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# Investigate the Effect of Knowledge Management on Customer Relationship Management (Case Study: Mellat Bank, Yazd City)

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## **ABSTRACT**

Nowadays creating and maintaining customer relationship is discussed not only to sell products and services, but also to access information and knowledge a new concept in the form of knowledge management systems. The main purpose of this study was to investigate the relationship between knowledge management and customer relationship management in the branches of Mellat bank in Yazd city. This study is applied research in term of purpose and descriptive and field to collect data collection. Statistical society of this study includes all employees, assistants and administrators working in Mellat Bank of Yazd city. 170 samples were selected using Cochran Formula. Then, comprehensive information on the relationship between knowledge management and management of customer relationships acquired by distributing researchers made questionnaires. In this study, descriptive analysis was used to display demographic characteristics of statistics as well as deductive statistical tests including Pearson correlation analysis and structural equation modeling (SEM) was used to investigate and prove the hypotheses.

**KEYWORDS:** Knowledge Management, Customer Relationship Management, Products and Services, Structural Equation Modeling (SEM)

#### 1. INTRODUCTION

Nowadays, there is a growing recognition in the business community about the importance of knowledge as a critical resource for organizations. With the transition from a traditional economy based on knowledge-based economy resources, knowledge has become one of the underlying assets of the organization and its management seems necessary. (Vignali et al, 2001) In other words, the success of organizations in the economic sphere stems their ability to capture, encode and transfer of knowledge in a manner more efficient than competitors. (Chang et al, 2014) Successful organizations create competitive advantage by reducing control and increasing learning which is obtained through creation and sharing of new knowledge continuously. What is certain is attention to knowledge and knowledge management in the 21st century. (Chan & Cui, 2004) In short, organizations and companies nowadays are dealing with four concepts:

- Mission: what they are trying to do.
- Competition: how to achieve competitive sector
- Efficiency: How to deliver Results
- Change: how to deal with changes

Knowledge management can improves abilities of companies and organizations to do four mentioned concepts. In other words, we can say that knowledge management is a systematic approach to create, receive, organize, access and use of knowledge and learning in organizations and companies and its advantages include improving decision-making, greater flexibility, increasing profits, reducing hyperactivity, increasing productivity, creating new business opportunities, reducing cost, greater market share and improving employee motivation. Knowledge Management can be used for various activities such as: normal, logical, complex and unexpected activities.

Globalization of trade and economy and dynamic competition has changed the role of consumer in the organizations. Todays, enterprises look customers not as a consumer. In today's competitive world, customers are the prime concern of companies and their satisfaction is the main factor in competitive advantage. Meeting customers' needs fully and identifying their demands, expectation and intentions to buy products are necessary to satisfy them and companies to gain competitive advantage should focus on customers and the meet their needs. (Better than competitors) (Salar, 2012) Therefore, this study is trying to find the position and influence of knowledge management on customer satisfaction and customer relationship management. This study seeks to identify dimensions of knowledge management and customer relationship management to review the relationship between two variables in the study. (Mellat Bank)

#### 2. Problem Statement

Today is the era of knowledge-based organizations. Knowledge management has given serious consideration to new theories, such as community-oriented knowledge management, which aims to achieve

enormous resources of our customers to achieve new knowledge resources. Nowadays, creating and maintaining customer relationship is discussed not only to sell products and services, but also toaccess their knowledge and information as a new concept in from of knowledge management systems. (Wang, 2014)

Although with the addition of the number of channels, customer relationship management also becomes more difficult. Applying customer relationship management techniques help businesses to understand customer behavior and change business process that has placed in the way of customer service. In fact, CRM helps business to realize customer's value and invest to improve communication. Understanding customers morehelps to respond their needs as well. (Khoramabadi and Hedayati, 2012) In fact, the main question of this study is the extent to which knowledge management through integrating knowledge sources can improve factors such as customer satisfaction, customer loyalty and help attract new customers? The main purpose of this research is to attempt to determine the effects of customer relationship management on knowledge management, customer satisfaction, customer loyalty, customer acquisition and customer.

#### 3. Theoretical Foundations

### 3.1 nature and definition of knowledge management

Nowadays, knowledge management is most important asset of organizations and is a powerful tool for success and progress both public and non-governmental organizations. Because organizations are recognizing the fact that human beings and human knowledge constitutes a valuable asset of each organization and focus on human knowledge to successfully compete and survive in today's complex and dynamic world more than ever. (Afrazeh, 2007)

Experts have provided many different definitions of knowledge management. In terms of Pet rash, knowledge management is acquire right knowledge to the right people at the right time and the right place, so that they can achieve the goals of the organization to use knowledge. (Nabavi, 2006) Davenport and Prusak (1998) believe that knowledge management, operation and development of an organization's knowledge assets is to achieve the goals of the organization. (Davenport & Prusak, 1998) Serban and Luan (2002) states thatknowledge management is a systematic and organized approach in organizations so that they can take advantage of both explicit and tacit knowledge and, which in turn will lead to the production of new knowledge. (Serban & Luan, 2002) Grodin (2006) believes that knowledge management is knowledge acquisition, knowledge creation and transforming it into a usable form, maintenance and discovery and reuse it. (Lytras et al, 2008)

# 3.2 knowledge management constituents

Aspects of knowledge management in different periods show that on this issue, there is no attitude and vision. Some Comments considered technical and technological factors and others on human and cultural factors, and the third group combination of these factors in the success of knowledge management. (Farbod, 2014) In a study by Mirghafoori and colleagues (2010), knowledge management structure in this part has identified to show the capacity expansion of knowledge management in the company, So that the component of knowledge management includes knowledge acquisition, knowledge sharing and application of knowledge. Sadeghi et al (2010) examined the relationship between organizational culture and knowledge management and founded components of management of knowledge as Identifying goals, identify knowledge, knowledge acquisition, knowledge development, knowledge sharing, knowledge application, maintenance knowledge, knowledge assessment and knowledge management. Table 1 shows the results of component of knowledge management resulted the literature review.

Table 1: Summary of examined knowledge management components

Table 1. Summary of examined knowledge management components			
Year of publication	examined knowledge management components	Name of researcher	
2014	Knowledge creation, knowledge preservation, knowledge, application of knowledge	Farbod	
2014	Knowledge acquisition, knowledge dissemination, responding knowledge, policies and strategies	Heidari and Rafiei	
2014	Sharing knowledge, measure knowledge, architectural knowledge, knowledge creation, knowledge repositories	Faraj poor khanaposhtani and Khosravi	
2014	Knowledge creation, storage, preservation of knowledge, dissemination of knowledge	Yavarzadeh and Heidari Poorafshari	
2014	Knowledge acquisition, knowledge transfer, application of knowledge, protection of knowledge	Hossein Hosseinabad	
2011	Knowledge creation, knowledge registration, knowledge refinement, knowledge dissemination and knowledge application	Keyvan ara et al	
2009	Knowledge acquisition, knowledge sharing and application of knowledge	Mirghafoori et al	
2009	Identifying goals, identify knowledge, knowledge acquisition, knowledge development, knowledge sharing, knowledge application, knowledge maintenance, knowledge assessment and knowledge management	Sadeghi et al	
2014	Identify knowledge, knowledge dissemination, knowledge development, application knowledge	Renz et al	
2014	Knowledge storage, share knowledge, application of knowledge and learning	Ren yang et al	
2015	Knowledge production, storage and transfer of knowledge, knowledge dissemination and application of knowledge	Mora et al	
2014	Storage of knowledge, transfer of knowledge, application of knowledge and create knowledge	Donat and Chanchezli Pablo	

### 3.3 The nature and definition of customer relationship management (CRM)

Customer relationship management is an integrated information system that can be present activities of planning and control to customers. Factors that create value for customers and achieve it simply is not possible for a competitor. To achieve a competitive advantage to be ahead of the competition, from the perspective of customer value and better understanding of the competitor. Under circumstances where the factors of competitive advantage, constantly changing only sustainable competitive advantage, continued to identify these factors. The success of an organization depends on understanding the business rules. Rules that create value for the customer. (Lahijanian, 2005) Customer relationship management is the creation of a single connection to a customer and maintain the value of profitable customers (Hassanzadeh and PoorFard, 2003) Customer Relationship Management includes the processes that now organizing and way of communication with the customer and their future. Customer Relationship Management is a business strategy to establish and maintain long-term, profitable customer relationships. Successful CRM programs with organizational philosophy that revolves around the needs of customers integrate their activities. Customer relationship management is a crossfunctional process that aims to enhance customer value by integrating information technology and marketing strategies. (Salehi, 2009)

# 3.4 component of customer relationship management (CRM)

Customer relationship management consists of dimensions and key components in the implementation of projects related to customer satisfaction, which should be taken into consideration. Figure 1 shows key components of customer relationship management.

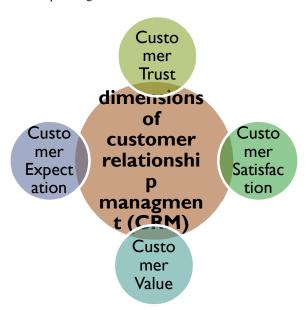


Figure 1: The main dimensions of customer relationship management (Farbod-2014)

# 3.4 customer relationship management in banks

In the past few years a strong focus for the use of CRM in the banking system has been increased and expected to increasingly apply this technology in the banks. According to Foss (2002) more financial services industry use CRM for the following reasons (Ranjbarak and NayebZadeh, 2012)

- Create a customer-centric culture
- Secure customer relationships
- ➤ Maximize customer profitability
- > Trying to allocate resources on groups of customers with more value
- Communication and interaction with customer support via channels
- ➤ Identify sales prospects and opportunities
- > Customer value management by development component targeting different customers
- > Support channel management and pricing and customer churn
- Support channel management and pricing and customer churn

Banks need to have a complete view of the customer that it can collect from multiple systems. If the bank can understand the behavior and customer demands, the executive can predict future customer behavior. Data and applications help the Bank for managing ongoing customer relationships and to ensure their growth and development. (Ranjbarak and NayebZadeh, 2012)

#### 4. Research history

According to the mentioned titles and to seek to use of experience in the field of knowledge management and customer relationship management, research found that were included in two categories of internal and external researches.

Ranjbarak et al (2012) examined "Review and Rating dimensions of Customer Relationship Management (CRM) in the Melli Bank of Yazd using FTOPSIS" to review the current situation dimensions of CRM and also ranked various aspects of in the Melli Bank of Yazd. Results obtained of this study suggest that the Melli Bank had undesirable feedback in three dimensions of recognition, mutual understanding and good loyalty and customer orientation and flexibility.

Divandari et al (2014) examined "Determining and establishing a framework of knowledge management client in Iran private commercial banks" to check the size and distribution of the private banks of the country have a knowledge management system. In this study, according to the method of publication arising from the data analysis and qualitative data was used. Results of this study regarding the goals has shown good challenges, mechanisms and factors influencing the choice of customers and the implications of knowledge management customer.

Salavati et al (2011) examined "Effects of knowledge management on customer relationship management in the Refah bank" to investigate the effect of knowledge management on customer relationship management in Refah banks in Kurdistan province. Findings of this research suggest that knowledge management through knowledge resources had positive and significant impact on different aspects of customer relationship management, customer satisfaction, customer loyalty, customer acquisition and customer interaction. The most effectiveness of knowledge management was on customer satisfaction. Loyalty variable and absorption and interaction with the customer are on the next level.

Khan et al (2012) examined "The integration between customer relationship management (CRM) and database" to investigate the role of customer relationship management in a database of customers in Pakistan. Results of this study show that agencies and most companies to implement customer relationship management (CRM) requires a database of their clients and it would have many advantages such as reducing operating costs, improving product more quickly - service, customer retention and customer data processing time is reduced. (Khan et al, 2012)

Wang (2014) examined "moderating effects of customer relationship management in airlines" to investigate dimensions of customer relationship management in Taiwanese airlines among the passengers. Inferential statistical methods for data analysis and structural equation modeling has been done. Results of this study show that customer loyalty, customer's absorption and meeting customer's wishes are of most important issues. (Wang, 2014)

## 5. Research hypotheses

In this study, according to literature review and conceptual model; 1 main hypothesis, and 4 hypothesis will be tested.

### 5.1 The main hypothesis

Knowledge management influences on customer relationship management in Mellat Bank at Yazd city.

#### 5-2 subsidiary hypotheses

Hypothesis 1: Knowledge management has a positive effect on customer acquisition.

Hypothesis 2: Knowledge management has a positive effect on customer loyalty.

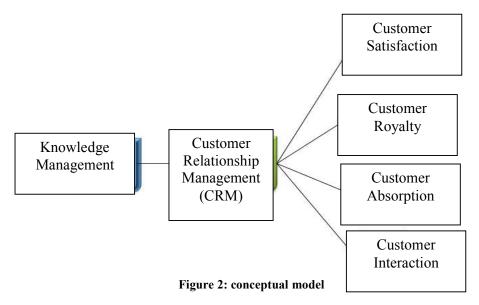
Hypothesis 3: Knowledge management has a positive effect on customer engagement

Hypothesis 4: Knowledge management has a positive effect on customer satisfaction.

#### 6. Research Method

This is an applied study in term of purpose and descriptive- survey to collect data. Because it occurs naturally and there is no experimental manipulation. Research Methodology is survey. Statistical society in this study consisted of 300 people from all employees, assistants and administrators Mellat Bank of Yazd city and 170 samples were selected randomly. In this study, two types of questionnaires to gather information is used such as knowledge management and customer relationship management with regard to the LIKERT scale. As well as structural equation modeling (SEM) and Pearson correlation test by SPSS 21 and LISREL 8.8 software

was used to analyze the data and verify primary and secondary hypotheses. According to the theoretical framework and literature, the conceptual model is shown in Figure 2.



### 7. Research findings

# 7.1 investigate the validity and reliability

In this study, to determine the validity of the questionnaire after the visit to the literature, the questionnaire has been developed that this questionnaire approved by the supervisor and counselor and other teachers. To evaluate the reliability of dimensions of the research questionnaire, Cronbach's alpha coefficient was used by SPSS 21 software. Table 2 indicates the dimensions of questionnaire with Cronbach's alpha coefficient values.

Table 2: Cronbach's alpha coefficient of the questionnaire

Status	Cronbach's alpha coefficient	Component
Accepted	0.812	Knowledge management
Accepted	0.836	Customer satisfaction
Accepted	0.842	Customer loyalty
Accepted	0.844	Customer's absorption
Accepted	0.773	Customer interaction
Accepted	0.735	Customer Relationship Management (CRM)

# 7.2 Descriptive Statistics

In order to better understand the nature of society in research and learn more about the variables, it is necessary to describe the data before analyzing statistical data.

In this study, 80.6% of the study statistical society were men, 19.4 percent are women. In terms of age 0.6% were less than 25 years old, 47.1% were between 26 and 35 years old, 27.1% were between 36 and 45 yearsold, 24.7% were between 46 and 55 years old and 0.6 percent have more than 55 years old. In terms of education, 25.9 percent were high school graduates, 11.8 had associate degree, 45.3% hadBA degree, 7.6 percent had MA degree and 4.9 percent had doctoral degrees. In terms of work experience 44.7 percent had more than a 20 years old experiences (maximum frequency) and 8.2% had between 16 and 20 years of work experience (minimum frequency). In terms of employee positions 42.4% were staff, 10.6% were deputies, and 45.3 percent were the head of the branch.

#### 7-3 Test the Model

In this study, according to the conceptual model presented in figure (3) to determine the fitness of the model presented in this study with the help of factor analysis, different fitness indicators are considered.

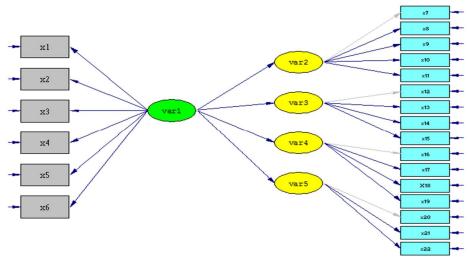


Figure 3: Conceptual model with dimensions of and questions

In the figure above, the variables Var1 to Var5 respectively include knowledge management, customer satisfaction, customer loyalty, customer acquisition and customer interaction. This model contains 4 hidden endogenous variables and exogenous latent variables with 22 talent variables. (Question)

Model fitness consists of two stages. In the first, the factorial loadings on the measurement model by revealing the connection between latent variables (questions) is studied. Then in second stage, the relative parameters to model will be outlined. Figure 4 shows model of Measures of the dependent variables with factorial loadings.

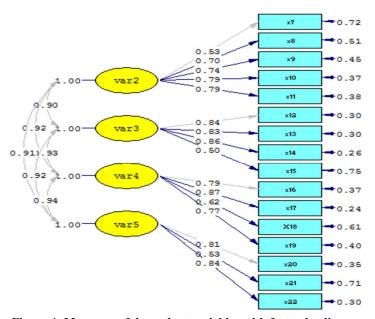


Figure 4: Measures of dependent variables with factor loadings

As shown above, all values of the factor loadings reveal hidden variables dependent variables (questions) is greater than 0.4. Therefore, research questions have a good relationship with variables and explained dimensions suitable.

Also in Figure 5, which represents the independent variable, the amount of factor loadings between manifest variables (questions) with independent variable exogenous (knowledge management) is shown.

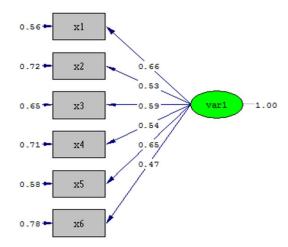


Figure 5: Measures of independent variables with factor loadings

As shown above, all independent variable amounts of factor loadings between manifest variables (questions) is greater than 0.4. Therefore, research questions have a good relationship with variables and explained their dimensions suitable.

In the second stage, with respect to the original investigation and the relationship between overt and covert, LISREL 8.8 software was used to investigate the fitness of model of absolute and relative parameters. Results obtained of absolute and relative parameters are shown in table (3) and (4).

**Table 3: Absolute values of model parameters** 

Status	Index value	Absolute fitness index
Good	0.06	P-Value
Middle	1.4	$\delta^2$
		df
Good	0.95	GFI
Good	0.95	AGFI
Middle	0.077	RMSEA
Good	0.03	RMR
Good	0.035	SRMR

Table 4: relative values of model parameters

Status	Index value	Absolute fitness index
Excellent	0.95	NFI
Excellent	0.96	NNFI
Excellent	0.97	IFI
Excellent	0.97	CFI

According to the results obtained in the table (3) and (4) all absolute and relative parameters model have a good situation. Therefore, model has a good fit and was verified.

# 7.4 Testing hypotheses

# 7.4.1 Subsidiary hypotheses

According to what was said,4 subsidiary hypotheses in this study are discussed. According to the normality of data, structural equation modeling (SEM) through LISREL 8.8 software was used to examine the association between variables. At this stage, the structural model (relation between latent variables) through T-Value statistics was demonstrated and research hypothesis will be discussed. In Table (5) subsidiary hypotheses with the values (T-Value) and (R2) will be shown.

Table 5: Test results (T-Value) and R2 subsidiary hypotheses research

Status	Coefficient of determination (R2)	Statistic value (T-Value)	Hypothesis title
Accepted	0.89	7.05	There is a significant relationship between knowledge management and customer satisfaction.
Accepted	0.91	12.5	There is a significant relationship between knowledge management and customer loyalty.
Accepted	0.96	11.91	There is a significant relationship between knowledge management and customer acquisition.
Accepted	0.92	11.81	There is a significant relationship between knowledge management and customer interaction.

Figure 6 shows the structural model for research that is investigating the relationship between latent variables as well, values (T-Value) calculated by the software LISREL 8.8 is shown.

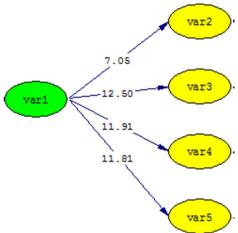


Figure 6: Structural model of research with values (T-Value)

As shown in Figure 6, all amounts (T-Value) is larger than 1.96 that this reflects the significance of the four sub-hypotheses proposed in the research. Moreover, the model has been fitted at the structural level and all four endogenous variables (customer relationship management factors) are able to explain exogenous variable (customer relationship management).

#### 7.4.2 Testing Main hypothesis

In this study, in main hypothesis claimed a significant relationship between knowledge management and customer relationship management. To check the validity of this hypothesis, Pearson correlation test was used according to the normality of the data.

H0 and H1 are defined as follows:

H0: There is no significant relationship between knowledge management and customer relationship management

H1: there is relationship between knowledge management and customer relationship management

Pearson moment coefficient was used to estimate the correlation between the two variables and to calculate the linear correlation between two variables in distance and relative level. Table 6 shows the analysis results in accordance with the first hypothesis.

Table (6): Pearson correlation analysis to test the first hypothesis

		Knowledge management	customer relationship management
Knowledge management Pearson Correlation		1	0.533
	Sig. (2-tailed)		0.003
	N	170	170
customer relationship management Pearson Correlation		0.533	1
	Sig. (2-tailed)	0.003	
	N	170	170

As shown in chart above, given that a significant level is equal to 0.003, and thus is more than 0.05, H1 hypothesis is confirmed with 95% confidence level and against hypothesis is rejected. In other words, there is a significant linear relationship between knowledge management (independent variable) and customer relationship management (dependent variable).

Also, correlation coefficient is equal to 0.533 which indicates a positive relationship between knowledge management dimension and customer relationship management.

# **Conclusions and Recommendations**

The main purpose of this study is to examine the relationship between knowledge management and customer relationship management. (CRM) In this regard, four main hypothesis and a theory were examined. Results obtained of inferential statistics to prove the hypothesis of the study suggests that all 4 subsidiary hypotheses have been accepted. This means that in order to investigate the factors and implementing customer relationship management, all 4 factors (satisfaction, loyalty, customer acquisition and customer interaction) had

a significant role. The main hypothesis of this study, it was claimed that a significant relationship exists between knowledge management and customer relationship management.

On the other hand due to the significant level (sig) is equal to 0.003 and Pearson's correlation coefficient test is the equivalent of 0.533, it can be noted that the result is always the knowledge management and customer relationship management of the correlation is good. In a summary of findings from the research hypothesis testing has shown that the effect of knowledge on various aspects of customer relationship management is different. According to the analysis by structural equation modeling (SEM) which is done by software LISREL 8. 8, knowledge management is based on the coefficient of determination (R2) has the greatest impact on customer acquisition. In fact, knowledge management and integration of knowledge resources such as customers, suppliers, owners, staff - staff representatives, politicians, media leaders and experts and the general public can have the greatest impact on customer satisfaction as the level of service received by the customer's wish. For the success of any organization to achieve its objectives, sources of knowledge should be considered. Many of leading organizations collect hidden knowledge among different groups have something that is called knowledge capital and knowledge management through integrating the knowledge of important information to help organizations to discover, select, organize and publish.

The results of this study show the relationship between knowledge management and customer relationship management at Mellat Bank of Yazd city, it is suggested to Mellat Bank to create bank of knowledge to identify internal market (knowledge among individuals, including employees, retirees, employees, transfer, etc.) and foreign market such as knowledge of the customer, partners, competitors in different forms, including books, software, video, audio and text and also provide appropriate context for knowledge storage and also knowledge exchange between managers, employees and customers to provide new ideas and applications to better and provide more varied services to customers. The researchers recommended examine how to implement customer relationship management in banks with a competitive edge approach between banks and increase timely and prompt customer service and examines the relationship between resources and knowledge of customer relationship management for improving the relationship between banks and customers.

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