

The impact of the customer relationship management on organizational productivity, customer trust and satisfaction by using the structural equation model: A study in the Iranian hospitals

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ABSTRACT

Context: One of the challenges in the fiercely competitive space of health organizations is responding to customers and building trust and satisfaction in them in the shortest time, with best quality and highest productivity. Hence the aim of this study is to survey the impact of customer relationship management (CRM) on organizational productivity, customer loyalty, satisfaction and trust in selected hospitals of Isfahan (in Iran). **Materials and Methods:** This study is a correlation descriptive research. Study population was the nurses in selected hospitals of Isfahan and the sampling has been conducted using stratified random method. Data collection tool is a researcher-made questionnaire of CRM and its effects (organizational productivity, customer loyalty, satisfaction and trust) which its validity and reliability has been confirmed by researchers. Structural equation method was used to determine the impact of variables. Data analysis method was structural equation modeling and the software used was SPSS version 16 (IBM, SPSS, 2007 Microsoft Corp., Bristol, UK) and AMOS version 18 (IBM, SPSS, 2010 Microsoft Corp, Bristol, UK). **Results:** Among the dimensions of CRM, diversification had the highest impact (0.83) and customer acquisition had the lowest (0.57) CRM, had the lowest impact on productivity (0.59) and the highest effect on customer satisfaction (0.83). **Conclusions:** For the implementation of CRM, it is necessary that the studied hospitals improve strategies of acquiring information about new customers, attracting new customers and keeping them and communication with patients outside the hospital and improve the system of measuring patient satisfaction and loyalty.

Key words: Customer relationship management, hospital, structural equations

INTRODUCTION

Without a doubt, we can say that the most important assets of most organizations are their clients. Because of direct communication with the actions of an organization, clients

are a valuable source for opportunities and threats related to respective industry. In new business processes, a vital position is allocated for achieving customer satisfaction in organization goals and senior managers are well aware that their success in achieving the major goals of the organization depends on customer satisfaction.^[1] Considering the importance and the impact of customer satisfaction and loyalty in expanding the market share, organizations look to the customer relationship

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management (CRM) as a tool for to increasing their profitability.^[2] CRM in organizations is considered a business strategy. Many successful organizations emphasize on the note that maintaining stable relationships with the customers can hold them firm and progressive in competition stage.^[1]

However, one of the challenges in today's highly competitive environment is that the organizations fulfill the mission of responding to customers in the shortest time and with the best quality and the lowest cost.^[3] This competitive economy has also made the health-care use new managerial approaches and tools.^[4] One of the most interesting aspects in medical care is how to manage the relationship between healthcare providers and patients. The research report of Healthcare Information and Management Systems Society has shown that the quality of care and customer satisfaction in the coming years will have a significant impact on health.^[5] On the other hand from commercial viewpoint, patients are considered as the main customers of hospital who receive and feel the health services directly.^[6] CRM is able to reduce the gap between customers and organizations^[3] so that the main goal of CRM is better behavior with customer in order to increase loyalty and interests.^[7] Fostering relationship between providers and patients leads to maintain loyal customer, greater mutual understanding, trust, patient satisfaction, and patient involvement in decision-making. Furthermore, effective communication is often associated with improved physical health, more effective chronic disease management, and better health-related quality of life. On the other hand, failure in CRM affects the patient dissatisfaction and leads to a distrust of system, a sense of patient alienation in the hospital and endangering the survival of the business at the hospital.^[8]

CRM is a commercial strategy for mutual value creation that identifies all aspects of the customer specifications. Therefore examining such valuable concept in hospitals, which their function is based on the patient (customer), is very necessary.^[9] Keith and Jones identified seven core benefits and value drivers of CRM.^[10] About loyalty, which is one of the effects of CRM, the results of a research indicate that customer is 70% of complained customers remain loyal if they are dealt accurately, their problem is solved,^[11] and the results of a research in Nigeria showed that CRM has had significant effects on the quality of hospital services.^[12] Burnett believes that CRM is of the rational goals of each organization, including hospitals.^[13] Regarding the impact of CRM on productivity, studies indicate that nowadays many financial organizations have started moving towards the implementation of CRM programs.^[14] Today emphasis on market manager is more than customer management.^[15]

Fostering relationship between healthcare services providers and patients leads to maintain loyal customer, greater mutual understanding, trust, patient satisfaction, and patient involvement in decision-making. Furthermore, effective communication is often associated with improved physical health, more effective chronic disease management, and

better health-related quality of life. On the other hand, failure in CRM will affect the patient dissatisfaction, distrust towards systems, patient feels alienated in the hospital, and jeopardize business survivability in the future.^[8] The important role of CRM has been shown in hospitals.^[16] On the other hand, more than 80% of a hospital business depends on its patients.^[11] In fact, CRM can have positive effects in many organizations, including leading roles in increasing the patient's satisfaction and building loyalty. Hence, the effect of CRM on the organization's productivity, customer satisfaction, trust and loyalty in the hospitals of Isfahan University of Medical Sciences was studied in this research.

MATERIALS AND METHODS

This is analytical study and conducted in 2013–2014 in selected hospitals (three state hospitals and three private hospitals). The estimated sample size was 268 nurses. The adequacy of sample size has been taken using Kaiser–Meyer–Olkin method.

Data collection tools

This study is a correlation descriptive research. A researcher-made questionnaire has two main parts. The first part is based on the functions of CRM and the second part is the variables that CRM have influence on them, the second part of questionnaire consisting of three areas: Organization productivity, customer satisfaction, and customer loyalty and trust. For confirming the validity of questionnaires, expert judgment methods were used so that the developed questionnaire along with explanations of its vocabulary and concepts was given to 10 university professors, five hospital managers and authorities, and six hospital nurse managers and they were asked to express their opinions in relation to the content, structure and style of wording of the questionnaire and its appearance. After applying the recommendations and its final confirmation by other experts, the content validity of the questionnaire was ensured. To assess the questionnaire reliability, it was rounded to another pilot group, and reliability and internal.

Data analysis

Structural equation modeling method was used to analyze the data using SPSS version 16.0 for windows (IBM, SPSS, 2007 Microsoft Corp., Bristol, UK) AMOS version 18.0 for windows (IBM, SPSS, 2010 Microsoft Corp, Bristol, UK). The CRM functions (identifying and prioritizing customer, customer acquisition, the diversity of services, client interaction and customer retention) were defined as the independent variables and trust and loyalty, organization productivity and customer satisfaction as the dependent variables in this research. Finally, the effect of independent variable on the dependent was identified and the significance and the strength of relationship was determined, the overall model fitness was confirmed by using fitness indices. Data analysis was conducted using structural equation. SPSS version 16 and AMOS version 18 softwares were used.

The proposed model of research

This article aims to provide the model of e impacts (effect) of CRM. many studies have been conducted about the benefits and impacts of CRM, for example, regarding the impact of CRM on performance,^[17] motion of financial organizations to the implementation of CRM programs,^[14] the impact of CRM on performance and efficiency,^[10,18] impact of CRM on customer satisfaction and complaints,^[2,19,20] customer value and loyalty,^[18,21,22] relationship between CRM and organizational changes.^[23] However, the number of studies conducted in hospital or health system is more limited. Hence, the present study seeks to provide a comprehensive model in hospital. In this proposed model, the CRM tasks (identifying and prioritizing customer, customer acquisition, the diversity of services, client interaction and customer retention) have been defined as the independent variables and the effects of CRM (trust and loyalty, organization productivity and customer satisfaction) as the dependent factors. We used structural equation modeling method and AMOS software in order to check whether the proposed model is approved or not [Figure 1].

RESULTS

The highest percentages of respondents were male in the age group over 40 years old with working experience 21–30 years. Most of the research percentage were executive directors and in master’s degree.

Among the dimensions of CRM effects, productivity had the highest average score and loyalty and trust had the lowest.

Among the tasks of CRM, customer interaction has the lowest average score (2.7) and the variety of services had the highest (2.9). Among the components of CRM tasks, acquisition has had the lowest impact (0.57) and the variety of services had the highest (0.83). CRM had the highest level of impact 0.83) on customer satisfaction and the lowest on productivity (0.59) [Table 1].

Among the components of productivity, impact of CRM on income was the highest (0.73) and the impact of customer relationship improvement on effectiveness of services (0.02) had the lowest factor loading or impact. Among the components of customer satisfaction, existence of patient complaints management in the hospital had the highest impact (0.76) and customers’ satisfaction of the hospital has the lowest factor loading impact (0.58). Among the components of customer loyalty and trust, the amount of trust of customers and employees in the hospital had the highest impact (0.72) and patients referring to other hospitals if better conditions had the lowest factor loading or impact (0.44) [Table 2].

As it is shown in Table 3, Chi-square value is significant in the obtained structural equation model. The relative value of Chi-square is very good (between 2 and 3). The comparative index values (more than 0.90) are interpreted as the acceptable values. As the value for parsimony nor med of fit index and parsimony comparative fit index is greater than 5.0, is an acceptable value. And the root mean square error of approximation value which is acceptable when near to 0.05. Finally, this model can be considered acceptable.

DISCUSSION

The results showed that among the CRM areas the area of customer satisfaction (0.83) customer loyalty and trust (0.81) have had the greatest impact. As mentioned, CRM can reduce the gap between the customers and organizations and leads to the organizational success by creating customer loyalty. On the other hand, existence of the patient complaint management in the hospital has also been recognized as one of the satisfying factors and has had the highest impact. The results of this research showed that among the tasks of CRM, the diversity of services has had the highest impact. Existence of consulting services and new services and providing services based on the needs and expectations of patients are as the most important mechanisms of increasing the diversity of services. In fact, CRM is a business strategy, which has designed, based on customer needs-centered service provision^[1] so that more effectively an organization can communicate with its customers, the more opportunities it will gain to offer more products and services to that customers.^[2]

Customer interaction is also one of CRM functions, which also had a high impact in this research (0.74). Good treat of medical staff with patients and communicating with patients outside the hospital are as the effective strategies for more interaction with patients. Lindgreen introduces the customer

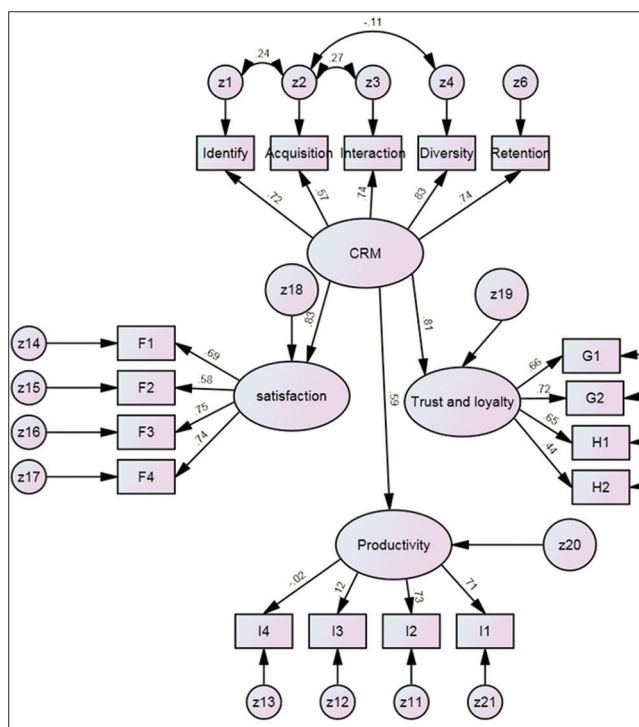


Figure 1: Evaluation of customer relationship management effect on organizational productivity, customer loyalty, satisfaction, and trust

Table 1: Factor loadings of customer relationship management tasks and effects

CRM tasks and effects	Tasks					Effects		
	Retention	The diversity of services	Client interaction	Acquisition	Identify and prioritize customer	Productivity	Trust and customer loyalty	Customer satisfaction
Factor loadings	0.74	0.83	0.74	0.57	0.72	0.59	0.81	0.83

CRM=Customer relationship management

Table 2: Factor loading of the component of customer relationship management effects (customer satisfaction, trust and customer loyalty, productivity of organization)

CRM effects	Factor loadings
Customer satisfaction	
F1 - Amount of complaints of customers of services provided	0.62
F2 - Customer satisfaction of hospital	0.58
F3 - Existence of patient complaints management in the hospital	0.76
F4 - Regular measurement of patient satisfaction	0.74
Trust and customer loyalty	
G1 - The sharing of issues and problems (financial, etc.) of customers (patients and other clients) with the medical staff	0.66
G2 - Amount of trust of customers and employees in hospital	0.72
H1 - Loyalty of customers to hospital	0.64
H2 - Patients referring to other hospitals if better conditions	0.44
Productivity	
I1 - Impact of improved customer relationship on cost reduction	0.71
I2 - The impact of proper relationship with customers on increasing revenue	0.73
I3 - The impact of improved customer relationship on bed productivity	0.12
I4 - The effect of improved customer relationship on the effectiveness of services providing	0.02

CRM=Customer relationship management

Table 3: Overall fit indices in customer relationship management impact on organizational productivity, customer satisfaction, trust and loyalty

Model Fit Summary								
Absolute			Comparative		Parsimony			
CMIN	df	P	IFI	CFI	CMIN/df	PNFI	PCFI	RMSEA
2.234	113	0.00	0.981	0.903	0.901	2.07	0.688	0.649

IFI=Incremental index of fit, CFI=Comparative fit index, PNFI=Parsimony normed of fit index, PCFI=Parsimony comparative fit index, RMSEA=Root mean square error of approximation, CMIN=Chi-square, df=Degree of freedom

strategy and customer-interaction strategy as the key areas of CRM,^[15] which is consistent with results of this study regarding customer interaction, existence of a strategy to obtain new customers and customer maintenance.

Medical team training on how to deal with customers is another affective factor for improving interactions with

patients. Staff capabilities is significantly effective in the adoption of CRM and developing this capability is possible with education.^[6]

This in this regard is similar to the existence of a strategy for attracting new customers and keeping them in the present study.^[24] On the other hand, Mendoza in a study investigates a model outlining key factors of successful CRM which notifying the strategy of CRM to staff has been one of the contributing factors in this model.^[25]

Also identifying and prioritizing customers (0.72) had a high impact among CRM function customer identification can be accessed by identifying customers who are likely to cut their relationship with the organization and then trying to increase their loyalty. Identifying customers leads to profitability and cost reduction targets are met.^[11] In the dimension of customer satisfaction, existence of management of patient complaints in hospital and measuring customer satisfaction has been considered. Sayedi *et al.*^[2] have examined the relationship among customer expectations, perceived quality, customer satisfaction, customer complaints, customer loyalty and CRM function, which the dimensions of customer satisfaction, customer complaints, and customer loyalty are also expressed in the present study.

Among the components of customer loyalty and trust, “patients referring to other hospitals if better condition” had the lowest factor loading or impact (0.44). This means that if the conditions are better in other hospitals, the patients still desire to be loyal and there is trust between patient and hospitals. Among the components of the trust and loyalty, the issues and problems (financial, etc.) of customers (patients and other clients) with the medical staff also had a good effect (0.66).

One of the effects of CRM in this research was productivity. Keith and Jones^[10] specified a list of the benefits, which is expected from CRM. They finally gained seven main benefits such as efficiency and effectiveness in services which is consistent to the concept of productivity in the present study. In addition, Ko *et al.* in an article entitled organizational characteristics and the CRM adoption process pointed out that customer loyalty and improved productivity and efficiency are of the CRM effects.^[18]

Customer relationship is as a strategic imperative for all organizations since its effective implementation can increase customer satisfaction, loyalty and attracting them and thus causes more sales and repeated purchases.^[26]

CONCLUSIONS

The more effectively a hospital communicates with its patients, the more opportunities it will gain for providing services and products to them (26). Healthcare organizations should apply all their efforts to be able to remain in the competitive market. CRM strategy is one of the strategies that help these organizations in this direction.

Suggestions

- The hospital should check its preparation for formal implementation of CRM. This preparation should be done in various aspects including financial resources, human resources, management support, and staff willingness and ...
- Joint cooperation in various parts of the hospital (formation of inter-professional groups) should be considered
- Hospital top management should have sufficient commitment for the implementation of CRM.

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Conflicts of interest

There are no conflicts of interest.

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