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The impact of cost, technology acceptance and employees' satisfaction on the effectiveness of the electronic customer relationship management systems



Nima Jafari Navimipour ^{a,*}, Zeynab Soltani ^b

^a Department of Computer, Tabriz Branch, Islamic Azad University, Tabriz, Iran

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

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ABSTRACT

Internet technology enables companies to capture new customers, track their performances and online behavior, and customize communications, products, services, and prices. Customer relationship management (CRM) is an important concept to maintain competitiveness at e-commerce. The issue of electronic customer relationship management (E-CRM) has increasingly become the identification of the success of the CRM implementation. The E-CRM has emerged as one of the most prominent information system that enables organizations to contact customers and collect, store and analyze customer data in order to provide a comprehensive view of their customers. Organization can obtain competitive advantages from increase effectiveness of the E-CRM. This research proposes determining the effective factors (cost, technology acceptance and employees' satisfaction) for the effectiveness of the E-CRM. The structural equation modeling technique was used to evaluate the causal model and to examine the reliability and validity of the measurement model. The results of gathered data from 210 employees of the East Azerbaijan Tax Administration in Iran is indicated that the impact of the technology acceptance on organization performance begins with infrastructure capability, ease of use, and E-learning systems, and the complementarity between these factors positively influences the effectiveness of the E-CRM. The results also indicated that the customer costs positively affects on the customer relationship performance, which consequently leads to improvements of the effectiveness of the E-CRM in organization. Our findings show that each of cost, technology acceptance and satisfaction employee plays an important role toward in effectiveness of the E-CRM.

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1. Introduction

Internet and web services as an information hub facilitate information and data transferring and sharing (Souri & Navimipour, 2014). Currently, the Internet makes a huge effect to the society and creates a new revolution in the 21st century where everything and everyone are getting online (Navimipour & Zareie, 2015; Nguyen & Simkin, 2013). Also, internet technology enables companies to capture new customers, track their performances and online behavior, and customize communications, products, services, and prices. Using the Internet to provide products, services and information to customers necessitates companies' accurate

understanding of their customers' needs (Mahdavi, Cho, Shirazi, & Sahebjamnia, 2008). Customers can easily use the Internet to access information on various products from numerous companies. The information then influences their purchase decisions. Furthermore, companies can collect and analyze the customers' information in order to make better decisions in marketing policy through many types of information technology (Mahdavi, Movahednejad, & Adbesh, 2011). More recently, Bradshaw and Brash (2001) have found that companies have become more efficient in developing marketing relationships that use Internet technology. Further, Feinberg and Kadam (2002) have suggested that the use of the Internet as a channel for commerce and information presents an opportunity for businesses to use the Internet as a platform for the delivery of the CRM functions on the Web E-CRM (Sivaraks, Krairit, & Tang, 2011).

In the 1990s, in the business domain gradually emerges the

* Corresponding author.

E-mail address: jafari@iaut.ac.ir (N. Jafari Navimipour).

concept of customer relationship management (CRM) which from the very first years, the CRM prevailed, gained prominence as a legitimate area of scholarly inquiry and stimulated the interest of global business and research community. The CRM is nothing more than an approach that stems from the need to create a new business environment, which allows a more effective management of relationships with customers (Galbreath & Rogers, 1999). The CRM a comprehensive strategy and process of acquiring, retaining, and collaborating with selected customers to create superior value for the company and the customer. It involves the integration of marketing, sales, customer service, and the supply-chain functions of the organization to achieve greater efficiencies and effectiveness in delivering customer value (Giannakis-Bompolis & Boutsouki, 2014). The CRM referred to the managerial process that most of organizations have applied to create competitive advantage (Mekkamol, Piewdang, & Untachai, 2013). For the past decade, the CRM has been one of the top priorities in both marketing research and practice. Considering the positive effects of the CRM activities on business growth (Day & Van den Bulte, 2002), market share (Schoder & Madeja, 2004), profitability (Schmitt, Skiera, & Van den Bulte, 2011), customer satisfaction (Coolil, Keiningham, Aksoy, & Hsu, 2007), and loyalty (Drèze & Nunes, 2011) found in many research studies therefore, it is not surprising that companies have invested heavily in the implementation of the CRM systems (Becker, Greve, & Albers, 2009; Reimer & Becker, 2015). The CRM applies information technology in order to gather data that could be used later for creating of required information and developing of personal and unique relations with customers (Javadi & Azmoon, 2011; Loria & Obeng, 2005). In recent years, we observed a change from product-oriented to customer-oriented business strategies, where customers are considered as a firm's major assets and resources of value to be managed across a lifecycle (Gupta & Lehmann, 2003; Heidemann, Klier, Landherr, & Zimmermann, 2013; Romano & Fjermestad, 2009).

Electronic customer relationship management (E-CRM) aims to fulfill customers' individual needs in order to increase the value for both the customers and firms alike (Yu, Nguyen, Han, Chen, & Li, 2015). An organization's capability to convert and combine knowledge from various sources successfully (Khodakarami & Chan, 2014) depends on organizational structures, processes and personal skills (Chen & Li, 2006; Da Xu, 2011). Customer data gathering plans, such as intranets, extranets, customer knowledge discovery algorithms, web spiders, cookies, online registration and purchasing, etc. generate huge amounts of data, however much of it is useless without scalable methods to collect, analyze, process, and understand it (Guo, Xu, Gong, Che, & Chaudhry, 2012; Tan et al., 2014). The E-CRM has emerged as the prominent information system that enables organizations to contact customers and collect, store and analyze customer data in order to provide a comprehensive view of their customers (Romano & Fjermestad, 2003). It enables firms to take full advantage of data collected and transform it into useful information and value-added knowledge for themselves and their customers, as data are analyzed to gain an understanding of not only purchasing patterns and trends, but also attitudes and preferences (Chen, 2014). Focusing on the most important customers with differentiated offerings can result in more efficient use of organizational resources and enhanced value for both the customer and the firm (Maklan & Knox, 2009).

To succeed with the E-CRM, companies need to match the products and campaigns to prospects and customers. It is aimed to intelligently manage customers' life cycle according to three stages: acquiring customers, increasing the value of the customers, and retaining good customers (Mahdavi et al., 2008). The issue of the E-CRM has increasingly become the identification of the success of the CRM implementation (Bull, 2003; Wu & Hung, 2009). The main

question is what factors influencing the effectiveness of the E-CRM? To achieve this goal, we have studied the employees of the Tax Administration of the East Azerbaijan Tax Administration in Iran. Briefly, The contributions of this paper are as follows:

- Providing a model and framework for determining the effective factors for the effectiveness of the E-CRM systems.
- Evaluation of the impact of cost, technology acceptance and employees' satisfaction on the effectiveness of the E-CRM systems.
- Exploring future challenges for the E-CRM systems.

The organization of this paper is as follows. Section 2, "literature review", Section 3 "research model and hypotheses" present the theoretical foundations of this research model and the hypotheses. Section 4, "method and measures", outlines the research methodology and measures. Section 5, "data analysis and results", describes the data analysis and results. Finally, Section 6 and 7 discuss the paper and presents limitations and directions for future research.

2. Literature review

Today's companies are intensely looking for ways for better interaction with customers and influencing on them (Javadi & Azmoon, 2011). The CRM is defined as the approach that involves identifying, attracting, developing, and maintaining successful customer relationships over time for increasing retention of profitable customers (Bradshaw & Brash, 2001). When these activities and techniques are delivered via Internet based media (e.g. e-mail, forums). Then the E-CRM is applied (Lee-Kelley, Gilbert, & Mannicom, 2003; Sigala, 2011). The issue of E-CRM has increasingly become the identification of the success of the CRM implementation (Bull, 2003; Turban, King, Lee, & Viehland, 2004). The E-CRM is a collection of concepts, tools, and processes that allows an organization to obtain the maximum value from their e-business investment. It helps companies to improve the effectiveness of their interaction with customers while at the same time making the interaction intimate through individualization (Mahdavi et al., 2008).

Hwang (2009) has examined the effect of uncertainty avoidance, social norms and innovative trust and ease of use in the E-CRM. The result showed that when people have a high tendency to mitigate uncertainty by adopting strict codes of behavior, their belief that the trusted party honestly adheres to these accepted rules of conduct is not directly influenced by this tendency. Thus, the social normative aspects of a website shall be emphasized (such as feedback mechanisms in the online community or media) rather than reducing procedural uncertainty by formal rules of conduct listed on the website for increasing the integrity dimension of online trust information system (IS) designer. Second, trust beliefs of the website should be enhanced through the perception that the target website is easy to use even in the case of innovative and proactive IT users. Third, in developing social norms, internal influences (family and friends) are more important than external influences (media). Social norms also significantly influence personal innovativeness in IT (PIIT), as expected.

Also, in another research, Sigala (2011) has investigated the E-CRM 2.0 applications and trends. First, the findings revealed an unbalanced exploitation of web 2.0, as tourism firms' E-CRM practices focused mainly on the first and last steps of the relationship life cycle. Tourism firms should not ignore the potential to exploit web 2.0 for enhancing and enriching customer relationships. To that end, the E-CRM activities may include the formation, sponsorship and management of customer online social networks,

the provision of customer support services, web 2.0 enabled customer communication strategies, loyalty customer services, and sales support services. However, in order to agree and commit on any technology investment and application, firms require hard evidence about the return of investment.

Moshref Javadi and Azmoon (2011) have aimed at performing of the research to determine the importance and effectiveness of major factors on the E-CRM capabilities in System Group Company¹ branches. Research results revealed that strategy has the most importance and priority among major factors of preparation for implementing of the E-CRM system.

Another research have examined and measured the outcomes of the E-CRM system implementation in the Thai banking industry from customers perspectives (Sivaraks, Krairit, & Tang, 2011). The research is an inductive and empirically based study. The results show the E-CRM implementation to be a viable means of increasing the bank–customer relationship quality and outcome, which comprises overall relationship quality, trust, satisfaction, commitment, loyalty, retention, and willingness to recommend. They indicated that if banks implement the E-CRM, especially operational E-CRM, their customers will recognize additional service attributes and the customers' relationships with their banks will improve.

Mekkamol et al. (2013) have designed a quantitative measure of the E-CRM for community tourism in Upper Northeastern Thailand. It is found from the study that the effect of website character and shopping convenience on care and service through website contact interactivity. There was a positive relationship between shopping convenience and website contact interactivity dimensions of the E-CRM for community tourism in Upper Northeastern Thailand. There was a positive relationship between website character and website contact interactivity dimensions of the modeling the E-CRM for community tourism in upper northeastern Thailand. The results showed that there was a positive relationship between website contact interactivity, care and service dimensions of the Modeling the E-CRM for community tourism in upper northeastern Thailand.

Finally, Yu et al. (2015) have investigated that how differential treatment of customers may affect their perceptions of fairness in a firm and its personalized the E-CRM activities. They also developed an integrated model of fairness in the E-CRM that incorporates four key variables internal to the firm— service quality, price, communication efforts, and differential treatment. They collected data using a person-administered questionnaire surveyed among customers from a large UK city. The study has established that as customers' perception of firms' differential treatment change, their perceptions of the firms' fairness also change. They showed that perceived service quality, price consciousness, and communication are predictors of attitudes towards fairness, and subsequently links with re-patronage intentions. These results have implications for offerings pertaining to personalization or tailored differentiation and the E-CRM schemes (Nguyen & Simkin, 2013). Also, the paper provides a new integrated model using multiple the E-CRM activities to explain why customers are likely to return to a firm, when they are treated differently, for services, prices, and communication.

3. Research model and hypotheses

The purpose of this section is to provide a new model for determining the effective factors for the effectiveness of the E-CRM systems. Fig. 1 presents the proposed research model. Eleven variable within three dimensions are presented and discussed. Eleven

hypotheses for testing the relationships among the components of the framework are presented in this section. Detailed hypotheses and supporting literature are explained in the next section. The rest of this section provides a brief review on the most important state of the art researches to identify the effective factors for the effectiveness of the E-CRM. Based on the previous studies, nine dimensions within three latent variables (cost, technology acceptance, an employee satisfaction) are discussed in the rest of this section. In Table 1–3, we try to summarize all the referential sources of the research variables.

3.1. Cost

With increased market complexity, customer demands for greater quality at lower cost with more expedient delivery, organizational access to new knowledge and capabilities is becoming the critical success factor necessary to compete globally (Lipparini & Fratocchi, 1999). The “low cost” Internet communication platform delivers functionality that Makes it the most strategic killer application of technology for business in the 20th century (Jutla, Craig, & Bodorik, 2001). As the internet is becoming more and more important in business life, many companies consider it as an opportunity to reduce customer-service costs, tighten customer relationships and most important, further personalize marketing messages and enable mass customization. Enterprises have attempted to deliver a better customer experience at lower cost by analyzing the costs associated with resolving customer inquiries and using the E-CRM applications to streamline each segment of a service interaction (Darajeh & Tahajod, 2010). Therefore, this study's research model adopts cost as a dependent variable comprising innovation and technical support for assessing the impact the direct and indirect effects on effectiveness of the E-CRM. Thus, the hypothesis related to cost is:

H1: The cost will positively influence on the effectiveness of the E-CRM.

3.1.1. Innovation

Due to the globalization of economics and technological changes, competition has been increased among countries in Macro level; and businesses in Micro level (Bruque & Moyano, 2007). In such competition, only those firms can survive which are able to obtain a competitive advantage over their rivals (Benitez-Amado, Perez-Arostegui, & Tamayo-Torres, 2010). Technological innovation is considered as a pre-requisite for gaining competitive advantage (Bergek, Hekkert, & Jacobsson, 2008). Innovation in the IT refers to newness in products, services, processes, and other IT dimensions (e.g. different systems of the IT which have emerged since the beginning of IT) (Wang & Ramiller, 2009). Benitez-Amado et al. (2010) have studied the effect of IT on enhancement of firms' capabilities, emphasizing the mediating role of innovation. It was concluded that innovation contributes to development of firms' capabilities. Today, firms need innovation to grow and have been encouraged to develop their innovative activities by the behavioral patterns (Sweetman, Luthans, Avey, & Luthans, 2011). According to Ortt and van der Duin (2008), innovation reduces the competitiveness in a dynamic business environment. Lumpkin and Dess (1996) also defined innovation as supporting and getting involved in new ideas through creative approaches in order to solve problems and meet market needs. Innovation could also be defined as a new product or service, a new technology or manufacturing process, a new structure or administrative system, or a new plan regarding the members of an organization (Liao & Wu, 2010; Ziyae, Mobaraki, & Saeediyoun, 2015). Technological innovations are growing rapidly, yet adopting new technology is often more

¹ <http://www.systemgroup.net>.

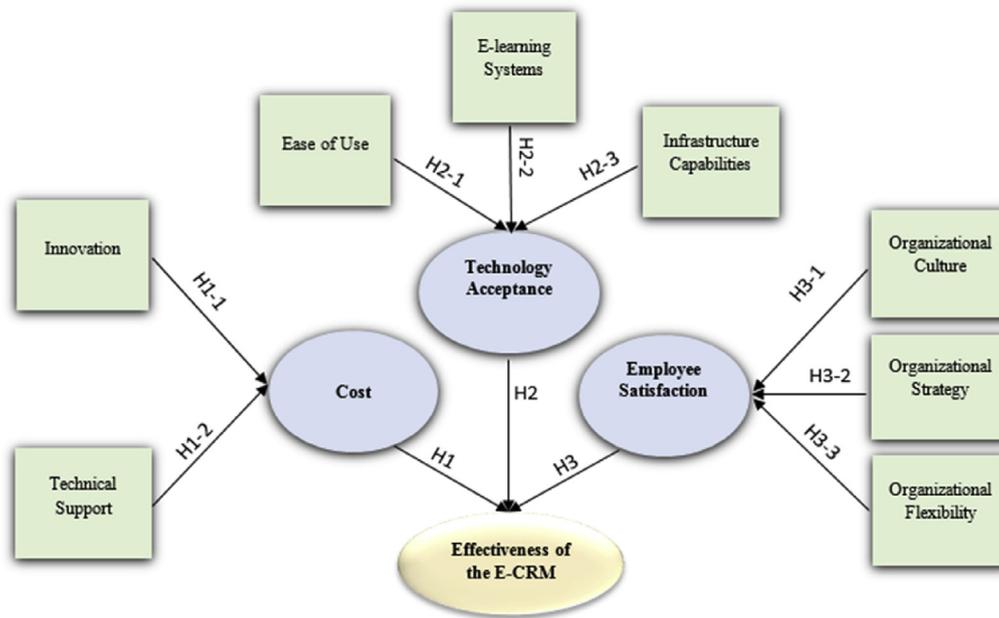


Fig. 1. Proposed research model.

Table 1
The indicators to measure the cost.

Indicators	References
Cost	Darajeh and Tahajod (2010), Jutla et al. (2001)
Innovation	Ziyae et al. (2015), Mostaghel et al. (2015), Benitez-Amado et al. (2010), Lopez-Nicolas and Soto-Acosta (2010), Liao and Wu (2010), Slone et al. (2007), Bergek et al. (2008), Bruque and Moyano (2007)
Technical Support	Rubin et al. (2013)

difficult than firms originally anticipate (Slone, Mentzer, & Dittmann, 2007), especially when the technology is strategically vital (Mostaghel, Oghazi, Beheshti, & Hultman, 2015). The customer satisfaction metric depends on research and development processes, since one of the factors that contribute to customer satisfaction is the rate of introduction of innovative products and services. Value, such as reduced costs to customers, may depend on changes to procurement processes due to introduction of price innovation based business models at the supplier end (Jutla et al., 2001). Innovativeness is seen as one of the major characteristics in driving the firm. In business competition, it has been found that some executives are keen to take risks adopting new technology whereas some are hesitant to try out such technology. Different levels of this individual characteristic can affect how the technology is adopted (Sophonthummapharn, 2009). Thus, the hypothesis

Table 2
The indicators to measure the technology acceptance.

Indicators	References
Technology Acceptance	Persico et al. (2014), Holzinger (2005), Davis (1989)
Ease of Use	Holzinger et al. (2011), Wahab, Al-Momani, and Noor (2010), Sanders and Manrodt (2003), Lara et al. (2014), Dominici and Palumbo (2013), Stickel et al. (2008)
E-learning Systems	Chen (2014), Chuang and Lin (2013), Mithas et al. (2011), Melville et al. (2004)
Infrastructure Capabilities	

related to innovation is:

H1-1: The innovation will positively influence on the cost.

3.1.2. Technical support

Technical support refers to a plethora of services by which enterprises provide assistance to users of technology products such as, software products or other electronic or mechanical goods. The technology used to support an online course may affect the frequency and manner in which users and masters interact with one another, provide and receive feedback, and interact with course materials (Rubin, Fernandes, & Avgerinou, 2013). Thus, the hypothesis related to technical support is:

H1-2: The technical support will positively influence on the cost.

3.2. Technology acceptance

Shackel suggested that systems' acceptability can be defined as a function of three orthogonal dimensions, balanced against cost: (1) utility (whether the system does what is needed functionally); (2) usability (whether the users can actually work with the system successfully); (3) likeability (whether the users feel that the system is suitable). Usability (effort needed for use, and on the individual assessment of such use, by a stated or implied set of end users

Table 3
The indicators to measure the employee satisfaction.

Indicators	References
Employee Satisfaction	Islam (2014), Yeh (2014), Ahmad and Tarmudi (2012), Tsai et al. (2007)
Organizational Culture	Howell and Annansingh (2013), Schein (2010), Dotan (2008)
Organizational Strategy	Paksoy, Pehlivan, and Kahraman (2012), Javadi and Azmoon (2011), Ocker and Mudambi (2003)
Organizational Flexibility	Verdú and Gómez-Gras (2009), Hatum and Pettigrew (2006), Volberda (1999), Webb and Pettigrew (1999)

(Holzinger, Searle, & Wernbacher, 2011). Technology are identified as key enablers of E-CRM (Jutla et al., 2001). To assess users' acceptance of a technological innovation, one of the most well-known models is the Technology Acceptance Model (TAM), originally proposed by Davis (1989). At the core of the TAM are two important acceptance indicators: perceived ease-of-use (PEOU) and perceived usefulness (PU), which refer to "the degree to which users believe that adopting a particular technology would be free from effort" and "the degree to which a person believes that using a particular system would enhance his or her job performance" respectively (Davis, 1989; Persico, Manca, & Pozzi, 2014). Since new technologies such as personal computers are complex and an element of uncertainty exists in the minds of decision makers with respect to the successful adoption of them, people form attitudes and intentions toward trying to learn to use the new technology prior to initiating efforts directed at using. Attitudes towards usage and intentions to use may be ill-formed or lacking in conviction or else may occur only after preliminary strivings to learn to use the technology evolve. Thus, actual usage may not be a direct or immediate consequence of such attitudes and intentions (Bagozzi, Davis, & Warshaw, 1992). According to Davis, the attitude of an individual is not the only factor that determines his use of a system, but is also based on the impact which it may have on his performance. Therefore, even if an employee does not welcome an information system, the probability that he will use it is high if he perceives that the system will improve his performance at work. Besides, the TAM hypothesizes a direct link between perceived usefulness and perceived ease of use. With two systems offering the same features, a user will find more useful the one that he finds easier to use (Dillon & Morris, 1996). Therefore, this study's research model adopts technology acceptance as a dependent variable comprising ease of use, e-learning systems and infrastructure capabilities for assessing the impact the direct and indirect effects on effectiveness of the E-CRM. Thus, the hypothesis related to technology acceptance is:

H2: The technology acceptance will positively influence on the effectiveness of the E-CRM.

3.2.1. Ease of use

Usability is most often defined as the ease of use and acceptability of a system for a particular class of users carrying out specific tasks in a specific environment. Ease of use affects the users' performance and their satisfaction, while acceptability affects whether the product is used (Bevan, 1995). Thus, it is of great importance that every software practitioner not only be aware of various usability methods, but be able to quickly determine which method is best suited to every situation in a software project. One of the basic lessons we have learned in human–computer interaction (HCI) is that usability must be considered before prototyping takes place. There are techniques (such as usability context analysis) intended to facilitate such early focus and commitment (Holzinger, 2005). Ease of use is defined as the degree to which a person believes that using an information system would be free of effort. It is one of the "classical" concepts in information systems research (Davis, 1989; Sanders & Manrodt, 2003). A significant body of research in information systems has accumulated evidence for the existence of an effect of ease of use on initial user acceptance and sustained usage of systems (Venkatesh, 2000). Some previous researchers have noted perceived ease of use as the extent the person accepts using services with no additional cost (Al-Gahtani, 2001; Davis, 1989). They posit perceived ease of use as the extent to which a person believes that using a particular system will be free of effort. Gefen and Straub, (2000) propose that the significance of perceived ease of use will vary with the type of task being addressed. They

hypothesize that ease of use will not have an important influence on usage for something that is task oriented, such as making a purchase online, but will be significant in a task that is more essential, such as gathering information. The success of the system used depends on the level of ease of use of the system. (Wahab, Nor, & Al-Momani, 2010). Perceived ease of use can also contribute in an instrumental way in improving a person's performance. Due to the fact that the user will have to deploy less efforts with a tool that is easy to use, he will be able to spare efforts to accomplish other tasks (Davis, Bagozzi, & Warshaw, 1989). Thus, the hypothesis related to ease of use is:

H2-1: The ease of use will positively influence on the technology acceptance.

3.2.2. E-learning systems

A wide spectrum of e-learning technologies has been developed, including various authoring systems, virtual simulations, digital learning games, mobile technologies (Holzinger, Nischelwitzer, & Meisenberger, 2005) etc.; ranging from simple information presentation to highly multimedia-based and interactive applications (Holzinger, Nischelwitzer, & Kickmeier-Rust, 2006). However, most of those technologies are designed to present information to the learner, of course, at any time and any place. Following the discussions on Web 2.0, it becomes obvious that the presentation of information is predominant (Ebner, Holzinger, & Maurer, 2007); at least such technology enables authoring of everyone and the end users can customize both content and form (Maurer, 1998; Stickle, Ebner, & Holzinger, 2008). The European Commission describes e-learning as the use of the Internet and new multimedia technologies to advance the quality of learning by providing access to resources and services, as well as enabling remote exchange and collaboration (Dominici & Palumbo, 2013). E-learning is also emerging as a popular learning approach utilized by many organizations (Navimipour & Zareie, 2015). E-learning is a form of distance learning that is completely virtualized through an electronic channel (medium), like the Internet (Lara, Lizcano, Martínez, Pazos, & Riera, 2014). It is particularly important that the e-learning systems are able to integrate different paces of content and navigation in order to be able to respond to diverse needs of the learners and to avoid the cognitive overload (Ruiz, Díaz, Soler, & Pérez, 2008). Thus, the current organizations worldwide prefer e-learning or online learning because they provide a cost-effective and timely learning vehicle to meet the various requirements of continuous education, and train civil agents working at different locations (Chen, 2014). In an e-learning environment, learners are supplied with learning materials via media, making e-learning systems a cost- and time-effective approach to employee training. Thus, the hypothesis related to e-learning systems is:

H2-2: The e-learning systems will positively influence on the technology acceptance.

3.2.3. Infrastructure capabilities

Literature in the information system domain indicates that firm-specific resources and capabilities can improve a firm's performance (Melville, Kraemer, & Gurbaxani, 2004; Mithas, Ramasubbu, & Sambamurthy, 2011) (Chuang & Lin, 2013; Mithas, Tafti, Bardhan, & Goh, 2012; Wade & Hulland, 2004). However, it is well known and widely publicized that changes in IS infrastructure often lead to failure and disappointment (Brynjolfsson, 1993; Farbey, Lano, & Targett, 1995; Willcocks, 1992). The reasons for this disappointment in investment are however unclear and may be due to the fact that the business processes are inefficient, or the underlying IS applications are poorly designed. Alternatively, it has recently been

hypothesized (Giaglis, Paul, & O'Keefe, 1999) that it may be that the IS capabilities are sufficient but inefficient use of the underlying technological infrastructure may be causing the system to falter. Most contemporary IS applications seem to rely on some kind of infrastructural support, which usually takes the form of telecommunication-based computer networks (local area networks, wide area networks, and so on). The advent of Internet/Intranets and the widespread attention that has lately been paid to their potential to support commercial transactions have also given new impetus to the problem of studying the relationships between business processes, IS applications, and computer networks in an integrated (Eatock, Giaglis, Paul, & Serrano, 2000; Giaglis et al., 1999). Thus, the hypothesis related to infrastructure capabilities is:

H2-3: The infrastructure capabilities will positively influence on the technology acceptance.

3.3. Employee satisfaction

Employees are the important assets of organizations and play a significant role in their success (Navin, Navimipour, Rahmani, & Hosseinzadeh, 2014). Some researchers have defined satisfaction as positive feelings or aggressive responses; whereas others defined it as the gap between expected gain and the actual gain (Tsai, Yen, Huang, & Huang, 2007). Also, user satisfaction is defined as the sum of positive and negative responses to a set of factors (Najmul Islam, 2014) and it is defined as the pleasurable emotional state of an employee, regarding working situations, supervisor, his or her job duties, and the organization as a whole (Yeh, 2014). Measuring employee satisfaction offers an indication of how successful the organization is at presenting effective training and benefits to its employees and offers additional insights regarding retention efforts (Ahmad & Tarmudi, 2012). Employee satisfaction is described as a pleasurable or positive emotional state resulting from an employee's appraisal of his or her company environment or company experience (Rollinson, 2008). Therefore, this study's research model adopts employee satisfaction as a dependent variable comprising organizational culture, organizational strategy and organizational flexibility for assessin the impact the direct and indirect effects on effectiveness of the E-CRM. Thus, the hypothesis related to employee satisfaction is:

H3: The employee satisfaction will positively influence on the effectiveness of the E-CRM.

3.3.1. Organizational culture

Schein (2004) considers culture to be an institutional process through which behavior is transformed and refined over time (Howell & Annansingh, 2013). It is clear that the implementation experience of organizations will differ from each other. Most of these differences are likely to be as a result of specific organizational characteristics such as the resources available, organizational culture, process and size. However, it may be possible to define methodologies for implementation that will apply to specific types of organizations (Adebanjo, 2008). Various researchers report findings which indicate organisational culture as a force that influences both employee behavior and the success of a company (Davidson, 2004; Denison, 1990; Denison & Mishra, 1995). Also, Pollitt and Klein (2005) have reported the research findings that indicate organisational culture as the strongest strategic lever in creating an engaged and committed workforce. Corporate culture is something that is not static and although difficult to change, can be made more performance enhancing by investigating its characteristics (Kotter, 2008). Organisational culture provides the underlying values, beliefs and principles that serve as a foundation for an

organisation's management system, as well as the set of management practices and behaviors that both exemplify and reinforce those basic principles. These principles and practices endure because they have meaning for the members of an organisation (Denison, 1990). A formal measurement of organisational management practices by means of culture surveys help employees to describe their experiences of the organisational culture (McMurray & Scott, 2003). Thus, the hypothesis related to organizational culture is:

H3-1: The organizational culture will positively influence on the employee satisfaction.

3.3.2. Organizational strategy

According to Ocker and Mudambi (2003) model, one of the major factors of organization's preparation for the E-CRM are the strategy. Paying attention to the most important parameters in the successful execution of the E-CRM, Ocker and Mudambi have stressed that organizations follow the CRM strategy with the aim of increasing business performance and obtained value of organizational challenges in relation to this attempt. They have suggested that organizations should perform a deep analysis of organizational preparation before utilizing the E-CRM in order to reduce danger of the organization's failure (Javadi & Azmoon, 2011). Much research has argued that the E-CRM concept is not simply a software application but is a strategy. Basically, the measure includes example attributes such as Internet applications, differentiated services, customer segmentation, and customers' profitability in order to discriminate the adoption of customer strategies in a firm (Wu & Hung, 2009). Thus, by deploying an the E-CRM strategy to maintain relationships with customers, an organization will be better equipped to serve their customers' desires and improve their loyalty, which will in turn improve the organization's efficiency and profitability (Darajeh & Tahajod, 2010). Thus, the hypothesis related to organizational strategy is:

H3-2: The organizational strategy will positively influence on the employee satisfaction.

3.3.3. Organizational flexibility

Flexible capabilities organizations need in order to cope with higher levels of disorder. This does not mean that we ignore the concept of innovative-ness. On the contrary, as Quinn (1985) and Volberda (1999) have suggested, organizational flexibility is an inclusive concept that encompasses the idea of innovation. Thus, organizational flexibility is a necessary condition for innovation. The lack of precision and blurred boundaries between these two concepts warrants a discussion of the similarities and differences between organizational flexibility and organizational innovative-ness. Institutional theory is raised as a complementary theory because it emphasizes the role of mimetic behavior in explaining patterns of adaptation, innovation and change throughout firms in an industry (Webb & Pettigrew, 1999) informing those organizational and contextual factors influencing flexibility (Hatun & Pettigrew, 2006). Organizational flexibility as a term is explained by Lund and Gjerding (1996) as the adaptation of structures and processes, which should respond accordingly to new products and technology in altering economic and market circumstances. Verdú and Gómez-Gras (2009) further developed this, using the term to describe the existence of management capability in a company and how far it successfully utilises this to speed of reaction to unexpected changes and maintain overall control of the establishment. Thus, the hypothesis related to organizational flexibility is:

H3-3: The organizational flexibility will positively influence on the employee satisfaction.

For this purpose, we presented a research model and framework for assessing the effective factors for the effectiveness of the E-CRM. In Fig. 1, we showed the details of the relations model, the main body of our research, which is composed of four principal relations: cost, acceptance technology, satisfaction employee and effectiveness the E-CRM.

Next section describes the methodology used in this research study, including the measurement, data collection procedure and the data analysis, including an analysis of the measurement model and test of the partial least squares (PLS) structural model.

4. Method and measures

For measuring the elements of the model, a questionnaire is designed. Questionnaires were revised with the help of experts (including academics and practitioners) with significant experiences in the E-CRM. To examine the validity of the questionnaire was used from standard and reliable resource and were used after the revision, then among the statistical Sample was distributed. In this study can be said, acceptability questionnaire and study measuring considered questions. The questionnaire was presented to employees of the East Azerbaijan Tax Administration² in Iran. For statistical analysis of questionnaires, we used the SPSS 22³ and SMART- PLS⁴ (Partial Least Squares) 2.0 software package. All questionnaire items used a five point Likert-type scale where 1 = completely disagree, 3 = neither agree nor disagree, and 5 = completely agree. The PLS avoids many of the restrictive assumptions underlying covariance based structural equation modeling techniques (SEM) such as multivariate normality and large sample size (Falk & Miller, 1992; Fornell & Bookstein, 1982). Furthermore, the PLS enables both formative and reflective constructs to be tested together in the model (Chin, 1998). Thus, this study, which includes formative constructs, used the PLS rather than the other statistical techniques in data analysis. Our sample size is (209) which is more than adequate for the PLS estimation procedures (Hwang, 2009).

The target samples in this study are employees of the East Azerbaijan Tax Administration in Iran. In recent years, the development of public access to the Internet tend to offer electronic services has increased and one of the clearest symptoms of the electronic services, taxpayers interact with the tax system of the country. Use the electronic tax return on the one hand the saving of time and costs of the taxpayers to complete and providing a tax return and on the other hand consequence encourage people to use electronic tax returns. Since the East Azerbaijan Tax Administration in Iran, in 2014, ranks first in the successful implementation of electronic systems, customer relationship management among other administrations of the province; accordingly, we intend the identify the factors that important role in effectiveness of the E-CRM in this organization. The total volume of the sample was 600 people. According to Morgan table (Appendix B), the target population was selected. Thus, 234 cases were randomly selected. In this study, has distributing the questionnaires number about 234 among of employees the East Azerbaijan Tax Administration in Iran. From the 224 questionnaires returned from employees, 14 were deemed unusable (incomplete) resulting in 210 employee's questionnaires for analysis. The time range of this research is from 2014

to 2015. The standardized assessment questionnaire for examining the hypothesis that the content of this questionnaire has been completed based on research hypothesis and data collected from the research literature review. The samples selected for this study are the male and female genders. To examine descriptive statistics about gender, age and education the spss software was used. The results of the analysis show that in the sample studied 77.1 percent of respondents man and 22.9 percent of the respondents were women; the evaluations of the education and age respondents reported the 57.6% of respondents have had a bachelor's degree and 41.4% of the respondents were between 35 and 45 years. Then by using SPSS software has gained Cronbach's alpha value that is equal 0.91. Thus, this questionnaire has acceptable reliability.

5. Data analysis and results

The measurement model in the PLS is assessed by examining internal consistency, convergent validity, and discriminant validity (Barclay, Higgins, & Thompson, 1995; Hwang, 2009; Mun & Hwang, 2003). The measurement model was assessed using item loadings, convergent validity, reliability of the measure, and discriminate validity. Internal consistencies (similar to Cronbach's alpha) of 0.7 or higher are considered adequate (Barclay et al., 1995; Fornell & Bookstein, 1982). The convergent validity was assessed through using average variance extracted (AVE), which must exceed a standard minimum level of 0.5 (Fornell & Larcker, 1981; Hair, Black, Babin, Anderson, & Tatham, 2006). The reliability of the measures was examined through the use of composite reliability and Cronbach's alpha. In general, the minimum value of composite reliability is 0.7 Nunnally (1978), and the minimum value of Cronbach's alpha is 0.7 (Cronbach, 1951). The discriminate validity was assessed by using the square root of the AVE and latent variable correlations. The square root of the AVE of each construct should exceed the correlation shared between one construct and other constructs in the model (Huang, Huang, Huang, & Lin, 2012). Tables 4 and 5 shows the internal consistency reliabilities and correlations among constructs.

This study adopted the criteria evaluation measurement model suggested by Fornell and Larcker (1981) where the Cronbach's alpha should be significant and greater than 0.7, the composite reliability (CR) should be greater than 0.7, and the AVE should be greater than 0.5. The must be Cronbach's a coefficient of each dimension greater than 0.7 (Cronbach, 1951), for the all variables including latent variables effectiveness the E-CRM (0.87), cost (0.71), employee satisfaction (0.86), and technology acceptance (0.87) is greater than 0.7. This indicates that the measurement variable items of this study are coincident. The CR values are within 0.83–0.92 are greater than 0.7. The AVE values within 0.51–0.85 are greater than 0.5. The three conditions of this study are coincident with good convergent validity.

Furthermore, the discriminant validity of the scales was assessed using the benchmark suggested by Fornell and Larcker (1981) the square root of the AVE from the factor should be greater than the correlation shared between the factor and other factors in the model. Table 5 lists the correlations among the factors, with the square root of the AVE on the diagonal. All of the diagonal values exceed the correlations between any pair of factors, indicating that the measure has adequate discriminant validity (Chen, Chuang, & Chen, 2012). As recommended, the internal consistency reliabilities were all higher than 0.7 without exception, and the diagonal elements (square root of the variance shared between the constructs and their measures) were all higher than 0.7 and also higher than correlations between target constructs and other constructs without exception.

In addition to the discriminant validity assessment, we also

² www.eata.ir.

³ <http://www-01.ibm.com/software/analytics/spss/>.

⁴ <http://www.smartpls.com/>.

Table 4
The convergent validity and reliability of measure for the measurement model.

Cronbach's alpha	Composite reliability	AVE	Indicators
0.87	0.90	0.51	Effectiveness E-CRM
0.71	0.84	0.53	Cost
0.86	0.89	0.55	Employee satisfaction
0.71	0.83	0.62	Organizational flexibility
0.87	0.91	0.63	Technology acceptance
0.74	0.85	0.65	Organizational strategy
0.77	0.86	0.68	Innovation
0.78	0.87	0.69	E-learning systems
0.79	0.89	0.71	Organizational culture
0.77	0.89	0.81	Ease of use
0.80	0.91	0.84	Technical support
0.83	0.92	0.85	Infrastructure capabilities

checked for multicollinearity due to the relatively high correlations among some factors. The variance inflation factor (VIF) in this study ranged from 1.055 to 2.432, which was below 3.3 (the accepted criterion) (Chen et al., 2012; Diamantopoulos & Siguaw, 2006). In summary, the measurement model demonstrated adequate and sufficient reliability, unidimensionality, convergent validity, and discriminant validity.

Multi-collinearity might pose a relevant problem as the formative measurement model is based on multiple regression. A concern with formative measures is the potential multi-collinearity among the items (Mathwick, Malhotra, & Rigdon, 2001) which could produce unstable estimates. An inspection of all indicators' correlation matrix can serve as a first indication of pairwise collinearity. The VIF is a metric for multicollinearity, i.e., collinearity between more than two indicators. The VIF is calculated as the inverse of the tolerance value (Hair et al., 2006). The term VIF is derived from the fact that its square root is the degree to which the standard error has been increased due to multicollinearity. There is no clear threshold value for multicollinearity. As a rule of thumb, the VIF should not exceed a value of 10, but, in general, the critical value should be defined individually and be based on practical considerations in respect of each analysis. Green and Tull 1988) for example, argued that no multiple correlation of a regression's variables should exceed the dependent variable's multiple correlation with the indicators (Götz, Liehr-Gobbers, & Krafft, 2010). The resulting VIF for these constructs are between 2.27 and 8.33. Therefore, multi-collinearity does not represent a serious problem. Table 6 gives an overview of the VIFs of formative indicators. Amount of the R² for each index is equal to the square of the load factor between the Construct and the Item. The "Q" represent each question for each construct.

$$VIF(\text{any of the item}) = \frac{1}{1 - R^2} \quad (1)$$

The research hypotheses were tested using PLS. PLS is a component-based approach that assesses construct reliability and validity and estimates the relationships among constructs (Joereskog & Wold, 1982). Thus, PLS can accommodate different variable type, as well as direct, indirect, and moderating effects (Fornell, 1982), such that latent constructs to be modeled as formative or reflective indicators (detain this study are both types), and it makes minimal demands on measurement scales, sample size, and residual distributions (Chin, 1998). Using ordinary least squares as its estimation technique, the PLS performs an iterative set of factor analyses and applies bootstrap approach to assess the significance (t values) of paths (Chin, 1998; Chin, Marcolin, & Newsted, 2003). Fig. 2 provides the results of hypothesis testing. All of the hypotheses were supported and all were significant at the 0.999 level (p < 0.001). Parameter

Table 5
The discriminant validity of the measurement model.

Structures	Effectiveness E-CRM	Cost	Employee satisfaction	Organizational flexibility	Technology acceptance	Organizational strategy	Innovation E-learning system	Organizational culture	Ease of use	Technical support	Infrastructure capabilities
Effectiveness E-CRM	0.71^a										
Cost	0.61	0.73^b									
Employee satisfaction	0.68	0.68	0.74^c								
Organizational flexibility	0.66	0.66	0.63	0.79^d							
Technology acceptance	0.61	0.33	0.45	0.67	0.80^e						
Organizational strategy	0.57	0.57	0.69	0.54	0.32	0.80^f					
Innovation	0.70	0.64	0.73	0.68	0.43	0.50	0.82^g				
E-learning system	0.69	0.37	0.46	0.39	0.48	0.30	0.49	0.83^h			
Organizational culture	0.54	0.59	0.72	0.69	0.44	0.59	0.69	0.44	0.84ⁱ		
Ease of use	0.70	0.26	0.36	0.33	0.25	0.26	0.32	0.69	0.34	0.90^j	
Technical support	0.31	0.48	0.41	0.42	0.14	0.43	0.40	0.16	0.10	0.32	0.92^k
Infrastructure capabilities	0.64	0.29	0.41	0.32	0.63	0.30	0.37	0.61	0.69	0.12	0.84

Note: a = √0.51, b = √0.53, c = √0.55, d = √0.62, e = √0.63, f = √0.65, g = √0.68, h = √0.69, i = √0.71, j = √0.81, k = √0.84, l = √0.85.

Table 6
Overview of VIFs of formative indicators.

Latent Variable	Construct	Item	VIF
Cost	Innovation	Q1	3.84
		Q2	3.45
		Q3	2.27
Acceptance technology	Technical support	Q4	5.55
		Q5	6.66
	Ease of use	Q6	7.11
		Q7	3.70
	E-learning systems	Q8	4.34
		Q9	3.03
		Q10	2.38
Employee satisfaction	Infrastructure capabilities	Q11	8.33
		Q12	5.26
		Q13	3.03
	Organizational culture	Q14	3.22
		Q15	4.76
		Q16	2.63
	Organizational strategy	Q17	3.57
		Q18	2.44
	Organizational flexibility	Q19	2.44
		Q20	2.13

estimates and t-values for the hypothesized relationships are shown in Table 7. The structural model represents the relationships between constructs or latent variables that were hypothesized in the research model.

Since the primary objective of the PLS is prediction, the goodness of a theoretical model is established by the strength of each structural path and the combined predictiveness. The R^2 of its exogenous constructs (Chin, 1998). Falk and Miller (1992) suggested that the variance explained, or the R^2 , for endogenous variables should be greater than 0.1 (Duarte & Raposo, 2010). For an adequate evaluation of the structural model in the PLS, there are two key indexes: the explained variance in the endogenous variables (R^2) and the path coefficients (Barroso, Carrión, & Roldán, 2010). The R^2 measures the quality of the inner model and is calculated for each endogenous variable according to latent variables which explain it (Stan & Saporta, 2010). The model explained substantial variance in cost ($R^2 = 0.74$), and modest variance in employee satisfaction ($R^2 = 0.52$), technology acceptance ($R^2 = 0.43$), and effectiveness of the E-CRM ($R^2 = 0.60$). In all cases, the explained variance is above 10%, so the complete model is well defined (Chaparro-Peláez, Pereira-Rama, & Pascual-Miguel, 2014; Falk & Miller, 1992). The variance explained for each dependent construct is showed in Table 7. Further discussions about these findings are provided in the next section.

$$\overline{Red} = \frac{Red\ cost + Red\ Acceptance\ technology + Red\ Employee\ satisfaction + Red\ Effectiveness\ E - CRM}{4}$$

The PLS path modeling lacks a well identified global optimization criterion so that there is no global fitting function to assess the goodness of the model. Furthermore, it is a variance-based model strongly oriented to prediction. Thus, model validation mainly focuses on the model predictive capability. According to the PLS structure, each part of the model needs to be validated: the measurement model, the structural model and the overall model. That is why, the PLS path modeling provides three different fit indexes: the communality index, the redundancy (Red) index and the Goodness of Fit (GoF) index (Vinzi, Trinchera, & Amato, 2010).

Although the quality of each structural equation is measured by a simple evaluation of the R^2 fit index, this is not sufficient to evaluate the whole structural model. Specifically, since the structural equations are estimated once the convergence is achieved and he latent variable scores are estimated, then the R^2 values only take into account the fit of each regression equation in the structural model. It would be a wise choice to replace this current practice by a path analysis on the latent variable scores considering all structural equations simultaneously rather than as independent regressions. We see two advantages in this proposal: the path coefficients would be estimated by optimizing a single discrepancy function based on the difference between the observed covariance matrix of the latent variable scores and the same covariance matrix implied by the model; the structural model could be assessed as a whole in terms of a chi-square test related to the optimized discrepancy function. We have noticed, through several applications, that such a procedure does not actually change the prediction performance of the model in terms of explained variances for the endogenous latent variables. Up to now, no available software has implemented the path analysis option in a the PLS framework. In view of linking the prediction performance of the measurement model to the structural one, the redundancy index computed for the j -th endogenous block, measures the portion of variability of the manifest variables connected to the j -th endogenous latent variable explained by the latent variables directly connected to the block, i.e.:

$$Red\ j = Communality\ j \times R^2 \tag{2}$$

$$Communality\ j = (loadings)^2 \tag{3}$$

Therefore:

- Red cost = Com cost $\times R^2 = 0.53 \times 0.72 = 0.38$
- Red acceptance technology = Com acceptance technology $\times R^2 = 0.63 \times 0.43 = 0.27$
- Red employee satisfaction = Com employee satisfaction $\times R^2 = 0.55 \times 0.52 = 0.29$
- Red effectiveness E-CRM = Com effectiveness E-CRM $\times R^2 = 0.51 \times 0.60 = 0.31$

A global quality measure of the structural model is also provided by the average redundancy index, computed as:

$$\overline{Red} = \frac{1}{n} \sum_{j=1}^n Red_j \tag{4}$$

$$\overline{Red} = \frac{0.38 + 0.27 + 0.29 + 0.31}{4} = 0.31$$

Where “n” is the total number of endogenous latent variables in the model. Because the redundancy is a suitable measure for assessing the structural equation modeling is structural; whatever much more redundancy; that is more suitable fit the structural model in a study.

As aforementioned, there is no overall fit index in PLS path modeling. Nevertheless, a global criterion of goodness of fit has

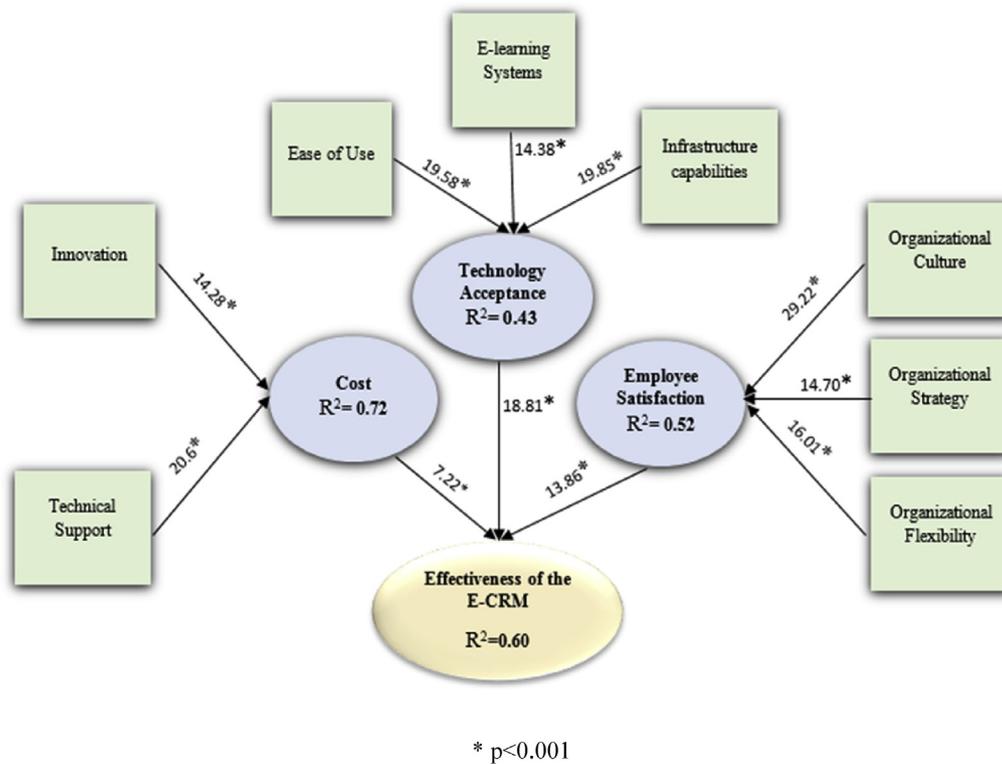


Fig. 2. PLS results for research model.

been proposed by Tenenhaus, Amato, and Esposito Vinzi (2004) the GOF index. Such an index has been developed in order to take into account the model performance in both the measurement and the structural model and thus provide a single measure for the overall prediction performance of the model. For this reason the, GOF index is obtained as the geometric mean of the average communality index and the average R^2 value:

$$GOF = \sqrt{AVE \times R^2} \tag{5}$$

Formula (6) comes from the definition of AVE average.

$$\mu_{AVE} = \frac{1}{n} \cdot \sum_{i=1}^n X_i \tag{6}$$

The AVE average value is calculated as:

$$\mu_{AVE} = \frac{0.51 + 0.53 + 0.55 + 0.62 + 0.63 + 0.65 + 0.68 + 0.69 + 0.71 + 0.81 + 0.84 + 0.85}{12}$$

$$\mu_{AVE} = 0.67$$

Where the average R^2 value is obtained as:

$$\mu_{R^2} = \frac{1}{n} \cdot \sum_{i=1}^n X_i \tag{7}$$

$$\mu_{R^2} = 0.57$$

Thus, according to substituting (6), (7) into (5), the relative Gof index is:

$$GOF = \sqrt{0.67 \times 0.57} = 0.62$$

The GOF value is obtained about 0.62, which exceeds the cut-off value of 0.36 for large effect sizes of R^2 and allows us to conclude that the model performs well compared to the baseline values defined above. Therefore, the structure of model had a good fit with the data. This index is bounded between 0 and 1. Both the GOF and the relative GOF are descriptive indexes, i.e. there is no inference-based threshold to judge the statistical significance of their values. As a rule of thumb, a value of the relative GOF equal to or higher than 0:90 clearly speaks in favor of the model. As the PLS path modeling is a soft modeling approach with no distributional assumptions, it is possible to estimate the significance of the parameters through cross-validation methods like jack-knife and bootstrap (Efron & Tibshirani, 1994). Moreover, it is possible to

build a cross-validated version of all the quality indexes (i.e. of the communality index, of the redundancy index, and of the GOF index) by means of a blindfolding procedure (Chin, 1998; Lohmöller, 2013; Vinzi et al., 2010).

6. Discussion

The importance of the Internet as an information hub to facilitate data transfer and sharing has increased dramatically in the last decade because of its convenience in accessing both professional services and entertainment (Jafari Navimipour & Sharifi Milani,

Table 7
PLS structural model results.

Relationship			β	T-value	R^2	Hypothesis testing
Cost	→	Effectiveness E-CRM	0.09	7.22*	0.72	supported
Innovation	→	Cost	0.56	14.28*	–	supported
Technical support	→	Cost	0.61	20.6*	–	supported
Acceptance technology	→	Effectiveness E-CRM	0.64	18.81*	0.43	supported
Ease of use	→	Technology acceptance	0.39	19.58*	–	supported
E-learning systems	→	Technology acceptance	0.32	14.38*	–	supported
Infrastructure capabilities	→	Technology acceptance	0.41	19.85*	–	Supported
Employee satisfaction	→	Effectiveness E-CRM	0.44	13.86*	0.52	Supported
Organizational culture	→	Employee satisfaction	0.59	29.22*	–	Supported
Organizational strategy	→	Employee satisfaction	0.14	14.70*	–	Supported
Organizational flexibility	→	Employee satisfaction	0.39	16.01*	–	supported

Note: * $p < 0.001$, "→" shows path hypothesis. β : path coefficient.

2015). The E-CRM has emerged as one of the most prominent information system that enables organizations to contact customers and collect, store and analyze customer data in order to provide a comprehensive view of their customers (Romano & Fjermestad, 2003). It enables firms to take full advantage of data collected and transform it into useful information and value-added knowledge for themselves and their customers, as data are analyzed to gain an understanding of not only purchasing patterns and trends, but also attitudes and preferences (He, Lai, Sun, & Chen, 2014; Romano, 2000). Organization can obtain competitive advantages from increase effectiveness of the E-CRM. This paper presents a research model and framework to examine the direct and indirect effects of cost, innovation, education cost, technical support and acceptance technology, ease of use, e-learning systems, Infrastructure capabilities and satisfaction employee and organizational culture, organizational strategy, organizational flexibility on the effectiveness of the E-CRM. The hypotheses are tested on data collected from 210 employee, using partial least squares regression.

As indicated in Table 7, the obtained results from the sample t-test and path coefficient implied that cost has a significant and positive effect on effectiveness of the E-CRM ($\beta = 0.09$, $t = 7.22$, $p < 0.001$) which supports Hypothesis 1. The effect of innovation on cost also proved to be positive and significant ($\beta = 0.56$, $t = 14.28$, $p < 0.001$). The complementarity between technical support and cost ($\beta = 0.61$, $t = 20.6$, $p < 0.001$) thus, H1-3 receives support. Accordingly, H1, H1-1, and H1-2 were supported. Thus, the findings we show that innovation and technical support significant effect on decreased costs of customer and overall increased effectiveness of the E-CRM.

Also, hypothesis 2, which proposed a positive relationship between acceptance technology and effectiveness of the E-CRM, supported ($\beta = 0.64$, $t = 18.81$, $p < 0.001$). The ease of use had a significant effect on acceptance technology ($\beta = 0.39$, $t = 19.58$, $p < 0.001$) and the complementarity between e-learning systems and acceptance technology ($\beta = 0.32$, $t = 14.38$, $p < 0.001$). The effect of infrastructure capabilities in acceptance technology also proved to be positive and significant ($\beta = 0.41$, $t = 19.85$, $p < 0.001$). Thus, H2, H2-1, H2-2 and H2-3 were supported. The findings for the three variables that the H2 examines indicate that ease of use, e-learning systems, and infrastructure capabilities has significant effects on acceptance technology, and acceptance technology has significant effects on increase effectiveness of the E-CRM.

Specifically, as proposed in Hypothesis 3, which predicted a positive relationship between satisfaction, employee and the

effectiveness of the E-CRM, the findings suggest that a more positive perception of satisfaction employee will result in a more positive increase effectiveness of the E-CRM, ($\beta = 0.44$, $t = 13.86$, $p < 0.001$). Hypothesis 3-1, which stated that the create strong organizational Culture results in increased satisfaction employee, is supported ($\beta = 0.059$, $t = 29.22$, $p < 0.001$). Positive and significant correlations were also found between organizational strategy and employee satisfaction ($\beta = 0.14$, $t = 14.70$, $p < 0.001$) thus, H3-2 receives support. Thus, as organizational flexibility are increased, the satisfaction employee an organization is also increased, lastly, H3-3 is supported ($\beta = 0.39$, $t = 16.01$, $p < 0.001$). To the best of our knowledge, this empirical research is among the earliest studies attempting to address the issue of improvement factors affecting in effectiveness of the E-CRM. To address this important issue, a research model is provided that can be used for the investigation of factors influencing in effectiveness of the E-CRM. The contributions of the paper are described below.

7. Conclusion, limitations and directions for future research

The emergence of the internet and the widespread use of the web technology provide an opportunity for businesses to deploy technology features for the E-CRM. Organizations today realize the fact that the customer is the driver for their success and survival. Many companies are moving towards web-based customer services to reduce costs and provide real-time services to improve customer's convenience and satisfaction. The E-CRM enhances customer relationship and interaction and creates a competitive advantage in the marketplace. Many companies are moving towards web-based customer services to reduce costs and provide real-time services to improve customer's convenience and satisfaction. We have provided a model and framework for the factors assessing the impact the direct and indirect on effectiveness of the E-CRM. Data was collected from 210 employee East Azerbaijan Tax Administration in Iran. The obtained data from the questionnaires are analyzed through the Smart pls 2.0 program. This study focuses on the determining the effective factors for the effectiveness of the E-CRM systems.

The results in this study showed the, great reduction in costs customer achieved through the E-CRM activities. Technological innovation is considered as a pre-requisite for gaining competitive advantage. The results in this study showed the effected of reduction cost customer on the enhancement of effectiveness the E-CRM, emphasizing the mediating role of innovation. It was

concluded that since innovation leads to customer satisfaction and create innovation in systems the E-CRM can also have a key role in improving an organization's performance and effectiveness the E-CRM. A clear interpretation of the findings indicates that organizations must have right technical staff, hardware and software provide technical support for use of electronic the E-CRM system in building customer relationships and serve its customers. The findings from this study address several critical implications for IS and information management research. The present study investigated the technology acceptance and ease of use for the effectiveness the E-CRM. Technology acceptance variables (ease of use, e-learning systems and Infrastructure capabilities) are as key drivers of effectiveness the E-CRM. Furthermore, the success of the E-CRM system depends on the level of ease of use of the system. In conclusion, it can be concluded that ease of use is one of the technological factors that plays significant role in the E-CRM performance. Therefore, this study proposes easing of use as one of the antecedents that influence effectiveness the E-CRM. The results obtained showed that in order to increase effectiveness in the E-CRM system, organizations should develop their infrastructure capability and acceptance technology strategy to support the implementation of the E-CRM system. The infrastructure capability, especially when coupled with an acceptance technology strategy, relates positively to the effectiveness the E-CRM, which enhances customer relationships and the overall organization performance. Organization infrastructure capability that is supportive and compatible with their the E-CRM systems enables the E-CRM systems to obtain timely, up-to-date, correct, accurate, complete, and relevant data or information from multiple internal and external sources, and helps the E-CRM systems integrate and process those data or information effectively. Thus, we suggest that infrastructure capability be integrated more deeply into customer-focused information processes that exhibit usefulness, timeliness, and integration of customer information. This finding supports our view that a supportive and compatible infrastructure capability as a firm's internal capability leads to increase effectiveness of the E-CRM. Furthermore, our research showed that organizational culture and the satisfaction employee must be considered when introducing a new system. Any system, whether well designed or poorly designed, accents or obviates certain values, some of which may be an ingrained part of our organizational culture. The attention given to organizational culture and employee satisfaction surveys as a means of predicting employees' commitment to and satisfaction with the company is one of the most prominent trends in organizations today. The findings may prove to be useful for industrial and organizational psychologists, organization development practitioners and human resource practitioners in understanding the variables that influence employee's satisfaction and experiences of their company's organizational culture. Customer satisfaction is built around companies' ability to maintain superior standard for their services and products, and this ability relies on employee satisfaction, which in turn is a prerequisite for the flexibility of the company. Organizational flexibility predetermines the ability and aptitude of organization in rapidly changing technology situations. This finding suggests that organization should focus on greater, on organizational strategy and organizational flexibility. Finally, one of the great ideas in effectiveness of the E-CRM is that organizations focus on Employee satisfaction, decrease costs customers and ease acceptance technology the users and employees. However, our study shows that it may always be a good idea.

Our research makes important contributions for both academics and practitioners, however, we acknowledge some limitations, as follows: First, we conducted the study in a single region. It cannot be guaranteed that the results are generalizable to other

regions. Second, the research design conducted for this study is cross-sectional, representing static relationships between the variables. Since cross-sectional data capture the variables' relationships at a single point in time, were collected at other periods. Third, due to time and financial constraints, we collected the data for the study using a sample from a single location. Fourth, our use of variables to depict the E-CRM may be exploratory and not exhaustive. We therefore encourage future research to consider these the E-CRM dimensions, and call for expansive consideration of the different the E-CRM variations. Further, we encourage future research to collect a comprehensive sample, which may uncover other important elements leading effectiveness the E-CRM. We also encourage larger samples for conducting cross validation of the model, so that generalizability can be ensured. Finally, from a conceptual perspective, future studies are encouraged to investigate the relationships between service quality, trust and loyalty, privacy of the satisfied customer for the effectiveness the E-CRM.

Appendixes

A: Abbreviations Table

Table 8
The commonly used abbreviations in the paper.

Abbreviations	State
AVE	Average Variance Extracted
CR	Composite Reliability
CRM	Customer Relationship Management
E-CRM	Electronic Customer Relationship Management
E-Learning	Electronic Learning
GOF	Goodness of Fit
HCI	human-computer interaction
IT	Information Technology
IS	Information System
PIIT	Personal Innovativeness In IT
PLS	Partial Least Squares
SPSS	Statistical Package Social Sciences
SEM	Structural Equation Modeling
TAM	Technology Acceptance Model
VIF	Variance Inflation Factor
PEOU	Perceived Ease-Of-Use
PU	Perceived Usefulness

B: Morgan Table

Table 9
The Morgan table.

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10,000	373
65	56	210	136	480	214	1700	313	15,000	375
70	59	220	140	500	217	1800	317	20,000	377
75	63	230	144	550	225	1900	320	30,000	379
80	66	240	148	600	234	2000	322	40,000	380
85	70	250	152	650	242	2200	327	50,000	381
90	73	260	155	700	248	2400	331	75,000	382
95	76	270	159	750	256	2600	335	100,000	384

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