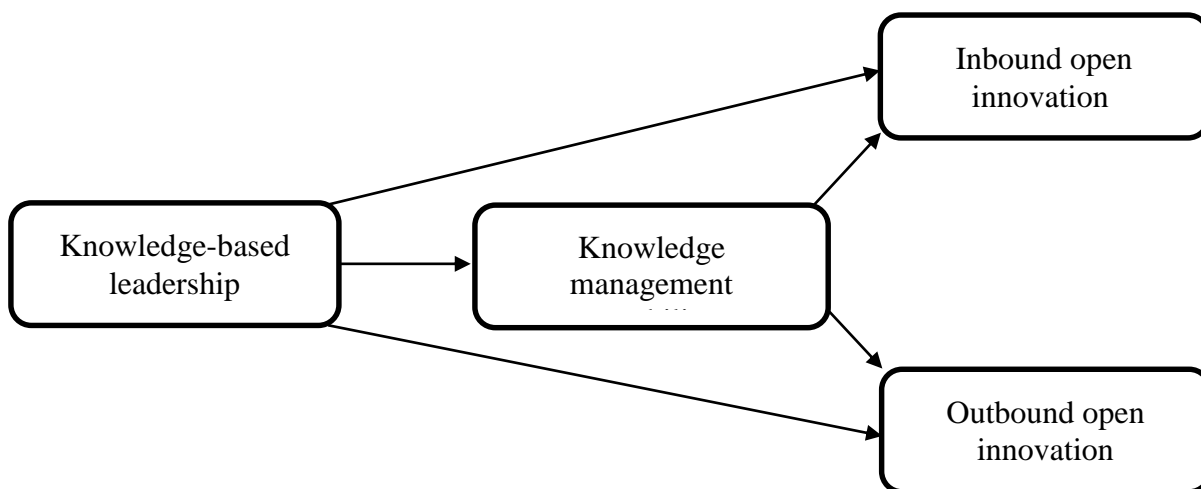


Figure 2-8 Research conceptual model (Jassim et al., 2017)

Chapter 3 Research Methodology

3.1 Introduction

The foundation of any science is the method to understand it and the validity and value of the laws in each science are based on the methodology in which the science is applied. From the term “research method”, specific and distinctive meanings can be inferred in scientific texts. These inferences sometimes have overlaps and dependencies and in some cases, the “research method” and “research type” are synonymous. Overall, “the research methodology is a set of valid, reliable and systematic rules, tools, and methods to investigate the facts, discover the unknowns and find solutions to problems” (Khaki, 2008:208). In this chapter, research method and statistical population and sample are first investigated and then, data collection tools are addressed and their reliability and validity are examined. At the end of the chapter, data analysis methods and the test used in the study are discussed.

3.2 Research Method

This study is an applied research in terms of purpose because an applied research is an attempt to respond to a (practical) problem that exists in the real world. In terms of data collection, it is a field and survey study (non-experimental). Survey is a kind of research that, through opinion poll, collects information about discovering the relationships between variables and examining the existing facts. For this purpose, in this study, questionnaire tool is used. Also, in temporal terms, this research is a cross-sectional study.

Data collection method

In the current research, three methods have been employed to collect data, which are as follows:

Documentary and library studies: At the beginning of the study, a comprehensive review of documents and library resources such as books, student dissertations, reports of projects and scientific and research journals is conducted.

Electronic resources: This method involves achieving research results and findings and scientific articles and exchanging information and resources through the Internet. This method urgently needs an awareness of the findings of studies related to the research topic conducted in other countries, which is highly effective in advancing this research, especially in the process of reviewing resources.

Field study: In this section, questionnaire is used to obtain the required information. This questionnaire is set after a comprehensive review of the subject literature and with regard to the research objectives and hypotheses.

3.3 Statistical Population

All the relevant managers and experts in Iran Insurance Company are considered as the statistical population of this research.

The reason for choosing the statistical population: Considering the variables of the research and its application in service companies, mostly managers make up the statistical population, who better respond due to the mastery of the mentioned variables.

3.3.1 Sampling Method

Sampling is done through a stratified random method. In this study, stratified random sampling is applied to do the research because of the homogeneity of the population.

3.3.2 Determining the Sample Size

In the present study, based on the investigations, the number of all the relevant managers and experts in Iran Insurance Company is 450. The sample size was determined to be 207 using the Cochran formula. However, 250 questionnaires were distributed and finally, 207 complete questionnaires were collected which were used as the basis for data analysis.

The total sample size, assuming a limited statistical population, is calculated at a 0.95 confidence level as follows:

N= Statistical population size

$Z_{\alpha/2}$ = The value of the normal variable of the unit corresponding to the confidence level ($\alpha = 1.96$)

P= Estimate of the variable attribute ratio (0.5)

ε = Estimation error (0.5)

$$n = \frac{NZ^2 \frac{\alpha}{2} P(1-P)}{\varepsilon^2 (N-1) + Z^2 \frac{\alpha}{2} .P(1-P)}$$

$$n = \frac{450 \times (1/96)^2 \times 0/5 \times (1-0/5)}{(0/05)^2 \times (450-1) + (1/96)^2 \times 0/5 \times (1-0/5)} \cong 207$$

Here, the sample size is equal to 207 people and questionnaires are distributed among them.

3.4 Research Questionnaire

To collect data from the population or sample, appropriate tools should be used. Thus, according to the mentioned methodology, the following methods are used in this research:

1- Library method: Collecting information through referring to libraries, studying materials, articles and related books, Internet and journals.

2- Field method: In this study, the questionnaire tool which is one of the most common tools in survey research has been used.

The questions in the questionnaire are categorized as follows:

	Items	I completely agree	I agree	I have no idea	I disagree	I completely disagree
Knowledge-oriented leadership	1. Managers reward those employees who improve the knowledge promotion.					
	2. Managers use the role of knowledge leaders to achieve organization's common goals.					
	3. Managers work as advisor and controller and evaluator and help the organization to achieve its goals.					
	4. Most executives of the organization promote acquisition of external knowledge.					
	5. Managers reward the staff to share and use their knowledge.					
Knowledge management capability	6. The company can identify the knowledge it needs from external sources.					
	7. The company can obtain the knowledge it needs from foreign sources.					
	8. The company is able to identify the knowledge used by the company from domestic sources.					
	9. The company can combine the knowledge using foreign sources.					
	10. The company can capture, store and transfer external sources and make them internal.					
	11. The company is able to improve value of the knowledge gained from domestic sources.					
	12. The company is able to organize internal knowledge obtained from employees.					
	13. The company is able to use existing knowledge to create new knowledge.					
Input open innovation	14. The company uses external resources to complete its R&D processes.					

	15. The company uses external resources to develop new services.					
	16. Managers have a good connection with companies, research groups or universities to develop innovation.					
	17. The company uses foreign developed knowledge for research and development projects.					
	18. The company looks for innovative ways to improve the business model to optimize value creation.					
	19. The company looks for innovative ways to create added value with customers.					
Output open innovation	20. The company perform technology commercialization continuously.					
	21. The company uses commercialization in its knowledge acquisition processes.					
	22. The company uses existing knowledge to create new knowledge generation processes.					
	23. The company employs inter-organizational cooperation to develop innovation.					
	24. The company has certain processes to achieve knowledge about new services.					
	25. The company uses the technology that leads to creation of new opportunities.					
	26. Learning and training are priorities of the company in development of innovation.					
	27. The company uses innovation to improve productivity.					
	28. The company do its best to develop capabilities of innovation.					
	29. The organization always emphasizes on development of new services.					
	30. The company offers a given organization for added value to customers.					
	31. The company experiences the market through innovative approaches.					

Table 3.1 The relationship between hypotheses and questions in the questionnaire

To measure the questions in the questionnaire, a 5-point Likert scale was used which is one of the most widely used scales in research, in particular behavioral sciences. In this scale, 1 represents very high and 5 indicates very low.

3.4.1 Questionnaire Validity

By validity, it means that the measuring tool can measure the desired attribute and feature. Validity is important in that inappropriate and inadequate measurements can make any scientific research worthless and invalid (Khaki, 2008: 288).

To ensure the validity of the questionnaire of this research, the qualitative method, i.e. professors' expertise and experts' theories, and study of similar questionnaires, articles and books have been used and their desired modifications and changes have been applied in the questionnaire after discussion. To this end, the viewpoint of management professors, experts and managers are used and after their approval, the questionnaires are prepared and distributed.

3.4.2 Questionnaire Reliability

By reliability, it means that if the measuring tool is given several times to the same groups of people in a short time interval, the results are close to each other (Khaki, 2010).

To determine the questionnaire reliability in this research, Cronbach's alpha method is used. This method is applied to calculate the internal consistency of measuring instruments, such as questionnaires or tests that measure various attributes. Cronbach's alpha coefficient was invented by Cronbach and is one of the most common ways to measure reliability of questionnaires. To calculate Cronbach's alpha coefficient, the variance of the scores of each subset of the questions in the questionnaire or subtest and the total variance should be calculated. Then, Cronbach's alpha coefficient value can be obtained using the following equation:

$$\alpha = \frac{k}{k-1} \left(1 - \frac{\sum_{i=1}^k S_i^2}{\sigma^2} \right)$$

α = Total test reliability coefficient

k= Number of research questions

S_k^2 = Variance related to the kth question

σ^2 = The total variance of the test questions

The closer this criterion to one, it indicates higher reliability and the closer this value to zero, it represents lack of reliability. Cronbach has suggested that the reliability coefficient of 45% is low, 75% is average and acceptable and 95% is high.

In this study, Cronbach's alpha is calculated using SPSS software.

Variables	Cronbach's alpha
Knowledge-based leadership	
Inbound open innovation	
Outbound open innovation	
Knowledge management capability	

Table 3.2 Cronbach's alpha coefficient

3.5 Data Analysis Method

In the current research, data collection and analysis of demographic variables were performed using descriptive statistics. To examine the questionnaire validity and fit of the research model, structural equation modeling analysis and confirmatory factor analysis were carried out. Furthermore, in order to test the research hypotheses by inferential statistics whose data were collected using the questionnaire, structural equations were used. Thus, data analysis with SPSS software is used for Smirnov-Kolmogorov test (normality), correlation of variables

(Pearson) and one sample t-test (desirability of the research variables), and LISREL software is applied for factor analysis (via factor loading and construct validity), path analysis (based on measurement and structural models) and fit of the model.

Chapter 4 Data Analysis Review and Hypothesis Testing

4.1 Introduction

The main goal of all research studies is answering the questions and proving the hypotheses that the researcher has designed in order to explore and identify external facts. Nowadays, in most research studies that are based on the obtained data regarding the research subject, Data analysis is among the most important sections of the research. Raw data is analyzed using statistical techniques and after processing, will be accessible to users in the form of data. The researcher can use different methods for statistical analysis and answering the stated problem or when deciding to deny or confirm the formulated hypothesis. Using each method is subject to conditions which the researcher should take into consideration in relation to the research. These methods can be divided into two categories: 1. Descriptive statistics 2. Inferential statistics.

Therefore, for analyzing the obtained data in this research, first we have used statistical indexes to describe and summarize the properties of the demographic of the sampled population of the research including sex, age, education and job experience on a descriptive level, and then on an inferential level, for the purpose of assessing the accuracy of the hypothesis and the relation between research variables, we have used “structural equation modeling” and in particular, path analysis technique via LISREL software.

4.2 Descriptive Statistics

Descriptive statistics are a series of criterion that can provide general specification of the obtained data to the researcher. Consider that descriptive statistics cannot be used to extend the results to generalized scenarios, but rather these criteria are used to provide an overall view of the research. In this research, we have performed a descriptive review of the observations by providing the related charts and tables. The information related to descriptive demographic indexes for the sample population have been inserted in the tables below. The information include sex, age, education and job experience.

4.2.1 Demographic Variable Description

In order to identify the respondents, their demographic variables including sex, age, education and job experience has been provided in detail.

4.2.1.1 Sex

Sex	Frequency	Frequency Distribution
Male	146	70.4
Female	61	29.5
Total	207	100

Table 4.1 Respondent's frequency distribution of sex

Source: Research Findings

As it is shown in table 4-1, males (70.4%) are the majority participators in our survey and females form 29.6% of the respondents.

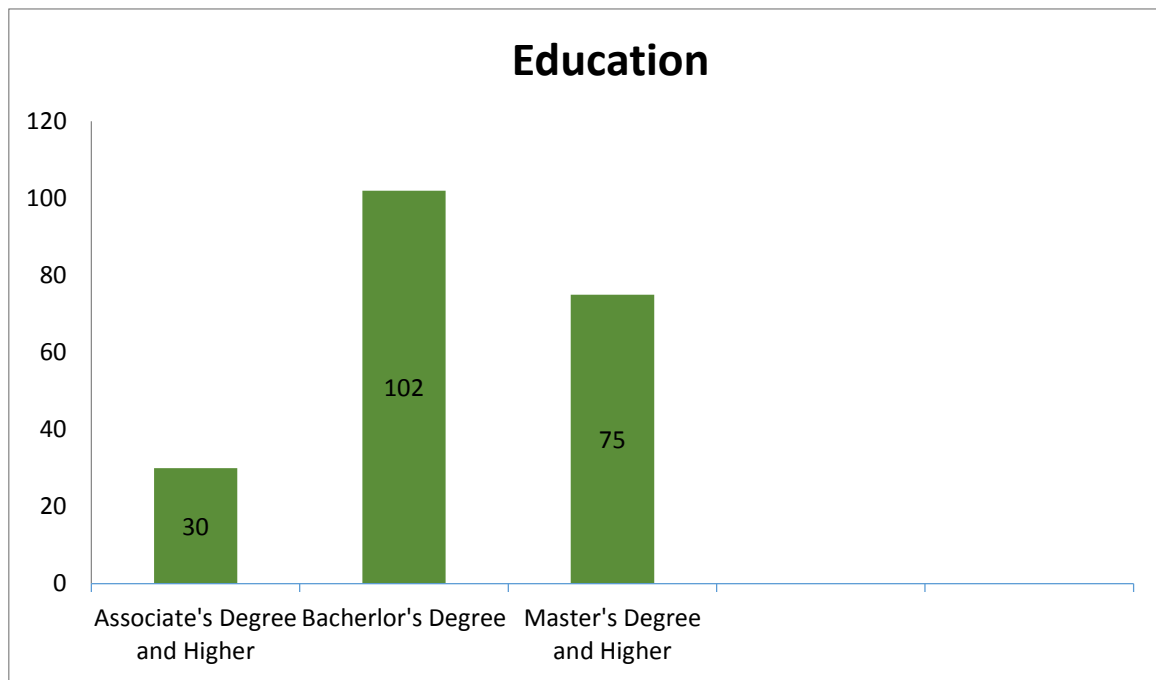


Figure 4-1 Education Frequency of Respondents

4.2.1.2 Population Age

Table

Age	Frequency	Frequency Distribution
30 years and less	14	60.7
31-40	55	26.5
41-50	99	47.8
51 years and more	35	16.9
Total	207	100

4.2

Frequency Distribution of Respondents' Age

As you can see in the table above, 60.7% of the respondents are 30 years old and younger, 26.5% of the population are 31-40, 47.8% of the respondents are between the ages of 41-50 and 16.9% of the respondents are older than 51.

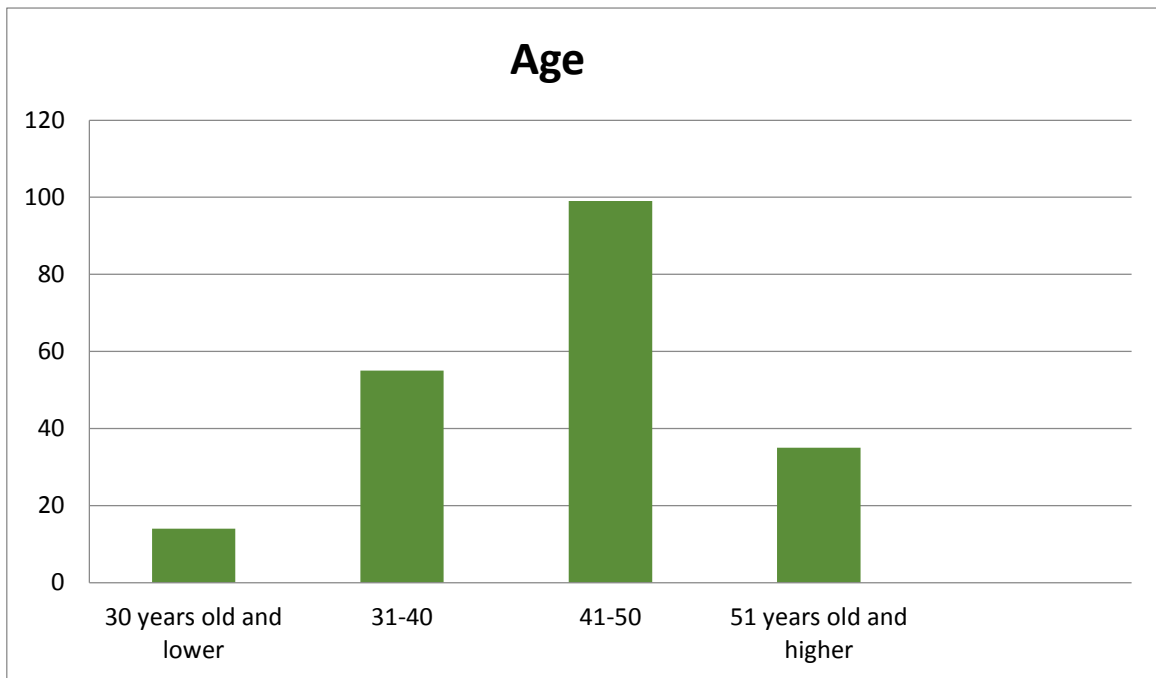


Figure 4-2 population age status displayed using the bar graph

4.2.1.3

4.2.1.4 Population Job Experience

Experience (years)	Frequency	Frequency Distribution
5 years and less	12	5.7
6-10 years	102	49.2
11-15 years	71	34.2
More than 15 years	22	10.6
Total	207	100

Table 4.3 3 Frequency Distribution of Population Job Experience

As you can see in the table above, 5.7% of the respondents have 5 years of job experience or less, 49.2% have between 6-10 years of job experience, 34.2% of the respondents have 11-15 years of job experience and 10.6% of the population have had more than 15 years of job experience.

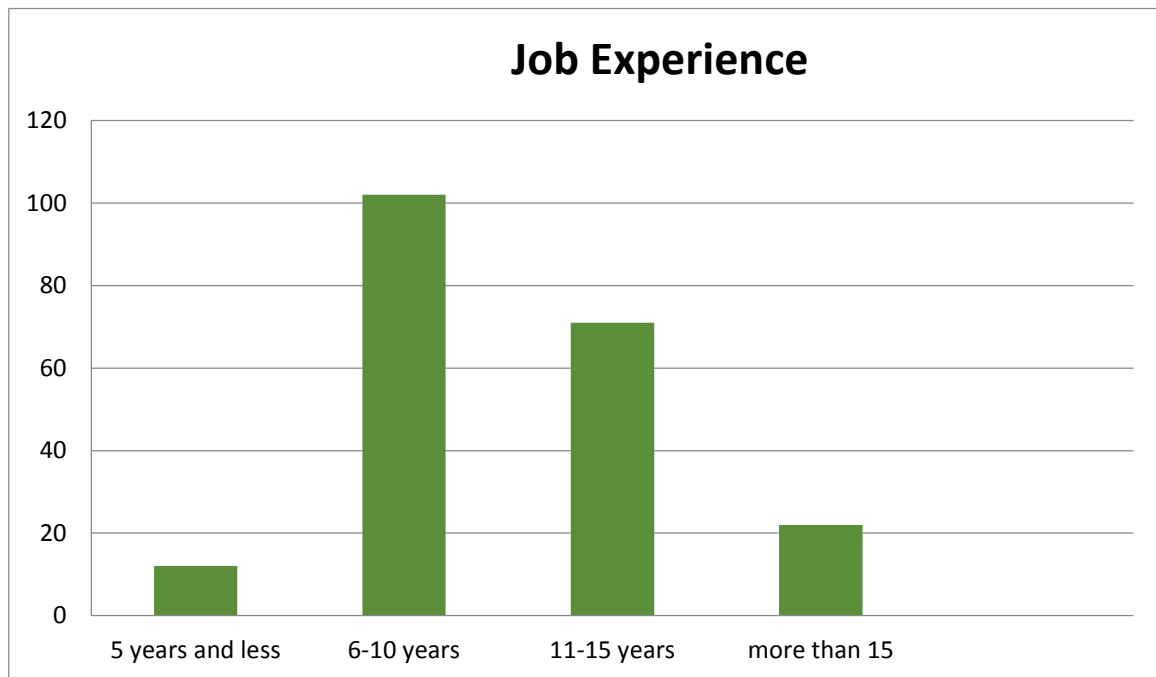


Figure 4-3 Population Job Experience Status displayed using the bar graph

4.2.2 Research Variables' Statistic Description

The importance of the variables' description lies in the fact that the results of the hypothesis testing will be extracted according to the data and index based on these variables. The research data exist on interval scales. Indexes of central tendency and dispersion have been used to describe research variables, which will be found below.

4.2.2.1 Description of Knowledge-oriented Leadership

Based on table 4.4 the average score of the knowledge-oriented leadership variable from the point of view of the respondent is 3.1272 and the standard deviation is 0.74939.

The obtained average is less than the expected average (3 points) and also the lowest score related to the knowledge-oriented leadership variable from the point of view of the respondents equals 1 and the highest point equals 4.50.

	Frequency	Lowest	Highest	Average	Standard Deviation
Knowledge-oriented Leadership	207	1	4.5	3.1272	0.74939

Table 4.4 Description of Knowledge-oriented leadership Variable

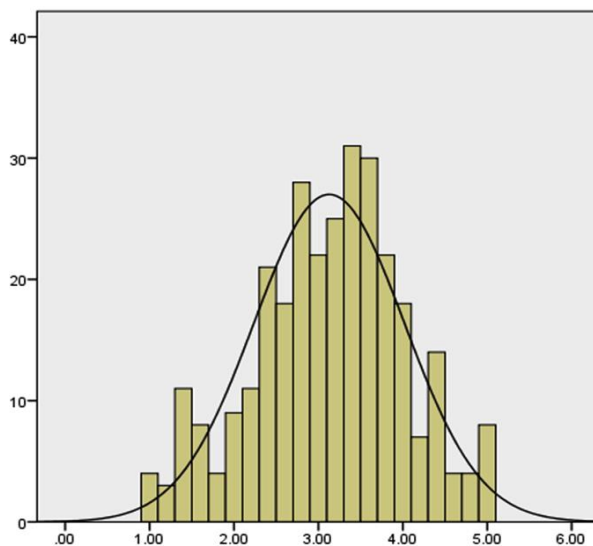


Figure 4-4 Knowledge-oriented Variable Histogram

4.2.2.2 Description of Organizational Innovation Variable

Based on table 4.5 the average score for the Organizational Innovation Variable from the point of view of the respondents is 2.8324 and the standard deviation is at 0.71708.

The obtained average is lower than the expected average and also the lowest score related to the Organizational Innovation Variable from the point of view of the respondents is 1.00 and the highest score is 4.75.

	Frequency	Lowest	Highest	Average	Standard Deviation
Organizational Innovation	207	1	4.75	2.8324	0.71708

Table 4.5 Description of Organizational Innovation Variable

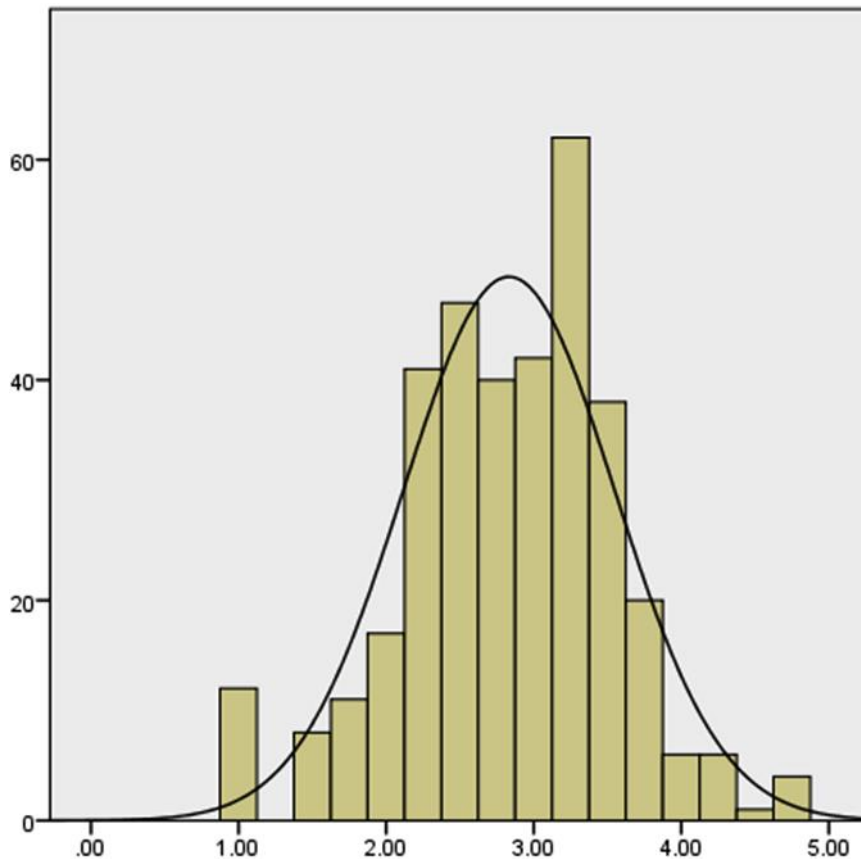


Figure 4-5 Organizational Innovation Variable Histogram

4.2.2.3 Description of Knowledge Management Capacity Variable

Based on table 4.6 the average score for the Knowledge Management Capacity Variable from the point of view of the respondents is 92.996 and the standard deviation is 0.72493. The obtained average is lower than the expected average and also the lowest score related to the Knowledge Management Capacity Variable from the point of view of the respondents is 1.00 and the highest score is 5.

	Frequency	Lowest	Highest	Average	Standard Deviation
Knowledge Management Capacity	207	1	4.67	2.9996	0.72493

Table 4.6 Description of Knowledge Management Capacity Variable

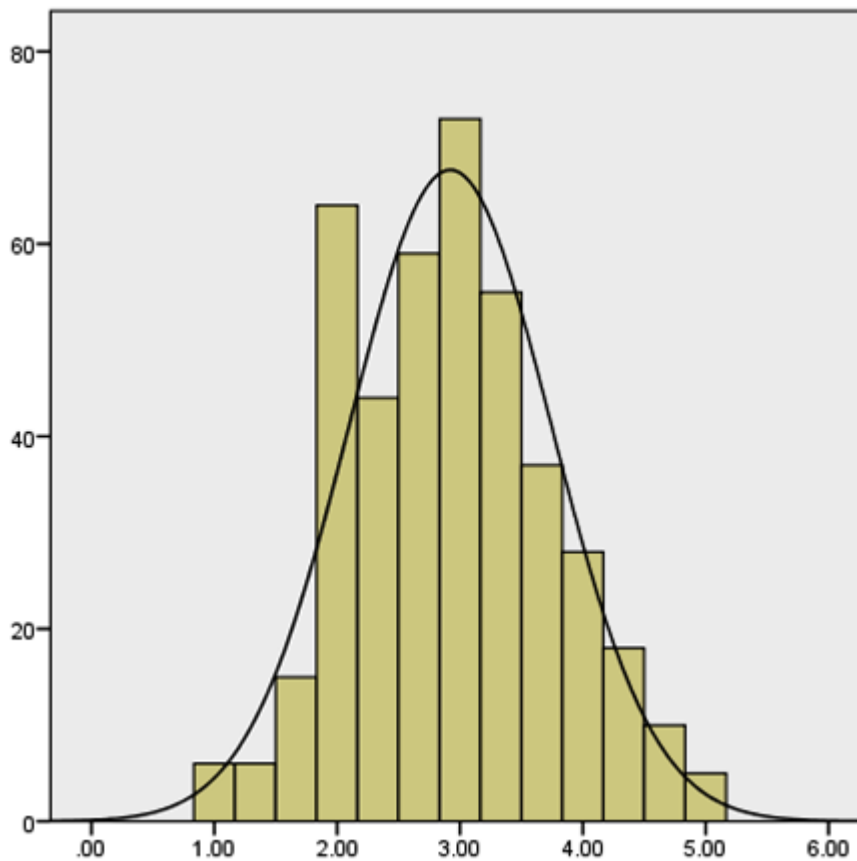


Figure 4-6 Knowledge Management Capacity Variable Histogram

4.3 Hypothesis Testing

4.3.1 Kolmogorov–Smirnov test

Before testing the research hypothesis, it is necessary to check whether or not the main indexes are normal. If the indexes are considered normal, a series of parametric tests will be used, otherwise nonparametric tests will be used. In order to determine the normality of distribution the Kolmogorov–Smirnov test has been used, and the results are presented in the table below.

Variable	Kolmogorov–Smirnov Statistical Value	Test Significance Level
Knowledge-oriented Leadership	3.169	150'
Organizational Innovation	3.109	134'
Knowledge Management Capacity	3.343	126'

Table 4.7 Kolmogorov–Smirnov test

In the Kolmogorov–Smirnov test significance column, we can see that all the indexes and their dimensions have a significance value higher than 5%. Therefore, it could be said that the research variables are normal and as such, we can use parametric tests such as Pearson, T Test and even Regression test. We are allowed to use Structural equation modeling method in this research because the research data is normal, otherwise it would not have been possible. We will present the findings in the following.

4.3.2 Sampling Adequacy Test

In order to assure you of our sampling adequacy, the results of the Bartlett test are presented in table 4.11.

1. KMO index

It is an index of sample adequacy that measures the sphericity of partial correlation between the variables will determine whether the variance of research variables is influenced by the shared variance of latent and basic factors. If the index value is close to 1, the data in question is suitable for Factor Analysis, otherwise (usually lower than 0.7) the results of Factor Analysis are not very suitable for the data.

2. Bartlett Test

In performing Factor Analysis, you must make sure that the existing data can be used for the analysis. The KMO index is used for achieving this purpose. Using this test, we can assure our sampling adequacy. This index has a 0-1 domain, if the index is closer to 1, the data in question is suitable for Factor Analysis and otherwise, and the results of the factor analysis are not very suitable for the mentioned data. (Momeni, 1389: 193).

On the other hand, we have used the Bartlett Test in order to assure data adequacy and determine if the correlation matrix that are the basis for our analysis do not equal zero in the statistical population.

Table 4.8 KMO Index for sample adequacy and Bartlett Test for correlation suitability between the findings for use in factor analysis. Considering the high amount of the KMO index and the significance of Bartlett Test, the number of samples is adequate for factor analysis and the correlation between the findings is suitable.

	Value
KMO Index	0.819
Bartlett Test Statistics	311.520
Degrees of Freedom	15
Significance Level	0/000

Table 4.8 Bartlett Test and KMO Index Factor Analysis

4.4 Measurement Model Section Analysis

In analyzing the measurement model section, the researcher must analyze the relationship between latent and observed variables of the model. Here, the goal is determining the validity

and reliability of the values. In terms of validity, the question is that are the observed variables measuring what the researcher has intended for or something else. In terms of reliability, the question is how accurate is the measurement of the used indexes in regards to the subject matter. For the purpose of the analysis of the internal construct of the survey and to discover the forming factor of each latent construct and variable, confirmatory factor analysis tools were used. Also in this section, by confirmatory factor analysis of the measurement models related to each construct (latent variable) are extracted and rendered. (Kalantari, 1388: 136). Confirmatory Factor Analysis of the research construct are presented below.

For the purpose of the analysis of the internal construct of the survey and to discover the forming factor of each latent construct and variable, confirmatory factor analysis tools were used.

4.4.1 Evaluation of Construct Credibility of Research Variables

The charts presented below show the research variables in standard and significant modes. As the charts show, the presence of all analyzed factor in this variable is confirmed.

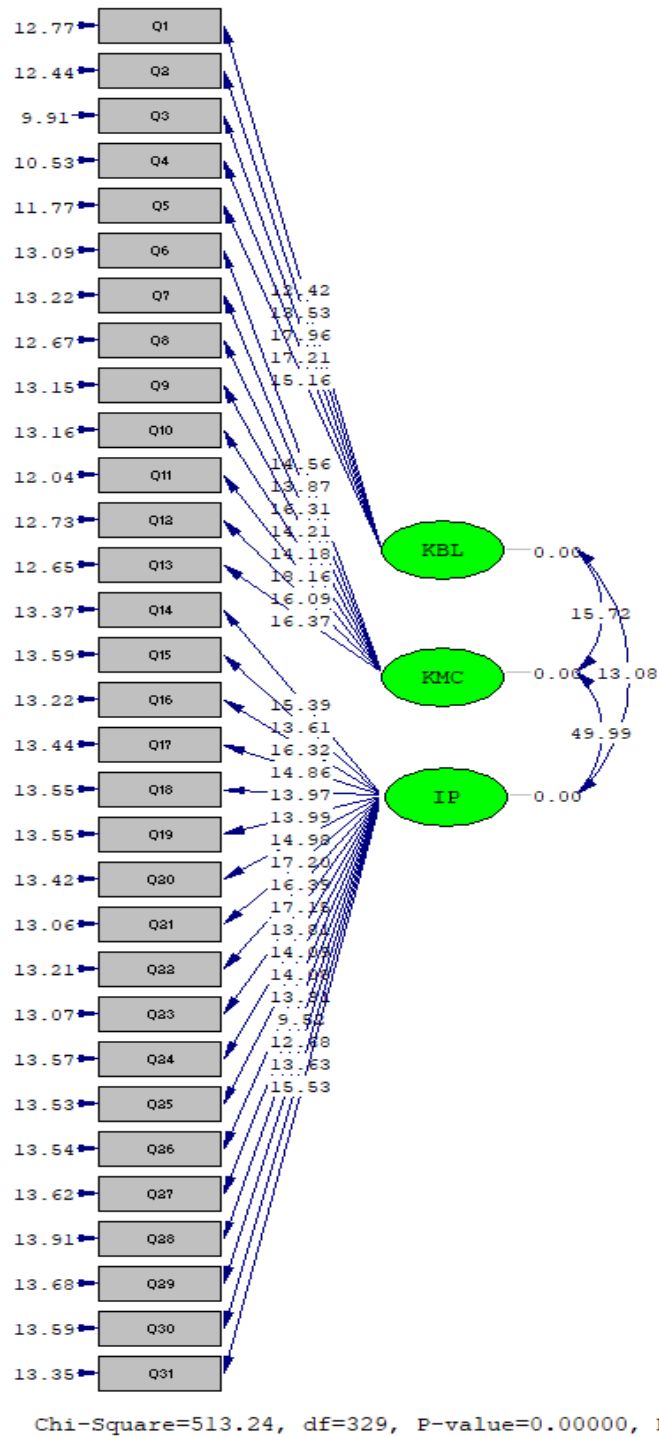


Figure 4-7 Research Value Measurement Models using Factor Analysis in Significance Level

In figure 4.7 the model shows the significance of the obtained coefficients and parameters, and the measurement of variables shows that all the obtained coefficients are significant. Because the amount of the significance test is higher than 1.96 or lower than -1.96, then the relations are significant. Therefore, considering figure 4.7 the obtained results of the confirmatory factor analysis, it could be said that all the questions measure the latent variable in a significant manner.

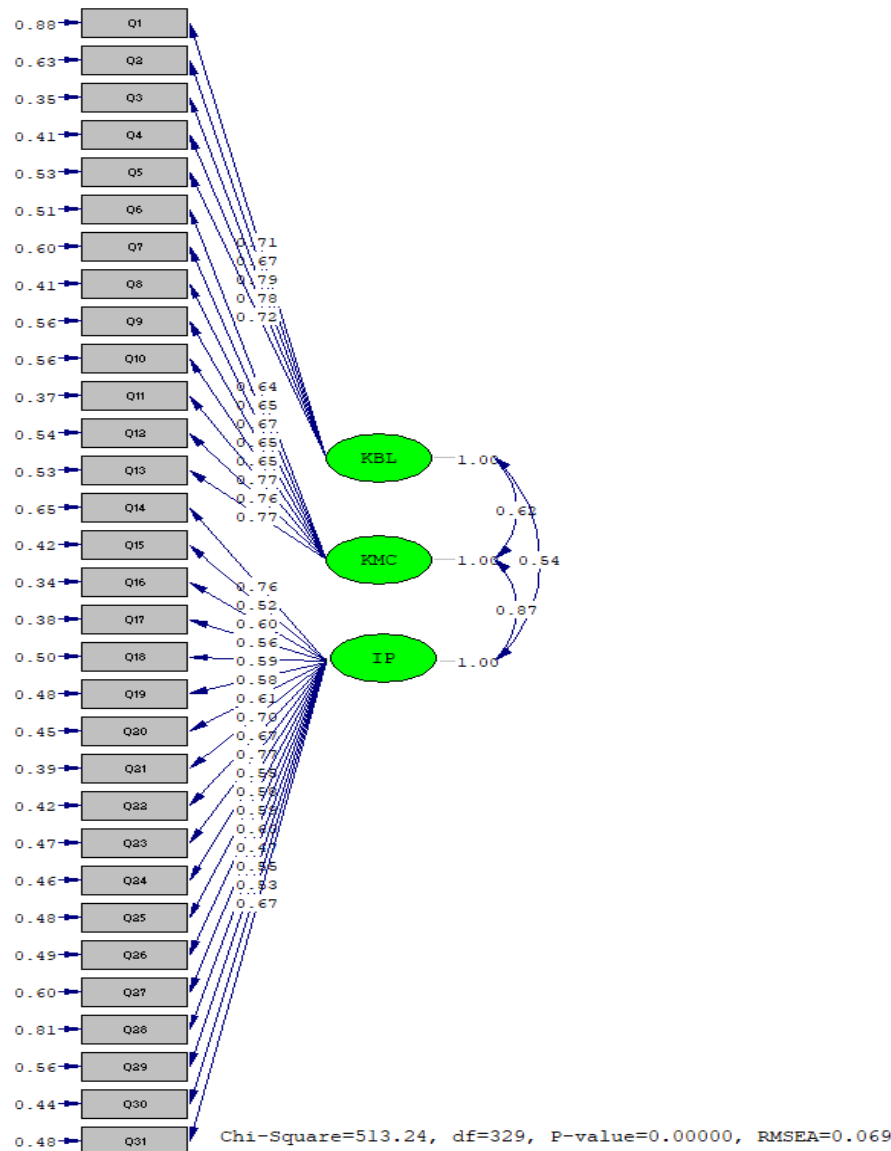


Figure 4-8 Measurement Model for Independent Variables of the research using Standard Factor Analysis

Figure 4.8 the factor loadings of measurement model related to dependent variables of research, shows the effectiveness of each variable or item in explaining and clarifying the variance of variable scores or the main factor. In other words, the factor loading shows the correlation amount of each observed variable (survey question) with latent variables (factors).

Evaluation of Measurement Model for Research Variables

Index Name	Obtained Amount	Permitted Amount
K2 on Degree of Fitness $\frac{\chi^2}{df}$	1/56	Less than 3
Root Mean Square Error of Approximation	0/069	Less than 0.1
Parsimony Normed Fit Index	0/90	Higher than 0.5
Goodness of Fit Index	0/92	Higher than 0.8
Adjusted Goodness of Fit Index	0/90	Higher than 0.8
Normed Fit Index	0/95	Higher than 0.9
Relative Fit Index	0/92	Higher than 0.9
Incremental Fit Index	0/92	Higher than 0.9
Non Normed Fit Index	0/95	Higher than 0.9
Confirmatory Fit Index	0/94	Higher than 0.9

Table 4.9 Model Fitness Indexes

4.4.2 Analysis of Construct Validity and Reliability

In order to evaluate the convergence and differential validity, calculate the amounts inserted below. If the conditions inserted in table 4.9 are realized, we can claim construct validity.

1. Construct Reliability CR
2. Average Variance Extracted AVE
3. Maximum Shared Squared Variance MSV
4. Average Shared Squared Variance ASV

Reliability	CR>0.7
Convergence Validity	Factor Loading must be significant Standard factor loading must be higher than 0.5 and if possible, higher than 0.7 CR>AVE AVE>0.5
Differential Validity	AVE>MSV AVE>ASV

Table 4.10 Conditions for Construct Validity and Reliability

Hier and Colleagues

Variables	CR	AVE	MSV	ASV
Knowledge-oriented Leadership	0.799	0.555	0.455	0.390
Organizational Innovation	0.812	0.514	0.499	0.352
Knowledge Management Capacity	0.825	0.599	0.460	0.529

Table 4.11 Establishing Construct Validity and Reliability

Considering the calculated numbers for the indexes, we see that all CR values are higher than 0.7, therefore, we observe construct or hybrid reliability. By establishing the 4 conditions of convergence validity, considering the numbers in the table, convergence validity is confirmed. We also see that the AVE value is higher than the two MSV and ASV values and the differential validity of the model is confirmed.

4.4.3 Structural Equation Modeling

Various efforts have been made in order to analyze the causal relation between the variables. One of these methods for confirmatory factor analysis is Structural equation or multi-variable analysis with latent variable. Structural equation modeling is a general and powerful multi-variable analysis technique from the multi-variable regression family and more accurately,

an expansion of the general linear model that allows the researcher to test a series of regression equations simultaneously.

Structural Equation Modeling with Statistical Population Approach is for testing hypothesis about the relation between observed variables and latent variables, which is sometimes called Co-Variance Structural Analysis, Causal Modeling and Linear Structural Relationships LISREL. But the most common phrase these days, is Structural Equation Modeling or SEM for short. (Hooman, 1388: 11)

A complete Structural Equation Model includes two components:

a) Measurement Model: part of structural equation during which latent variables are identified. Latent variables are observable variables that are shown using the Co-Variance between two or more indices.

b) Structural Model: part of the structural model that shows the relationship between latent variables.

The study and analysis of measurement models is most useful in the preliminary stages of confirmatory studies, since it can illuminate weak theoretical points and help interpret study findings and have a major share in designing future studies. On this basis the structural equation modeling has two main stages of Model Compilation and Model Testing. In model compilation the researcher uses all the related theories and accessible studies and information to design the model and in this stage, describes the causal relation model for the relationship between the variables. The relationship between the models can explain the theories that deduce the causal relationship between observed and latent variables from a theoretical point of view. The next stage is the goodness of fit test and determining the conformity level of the theories with empirical data that has been obtained from a set population.

In analyzing the structure component of the model, the relationship between extraneous and endogenous latent variables (dependent and independent latent variables) is the main focus of study. Here, the goal is determining whether the theoretical relationship between variables that

has been intended by the researcher in the compilation stage of the framework concept has been confirmed by the data or not. In this regard, three problems are considered.

1. (Negative or positive) parameter marks related to the relationship between latent variables shows whether the calculated parameter for theoretical relationships have been confirmed.

2. The amount of the estimated parameters shows how strong the estimated relationships are. Here the estimated parameters must be significant. (The absolute value of t must be higher than 1.96).

3. The multiple correlation square (R^2) for structural equations, shows the variance amount for each endogenous latent variable that is explained by independent (extraneous) latent variables. The higher the R^2 amount, the stronger the explained variance is. (Kalantari, 1388: p. 140.)

Confirmatory Factor Analysis determines if the existing data fits the extremely limited pre-empirical structure that estimates the compatibility requirements. During this process, the fitness is sometimes falsely recognized as the confirmation of a theoretical model or structure. But we should remember that no model is ever verified, it can only be rejected (not fit the data) or its rejection can be denied (fit the data). Since the full equation model for the structural equation includes the two types of observed and unobserved variables, the model parameters must be estimated using the relation between the variances and co-variances of the observed variables and model parameters as defined by the researcher to determine the fitness of the obtained data with the theoretical pattern. (Cline, 1381: 84).

There is a vast array of goodness of fit criteria and indices that can be used to measure the general fitness of the model. Unfortunately, none of them are superior to the others in all aspects. Because a specific goodness of fit index acts differently based on sample size, estimation method, model complexity, the normality postulates or a mix of the above, and that is why different researchers may use different indices to determine the goodness of fit of the model

based on the conditions. (Kalantari, 1388: 128-129). Therefore, different indices have been used to measure the goodness of fit in this research, which are as follows:

The Root Mean Square Error of Approximation: the first criterion for determining the general fitness of the model is the Root Mean Square Error of Approximation that is shows as (RMSEA2). When the amount of this value is lower than 0.05, the model exhibits goodness of fit, if the amount is between 0.05 and 0.08 the fitness is considered acceptable, if it is between 0.08 and 0.1 the fitness is average and if it is higher than 0.1 the fitness is weak.

Absolute Fit Indices: the next two criterions for the fitness of the model are known as absolute fitness indices. These criterions are shown in the output as Goodness of Fit Index (GFI2) and Goodness of Fit Index (AGFI3). These indices must be between zero and one and amounts higher than 0.9 show acceptable model fitness.

Relative Fit Indices: the next measurements shown in the output of the program measure relative fit indices and show how suitable the model is compared to the basic linear model that is in fact the independence model. These indices include Comparative Fit Index (CFI6), Normed Fit Index (NFI5) and Non- Normed Fit Index (NNFI4). Except for NNFI, all the values related to the indices in this group are between zero and one, and the closer their value is to one, the more fit a model is. (NNFI can be higher than one). Some sources recommend the use of NNFI (also known as Tucker-Louis Indices TLI7) for model goodness of fit. In general, when working with LISREL, each of the obtained indices do not determine the model fitness on their own, but rather the indices must be interpreted altogether.

In this section, we will show the confirmatory factor analysis and path diagram (standard weights and coefficient significance) of the concept of the research model.

4.5 Structural Equation Models of Research Hypothesis

Hypothesis 1: knowledge-oriented leadership has a positive effect on organizational innovation.

H0: knowledge-oriented leadership does not have a positive effect on organizational innovation.

H1: knowledge-oriented leadership has a positive effect on organizational innovation.

Based on the results of hypothesis testing, the first hypothesis is that knowledge-oriented leadership does have a positive effect on organizational innovation. The value of path coefficient for the direct effect of knowledge-oriented leadership on organizational innovation equals 0.50 and this amount is significant on the confidence level of 95%. Considering the fact that this statistical value of T is in critical period (lower than 1.96), then the researcher's claim (knowledge-oriented leadership does have a positive effect on organizational innovation) is verified with a 0.95 probability.

Hypothesis 2: knowledge-oriented leadership has a positive effect on knowledge management capacity.

H0: knowledge-oriented leadership does not have a positive effect on knowledge management capacity.

H1: knowledge-oriented leadership has a positive effect on knowledge management capacity.

Based on the results of hypothesis testing, the second hypothesis is that knowledge-oriented leadership does have a positive effect on knowledge management capacity. The value of path coefficient for the direct effect of knowledge-oriented leadership on knowledge management capacity equals 0.61 and this amount is significant on the confidence level of 95%. Considering the fact that this statistical value of T is in critical period (lower than 1.96), then the researcher's claim (knowledge-oriented leadership has a positive effect on knowledge management capacity) is verified with a 0.95 probability.

Hypothesis 3: Knowledge Management Capacity has a positive effect on organizational innovation.

H0: Knowledge Management Capacity does not have a positive effect on organizational innovation.

H1: Knowledge Management Capacity has a positive effect on organizational innovation.

Based on the results of hypothesis testing, the third hypothesis is that Knowledge Management Capacity does have an effect on organizational innovation. The value of path coefficient for the direct effect of: Knowledge Management Capacity on organizational innovation equals 0.48 and this amount is significant on the confidence level of 95%. Considering the fact that this statistical value of T is in critical period (lower than 1.96), then the researcher's claim (Knowledge Management Capacity has a positive effect on organizational innovation) is verified with a 0.95 probability.

Hypothesis 4: Knowledge-oriented leadership has an effect on organizational innovation through knowledge management capacity.

H0: Knowledge-oriented leadership does not have an effect on organizational innovation through knowledge management capacity.

H1: Knowledge-oriented leadership has an effect on organizational innovation through knowledge management capacity.

Based on the results of hypothesis testing, the third hypothesis is that Knowledge-oriented leadership has an effect on organizational innovation through knowledge management capacity. The value of path coefficient for the in-direct effect of knowledge-oriented leadership on knowledge on organizational innovation through knowledge management capacity equals 0.79 and this amount is significant on the confidence level of 95%. Considering the fact that this statistical value of T is in critical period (lower than 1.96), then the researcher's claim Knowledge-oriented leadership has an effect on organizational innovation through knowledge management capacity) is verified with a 0.95 probability.

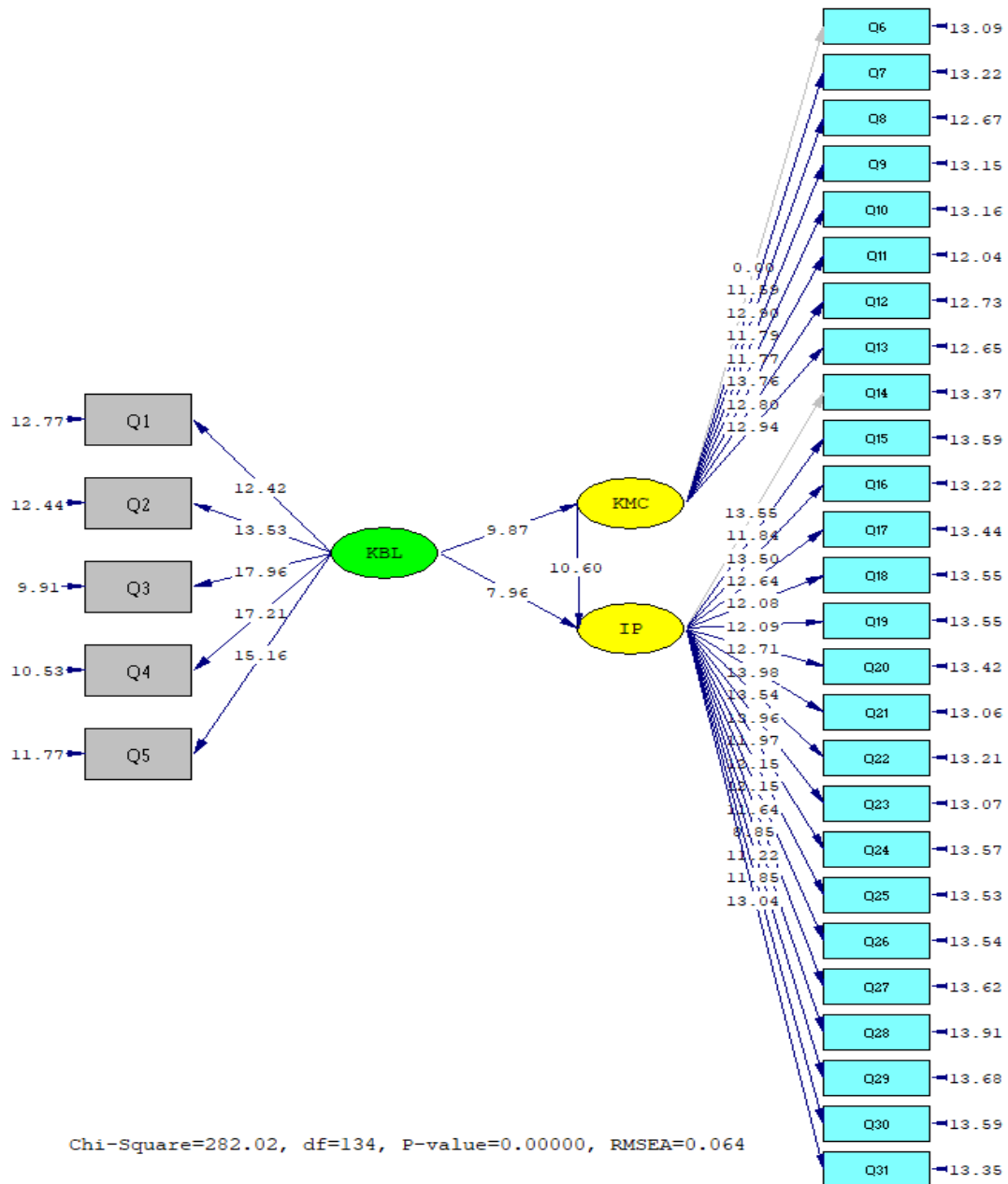


Figure 4-9 Structural Equation Modeling of Research Hypothesis in Standard mode

Figure 4.9 shows the confirmatory factor analysis and structural equation model in coefficient estimate. In this model the performance variables are “hotel fame” (independent) and word-of-mouth Electronic Marketing behavior (dependent). In this diagram the number and/or coefficients are divided into two categories. The first category is labeled measurement equations

that include the relationship between latent variables (oval) and observed variables (rectangle). These equations are known as Factor Loading 1. The second category is structural equations that includes the relationship between latent variables and is used to test the hypothesis. These coefficients are known as Path Coefficient 2.

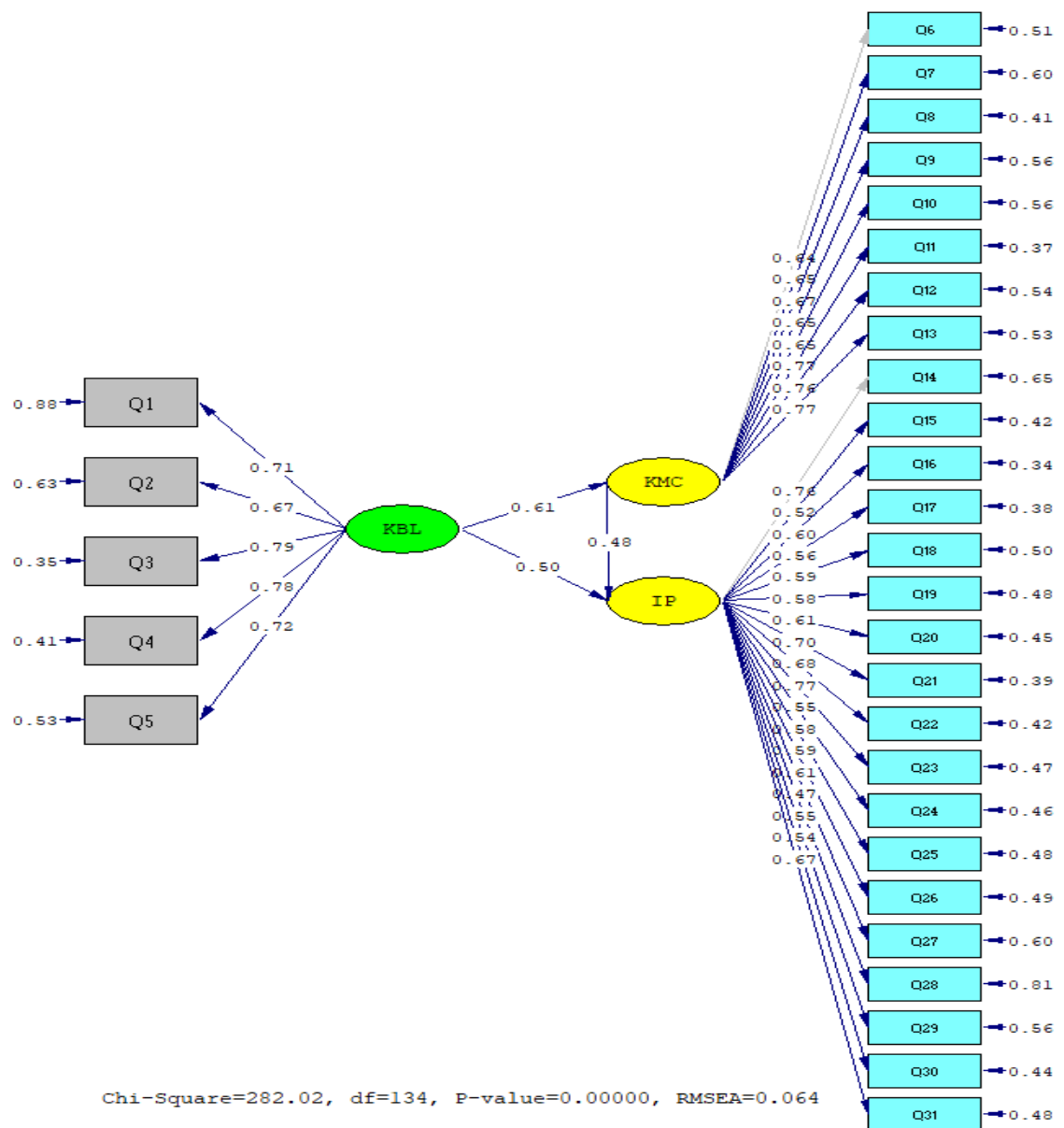


Figure 4-10 Structural Equation Model for Research Hypothesis Significance Mode

Figure 4.10 shows the model in coefficient significance mode (t-value). This model in fact tests all the measurement equations (factor loading) and structural equations using the t statistic. Based on this model the path coefficient and factor loading are significant on a confidence level of 95%, if the amount of the t value is outside the boundaries of -1.96 to +1.96.

Index	Estimated	Allowed
$\frac{K^2}{df}$	2.10	Lower than 3
Goodness of Fit index	0.93	Higher than 0.8
Adjusted Goodness of Fit	0.89	Higher than 0.8
Root Mean Squared Error of Approximation	0.064	Lower than 0.1
Comparative Fit Index	0.97	Higher than 0.9
Normed Fit Index	0.95	Higher than 0.9
Non-normed Fit Index	0.96	Higher than 0.9
Incremental Fit index	0.97	Higher than 0.9

Table 4.12 Goodness of Fit indices for structural equation model of the main research hypothesis

As it can be seen in the table above, for the model of predicting future interactions all the Fit indices of the model including the K2 on Degree of Freedom (χ^2/df), goodness of fit index (GFI), Adjusted goodness of fit index (AGFI), Normed Fit index (NFI), Non-normed fit index (NNFI), Incremental Fit Index (IFI), Comparative Fit Index (CFI) and the very important index of The Root Mean Square Error of Approximation (RMSEA) are all in ideal shape and it can be said that the data of the research model has a goodness of fit with the factor structure and theoretical foundation and this shows the conformity of survey questions with theoretical structures. Therefore, it could be said the research model is verified.

The results of the research hypothesis have been inserted in table 4.13 in full detail:

	Beta Coefficient	Test Statistics	Results
knowledge-oriented leadership has a positive effect on organizational innovation	0.50	7.96	Verification of H1
knowledge-oriented leadership has a positive effect on knowledge management capacity	0.61	9.87	Verification of H2
Knowledge Management Capacity has a positive effect on organizational innovation	0.47	10.60	Verification of H3
Knowledge-oriented leadership has an effect on organizational innovation through knowledge management capacity	0.79	7.29	Verification of H3

Table 4.13

4.6 Model Goodness of Fit

After the parameter estimates have been edited for a model and were specifically obtained, the level of fitness with the model should be determined, that is, how much does the sample input support the theoretical model? Various tests are used to describe the relationship between the observable variables. The table below shows the goodness of fit indices and model significance. Table 4.14 includes the most important indices and shows that the pattern is suitable in terms of explanation and goodness of fit. All the indices exhibit the fitness of the model in regards to the observed data. Considering the fact that χ^2 on degree of freedom is lower than 3, and the RMSEA index is lower than 0.08, and considering other index levels, the goodness of fit index is acceptable. In other words, the general model and framework of this research is deemed significant and acceptable. Table 4.14 reflects the values for the goodness of fit indices and the result of the model goodness of fit.

Index	Obtained Value	Allowed Value	Result
$\frac{\chi^2}{df}$	1.89	Lower than 3	Fitting
RMSEA	0/072	Lower than 0.1	Fitting
PNFI	0/90	Higher than 0.5	Fitting
GFI	0/92	Higher than 0.8	Fitting
AGFI	0/93	Higher than 0.8	Fitting
NFI	0/94	Higher than 0.9	Fitting
RFI	0/95	Higher than 0.9	Fitting
IFI	0/92	Higher than 0.9	Fitting
NNFI	0/93	Higher than 0.9	Fitting
CFI	0/91	Higher than 0.9	Fitting

Table 4.14 Structural Model Goodness of Fit Indices

Chapter 5 Summary of Findings, Conclusions and Recommendations

5.1 Introduction

At the end of any research activity, the researcher must present the conclusions after testing the hypotheses. The hypotheses test results are the basis for forming recommendations. Therefore, one of the most important aspects of the research that could in fact be a way to transform theory into action for success in the future is the formation of correct conclusions and reliable and appropriate recommendations. Conclusions that are based on sound analysis can solve the organization's problems that led to the design of this study. In this chapter, the conclusions of the data analysis are summarized, and by analyzing them, we try to reach the goals that were stated by the researcher in the first chapter. In the first section of this chapter, the summary of the results of the study and its goals are presented, in the next section, using the obtained information, some recommendations are made regarding the research subject and in the end, research limitations and some recommendations for future studies are presented.

5.2 Research Summary

In this research project, the effects of knowledge-oriented leadership on organizational innovation through knowledge management capacity have been studied. The other goal for this project was to determine the relationship between these variables in service companies, which were extracted through theoretical discussions and index subject background, and after undertaking the survey and obtaining data, the relationship between the variables was studied. The research method has been descriptive and survey based and in order to obtain data, a survey containing demographic data and main variable questions was used. The validity of the survey content was verified using the opinions of the field's experts and respected professors, and the credibility of the tools was verified to be on an acceptable level after preliminary experiment on a 30-person sample using Cronbach's alpha. The statistical population of the research contained all the managers and experts, from which 207 persons were chosen as sample population. First for the analysis of the obtained data on a descriptive level, we used the SPSS software and

statistical indices to describe and summarize the features of the demographic of the sample population of the research including age, education and sex. In the analytic statistics of the research, we used the LISREL and SPSS software to test the significance if the relationship between the variables, and the components and goodness of fit for the measurement model was obtained, and using structural equation modeling, the hypotheses were tested.

5.3 Findings Analysis

Hypothesis 1: knowledge-oriented leadership has a positive effect on organizational innovation.

The results obtained from structural equation coefficients show that the statistics value is significant at 95% confidence level. (Sig: 7.96). As a result, the positive effect of knowledge-oriented leadership on organizational innovation has been verified at 95% confidence level and the research hypothesis is verified. Therefore, at 95% confidence level, we can expect that the when more attention is paid to knowledge-oriented Leadership, organizational innovation will increase positively. The results of this research conform to the studies conducted by Sujinda (2014), Birasnav (2013), Lucia (2012) and Maria Donnet (2015).

Hypothesis 2: knowledge-oriented leadership has a positive effect on knowledge management capacity

The results obtained from structural equation coefficients show that the statistics value is significant at 95% confidence level. (Sig: 9.87). Therefore, at 95% confidence level, we can expect that the when more attention is paid to knowledge-oriented Leadership, knowledge management capacity will increase positively. The results of this research conform to the studies conducted by Maria Donnet (2015) and Mashbaki (2015).

Hypothesis 3: Knowledge Management Capacity has a positive effect on organizational innovation

The results obtained from structural equation coefficients show that the statistics value is significant at 95% confidence level. (Sig: 7.29).as a result, at 95% confidence level, the effect of

knowledge management capacity on organizational innovation has been verified. Therefore, at 95% confidence level, we can expect that the when more attention is paid to knowledge management capacity, organizational innovation will increase positively. The results of this research conform to the studies conducted by Sujinda (2014), Birasnav (2013) and Lucia (2012).

Hypothesis 4: Knowledge-oriented leadership has an effect on organizational innovation through knowledge management capacity.

The results obtained from structural equation coefficients show that the statistics value is significant at 95% confidence level. (Sig: 7.29). Therefore, at 95% confidence level, the positive effect of knowledge-oriented leadership on organizational innovation through knowledge management capacity has been verified. The results of this research conform to the studies conducted by Birasnav (2013) and Lucia (2012).

5.4 Practical Recommendations

- The company managers create condition in which the managers can compile short term and long term plans based on sharing knowledge while making company decisions, so that through their actions work and access to the organization's required knowledge will become a hobby for them, and in this way they will move towards a knowledge-oriented organization.
- Contact organizations that have been successful in establishing a knowledge-oriented management system and attract employee participation in this regard.
- It is recommended to bring in new marketing knowledge and production processes from outside the organization in order to develop new knowledge management measures and to use new technological advancements, so that organizational innovation can be increased.
- It is also necessary that systems compatible with the organizational innovation be provided to employees and implemented and in the end, with creating a feedback circle with the possibility of improvement, increase the tendency to share organizational knowledge via these systems. In this regard, establishing information systems suitable for

developing knowledge transfer and providing the necessary facilities to the managers and employees by holding the required training sessions is recommended.

- Use system with new technologies in the company's structure, and the new structure should proceed to design new systems and methods directly related to knowledge sharing capacities and senior managers should contact and effectively participate with organizations that have been successful in this field.
- Company managers should provide new paths for growth and advancement by creating new ideas and perspectives that will result in the improvement of acceptance for management knowledge culture. On the other hand, the company should recognize new opportunities, be open to new challenges, improve and establish a strong perspective for the future, increase the motivation of its employees and create strong and clear communications that will make the knowledge management oriented more effective and make the employees more committed to the organization.
- In order to make the access to company's management knowledge sharing system more effective, it must establish the capacity to accept the knowledge in its employees and have the key abilities for implementing the suitable process of innovation based on leading companies. The managers should induce suitable and creative change to the entirety of organizational structure and create a strong and ideal perspective for the company.
- Instead of enforcing predetermined organizational rules and regulations, employee participation must be used so that by attracting the minds of the employees and involving them in knowledge-oriented management activity, in order to increase their capabilities and internalize the principles and values on different levels of the company and create harmony and agreement, and increase the employees' trust in the status quo.
- It is recommended that along with the expansion of knowledge sharing based on understanding the needs of the employees, the company should proceed to finance from internal and external resources so that with the cooperation of different company units with each other and by taking initiative in making important decision, increase the influence of knowledge-oriented management leadership in comparison to internal and external rivals.

- In order to ensure the success of the organization especially in establishing knowledge-oriented management, it is recommended that the informational requirements of various organization units in terms of knowledge-oriented management culture should be identified by suitable scientific methods.
- Company managers on organizational level should be familiar with knowledge management's cultural processes, and have more interest and attention to the pragmatic components of knowledge-oriented management such as obtainment, preservation, transfer and implementation of the related knowledge, so that a collective agreement can be reached and the organization's goals and ideal can be achieved through collective effort.
- It is also recommended that company managers should focus on knowledge management and make expansive investments in the field of information technology with the aim to achieve the benefits of knowledge-oriented leadership and make efforts to improve organizational performance by implementing the knowledge-oriented leadership.
- Therefore, for achieving these goals, a combination of knowledge-management tools must be used in order to improve the effectiveness of knowledge-oriented management in Iran Insurance Company. Adequate schemes must be implemented to adjust the required tools to be compatible with the expected knowledge management processes and the required infrastructures must be reinforced in order to increase the effectiveness of innovational tools involved in knowledge transfer.
- Processes, methods and active guidelines of the company should be directly (periodically) subjected to review and improvement in the knowledge transfer process, so that the employees can have easy access to the required knowledge for completing their tasks.
- A team must be assigned to identify active individuals in the field of knowledge transfer and honor them the individuals should not only be honored for sharing their knowledge but must also be rewarded for using the knowledge of others. This goal can be achieved by annual promotion of personnel, in a formal ceremony or with the help of financial incentives. Establishing a positive perspective towards the method of knowledge transfer and exchange between the individuals can further increase leadership and management

effectiveness in the organization. It is also recommended the responsibilities and duties of the organization should pay serious attention to the optimal use of organizational innovation in developing knowledge transfer and exchange in the company's work process.

- Company managers should use the tools and technologies that are required for knowledge development as an opportunity to improve their capabilities (although this task requires the use of up-to-date technologies), also maintaining a positive perspective towards the creation or establishment of knowledge between the individuals can further increase the effectiveness of leadership and management of knowledge in the company in order to increase the effectiveness of knowledge-oriented management.
- The annual programs of organizations and companies should estimate a suitable budget for the development of knowledge-oriented management programs. Knowledge is property and its use, just like any other organizational property requires investment and maintenance.
- Financial resources must be available to employees and managers for conducting research and development for the purpose of developing organizational innovation.
- It is recommended to consider a position for the development of knowledge-oriented management for the purpose of devising new actions that will be specialized in obtainment and use of knowledge in management that will reconcile the opinions and knowledge of individuals in developing the effectiveness of actions related to knowledge-oriented management capability.
- It is necessary to create a suitable environment in the company that has the capacity to expand knowledge and help the individuals and units cooperate in developing actions related to knowledge-oriented management capability. Developing knowledge-oriented management potential should be among the daily tasks of the (leading team) since the development of knowledge requires flexibility and less stress on work regulations. It recommended to decrease the number of formal rules and regulations intended for work relations and decisions.
- It is recommended that the managers learn their vital activities and decisions in order to reach the full knowledge potential for the company and have a better, faster and more

direct effect on achieving desirable competitive positions and conduct more effective actions in regards to organizational innovation.

5.5 Recommendations for Future Research

Due to time limitation and the absence of other tools for the observations and surveys, it is recommended to use these tools for obtaining data in regards to research variables along with the survey to reach more comprehensive conclusions.

Also future researchers can use the model utilized in this research in service companies and compare the results with the data obtained in this research.

In order to check the generalizability of the results of this research paper, we recommend that this study be conducted in other companies and for their results to be compared with the results of this paper.

It is recommended to assess the effect of knowledge-oriented leadership on organizational innovation by reviewing the conducted research and identifying more effective variables and adding them to the demographic.

In future research, mediation variables should be studied, other data obtainment methods must be used and the relationships tested in this research must be re-examined, specially the results that differ from previous studies.

5.6 Research Limitations

One of the research limitations is the inherent limitation of the survey. Because the answers given to the survey questions based on audience interpretation may not conform to reality and this fact can affect study results. While in the cases of some of the research variables such as organizational innovation some information was obtained by observation and interviews, the use of only one data obtainment tool (Survey) and the lack of ability to use other obtainment tools such as observation, interviews and etc. due to the absence of required licenses, time limitations or lack of cooperation from the demographic were among the limitations experience by the researcher in this study.

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