



ELSEVIER

Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Journal of High Technology Management Research

journal homepage: www.elsevier.com/locate/hitech

The impact of the customer relationship management on the organization performance

Zeynab Soltani^a, Batool Zareie^b, Farnaz Sharifi Milani^c, Nima Jafari Navimipour^{c,*}

^a Ph.D. Candidate, Department of Technology Management, Science and Research Branch, Islamic Azad University, Tehran, Iran

^b Young Researchers and Elite Club, Tabriz Branch, Islamic Azad University, Tabriz, Iran

^c Young Researchers and Elite Club, Islamshahr Branch, Islamic Azad University, Islamshahr, Iran

ARTICLE INFO

Keywords:

CRM
Customer knowledge management
Customer orientation
Organizational capability
Information technology

ABSTRACT

Customer Relationship Management (CRM) is a very important growing business practice in today's environment. It is used for managing the interaction between a company and its future and current customers. CRM approach's task is analyzing data about the history of customers with a company. It focuses on a way to retain customers, therefore it helps the growth of sales. This leads to improvement of company's business relationship with customers. Current study's goal is to determine how technology, organizational capability, customer orientation, and customer knowledge management influence CRM success. We try to see that how the performance of an organization is affected by the achievement of CRM. For testing the hypotheses, Partial Least Squares Structural Equation Modeling (PLS-SEM) was adopted. Results have indicated that the success of CRM is highly influenced through "information technology use", also "customer orientation", "organizational capability", and "customer knowledge management" are related to CRM success. Finally, along with the future research avenues and limitations, study implications and findings are discussed.

1. Introduction

Relationship Marketing (RM) principles, a developing area of modern day marketing, is the base of Customer Relationship Management (CRM) (Rahimi & Kozak, 2017). CRM concept is prevailed in the 1990s, in the domain of business. As a scholarly inquiry, it is highly paid attention and has stimulated research community and global business interest. The need for a new business environment creation is the base of this approach, which creates the opportunity for customer relationship management (Galbreath & Rogers, 1999; Soltani & Navimipour, 2016). Since in the 21st century everyone and everything is getting online, society is highly affected by the Internet and a new revolution is created (N. Jafari Navimipour & Zareie, 2015) and technology is seen as life's indispensable and effective element (Zareie & Navimipour, 2016a, 2016b). Also, companies are enabled to track their online behavior and performances, and customize prices, communications, services, and products and capture new customers by the Internet technology. The companies must accurately understand the needs of customers to provide information, services, and products to customers via the Internet (N. J. Jafari Navimipour & Soltani, 2016). Since the world of business has changed its focus from product-orientation to customer-orientation, it is perceived that enhancing relations with customers leads to the profitable and sustainable growth of revenue. Research has shown that customer-to-firm relationships have been positively affected by relationships established between service providers and customers (Sivaraks, Krairit, & Tang, 2011). A business is enabled by CRM to better understand its

* Corresponding author.

E-mail address: n.jafari.n@gmail.com (N.J. Navimipour).

<https://doi.org/10.1016/j.hitech.2018.10.001>

1047-8310/ © 2018 Elsevier Inc. All rights reserved.

customers' implied and the stated needs (Lin, Su, & Chien, 2006) and corporations have invested in heavily and have adopted it as a core business strategy (H.-S. Kim & Kim, 2009). CRM focuses on enhancing, maintaining, and establishing long-term associations with customers (Josiassen, Assaf, & Cvelbar, 2014) and is based on information collection before decision making (Khosravifar, Bentahar, Gomrokchi, & Alam, 2012). Also, Giannakis-Bompolis and Boutsouki (2014) identify the CRM as: "a comprehensive strategy and process of acquiring, retaining, and partnering with selective customers to create superior value for the company and the customer". CRM systems' recent emergence has focused even more on the customer data value as a key organizational asset (Peltier, Zahay, & Lehmann, 2013). Also, CRM operation, by which the implementation and development of more effective and efficient strategies focused on the customer are enabled, leads to firm's success (Chang, Park, & Chaib, 2010). An organization can improve its operating process by technology and as a result, it can improve its performance.

Performance is a construct which has many dimensions. Record of accomplishment of an individual may be a referred to as performance. In Dugguh and Ayaga (2014) point of view, it is independent from the purpose and is something surpassed by the person (Dugguh & Ayaga, 2014). Organizational performance is a construct which has many dimensions. According to the theory of organization, efficiency and effectiveness can be classifications of organizational performance (e.g., (Clark, 1999; Lewin & Minton, 1986). "...the degree to which desired organizational goals are achieved," is referred to as effectiveness, whereas, "...the proportion of inputs of organizational resource which is used to achieved outcomes," is represented as efficiency (Vorhies & Morgan, 2003). In recent research, there is a tendency to include outcomes related to the customer in business performance (Kaplan & Norton, 1996). We use market effectiveness, efficiency (profitability, and customer satisfaction to measure the performance of an organization. Although CRM technology has conceptual support and significant financial indications, empirical research has been done to examine the link between CRM performance and technology which has met with ambiguous results. It is revealed by recent studies that improvements in organizational performance has only been seen in 30% of the organizations which have used the technology of CRM (Bull, 2003; Chang et al., 2010).

Current research's purpose is to make sure that how CRM success might be influenced by customer knowledge management and customer-oriented, organizational capability, and technology. We try to understand that how the performance of an organization is impacted by the CRM success. Understanding CRM technology's outcomes and determinants usage show the way for companies to improve the performance of CRM. This paper's goals are provided briefly here:

- A framework and a model is presented to show CRM success and organization performance's influential factors.
- The impact of customer orientation, organizational capability, technology, customer knowledge management on the CRM success is evaluated.
- Influence of success of CRM on the performance of an organization is evaluated.

The remainder of this paper proceeds as follows. The related work and background are provided in the next section. The theoretical foundations of the hypotheses and the research model are presented in section 3. Section 4, "Research methodology", outlines the measures and research methodology. The results and data analysis are given in section 5. Finally, sections 6 and 7 discuss the paper and present future research's directions and limitations.

2. Literature review

CRM is defined as technology by some authors, and as a process of data mining by others. Firth and Cameron (2006) and Lager (2008) consider the CRM based on technology (Triznova, Mařova, Dvoracek, & Sadek, 2015). Organizations need to change because they move away from the production-based business strategy toward the customer concentration strategy (Alshawi, Missi, & Irani, 2011). In order to have long-term profitability and to compete in nowadays business world, organizations should both take customer attraction into consideration and gain the persevering requisite which is customers' faith and also old customers should be kept (H.-S. Kim & Kim, 2009; Mendoza, Marius, Pérez, & Grimán, 2007). The most fundamental and profitable strategy for preserving and keeping customers is the CRM. Therefore, CRM has been paid a lot of attention in different fields of information technology and marketing, etc. in the recent years, communicating with customers is considered as profitable trading for the organizations and customers have important possession in organizations' view (Plakoyiannaki, 2005).

Ahani, Rahim, and Nilashi (2017) have investigated the effect of social CRM adoption on firm performance in small and medium enterprises (SMEs) context. Accordingly, they have developed a new adoption-performance model for social CRM strategy at the organization level. The proposed model of their study links technological, organizational, environmental and process factors to social CRM adoption and performance. The results have revealed that top management support, IT/IS knowledge of employee, cost, relative advantage, compatibility, customer pressure and competitive pressure are important drivers for social CRM adoption. Finally, their study confirms that social CRM adoption and SMEs performance are significantly related to each other.

Jeong, Kim, and Yoon (2014) have offered a structural model to explain the financial performance, CRM capability, customer orientation, and marketing relationship. Resource-based theory and IT investment were the base of building the research model. They introduced IT assets' relational capabilities, such as CRM based on the resource-based theory, to explain the customer orientations and organizational performances gap. The result of the test was that financial performances were not directly influenced by the customer orientation, but the quality of service, mediating variables, and capability of CRM have an indirect impact on financial performances. The results have shown that quality of service and CRM capability of the organization are very important mediating variables between performances and customer orientation.

With focusing on the mediator role between organizational commitment and knowledge management, Garrido-Moreno, Lockett,

and García-Morales (2014) have examined how to achieve CRM success. To analyze the process through which infrastructure of CRM technology translates into organizational performance, they developed and tested a research model, and also drew on the firm's Resource-Based View (RBV) and Knowledge-Based View (KBV). The results of 125 international sample hotels were that knowledge management and organizational commitment fully mediate this process. They have shown that organizational commitment's crucial role acts as a relevant mediator and brings the most influence on CRM success. Also, general managers' understandings are the base of measurement of variables, therefore they are highly subjective. This research is a cross-sectional piece too by which the need to carry out longitudinal studies in the future in order to explore how the variables in our analysis evolve over time is highlighted.

Chuang and Lin (2013) have investigated the ways that firms enhance the customer quality by bundling customer orientation and infrastructure capability. 116 financial service firms collected data in Taiwan suggested that quality influence on the performance of firm begins with an orientation of customer and capability of infrastructure, and information quality of customer is positively influenced by the complementarity between these factors. It was shown by the results that performance of customer relationship is positively affected by the quality of customer information, which as a result improves the performance of firms.

alem Mohammad, bin Rashid, and bin Tahir (2013) have investigated how different dimensions of performance of organization relate to each other (i.e., internal process, growth, and learning, and, financial, and customer) and dimensions of CRM (i.e. technology-based CRM, management of knowledge, customer orientation, and CRM organization) in hotels of Malaysia. Study's results have suggested that hotel performances are positively and significantly influenced by CRM's all dimensions (i.e. technology-based CRM, knowledge management, customer orientation, and CRM organization). However, CRM technology was not successful in showing a significant relationship between growth perspective and hotel performance learning.

Analyzing knowledge management's impact on CRM achievement was Garrido-Moreno and Padilla-Meléndez (2011) focus. Their study's result was that even if the firm attempts to produce orientation based on customer, it makes use of the highest technology, and carries out knowledge management initiatives. Also, the results have shown that firms experience an organizational learning by using CRM that helps them in a more efficient way to use the strategy, therefore, strategy outcomes are improved. In general, finding positive influences in the success of CRM through all proposed factors (CRM experience, customer orientation, technological, organizational, and knowledge management) is this research's advantage. Also, they have found that the key success factors for CRM are organizational variables (human resources, organizational structure, top-management support, and strategy). Finally, they have found that the process of management of knowledge is depended on other organizational variables and the human resources of a firm. However, cross-sectional data usage prevents the development of examination under analysis. Also, managerial perceptions evaluate the different variables of the model as a limitation and the size of the sample is fairly small. Furthermore, the empirical study focused on the sector of the hotel in Spain, so results may not be entirely applicable to other countries or other activity sectors.

Chang et al. (2010) have examined the role of CRM technology transformation in the performance of the organization. The manager gets help through this study to know what to do to actualize CRM performance. They have shown that capability of marketing in interpreting technology of CRM into outcomes of business plays a pivotal role. Moreover, in order to effectively use the technology of CRM, management should organize a management system and an organizational culture which focus on the customer.

Saini, Grewal, and Johnson (2008) have investigated the role of technology assimilation and knowledge stores and driving performance of CRM. They have contended that two forms of knowledge stores as technology and relational knowledge stores play a vital role in the performance of CRM for firms that adopt the technology of CRM. Based on random effects model, the results have shown that CRM technology assimilation and technology and relational knowledge stores with higher levels lead to the superior performance of CRM. Some support for top management championship and moderating CRM technology assimilation conditions are also provided in the study.

Finally, Keramati, Mehrabi, and Mousakhani (2008) have investigated technology, organization and human's role in building competitive advantage with CRM. By this empirical study, it was revealed that companies with more CRM resources deployment have better financial performance and process capabilities.

3. Research model and hypotheses

A new model is presented in this section that aims at identifying the factors which affect the increase of performance of the organization. The basis of the model is that the customer orientation, organizational capability, technology, customer knowledge management drive CRM success. Fig. 1 shows research model with 5 hypotheses discussed in this section. A number and the letter H indicate each hypothesis. Positive relationships are indicated by plus signs and the hypothesized relationships are shown with arrows. In this section, data collection and instrument development procedures are described in detail.

3.1. Customer orientation

Development of customer relationships to the main concept of marketing is understanding expectations and needs of customers and the customer orientation. Customer orientation is a behavioral phenomenon and a cultural concept (Gountas, Gountas, & Mavondo, 2014). It refers to organizations' extent of satisfying and understanding needs of customers for building relationships which last for a long time (Rodríguez, Peterson, & Ajjan, 2015). In addition, to maintain and establish organization-customers long-term relationships, customer-orientation is very important and is competition's independent concept (Harris, Mowen, & Brown, 2005). In Deshpande, Farley, and Webster Jr (1993) point of view, customer orientation is a set of beliefs that prioritize interests of customers to other stakeholders such as employees, managers, and owners of organization and give priority to customers' needs and interests are customer orientation. Strong and Harris (2004) also have defined it as market orientation's behavioral and cultural aspects and acts as

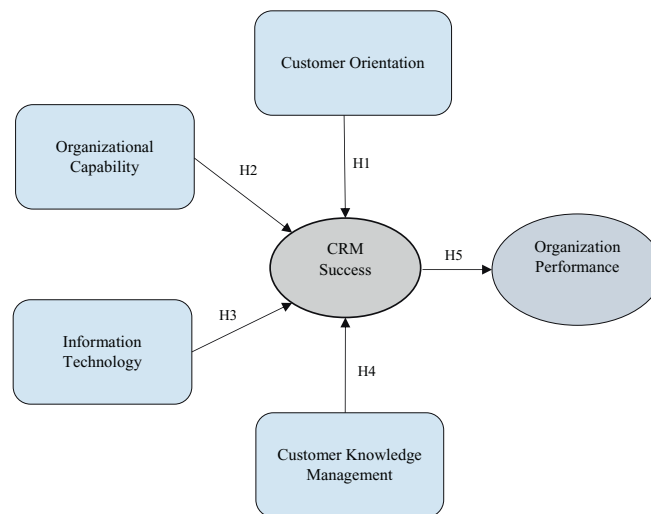


Fig. 1. Proposed research model.

a strategic element (Gheisari & Taher, 2015). CRM's dimension is customer orientation that organizations, in the achievement of solid relationship with customers, have confirmed it to be highly instrumental because it imbibes the customer-oriented culture and behavior into the employees of organization, thus instigating them on their performance in a positive way (B. Y. Kim, 2008; Yilmaz, Alpan, & Ergun, 2005). This is evidence of customer orientation's huge contribution to CRM's successful implementation (Abdullateef, Muktar, Yusoffc, & Ahmad, 2014; King & Burgess, 2008).

3.2. Organizational capability

Since capabilities cannot be explicitly codified and defined, one cannot repeat an enterprise's capabilities at another enterprise. Capabilities of an organization are a set of complementary assets, routines, and skills. They cannot be easily transferred and based on procedural knowledge, they are non-formalized and partly tacit (Nelson, 1991). Capabilities consist of the ability to efficient production, being able to keep up with changes of information technology, the ability to establish production facilities efficiently, and understanding the process of design and capability of product to increase productivity (Sirbel, 2012).

3.3. Information technology

The way we used to do business and the way we used to work in our lives are changed by technology (Sinha & Mukherjee, 2016). The current century has brought an unimaginable growth in information and communications technology and needs of enormous computing and educational institutions (Saleem et al., 2017; Y.-C. J. Wu, Pan, & Yuan, 2016). Information technology (IT) quickly evolves which leads companies to compete in the state-of-the-art of technology. It has been recognized that to achieve improvements in organizational performance IT enables the redesign processes of business in a radical way (Davenport & Short, 1990; Museli & Navimipour, 2018). By linking internal stakeholders and innovative methods, suppliers, and customers to each other and through facilitating changes to work practices, IT assists the redesign process of a business. Applications of CRM link the technological innovations to their ability to deliver service and product value to individual customers, respond with effective and timely customized communications, interpret customer behavior, analyze and collect data on customer patterns, and develop predictive models.

Technology's role in the success or failure of CRM has been discussed very much. Performing CRM activities at a high level significantly and positively influence business performance (Christy, Oliver, & Penn, 1996; Hong-kit Yim, Anderson, & Swaminathan, 2004; Kandell, 2000). Participation of Information technology in a higher level significantly and positively influences the CRM's activities (Ko, Kim, Kim, & Woo, 2008); while CRM activities' implementation is significantly influenced by different types of strategy of business (Chung, Hsu, Tsai, Huang, & Tsai, 2012; Ko, Kincade, & Brown, 2000). CRM technology's eventual success largely depends on how well the technology has been mastered, to what extent strategic marketing makes use of technology, and to what extent the users have bought into the technology. We define assimilation of the technology of CRM as the expertise of a CRM based on IT, strategic utilization, and the composite of buy-in (Saini et al., 2008).

3.4. Customer knowledge management

Insight, experience, skill, and concept are referred to as knowledge by which a framework is provided to capture, create, evaluate, and use the information (Charband & Navimipour, 2016; N. Jafari Navimipour & Zareie, 2015; Laudon & Laudon, 2004). Some researchers define customer knowledge through analyzing the relationship among knowledge, information, and data of customers

(Charband & Navimipour, 2018). The stem of customer knowledge is CRM, i.e. it is in the process of getting feedback from the customers, supplying service and product, and understanding customers' requirement (Lingbo & Kaichao, 2012). Defined as combined information with reflection, context, interpretation, and experience, one can divide knowledge into explicit knowledge and tacit knowledge. Customer knowledge management is the external perspective of knowledge management, and knowledge management is the systematic and explicit management of vital knowledge and its associated processes of diffusion, creation, exploitation, organization, and use (Lopez-Nicolas & Molina-Castillo, 2008). Similarly, customer knowledge management is the exploitation and management of knowledge which is related to the customer. In general, knowledge related to the customer which is involved in customer-firm interactions can be classified into three types of and knowledge about the customer, knowledge from the customer, and knowledge for the customer (Soltani & Navimipour, 2016; J. Wu, Guo, & Shi, 2013).

3.5. CRM success

Economist Intelligence Unit has identified more than eleven different indicators of the success of CRM (2007) in which increased revenue (30%), customer retention (43%), and customer satisfaction (49%) are the top three most frequently used. Companies, based on their objectives, tend to adopt measures and definitions of CRM. In other words, failure or success of CRM is often specific to the company in which generalizing failure and success of CRM across firms becomes difficult. For instance, if the objective of a company is satisfying the customer, then the ability of the organization to retain customers is the judging point of success of CRM. Alternatively, if realizing profit in a particular level is the objective, then the ability to generate profit is the judging point of success of CRM. Because different companies can make use of the same technology of CRM to achieve different goals, then initiatives of CRM are largely specific to the firm, and companies should define CRM on the base of tasks it performs and the way they use it. In order to specify the ways that CRM lead to success, Payne and Frow (2005) found that a system of CRM can fail tactically or strategically or both at the same time. For this reason, when companies align initiative of CRM with the firm's strategic orientation, then the success of CRM is defined. By this alignment is that goals with short and long perspectives are accomplished through the customer relationships management. This definition lets the advance of propositions that relate CRM success to strategic orientation of firm based on firm's strategic actions (Shannahan, Shannahan, & Alexandrov, 2010).

3.6. Firms performance

The activities of CRM aim to acquire maximum benefits of business, try to enhance the satisfaction of the customer, provide different services and products, satisfy customers' needs, and maintain the loyalty of customer (Kandell, 2000). CRM implementation can increase loyalty and satisfaction of the customer. In turn, business performance of an organization increases along with loyalty and satisfaction of customer (Chung et al., 2012; Hong-kit Yim et al., 2004).

Based on the above discussions, the current study hypothesizes are:

- H1. : Customer orientation is positively related to the success of CRM.
- H2. : Capability of the organization is positively related to CRM success.
- H3. : Information technology is positively related to the success of CRM.
- H4. : Management of customer knowledge is positively related to the success of CRM.
- H5. : Success of CRM is positively related to organization performance.

4. Research methodology

This research examines that how CRM success can enhance the organization's performance. Therefore, determining the factors that influence the organization performance has become a concern. Current study's important goal is to examine the success of management of customer relationship influence on the performance of the organization. In this study, we will propose a model for value CRM success in the performance of the firm. Collection of data, samples and the measure are described in the rest of this section.

4.1. Measure

A questionnaire is designed to measure the model's elements. Revising the questionnaires was done with experts' help (including practitioners, academics) who are experienced in CRM. Questionnaire's validity examination was done through a reliable and standard resource. A revision was done on the questionnaires, then we distributed them among the statistical sample. East Azerbaijan Tax Administration's employees were provided with the questionnaire.¹ We used software package of SMART- PLS (Partial Least Squares) 2.0 and the SPSS 22 for questionnaires' statistical analyses. A five-point Likert-type scale was used in all items of the questionnaire where 1 showed complete disagreement, 3 indicated neither agreement nor disagreement, and showed complete

¹ www.eata.ir

agreement. The PLS avoids many of the restrictive assumptions underlying covariance-based structural equation modeling techniques (SEM) such as large sample size and multivariate normality. Furthermore, both reflective and formative constructs are enabled by the PLS to be tested together in the model. In this study, in which formative constructs are included, data analysis is done by the PLS rather than the other techniques of statistics.

4.2. Data collection and samples

This study's target samples are East Azerbaijan Tax Administration's employees in Iran. The sample's total volume was 260 persons. The target population was selected according to Morgan table. Thus, 155 cases were randomly selected. 155 questionnaires were returned from employees of which 5 were not usable (they were not complete). 150 questionnaires were left for analysis. 150 is the size of our sample which is more than adequate for the procedures of estimation of PLS (Hwang, 2009).

5. Analysis of data and presenting results

For model testing, partial least squares (PLS) is employed because the predictive model is highly complex and analyzing complex models and relationships is better done by PLS (Chin, 1998). Evaluating the structural models and measurement with multi-item latent constructs is possible by PLS (Sun & Mouakket, 2015). Analyzing the empirical data was done in two stages because the Smart-PLS software 2.0 is used to perform the analysis of PLS. Examination of measurement model is done in the first stage to assess all scales' psychometric properties. The structural model evaluation about hypothesis testing is done in the second stage. Hypotheses testing, the structural model, and measurement model are elaborated as follows.

5.1. Measurement model

We have performed tests for discriminant validity and convergent validity to check whether each factor's indicators (as summarized in Table 1) can measure the corresponding variables. Convergent validity is measured by variance extracted (AVE) and composite reliability examination (CR) and the average from the measurements (Zhao & Cao, 2015). In our study, AVE is > 0.5 and the CR is > 0.7 . According to Chin and Dibbern (2010), sample data's convergent validity is sufficient for further analysis.

The second validity measure is the discriminant validity. It is calculated by the square root of AVE numbers of the corresponding constructs. These values should be larger than values of correlation among all the latent variables (Fornell & Larcker, 1981). Estimated correlations' root for each pair of constructs and every construct's AVE values are presented in Table 2. Discriminate validity's existence between the constructs is confirmed by this information because the values of AVE are higher than the squared estimated correlations.

5.2. Red index

Structural model's global quality measure is also provided by the average index of redundancy, computed as:

$$Red\ j = Communality\ j \times R^2 \quad (1)$$

$$Communality\ j = (loadings)^2 \quad (2)$$

Therefore:

- $Red_{CRM\ Success} = Com_{CRM\ Success} \times R^2 = 0.51 \times 0.89 = 0.45$
- $Red_{Firms\ Performance} = COM_{Firms\ Performance} \times R^2 = 0.56 \times 0.65 = 0.36$

$$\overline{Red} = \frac{1}{n} \sum_{j=1}^n Red_j \quad (3)$$

$$\overline{Red} = \frac{Red_{CRM\ Success} + Red_{Firms\ Performance}}{2}$$

Table 1
Measurement model's convergent reliability and validity of the measure.

	AVE	Composite reliability	Cronbach's alpha
Customer orientation	0.81	0.95	0.91
Organizational capability	0.51	0.84	0.81
Information technology	0.56	0.78	0.78
Customer knowledge management	0.58	0.87	0.80
CRM success	0.51	0.83	0.78
Firms performance	0.56	0.83	0.79

Table 2

The discriminant validity of the measurement model.

	Customer orientation	Organizational capability	Information technology	Customer knowledge management	CRM success	Firms performance
Customer orientation	0.90					
Organizational capability	0.32	0.72				
Information technology	0.71	0.35	0.75			
Customer knowledge management	0.47	0.63	0.51	0.77		
CRM success	0.72	0.49	0.72	0.61	0.72	
Firms performance	0.64	0.44	0.62	0.53	0.80	0.75

$$\overline{\text{Red}} = \frac{0.45 + 0.36}{2} = 0.405$$

Endogenous latent variables' total number in the model equals with n . Because structural equation modeling assessment can be suitably done by the redundancy; when redundancy is high, the structural model fits more suitably in a study.

5.3. Goodness of fit (GoF) of the model

PLS-SEM contains only one measure of the goodness of fit (Tenenhaus & Vinzi, 2005). As in the following formula, by calculating the average R Square and the AVE's geometric mean for the endogenous constructs we can calculate GoF:

$$\text{GOF} = \sqrt{\text{AVE} \times \overline{\text{R}^2}} \quad (4)$$

$$\text{GOF} = \sqrt{0.58 \times 0.77} = 0.67$$

According to Wetzels, Odekerken-Schröder, and Van Oppen (2009), 0.1, 0.25, and 0.36 are the baseline values which are small, medium, and high, respectively. According to Table 3, this study's GoF was 0.67 which is considered as large which in turn refers to the model validity adequacy.

5.4. Validation of the structural model

Endogenous constructs explain variance and the independent and dependent variables' relationship is represented by structure model using path coefficients' significance and sign. The determination's coefficient value (R-squared) is the structural model's predictive power measure. Maximizing the variance, which exogenous variables in the endogenous variable explain it, is the main goal of PLS-SEM. 0.67 to 0.19 is R^2 values' acceptance range (Chin, 1998). Overall, 0.65% in performance of the organization and 0.89% of the variance in the success of CRM is explained by the model. By use of the technique of bootstrapping, with 600 sub-samples, each path's statistical significance (the link between any two given constructs) was found out. Until the convergence was achieved by the research model, the algorithm of bootstrapping repeats itself. The hypothesis testing was done based on the respective path coefficients' signs.

After establishing and testing the construct validity and reliability, examining the proposed hypotheses, by running Bootstrapping and Smart PLS's Algorithm, is the task of next stage. Fig. 2 shows the obtained results. Structural model's path was surveyed. Every path (Fig. 1) corresponds to a theory. By checking the statistical significance, size, and sign of path coefficients (β) between the dependent variable and each latent variable, every hypothesis was tried. If the dependent variable is strongly influenced by a predictor latent variable, then the path coefficient will be high. By analyzing the significance of the t value for every path coefficients, the significance of the path coefficients (β_1 to β_5) was checked. For conducting this, Smart PLS 2.0 function of bootstrapping was used. The relating t-values and the path outcomes' synopsis are shown in Table 4.

Table 3

Goodness of Fit (GoF).

Construct	R square	Average variance extracted	Goodness of fit
Customer orientation		0.81	
Organizational capability		0.51	
Information technology		0.56	
Customer knowledge management		0.58	
CRM success	0.89	0.51	
Firms performance	0.65	0.56	0.67

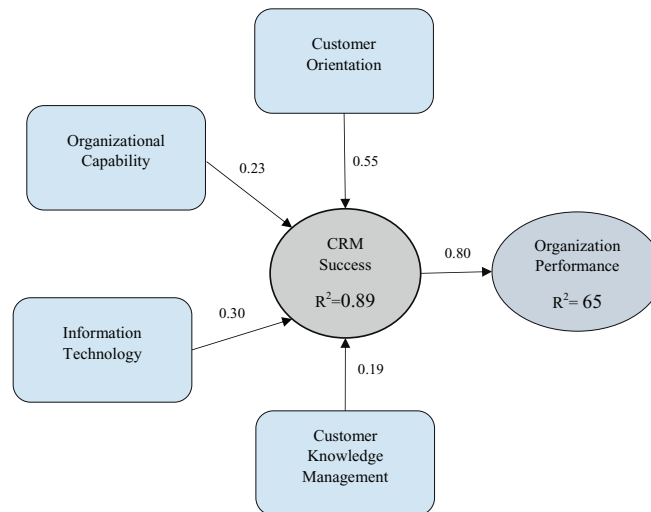


Fig. 2. PLS results of the research model.

Table 4
PLS structural model results.

Hypothesis	Relationship	β	T-value	Supported
H1	Customer orientation \longrightarrow CRM success	0.55	7.01***	Yes
H2	Organizational capability \longrightarrow CRM success	0.23	6.26***	Yes
H3	Information technology \longrightarrow CRM success	0.30	3.49***	Yes
H4	Customer knowledge management \longrightarrow CRM success	0.19	3.29***	Yes
H5	CRM success \longrightarrow Firms performance	0.80	76.04***	Yes

*** $p < 0.001$.

6. Discussions and conclusion

This study's purpose was to examine the CRM success's effect on organization performance. Based on the firm's resource-based theory view, the success of CRM is considered among the most important resources that organizations can enhance their performance with the help of success of CRM. Through questionnaire surveys from the East Azerbaijan Tax Administration's employees in Iran, this study's data was gathered. Test the hypothesized model was done through PLS-SEM. It is expected to see organization's performance and good success of CRM positive relationship from this study. The success of CRM is expected to mediate the relationship between the performance of the organization, management of customer knowledge, Information technology, the capability of the organization and customer orientation. This study will propose a model of critical factors for the success of CRM and provide a framework of CRM which is comprehensive. This research's theoretical implications are as follow. The statistical results showed that the five postulated hypotheses were supported.

As Table 4 showed, the results obtained from path coefficient and the sample t -test implied that success of CRM is positively and significantly influenced by customer orientation ($\beta = 0.55$, $t = 7.01$, $p < 0.001$) by which Hypothesis 1 is supported. The success of CRM impact from organizational capability also proved to be positive and significant ($\beta = 0.23$, $t = 6.26$, $p < 0.001$). By CRM Success and information technology complementarity ($\beta = 0.30$, $t = 3.49$, $p < 0.001$) H3 receives support. H1, H2, and H3 were supported. Thus, our findings show that overall increased firms performance and success of CRM are significantly affected by technology, the capability of organization and orientation of customer. ($\beta = 0.19$, $t = 3.29$, $p < 0.001$) is supported by hypothesis 4 which proposed that success of CRM and management of customer knowledge are positively related to each other. The effect of the success of CRM in the performance of firms also proved to be positive and significant ($\beta = 0.80$, $t = 76.04$, $p < 0.001$). H4 and H5 are supported accordingly. A research model is provided to address this important issue that can be used for factors' investigation which influences the performance of firms. This paper's contributions are described as follow.

In conclusion, it is hoped that by improving the understanding of the CRM successful implementation, this research contributes to both practitioners of academy and business. Also, with regards to the management implications of this study, we can affirm that the interrelationship between customer orientation and organizational capability, information technology, and customer knowledge management has been recognized as one of the key factors for CRM success. The results showed that all factors directly influence the organization performance.

7. Research's future lines and limitations

There are reported research's areas and limitations research for future which mentioning them worth. There are some limitations. We can mention the use of cross-sectional data which hinders the examination of development in time of the phenomenon under analysis. Next, despite the similarity of the sample which was used in the sectors' previous studies, the size of the sample is not large. Therefore, we used the technique of random sampling to get statistically significant data from the population and as a result, we solved this problem. Third, CRM's results and employee perceptions' usage for different model variables evaluation could be considered also as a limitation. This problem can be solved by using other methods and asking more people in the same organization (financial data) for measurement of CRM success. The fourth problem is the focus of this study which is on Tax Administration's staffs of East Azerbaijan-Iran, so generalizing the achieved results to other countries or other activity sectors is not possible.

Research's goal for future is to perform the study by using longitudinal data and samples which are larger that facilitate better explanation of the observed relationships and their temporal development. For testing model's validity by using data from other countries, studies in international level would do better. Designing empirical studies that consider the various agents' perceptions involved in CRM development, such as customers, employees, and managers is another possibility. Explanatory variables which are new can also be added to the model by future research. At the end, the successful model developed here could be used in other segments of the services sector, as well as other activity sectors, in order to test its generalizability.

References

- Abdulleatef, A. O., Muktar, S. S. M., Yusoff, R. Z., & Ahmad, I. S. B. (2014). The mediating effect of qualitative overstretch on customer orientation, technological based CRM and intention to quit incall centers. *Journal of Marketing Management*, 2(2), 195–209.
- Ahani, A., Rahim, N. Z. A., & Nilashi, M. (2017). *Firm performance through social customer Relationship management: Evidence from small and medium enterprises*. (Paper presented at the Research and Innovation in Information Systems (ICRIIS), 2017 International Conference on).
- Alem Mohammad, A., Bin Rashid, B., & Bin Tahir, S. (2013). Assessing the influence of customer relationship management (CRM) dimensions on organization performance: An empirical study in the hotel industry. *Journal of Hospitality and Tourism Technology*, 4(3), 228–247.
- Alshawi, S., Missi, F., & Irani, Z. (2011). Organisational, technical and data quality factors in CRM adoption—SMEs perspective. *Industrial Marketing Management*, 40(3), 376–383.
- Bull, C. (2003). Strategic issues in customer relationship management (CRM) implementation. *Business Process Management Journal*, 9(5), 592–602.
- Chang, W., Park, J. E., & Chaui, S. (2010). How does CRM technology transform into organizational performance? A mediating role of marketing capability. *Journal of Business Research*, 63(8), 849–855.
- Charband, Y., & Navimipour, N. J. (2018). *Knowledge sharing mechanisms in the education: A systematic review of the state of the art literature and recommendations for future research*. Kybernetes.
- Charband, Y., & Navimipour, N. J. (2016). Online knowledge sharing mechanisms: A systematic review of the state of the art literature and recommendations for future research. *Information Systems Frontiers*, 1–21.
- Chin, W. W. (1998). The partial least squares approach to structural equation modeling. *Modern Methods for Business Research*, 295(2), 295–336.
- Chin, W. W., & Dibbern, J. (2010). *An introduction to a permutation based procedure for multi-group PLS analysis: Results of tests of differences on simulated data and a cross cultural analysis of the sourcing of information system services between Germany and the USA Handbook of partial least squares*. Springer171–193.
- Christy, R., Oliver, G., & Penn, J. (1996). Relationship marketing in consumer markets. *Journal of Marketing Management*, 12(1–3), 175–187.
- Chuang, S.-H., & Lin, H.-N. (2013). The roles of infrastructure capability and customer orientation in enhancing customer-information quality in CRM systems: Empirical evidence from Taiwan. *International Journal of Information Management*, 33(2), 271–281.
- Chung, Y., Hsu, Y., Tsai, S., Huang, H., & Tsai, C. (2012). The correlation between business strategy, information technology, organisational culture, implementation of CRM, and business performance in a high-tech industry. *South African Journal of Industrial Engineering*, 23(2), 1–15.
- Clark, B. H. (1999). Marketing performance measures: History and interrelationships. *Journal of Marketing Management*, 15(8), 711–732.
- Davenport, T. H., & Short, J. E. (1990). *The new industrial engineering: Information technology and business process redesign*.
- Deshpande, R., Farley, J. U., & Webster, F. E., Jr. (1993). Corporate culture, customer orientation, and innovativeness in Japanese firms: A quadrad analysis. *The Journal of Marketing*, 23–37.
- Dugguh, S. I., & Ayaga, D. (2014). Job satisfaction theories: Traceability to employee performance in organizations. *Journal of Business and Management*, 16(5), 11–18.
- Firth, D. R., & Cameron, L. (2006). An institutional perspective on customer relationship management. *Journal of Information Technology, Theory and Applications*, 8(1), 21.
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research*, 382–388.
- Galbreath, J., & Rogers, T. (1999). Customer relationship leadership: A leadership and motivation model for the twenty-first century business. *The TQM Magazine*, 11(3), 161–171.
- Garrido-Moreno, A., Lockett, N., & García-Morales, V. (2014). Paving the way for CRM success: The mediating role of knowledge management and organizational commitment. *Information & Management*, 51(8), 1031–1042.
- Garrido-Moreno, A., & Padilla-Meléndez, A. (2011). Analyzing the impact of knowledge management on CRM success: The mediating effects of organizational factors. *International Journal of Information Management*, 31(5), 437–444.
- Gheisari, F., & Taher, G. (2015). *Explain the relationship between customer orientations; knowledge management and customer relationship with CRM technology with organizational variables mediate Pasargad Bank*.
- Giannakis-Bompolis, C., & Boutsouki, C. (2014). Customer relationship management in the era of social web and social customer: An investigation of customer engagement in the Greek retail banking sector. *Procedia-Social and Behavioral Sciences*, 148, 67–78.
- Gountas, S., Gountas, J., & Mavondo, F. T. (2014). Exploring the associations between standards for service delivery (organisational culture), co-worker support, self-efficacy, job satisfaction and customer orientation in the real estate industry. *Australian Journal of Management*, 39(1), 107–126.
- Harris, E. G., Mowen, J. C., & Brown, T. J. (2005). Re-examining salesperson goal orientations: Personality influencers, customer orientation, and work satisfaction. *Journal of the Academy of Marketing Science*, 33(1), 19–35.
- Hong-Kit Yim, F., Anderson, R. E., & Swaminathan, S. (2004). Customer relationship management: Its dimensions and effect on customer outcomes. *Journal of Personal Selling & Sales Management*, 24(4), 263–278.
- Hwang, Y. (2009). The impact of uncertainty avoidance, social norms and innovativeness on trust and ease of use in electronic customer relationship management. *Electronic Markets*, 19(2–3), 89–98.
- Jafari Navimipour, N., & Zareie, B. (2015). A model for assessing the impact of e-learning systems on employees' satisfaction. *Computers in Human Behavior*, 53, 475–485.
- Jafari Navimipour, N. J., & Soltani, Z. (2016). The impact of cost, technology acceptance and employees' satisfaction on the effectiveness of the electronic customer relationship management systems. *Computers in Human Behavior*, 55, 1052–1066.

- Jeong, D.-Y., Kim, S.-M., & Yoon, D.-J. (2014). *Customer orientation and organizational performance: Mediating role of CRM*.
- Josiassen, A., Assaf, A. G., & Cvelbar, L. K. (2014). CRM and the bottom line: Do all CRM dimensions affect firm performance? *International Journal of Hospitality Management*, 36, 130–136.
- Kandell, J. (2000). CRM, ERM, one-to-one-decoding relationship management theory and technology. *Trusts and Estates-Atlanta*, 139(4), 49–53.
- Kaplan, R. S., & Norton, D. P. (1996). *The balanced scorecard: Translating strategy into action*. Harvard Business Press.
- Keramati, A., Mehrabi, H., & Mousakhani, M. (2008). *The role of human, organization and technology in building competitive advantage with CRM: The case of iranian internet service industry*. (Paper presented at the Industrial Informatics, 2008. INDIN 2008. 6th IEEE International Conference on).
- Khosravifar, B., Bentahar, J., Gomrokchi, M., & Alam, R. (2012). CRM: An efficient trust and reputation model for agent computing. *Knowledge-Based Systems*, 30, 1–16.
- Kim, B. Y. (2008). Mediated effects of customer orientation on customer relationship management performance. *International Journal of Hospitality & Tourism Administration*, 9(2), 192–218.
- Kim, H.-S., & Kim, Y.-G. (2009). A CRM performance measurement framework: Its development process and application. *Industrial Marketing Management*, 38(4), 477–489.
- King, S. F., & Burgess, T. F. (2008). Understanding success and failure in customer relationship management. *Industrial Marketing Management*, 37(4), 421–431.
- Ko, E., Kim, S. H., Kim, M., & Woo, J. Y. (2008). Organizational characteristics and the CRM adoption process. *Journal of Business Research*, 61(1), 65–74.
- Ko, E., Kincaide, D., & Brown, J. R. (2000). Impact of business type upon the adoption of quick response technologies-the apparel industry experience. *International Journal of Operations & Production Management*, 20(9), 1093–1111.
- Lager, M. (2008). *CRM: In the public interest*. *CRM Mag. Vol. 6*, 18.
- Laudon, K. C., & Laudon, J. P. (2004). *Management information systems: Managing the digital firm. Vol. 8*. New Jersey: Pearson Education.
- Lewin, A. Y., & Minton, J. W. (1986). Determining organizational effectiveness: Another look, and an agenda for research. *Management Science*, 32(5), 514–538.
- Lin, Y., Su, H.-Y., & Chien, S. (2006). A knowledge-enabled procedure for customer relationship management. *Industrial Marketing Management*, 35(4), 446–456.
- Lingbo, K., & Kaichao, Y. (2012). Research on the knowledge flow in CRM circumstance. *Procedia Engineering*, 29, 3852–3857.
- Lopez-Nicolas, C., & Molina-Castillo, F. J. (2008). Customer knowledge management and E-commerce: The role of customer perceived risk. *International Journal of Information Management*, 28(2), 102–113.
- Mendoza, L. E., Marius, A., Pérez, M., & Grimán, A. C. (2007). Critical success factors for a customer relationship management strategy. *Information and Software Technology*, 49(8), 913–945.
- Museli, A., & Navimipour, J. N. (2018). *A model for examining the factors impacting the near field communication technology adoption in the organizations*. *Kybernetes*.
- Nelson, R. R. (1991). Why do firms differ, and how does it matter? *Strategic Management Journal*, 12(S2), 61–74.
- Payne, A., & Frow, P. (2005). A strategic framework for customer relationship management. *Journal of Marketing*, 69(4), 167–176.
- Peltier, J. W., Zahay, D., & Lehmann, D. R. (2013). Organizational learning and CRM success: A model for linking organizational practices, customer data quality, and performance. *Journal of Interactive Marketing*, 27(1), 1–13.
- Plakoyiannaki, E. (2005). How do organisational members perceive CRM? Evidence from a UK service firm. *Journal of Marketing Management*, 21(3–4), 363–392.
- Rahimi, R., & Kozak, M. (2017). Impact of customer relationship management on customer satisfaction: The case of a Budget Hotel Chain. *Journal of Travel & Tourism Marketing*, 34(1), 40–51.
- Rodriguez, M., Peterson, R. M., & Ajjan, H. (2015). *CRM/social media technology: Impact on customer orientation process and organizational sales performance ideas in marketing: Finding the new and polishing the old*. Springer636–638.
- Saini, A., Grewal, R., & Johnson, J. L. (2008). *Driving customer relationship management (CRM) performance: The role of knowledge stores and technology assimilation*.
- Saleem, K., Shahzad, B., Orgun, M. A., Al-Muhtadi, J., Rodrigues, J. J., & Zakariah, M. (2017). Design and deployment challenges in immersive and wearable technologies. *Behaviour & Information Technology*, 1–12.
- Shannahan, K. L., Shannahan, R. J., & Alexandrov, A. (2010). Strategic orientation and customer relationship management: A contingency framework of CRM success. *Journal of Comparative International Management*, (1), 13.
- Sinha, I., & Mukherjee, S. (2016). Acceptance of technology, related factors in use of off branch e-banking: An Indian case study. *The Journal of High Technology Management Research*, 27(1), 88–100.
- Sirbel, M. (2012). *The effect of information technology (IT) capabilities and customer relationship management (CRM) on marketing performance an empirical study on commercial jordanian banks in amman*. Middle East University.
- Sivaraks, P., Krairit, D., & Tang, J. C. (2011). Effects of e-CRM on customer-bank relationship quality and outcomes: The case of Thailand. *The Journal of High Technology Management Research*, 22(2), 141–157.
- Soltani, Z., & Navimipour, N. J. (2016). Customer relationship management mechanisms: A systematic review of the state of the art literature and recommendations for future research. *Computers in Human Behavior*, 61, 667–688.
- Strong, C. A., & Harris, L. C. (2004). The drivers of customer orientation: An exploration of relational, human resource and procedural tactics. *Journal of Strategic Marketing*, 12(3), 183–204.
- Sun, Y., & Mouakket, S. (2015). Assessing the impact of enterprise systems technological characteristics on user continuance behavior: An empirical study in China. *Computers in Industry*, 70, 153–167.
- Tenenhaus, M., & Vinzi, V. E. (2005). PLS regression, PLS path modeling and generalized Procrustean analysis: A combined approach for multiblock analysis. *Journal of Chemometrics*, 19(3), 145–153.
- Triznova, M., Maťova, H., Dvoracek, J., & Sadek, S. (2015). Customer relationship management based on employees and corporate culture. *Procedia Economics and Finance*, 26, 953–959.
- Vorhies, D. W., & Morgan, N. A. (2003). A configuration theory assessment of marketing organization fit with business strategy and its relationship with marketing performance. *Journal of Marketing*, 67(1), 100–115.
- Wetzels, M., Odekerken-Schröder, G., & Van Oppen, C. (2009). Using PLS path modeling for assessing hierarchical construct models: Guidelines and empirical illustration. *MIS Quarterly*, 177–195.
- Wu, J., Guo, B., & Shi, Y. (2013). Customer knowledge management and IT-enabled business model innovation: A conceptual framework and a case study from China. *European Management Journal*, 31(4), 359–372.
- Wu, Y.-C. J., Pan, C.-I., & Yuan, C.-H. (2016). Attitudes towards the use of information and communication technology in management education. *Behaviour & Information Technology*, 1–12.
- Yilmaz, C., Alpkhan, L., & Ergun, E. (2005). Cultural determinants of customer-and learning-oriented value systems and their joint effects on firm performance. *Journal of Business Research*, 58(10), 1340–1352.
- Zareie, B., & Navimipour, N. J. (2016a). The effect of electronic learning systems on the employee's commitment. *The International Journal of Management Education*, 14(2), 167–175.
- Zareie, B., & Navimipour, N. J. (2016b). The impact of electronic environmental knowledge on the environmental behaviors of people. *Computers in Human Behavior*, 59, 1–8.
- Zhao, Y., & Cao, H. (2015). Risk management on joint product development with power asymmetry between supplier and manufacturer. *International Journal of Project Management*, 33(8), 1812–1826.