Influence of Knowledge Management on the Customer Relationship Management with Meditative Role of Satisfaction and Customer Loyalty

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Abstract. In present study, effects of knowledge management on the customer relationship management is studied. Study technique is descriptive and survey. To test the study hypotheses firstly a questionnaire with 30 items was designed and applied to 80 managers survivor and directors of various parts of Hormozgan oil company. Then achieved information's were categorized in excel and their statistical properties were studied. Then study architecture model was adapted using smartPLS software to examine the relationship between the variables. In the fitness stage, 4 items were deleted due to lack of suitable relationship with the study variables and then the final model was extracted. Relevance and reliability of the construction and model was examined and after assuring the accuracy and reliability of test tool, study hypotheses were examined. Results of this study indicates that knowledge management with mediatory role of customer loyalty has a significant relationship with customer relationship.

1. Introduction

Knowledge management is a rapidly growing strategy and considerably
takes into consideration the current challenges for increasing the
efficiency and improving the effectively of trade- driven processes along
with continuous innovation. The need for knowledge management based
on the trading society's perception growth originates from the fact that
knowledge is an important element in the organizational performance
and attaining the sustainable competitive advantage. (Davenport &
Grover, 2001). Such a high level, fundamental shift has a great
consequences in middle and final level processes in the organization. In
fact, accept ion and utilization of concepts tools, techniques and
strategies of knowledge management in the future evolutions to establish
knowledge- based companies is not possible easily. Since, it needs the
proper selection of tools and techniques being used in a consistent
fashion. Understanding the available technological infrastructures,
organizational structure and trade, cultural in frastructures is necessary
for proper selection of the kind of technology or techniques. Additionally
understanding how these elements are combined to achieve the
organizational efficiency and efficacy is very important which itself leads
to meeting the organizational foals. To convert a company to a
knowledge- based institute through the technologies and strategies of
knowledge management, it is necessary initially to introduce the
dynamics hidden in the knowledge based economy, knowledge and
knowledge management. In the following, various kinds of infrastructures
required to establish knowledge management are mentioned. In modern
competitive market which major characteristic is uncertainty, these firms
are of competitive ability that have developed and distributed novel
knowledge in their organization and convert it to the goods and services.
This way, knowledge will provide competitive advantage for an
organization and provides the ability to solve the problems and gain new
opportunities for organization. Thus, knowledge is not only a source of
competitive advantage but also, in fact, it is the sole source of it. When
the knowledge sources of an organization are employed, it will experience

the enhancement and raise of dynamicity and the value in the business. While, many definitions have been provided in respect of knowledge management but there is no consensus on what knowledge management is. Among them, staps (1999) defines knowledge management as collection of required knowledge in the required time and location for the person requiring it organization of economic cooperation and development (2003) defines knowledge management as a series of organizational activites to create, and distribute data and promote knowledge sharing inside and around the organization. Hassan zade et al. (2009). Davenporto prosak one of the thinkers of knowledge field defines knowledge as a flexible and convertible combination of experiences, values, meaningful information and insights of professionals which provide a framework to evaluate and integration of new information and experiences. Some organizations constrain their knowledge domain to inside their organization. In fact, concentration on the knowledge management efforts method inside the organizational borders is one of the major factors of failure in all the knowledge management efforts in most organizations. A requirement of competitiveness' is the ability of an organization to rapidly adapt to customer needs. In recent years, companies have combined their customer relationship management efforts with knowledge management. Since, they apprehended that knowledge management plays an important role in the success of customer relationship. Customer relationship management is customer knowledge management to better understand them and to better service them. Certainly, customer relationship management is associated to the field of knowledge management. So adequate existence and continuously updating the customer related knowledge is greatly necessary to having an efficient customer relationship management system. Presently, knowing the important role played by knowledge management systems in the current customer driven environment lack of a simple, general frame work to incorporate traditional functions of customer relationship management to the management and using customer related knowledge is sensed. When customer relationship management is implemented, knowledge management plan can expand customer relationship knowledge flow. Additionally, it can maintain and make available knowledge management processes and systems to gain all the relevant

knowledge and this may lead to create added value for organization as well as customer. Malhutra states that knowledge management is a process by which organizations gain skills on learning (internalization of knowledge), knowledge coding (externalization of knowledge), knowledge distribution and transformation. Loyalty is consisting of a psychological process encompassing the evaluation of different options based on various criteria. Additionally, loyalty is a deep commitment to repurchase a preferred product or service in future i.e. repurchasing a brand despite environmental effects and marketing ettempts of competitors to change the behavior. Asael (1992) defines loyalty as a behavior toward a trade mark. So , this leads to continuously by that trade mark. Customer satisfaction can be considered as the success factor in the modern competitive trade world. So the importance of customer satisfaction and customer retaining and to codify strategy for customer driven and market driven firms may not be underestimate. Customer satisfaction is generally defined as completely meeting the expectations (Elisor, 1980). In summary presently the relationship between customer relationship management field and knowledge management is considered as an important study field which warrants more research, oil refinery personnel have information and abilities which don't necessarily practice inside the organization and major problems in the oil refinery are including the downfall of refinery profitability and the required materials such as tar and kerosene are lately delivered to the customer. Despite the fact that most organizations have discovered the importance of customer knowledge management and understand the point that customer knowledge management helps greatly to create economic values for companies. But oil refinery ignored the customer knowledge. In present study, we will explain the effect of knowledge management on the customer relationship management with mediatory role of customer satisfaction and loyalty. It seems necessary to consider these factors as the mediating factors in influence of knowledge management system and customer relationship management which in present study is also addressed.

2. Background

Jafary nia and Darvishan Nezhad (2013) in a study titled (study on influence of employees empowerment on the customer loyalty focusing on the mediating role of service quality and customer satisfaction in banking industry) attempted to address the effect of employees empowerment on the customer Loyalty focusing on the mediating role of service quality and customer satisfaction in banking industry. Study technique was descriptive and it is applied research in respect of objective. Study population are all the customers and employees of 53 brunches of Iranian Melli Bank in Ahvaz city. Tow questionnaires based on Likert scale were used for data collection and variables measurement. Least paatrial squares technique was used to analyze and test the hypothesis. Using PLS software. They have indicated that employee's empowerment, due to mediating role of service quality affects on the customers loyalty. But due to mediating role of customers satisfaction, it has no effect on the customers loyalty. Ranjbaran and Gholamy Karin(2005) consider the major objective of each organization, a side sailing their product, as creating a sustainable relationship and link between the product and a particular group of customers which consequence is customers commitment and loyalty toward the product. Providing such a commitment occurs in the course of a process including familiarity of customer to the product, perception of the product and then its preference. If this process succeed, loyalty of customers to the organization, it success and disappointment of other competitors warrant(Rank barian & Gholomy Karin, 2006). Nowadays, firms with superior performance in different industries are moving toward the customer maintenance and attract their loyalty. Since most market are in the maturity stage, competition is increasing and costs of new customer attraction also is seriously increasing. Customer maintenance and attracting his/ her loyalty is considered as critical to continue the business. So, firms must pursue various management strategies to improve the loyalty of their customers. Nowadays, managers more than ever must purpose to understand the request and requirements of customers to prevent them shifting to the competitors , this way they can meet their requirement and create long term relationships with them (Rank barian & Gholomy Karin, 2006). Anisimua(2007) believes that in

the era of rapid development of technology and conversion of products, the options available for organizations to attract   customers is decreasing. On the other hand, organization, confronting serious competition, recognized the need to a value added strategy. Intangible value such as firms credit and increasing skills of the firm, affect customers reaction toward the brand. In fact, a considerable rate of organization attempt is spent for strategic localization toward different groups of customers(Anisimova, 2007).

Cutler described the term loyalty as a sustainable commitment toward the family, country or friends the believes initially was introduced to marketing literature by focusing on the brand loyalty. But, oliver considers customer loyalty as having deep commitment toward repeated and continuous purchase of a preferred product (Ranjbarian &Barary, 2009). Hosseiny and Heiraty(2007) stated that loyalty in fact has grading. In the undermost level, exclusive loyalty is placed meaning the lack of choice for customers. So this level of loyalty is only reliable only until a new choice is available. Sometimes, customers remain loyal to the product and service provider company due to the costs of shifting toward another maybe still created but generally nowadays it is among the inefficient levels of loyalty. In past years, due to marketing and persuasive strategies, a middle level of loyalty is provided. But due to multiple plans and increasing initiatives, this level of loyalty is also unreliable. There is time when loyalty is turned to be a habit for customers. However value creation and satisfaction of major requirement of customers will mature in this loyalty level but beyond this level, committed loyalty is upmost level of customer loyalty. This kind of loyalty is the only sustainable and reliable rational and impressional loyalty for customers. In this case, an organization will turned to be a comprehensive source of removing all the obvious and latent requirements of its customers. So, customer's loyalty is the consequence of upmost level of customer satisfaction(Hosseiny & Heyraty, 2007).

3. Hypothesis and Model
H₁: knowledge managements with mediating role of customer satisfaction has a significant relationship with customer relationship management.

Knowledge management with mediating role of customer's loyalty has a significant relationship with customer relationship management.

Conceptual model of this study is adopted from watg & Ahmed(2003) and Taherpour Kalantary & tolo(2010) and is an incorporated model of these both models.
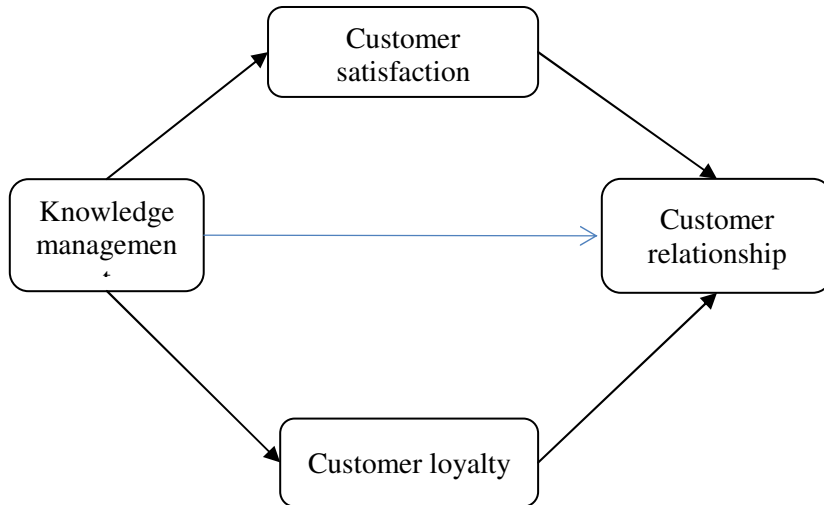

Figure 1: Conceptual model

4. Methodology

A questionnaire with 30 items was designed to study the influence of variable of knowledge management on customer relationship and applied on 80 members of study sample. After collection of the questionnaires, data were recorded in Excel, then fitted by SPL smart2. To examine the data normality, bias and tail calculation techniques were used, since all the figures relating the bias and tail range between 2 and 2, it can be concluded that used data have normal distribution. In this section, model fitness was examined by using smart- PLS. firstly the structural model was fitted, then its efficiency and reliance was examined and finally study hypothesis were analyzed using the data obtained from the model. According to the following figure, in the conceptual model developed in this study, there are 4 measurement model. 3 criteria including reliance, converging validity and diverging validity were used to fit the measurement models.
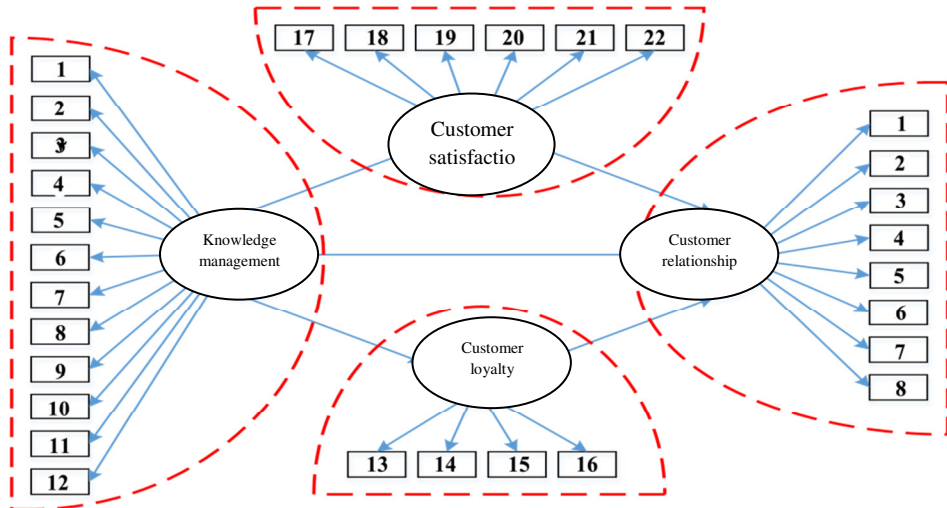
Figure 2. Defining the measurement model in the conceptual model of the study

Reliability of the measurement model was studied using three techniques including factorial burden, kronbach alpha, mixed reliability. Initially, we will examine the fitted model in respect of relationship of each item with related constructions. Figure 3 shows the initial fitted model.
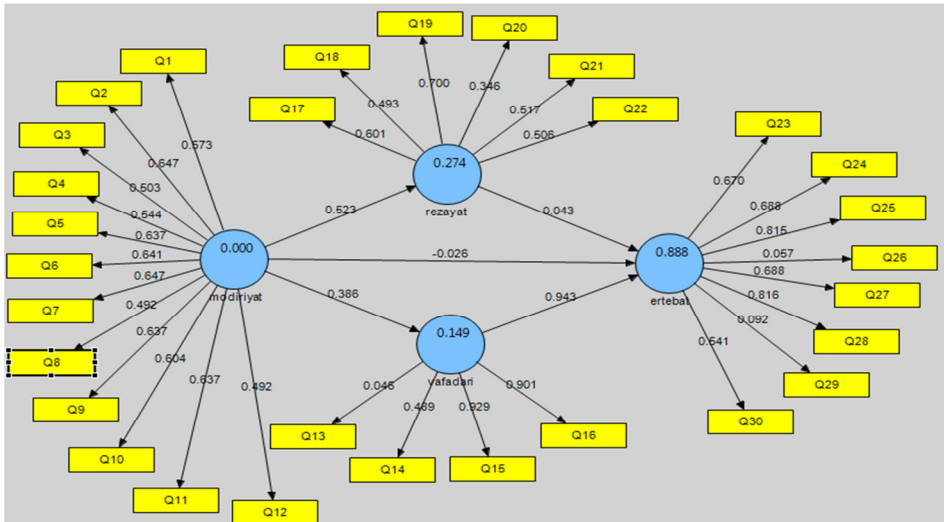

Figure 3. Initial fitted model

As is observed, factorial burden of items 13,20,26 and 29 is smaller than 0.4. this indicates that these items has not adequate relationship to the corresponding construct. Thus, these items are deleted from the model and are fitted again (Figure 4). As observed in the new fitted model all the factorial burdens are higher than perception limit, i.e. 0.4. constructs are of adequate reliability after deletion of above mentioned items.
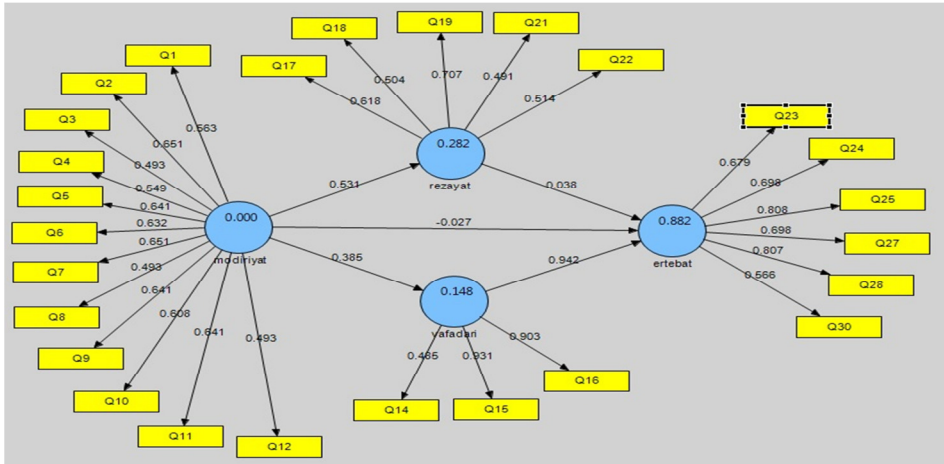

Figure 4. secondary fitted model after deletion

As you know, kronbach alpha is a classic criterion to measure reliability and to evaluate internal sustainability (consistency). Internal sustainability indicates the correlation rate between a construct and corresponding indicators. In this section, kronbach alpha for each construct and model indicators will be measured. Acceptable limit for kronbach alpha is 0.7 which is higher than this value for all the variables of this study.

Table 1. Cronbach alpha for the indicators and constructs
of measurement model

Variable	Alpha
Knowledge management	0.831
Customer loyalty	0.772
Customer satisfaction	0.796
Customer relationship	0.835

Mixed reliability is a more modern criterion compared to kronbach a , where constructs reliabilities are compared to each other according to their constructs correlation, rather than in an absolute fashion. Judgment criterion in this reliability also is 0.7. Results are given in the following table.

Table 2. Mixed reliability of first order constructs of measurement model

Variable	Mixed reliability
Knowledge management	0.864
Customer loyalty	0.832
Customer satisfaction	0.705
Customer relationship	0.860

According to the above table, mixed reliability of the model variables is higher than 0.7 and the model has an acceptable mixed reliability. Convergent validity (AVE) indicates the mean variance shared between each construct and its indicators. Judgment criterion for this validity is 0.5.

Table 3. Convergent validity (AVE)

Variable	Mixed reliability
Knowledge management	0/550
Customer loyalty	0/639
Customer satisfaction	0/528
Customer relationship	0/510

As observed in the above table, values gained after correction of questionnaire's items', was greater than 0.5 for all constructs and so convergent validity for all mod constructs is acceptable.

Furnell and Laker technique is used to compare the correlation rate of a construct with its indicators against the correlation of that construct with other constructs. Divergent validity to accept a model imply that a Construct interacts more with its own indicators than other constructs.

Validity acceptance criteria in this technique is that the values of main diagonal must be larger than its underneath and right handed elements. Results of study model giving in the following table imply that the model has acceptable divergent validity.

Table 4. Divergent validity measurement matrix.

Customer relationship	Customer satisfaction	Customer loyalty	Knowledge management	
			0.742	Knowledge management
		0.800	0.385	Customer loyalty
	0.727	0.185	0.531	Customer satisfaction
0.714	0.198	0.339	0.356	Customer relationship

5. Findings

By completion of fitting the measurement models, it is the time for fitting the study constructional model which included 4 hidden variables and two construction model (figure4).
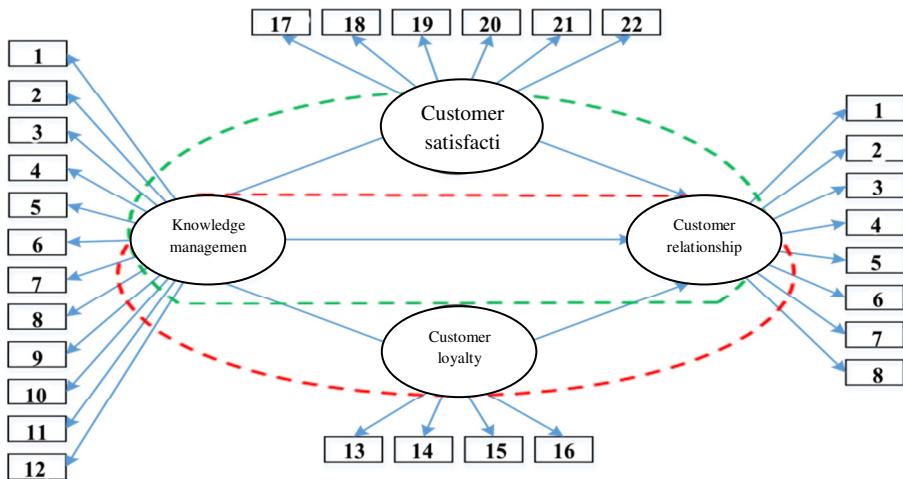

Figure 5. Defining the construction models in the study conceptual model.

If these values are larger than 1.96, accuracy of the relationship between the variables and variables items will be confirmed in 95% confidence level. This criterion doesn't show the severity of relation. T values for study model is indicated in the following figure.

Criterion R squares or R_2 indicates the effect of an endogenous variable on an exogenous variable. This variable is calculated only for endogenous variables, and its value for exogenous variable is zero. R_2 value indicates that what percentage of endogenous variables changes are explained by exogenous variables. This value is calculated using squares set of coefficients of the paths entering the variable. Approximate criterion 0.19 is considered as weak fitness, 0.33 as average fitness and 0.67 as strong fitness. In the following fitted model is given along with paths coefficients and judgment on the performed fitness.

Table 5. Hypothesis test

hypothesis			Factorial coefficients		Significance coefficients t	Support rejection of hypothesis
major	Knowledge management with mediatory role of customer satisfaction has a significant relation with customer relationship	Knowledge management with customer satisfaction	0.531	0.020	6.263	rejection
		customer satisfaction with customer relationship	0.038		0.815	
major	Knowledge management with mediatory role of customer loyalty has a significant relation with customer relationship	Knowledge management on the customer loyalty	0.385	0.363	4.106	Support
		customer loyalty on the customer relationship	0.942		37.762	
minor	Knowledge management has a significant relation with customer relationship		0.698	-0.027		rejection

6. Conclusion

It's worth mentioning that the relationship between knowledge management with customer satisfaction is supported in 95% significant level and impact coefficient. In respect of the second major hypothesis, where significant coefficient t for both paths was greater than 1.96,, thus the major hypothesis is rejected and it is concluded that knowledge management with mediatory role of customer loyalty has a significant effect on the customer relationship variable. Since the path coefficient for this relationship is 0.3636, it can be stated that it is direct and imperfect. In present of major hypothesis it is observed that significant coefficient t for this path is smaller than 1.96 and this hypothesis is rejected in the studied significance level. Based on the results, it can be concluded that the positive significant relationship between knowledge management with customer satisfaction imply that knowledge management in the organization leads to customers satisfaction. In other word, it is implied that knowledge management by relying on the collection of required information which accelerated the customers informational needs and requirements, will increase the customer satisfaction. There is no relationship between customer relationship and customer relationship and customer satisfaction and it can be concluded that customer satisfaction from organization doesn't lead to improvement of customer relationship and the satisfied customer doesn't tend to give more information about him/ herself. Positive, significant relationship of knowledge management and customer loyalty indicates that if there is knowledge management in the organization, customer will be more loyal toward the organization. This may be explained in such a fashion that customer feel more security in an organization with categorized, updated information where response to new circumstances will not shock the system and will find the organization more stable. So his/ her loyalty toward the organization will raise. Results indicate that knowledge management affects on the customer relationship through customer loyalty and knowledge management doesn't affect directly on the customer relationship.

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