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THE SURVEY OF THE IMPACT OF CUSTOMER KNOWLEDGE MANAGEMENT (CKM) ON CONTINUOUS INNOVATION AND FINANCIAL AND NON-FINANCIAL PERFORMANCE OF NOOR CREDIT INSTITUTION

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ABSTRACT

This paper surveyed the impact of customer knowledge management (CKM) on continuous innovation and financial and non-financial performance of Noor Credit Institution. This paper is fieldwork and in terms of methodology is causal and in terms of the purpose is practical. The statistical population of this study is consists of the employees of the Noor Credit Institution in the country which were selected by available sampling method. To collecting data, the questionnaire of Taherparvar et al. (2013) article is used. With respect to achieved results from structural equation technique, it found that the knowledge management had positive impact on professional performance of Noor Credit Institution. Also, the innovation ability had positive impact on professional performance of Noor Credit Institution and these three hypotheses are accepted. In fourth hypothesis it was found that the indirect effect of customer knowledge management on professional performance of Noor Credit Institution is more than the direct effect of customer knowledge management on professional performance which accordingly, it can be concluded that with respect to this increasing influence on the model, the intermediary role of innovation ability was confirmed and it becomes clear that customer knowledge management, by innovation ability, had positive impact on professional performance of Noor Credit Institution and this hypothesis is accepted.

Keywords: Customer Knowledge Management, Performance, Continuous Innovation, Performance

INTRODUCTION

Over the past years, the importance of external sources, particularly customer knowledge, has been highlighted by both practitioners and academics (Joshi, 2004). Today's customers have become more innovative and active and can easily communicate with other customers and firms anywhere in the world. Therefore, customers have valuable information and knowledge, which can be used as important sources for competition (von Hippel, 2001; Bolton and Shruti, 2009; van Doorn, 2010; Hoyer et al., 2010). However, customer knowledge does not constitute a strategic advantage by itself; it needs to be managed (Hollebeek, 2013). By increasing the position of the customer in the marketplace, new approaches to essential questions such as "how to innovate", "how to achieve a competitive advantage", "how to create value" or "how to reach superior

performance" have to be considered. For example, von Hippel (1986) and Chesbrough (2006) have pointed out the importance of customer information, knowledge and competence in the innovation process. According to Belkahl and Triki (2011), absorptive capability is necessary for innovation capability. Cohen and Levinthal (1990) have stated that absorptive capability allows firms to absorb external knowledge and manage it internally. This capability helps firms to identify outside opportunities and provides new knowledge for innovation. Matthing et al. (2004) have argued for a newly customer-centric view where competitive advantage is defined and created with the customers. By rejecting the traditional models of closed innovation and the firm-centric view of value, these new approaches emphasize the use and management

of customer knowledge as the main source for providing new outcomes (Smith and McKeen, 2005; Monica Hu et al., 2009). Hence, firms have recently started to implement customer knowledge management (CKM) to engage customers in the firms' processes and utilize their knowledge and ideas (Nambisan, 2009; Ngo and O'Cass, 2012)

CKM is a new organizational approach to capturing, sharing and using the information, knowledge, experience and ideas related to customers. By engaging customers in a firm's process, CKM connects external environment to internal environment (Chen, 2008) and transfers and shares information not only among customers and within firms but also between customers and firms (Zhang, 2011). In fact, when CKM is applied, customers' roles change from being purely passive recipients of products/services to being coequal partners in the process of adding value (Gibbert et al., 2002)

In recent years, CKM has been regarded as a key source for innovation capability and business performance (Tzokas and Saren, 2004; Rollins and Halinen, 2005; Rupak, 2008). Through effective use of CKM, absorptive capability can be increased by a process of identifying, disseminating and applying knowledge from, for and about customers (Sulaiman et al., 2011; Hoyer et al., 2010). As Adams (2003) and Cardinal (2001) have mentioned, availability of knowledge is essential for innovation. Therefore, by improving absorptive capability, more knowledge is provided for the innovation process and firms then have greater innovation capability.

On the other hand, according to the knowledge-based theory, competitive advantage and superior performance are strongly dependent on firms' knowledge. With CKM, firms create new knowledge and learn from it to enhance their competitive advantage (Su et al., 2006) because new knowledge developed today will become the core knowledge of tomorrow.

By considering customer knowledge as a main source of new knowledge, and through its effective management, firms can better improve their ability to perform and to compete against their competitors (Yeung et al., 2008)

In this paper, we argue that CKM enables firms to extract more from external resources, which enhances their innovation capability and firm performance. Despite the importance of CKM, the fundamental relationships among CKM, innovation capability and business performance have not been examined yet in previous studies. The present research addresses this gap by exploring the relationships among CKM,

innovation capability and business performance. Our research further differs from prior works in three ways. Few studies have linked CKM and business performance directly; this research tries to fill this gap. Moreover, this study not only testifies to the effect of CKM on business performance but also explores the effect of CKM on innovation capability. Finally, by discussing the effect of CKM on innovation capability, which leads to superior business performance, this study proposes that when complex and unpredictable situations happen, managers should simultaneously focus on customer-oriented strategies and innovation to outpace their competitors. The Noor Credit Institution, in the third millennium, as a pioneering institution in the creation of knowledge to meet the needs and goals of the organization, stands step. This study aims to survey the impact of customer knowledge management (CKM) on creating innovation in the organization and their impact on financial and non-financial performance.

RESEARCH LITERATURE

Knowledge management

Stamps, defines the knowledge management as providing the knowledge required at the required time and place for the someone in need (Salavati et al., 2010).

Henry & Hedipth, know the knowledge management as a system in which manage the collective knowledge assets across the organization (explicit and tacit knowledge) and is a spiral process that involves the identification, validation, storage and refining of knowledge for users to have access to it. (ibid., 62).

Knowledge management is a practical field that encourages and strength the way to have mutual benefit to create, capture, organize, and use information (Ja'fari Moghaddam, 2009).

Knowledge

Knowledge is a concept which is created from thinking, and without it deemed to be information and data. Only is by this concept that information get vital and become wise. Knowledge is an unstable mix of experiences, values, contextual information, and experts' insights that the makes framework for the evaluation and integration of new experiences and information (Hadizadeh Moghaddam et al., 2009)

Customer knowledge

To succeed in today's dynamic market, an important part i.e the customer's knowledge should be considered. Customer knowledge is increasingly a

key strategic resource in any company's success that has been recognized. Customer knowledge is an essential intangible asset for any organization; because it helps organizations to organize themselves in order to generate value. Marketing science researchers recommend that employees must take every opportunity to interact with the customer to enrich their information base about the customer.

Customer's behavior

The customer's behavior is defined as the study of the purchase units and exchange processes, which involve the acquisition, use and withdrawal of goods, services, experiences and ideas is defined as (Moon, 1381).

Organizational Performance

Performance is measurable results, organizational decisions and actions, that represents the success and achievements have been won (Bayazi Tahraband et al., 2008, 50).

Performance literally means the state or quality of function. Therefore, the organizational performance is a general structure that refers to how organizational operations. The most famous definition of performance offered by Neely et al.: the process of explanation of the quality effectiveness and efficiency of the past actions.

According to this definition, the function can be divided into two components:

- Efficiency which describes the organization to how to use the resources in services production or products, namely, the relation between the real and the ideal combination of inputs to produce specific outputs.
- Effectiveness which describing the level of achieving to organizational goals (ibid., 8).

Innovation

Innovation means the acceptance and application of new knowledge and innovation, including the ability of the organization to accept or create new concepts and application of these ideas to development and modification of new products, services, procedures and work processes. Also the innovation is an intangible resource that is impossible to imitate too. In other definitions, each type of thinking, behavior, or what is qualitatively is new for available forms (Yoosefi et al., 2010).

Theoretical framework and conceptual model of the research:

Owing to the importance of customers and their increased competencies and abilities, firms should engage customers in their internal process (Teece,

2010) to manage customer knowledge and access to important sources of information and ideas (Rollins and Halinen, 2005). By acquiring, sharing, transferring and utilizing information, knowledge and ideas related to customers, CKM effectively manages knowledge from the customer perspective and provides important sources for novel ideas. These can be used to develop new products/services and new solutions for satisfying customers' needs and problems (Garcia-Murillo and Annabi, 2002; Xu and Walton, 2005; Peng et al., 2009).

CKM supports the exchange of customer knowledge within a firm and between customers and firms to learn from, about and with customers. In fact, CKM is a learning process from which both customers and firms, sharing their experience and knowledge, learn from each other, solve their problems and take advantage of the exchange process benefits (Plessis, 2007)

CKM improves the absorptive capacity of a firm, which is defined by Cohen and Levinthal (1990) as a special capability that allows a firm to gain and absorb external knowledge and manage and develop it internally. In fact, CKM recognizes and identifies the value of new external knowledge and invests in customers' competencies to assimilate and utilize them for commercial ends, which is essential for a firm's innovation (Belkahl and Triki, 2011)

To access customer knowledge takes a lot of effort because it is embedded in the customer's mind as tacit knowledge. Through CKM, customers are encouraged to share their experiences with other customers to solve their problems. Knowledge workers can use these experiences and extract useful information from them; these then become an important source of innovative ideas and competitive advantage. However, exchanging customers' tacit knowledge (customers' experience, ideas, information, problems, needs and data) to explicit knowledge (useful ideas for solving customers' problems and helpful ideas for new innovative services or for improving current services) is not as easy as it may seem. In Figure 1, rectangle 1 shows the position of customer knowledge and rectangle 4 shows the position of firm knowledge. CK does not have a direct connection with FK. firms' knowledge with firms' processes. The linkage between rectangles 4 and 3 indicates the complete merger of customer knowledge with firm knowledge. In rectangle 4, customer knowledge has passed through different levels and has penetrated to a deeper layer of the firm. Therefore, the customers' usual data and information becomes useful, valuable and inimitable

knowledge for firms, which can not only be used to solve customers' problems but also becomes an important source of innovative ideas and competitive advantage CKM pays attention to both customer knowledge and firm knowledge and invests in both external and internal competencies, so it enables firms to create new products and services to respond to variable market situations. Data, information and knowledge, which are gathered by CKM, are important sources for competitive advantage because they are embedded in a firm's process and are difficult for competitors to imitate (Garcia-Murillo and Annabi, 2002; Campbell, 2003; Zhang, 2011)

CKM consists of three main flows: knowledge from customers, knowledge about customers and knowledge for customers (Garcia-Murillo and Annabi, 2002; Gibbert et al., 2002; Gebert et al., 2003). Using knowledge from customers and knowledge about customers, CKM can inform firms of customers' changing needs, and through knowledge for customers, CKM can provide required information for customers.

Knowledge from customers is customers' information about products, competitors and markets, which is acquired from customers to understand the external environment (Garcia-Murillo and Annabi, 2002). This kind of knowledge has a tacit nature and improves innovation capability, which leads to new product advantages. However, a greater challenge for firms is to exploit knowledge from customers and turn it into explicit knowledge (Desouza and Awazu, 2005). The use of social media, such as discussion forums, is an important tool used by CKM that can help firms gain knowledge from customers. In these forums, diverse people with different levels of knowledge can express their needs, problems and doubts (Maswera et al., 2006), and firms can use this information to make sense of community perspectives to develop new ideas, improve current products/ services and launch new and innovative products/services.

Knowledge about customers has an explicit nature and includes looking into customers' backgrounds, transaction histories, customer motivations and wants, etc. which help firms better understand customer's needs (Smith and McKeen, 2005).

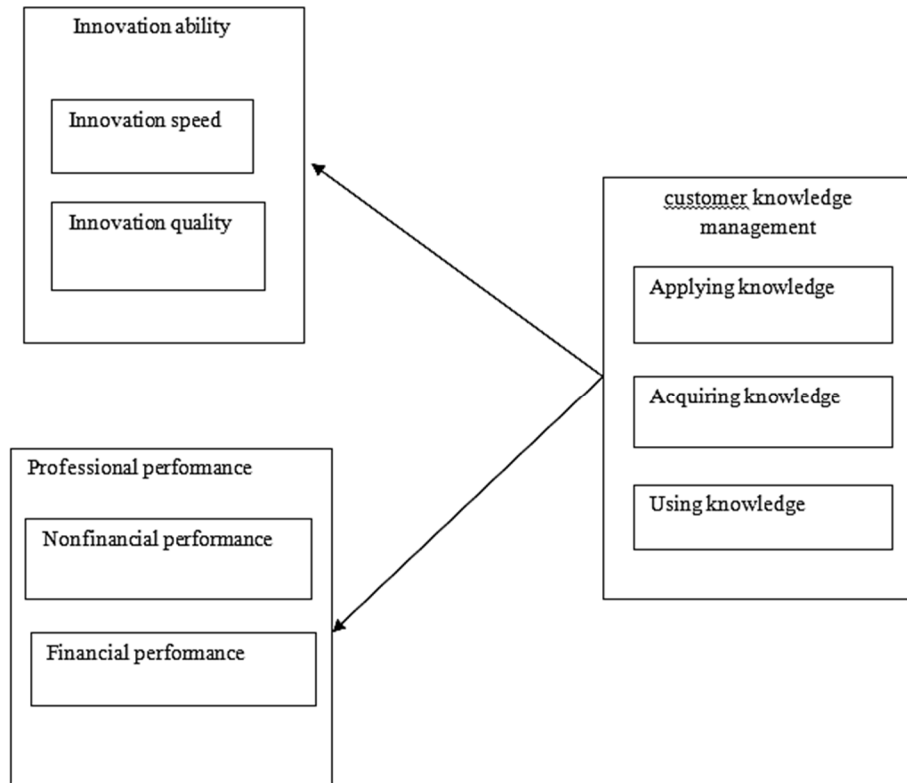
Knowledge for customers includes everything that a firm provides for customers to help them, satisfy their knowledge needs and promote the level of their knowledge. The nature of this knowledge is explicit and affects the customer's perception of service quality (Gebert et al., 2003). Document repositories and workflow applications are CKM tools, which

access information for customers and help them to make better decisions. Firms can use these tools to provide knowledge for customers (Lopez-Nicolas and Molina-Castillo, 2008). In general, knowledge from customers creates long-term benefits by developing new ideas and continuously improving products/services; knowledge about customers creates short-term value by improving effectiveness; and knowledge for customers creates short-term value by improving customers' experience and information and increasing a firm's validity (Smith and McKeen, 2005). Using customer knowledge flows to establish a co-creative environment for customer participation and interaction can help firms attain superior performance (Rollins and Halinen, 2005). For this reason, firms must put themselves in customers' mindset and pay attention to their intrinsic motivation. For example, to provide an interactive environment, many banks now offer cost-effective interactive sites to create highly personalized services to customers (including the virtual counter) and to diminish the real impact of the economic slowdown on customers' investment portfolios, thereby increasing the motivation of customers to participate as well as reducing the cost. In this way, banks have a special database of customers which allow them to be accessible to the customer (Gibbert et al., 2002)

Furthermore, creating a knowledge sharing platform can be useful for providing an interactive environment. This platform allows firms not only to transact business (pay online, place orders) but also share and exchange knowledge (e.g. share good and bad experiences with other customers). Holcim.com is one of the successful firms using a knowledge sharing platform for engaging customers in the firm's process. Holcim's customers say: "we like the firm's knowledge sharing platform, because it listens to what we tell it and really take our comments very seriously!" Another example of a successful firm using CKM is Threadless.com, a T-shirt manufacturer. This firm obtains the graphic designs for its T-shirts from its consumers who submit designs online. The most popular designs that are chosen by the Web site's members are sent into production and sales. In addition, chosen designers receive a monetary award and get to keep the rights to their designs (Beer, 2007; Liu, 2007). This process not only encourages many customers to register on the Web site and share their ideas and designs with the firm but it also helps the firm to create new designs that are accepted by its customers. In this study the researcher using the similar research which was undertaken by Taherparvar et al.(2014), tries to

survey the impact of customer knowledge management on continuous innovation and financial and nonfinancial performances. In analytical model which was introduced by Taherparvar et al., the

customer knowledge management variable is as independent variable and innovation ability and professional performance are as independent variables of the research.



RESEARCH HYPOTHESES

Primary hypothesis

The customer knowledge management has significant impact on innovation continuity and financial and non-financial performances of Noor Credit Institution.

Secondary hypotheses:

1. Customer knowledge management has significant impact on innovation ability of Noor Credit Institution.
2. Customer knowledge management has significant impact on financial and non-financial professional performance of Noor Credit Institution.
3. Innovation continuity has significant impact on financial and non-financial professional performance of Noor Credit Institution.

Research method

In this study, the research's kind based on the purpose is practical. In practical research, the researcher after various stages of research and testing hypotheses have been proposed, achieve results that will ultimately attempts in line with the results, presents proposals for the statistical population. Also,

this research in terms of the nature and method is causal because the researcher tries to survey the impact of the customer knowledge management on innovation continuity and financial and non-financial professional performance. The field method is used to collecting data related to testing the research's hypotheses. The research needed data are collected using questionnaire.

In this research, to reliability evaluating and measuring in primary stages of the study, data were collected from 34 questionnaire, then to validity determination, the SPSS software is used and the Cronbach's alpha coefficient for all of the questions of the questionnaire was 0.943, and with respect to this that this amount is more than 0.7, so the research's questionnaire has enough validity.

To validity surveying the research questionnaire, to achieving the content validity, by opinion of relevant professors and experts, has been exploited. Generally, for validity measuring of the questionnaire, primarily the initial questionnaire is designed and after presenting to relevant professors and applying their corrective comments, the 34 revised questionnaire were distributed among the statistical population and

the experts in order to validity surveying of the questionnaire and obtaining the opinions of respondents on questions designed and after going through all these stages, the final questionnaire has been prepared for distribution on a larger scale.

Statistical population and determining the sample size:

The statistical population of this study is consists of the employees of the Noor Credit Institution of the country. In this study, according to this that the structural equation technique is used to data analyzing, to determining the sample size, the following formula is used:

$$5q \leq n \leq 15q$$

Because the questionnaire has 27 questions, the sample must at least be between 135 and 405

persons. After using available sampling method, finally the 209 questionnaires were completed.

DATA ANALYZING

The research's hypotheses testing are performed by structural equation modeling. The structural modeling is a very general and powerful multivariate analysis technique from multivariate regression family and another definition of general linear model which tests a set of regression equations simultaneously. To analyze the hypothesis of this research and according to the model presented in relation with surveying the effect of the independent variable (customer knowledge management) on the dependent variables (innovation capability and professional performance), the structural equation was used.

Average test for variables based on gender component

Table. 1: The result of T-test based on gender component

Upper limit	Lower limit	Significant level	Freedom degree	t-statistic	F-significant level	F-statistic	status	variable
0.11242	-0.18382	0.635	205	-0.475	0.322	0.986	Equality of variance	Customer knowledge management
0.11785	-0.18925	0.646	117.737	-0.460			Inequity of variance	
0.22104	-0.13223	0.621	205	0.496	0.730	0.119	Equality of variance	Innovation capability
0.22728	-0.13846	0.632	118.101	0.481			Inequity of variance	
0.24201	-0.12826	0.545	205	0.606	0.852	0.035	Equality of variance	Professional performance
0.24801	-0.13426	0.557	118.858	0.589			Inequity of variance	

As can be seen in the table above, the significant level for the variables (customer knowledge management, innovation ability, and professional performance) is more than the error of 0.05.

Due to this it can be concluded that there is not significant difference between the average levels of

gender (male and female) in response to the variables of (customer knowledge management, innovation ability, and professional practice).

ANOVA for research variables based on the age criterion

Table. 2: The ANOVA test results based on the age

Significant level	F	Average of squares	Freedom degree	The sum of squares		variables
0.352	1.096	0.297	3	0.837	among the groups	education
		0.255	202	51.455	In the group	
			205	52.292	total	
0.529	0.740	0.256	3	0.796	among the groups	Services compensation
		0.358	202	72.408	In the group	
			205	73.402	total	
0.613	0.605	0.244	3	0.732	among the groups	staffing
		0.403	202	81.424	In the group	
			205	82.156	total	

As can be seen in the table above, the significant level for the variables (customer knowledge management, innovation capability, and professional performance), is more than the error level of 0.05. According to this it can be concluded that there is no

significant difference between the average of different age levels in response to variables (customer knowledge management, innovation capability, and professional performance).

ANOVA for research variables based on the education component:

Table. 3: ANOVA results based on education component

Significant level	F	Average of squares	Freedom degree	The sum of squares	variables
0.275	1.301	0.337	3	1.011	among the groups
		0.259	203	52.566	In the group
			206	53.577	Total
0.893	0.205	0.076	3	0.227	among the groups
		0.369	203	74.944	In the group
			206	75.171	Total
0.999	0.010	0.004	3	0.012	among the groups
		0.412	203	83.543	In the group
			206	83.555	Total

As can be seen in the table above, the significant level for the variables (customer knowledge management, innovation capability, and professional performance), is more than the error level of 0.05. According to this it can be concluded that there is no

significant difference between the average of different age levels in response to variables (customer knowledge management, innovation capability, and professional performance).

Survey the model appropriateness of the research:

Table. 4: The results of model appropriateness index

AGFI	GFI	IFI	CFI	NNFI	NFI	RMR	RMSEA	χ^2 / df	Appropriateness index
more than 0.8			more than 0.9			less than 0.08		3 less than	level standard
0.9	0.96	0.99	0.99	0.97	0.98	0.013	0.088	2.59	level research

According to the results of surveying indices, it can be concluded that the collected data were appropriate and the research model has suitable appropriateness.

Diagram (1), shows the t coefficients for measuring model (t coefficients for questions and variables related to them), and the structural model (t coefficients for the proposed paths in the model among the variables).

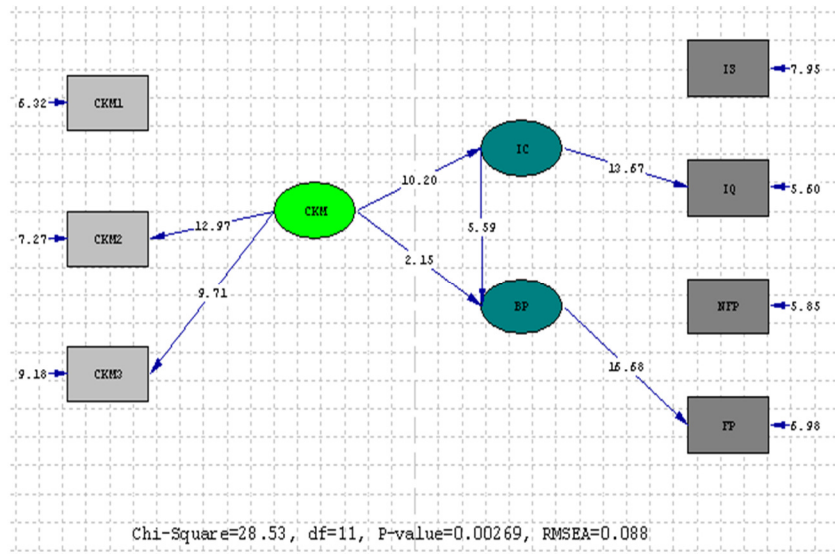


Diagram .1 t-statistic for structural model and measurement

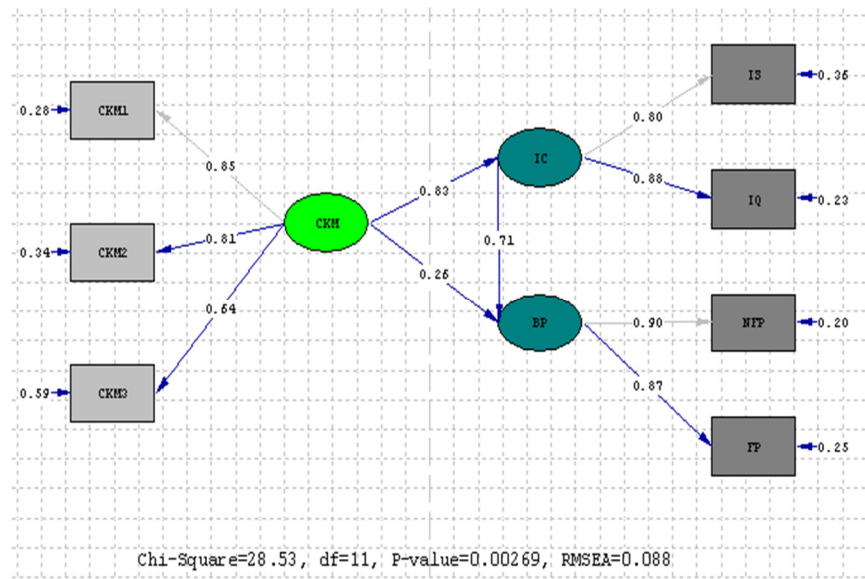


Diagram. 2 standard coefficient of structural model and measurement

Also, the diagram (2) shows the standardized coefficients for the measurement model (standardized coefficients for questions and variables related to them) and the structural model (path coefficients for the proposed paths in the model and among the variables).

Path between all independent variables with dependent variables with Gamma coefficient and path between all independent variables with dependent variables with Beta coefficient identified and named. So, in the model presented, two paths of gamma and one path of beta are planned which are tested according the testing the three hypotheses.

In the model presented above, the variables are introduced by acronyms, which accordingly: the Customer Knowledge Management variable is (CKM) which formed from the components of (using customer knowledge (CKM1), knowledge about the customer (CKM2), the application of knowledge to the customer (CKM3). Innovation capability with (IC) acronym has been introduced and has dimensions of (rate of innovation (IS) innovation and quality (IQ)). Also the professional practice (BP) presented with two dimensions (non-financial performance (NFP) and financial performance (FP)).

The results of research hypotheses testing

Table. 5: The results of hypotheses testing

result	Standard coefficient	t- statistic	Path kind	path	hypotheses
Acceptance of the hypothesis	0.83	10.20	Gamma	CKM → IC	First hypotheses
Acceptance of the hypothesis	0.26	2.15	Gamma	CKM → BP	Second hypotheses
Acceptance of the hypothesis	0.71	5.59	Gamma	IC → BP	Third hypotheses
Confirming the Intermediary role of the IC	Total effect 0.84	Indirect effect 0.28	Direct effect 0.26	CKM → IC → BP	Fourth hypotheses

DISCUSSION AND CONCLUSION

The first hypothesis surveys the customer knowledge management (CKM) on innovation capability of Noor Credit Institution. With respect to this that the t-statistic is equal to (10.20) and this amount is not interval (96/1, 96/1), therefore it can be concluded

that the hypothesis is significant. Hence it becomes clear that customer knowledge management has a significant effect on the ability of innovation of Noor credit institution. On the other side, considered path between two variables of customer knowledge management and innovation ability, given that is

between the independent variable and the dependent variable is gamma (0.83) and is positive and significant. With respect to achieved results of this hypothesis, it is clear that customer knowledge management has a positive impact on the innovation capability of Noor credit institution. According to confirmation of this hypothesis, then it can be concluded that customers play a significant role in enhancing the innovation capability of the institution. So, the Noor credit institution must consider the customer's role, and by strategies which are designed, try to manage and consider this power in terms of knowledge etc.

According to the second hypothesis, customer knowledge management, has impact on professional performance of Noor credit institution I. Since the t-statistic is equal to (2.15) and this amount is not in (-1.96,1.96) interval, so it can be concluded that this hypothesis is significant. So, it is clear that customer knowledge management has a positive impact on the professional capability of Noor credit institution. On the other side, considered path between two variables of customer knowledge management and professional capability, given that is between the independent variable and the dependent variable is gamma (0.26) and is positive and significant. According to the results of this hypothesis, it is clear that the customer knowledge management has positive impact on professional performance of Noor credit institution and this hypothesis is accepted. According to confirmation of this hypothesis, then it can be concluded that customers play a significant role in enhancing the professional capability of the institution. So, the Noor credit institution must consider the customer's role, and by strategies which are designed, try to manage and consider this power in terms of knowledge etc.

In third hypothesis the innovation capability impact on professional performance of the Noor Credit Institution has been surveyed. Since the t-statistic is equal to (5.59) and this amount is not in (-1.96,1.96) interval, so it can be concluded that this hypothesis is significant. So, it is clear that innovation capability has a positive impact on the professional capability of Noor credit institution. On the other side, considered path between two variables of innovation capability and professional performance, given that is between the independent variable and the dependent variable is gamma (0.71) and is positive and significant. According to the results of this hypothesis, it is clear that the innovation capability has positive impact on professional performance of Noor credit institution and this hypothesis is accepted. With respect to the

confirmation of this hypothesis, then it can be concluded that the innovation capability of the Institution leads to increasing the professional performance of the Institution, therefore, this Institution must have special consideration to the innovation and creating the innovation in the Institution.

Fourth hypothesis: CKM has impact on the professional performance by innovation capability. According to the results it is obvious that the indirect impact of the CKM on professional performance of Noor Credit Institution (0.58) is more than the direct impact of the CKM on professional performance (0.26) which accordingly, it can be concluded that with respect to impact increasing in the model, the intermediary role of the innovation capability is confirmed and it is cleared that CKM has positive impact on the professional performance by innovation capability and this hypothesis is accepted. In this hypothesis, the knowledge management increases the professional performance by the mediator variable, in other words, the innovation capability, so, in this regard, the Institution in addition to its CKM, should take into consideration the organizational innovation role to achieve the professional performance by its CKM and organizational innovation.

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