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Surveying the Impact of New Information Technologies on Improving Customer Relation Management considering Organizational Innovation as intervening variable (Case study: Bank Mellat of West Azerbaijan)

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Abstract
The aim of the present study is to Surveying the Impact of New Information Technologies on Improving Customer Relation Management considering Organizational Innovation as intervening variable (Case study: Bank Mellat of West Azerbaijan). The study is applied and descriptive in nature. All of the employee in Bank Mellat of West Azerbaijan branches were candidiate to participate in the study but using Cochran formula and stratified random sampling method, the sample size was determined as 236. To collect the data standard questionnaire were used. Using Cronbach alpha coefficient, the reliability was calculated as 0.902 which shows the good reliability. For statistical analysis purpose, SPSS and Smart Pls softwares were used. The results indicated that New Information Technologies Effected on Improving Customer Relation Management considering Organizational Innovation as intervening variable.

Key words: *New Information Technologies, Customer Relation Management, Organizational Innovation.*

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1- Introduction

Now, we are living in an era with the changes that are more fundamental than the changes of the industrial revolution. So, to survive and be present in the competition area, organizations are obliged to change and use the newest technology developments to achieve the highest levels of improvement of their abilities and their employees. A comparison of the evolutions of the last three decades indicates that they have a fundamental difference in comparison with past. The main reason of the differences is related to the revolution that has occurred in the last decades (Talati, Rahim, 2006). Nowadays, Information technology as one the new human technology has not only undergone profound changes itself, but also have had an impact on all social, economic, and political aspects of life. Naturally, human resources and performances of human resources are the most important sections that information technology will affect it by its arrival to the organization. Although, Progress in science and technology has provided a great deal of facilities for human, it has created new problems for him. Among the problems, undermining the emotional and human relations and moral, social, and cultural anomalies can be mentioned. On the other hand, some believe that convergence of technologies in human societies needs to strengthen human security in the country and promote the ethics and culture. However, the amount of the convergence is different in various societies. Nowadays, many of people use internet or intranet to communicate messages or for other tasks. Although the technology has led to facilitation of communication and vast improvements, it has created a space for the misuse of criminals to destabilize the man security through the information abuses, information destruction, and insecurity in people's living and working space. In the present study, we intend to study and analyze the effect of new information technologies on improvement of customer relation management by emphasis on organizational innovation as a mediating variable (a case study: Mellat Bank of Werstern Azarbayejan province).

2- Problem statement

In the last three decades, technology development especially in regard with communication has increased communication in human communities. Evolution in communicative domains owes to stunning advances in human knowledge in the fields of computer science, hardware, and software, knowledge of information technology and communication. New communication and communicative satellite devices and Internet have faded the geographical boundaries and have offered a new cultural and human communication to human communities (Ayati and Mohammad Zadeh, 2013). Now communication and information technologies are very important in organization because of high ability and capability in processing and quick release of information and processing them for the organization's activities. The significance is because information and its flow and its processing have a vital importance for the organization. The official structure of an organization acts such as an information processor. Organization's need to process information is derived from the division of duties, which in turn creates the need for coordination by making solidarity and dependence through the units. Organizational growth and complexity of their environment double increasing competition and the need for coordination between the units in order to increase the efficiency. Therefore, the need to process information by organization is resulted from a series of needs that their fulfillments have a great significance for the organization. Considering this condition, the only solution, or one of the most effective solutions in this regard is an optimized use of ICT in the organization that can set the organization in a superior strategic position (Grant and Meadows , 2008; cited from Farhangi, et al., 2013).

Despite the belief of scholars and researchers about the effect of communication and infor-

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mation technology on organizational dimensions and variables, in particular, the structure toward the nature of this effect, there is not any integrated idea among them. Some believe that communication technology is an effect factor itself. In the other term, the effect of technology is resulted from the high importance and authority of it as an external factor that affects the variables of organization compulsively. Organizations are affected by various factors that are due to the dynamic environment around them or the organization, and as the organizational structure is stable and static, it sometimes cannot meet the need for performance and productivity (Jane, 2007; cited from Farhangi, et al., 2013).

Globalization and technology progress have exposed firms to a fierce competition. In this period, companies look at customer relation management as a tool to increase their profitability. Many researchers know customer relation management as a mediating ring between people, processes, and technology. In past, organizations had a close and tight relation with customers. By technology progress, the distance between organization and customer became farther, so that mass production was the strategy of most organizations (Parvizi, 2012). After the digital revolution and technological evolutions in the world, organizations can make close and effective relation with customers again using information technology. Customer relation management has been consisted of three elements: 1. Customer, 2. Relation, 3. Management. Customer is the only current profitability source of organization and its future growth (Alduwailah & Maged, , 2013). A good customer is a person who leads to more profit and less sources. It is very rare because customer is smart and competition is non- controllable. Information technology improves the ability of organization for recognition and management of customers (Hamzelouet al, 2013).

Customer relation management is a type of business strategy that goes beyond increasing the volume of trade. Its goal is to increase profitability, income, and customer satisfaction. Therefore, the realization of the objectives of the organization uses a vast range of tools, procedures, methods, and communications with customers. The marketing strategy focuses on the concept with four P of price, product, propagation, and promotion. Moreover, their primary attention is on increasing the volume of trades between the seller and purchaser. Customer relation management is an integrated system applied for programming, timing, and controlling the activities before and after the sale of organization. In addition, its goal is enabling customers to interact with organizations through numerous tools, including web, phone, fax, email and so on and receive service. Applications of customer relationship management are to deliver the products to the highest level of return on investment, achieve to customer information, create effective partnerships and strategic cooperation, increase effectively the skill of sales of personnel, attract and keep the best talented people for sale. Customer relation systems are divided into three categories including: 10 operational: includes a section of software technology that is essential for management of customer relation. In the other term, it preps company for its duties for the customers. 2. Analysis : this system is the most important type of relation management. It includes the data needed by the programs to make a relation with customer. In the other term, it is obtaining, processing, interpreting, and reporting to users of customer data. 3. Collaboration : is the relation spot with customer. Email, fax, telephone, website, etc. complete these softwares (Khan Mohamamd and Fiaz Khawaja, 2013)

Innovation means implementing a creative thinking and innovation is the key to success in repetitive field of organization. When the topic of innovation is mentioned, minds will unintentionally focus on product innovation and some of its production process, even in some cases nothing is mentioned about in-

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novation services. However, in the process of innovation, marketing and management are needed. When we talk about the importance of innovation and mechanisms, it should be noted that only in a "global" competitive environment, we could talk about these concepts (VaeziT Chupani and FashalanjT 2010). Process, product, and organization do not create innovation, but it creates its personnel and this is management of innovation. It is the responsibility of senior executives or employees of an organization to create the environment for innovation. If we want to institutionalize innovation, which is something appropriate in today's world, its factors must be provided in the organization and develop under appropriate process. Obtaining such an organization requires a fundamental transformation process. Therefore, the new circuit in which the organization must be located is a circuit where the learning organizations are located in. learning organizations enhance the factor of innovation in them and innovation will continue. However, the preset organizations may not be the learning ones, the processes will not be formed, and innovations will not occur in processes until they are transformed into learning organizations (Agha Davoud et al, 2010).

In the new web-based business environment, products and services to customers are provided through new information technologies. Customer relationship management is done using new information technologies tools that can be used by the aim of helping organizations to interact and retain customers by them. Using customer relation management and using the results of the implementation of information technologies can help to improve the quality of services delivered more efficiently and in turn, improve loyalty, trust, and customer satisfaction. The objective of the present study is to survey the effect of new information technologies on improvement of customer relation management by emphasis on the mediating role of organizational innovation (a case study: Mellat Bank of Werstern Azarbayejan province).

3- New communication and information technologies

"New communication and information technologies" has been created by integration of three areas of information , computer , and communication . The area of computer acts as hardware and provider of the required facilities and tools. Information acts as raw materials in the network. In addition, telecommunication has the task of communicating between the other two parts (Dedrick , 2001). According to industrial classification of international standards, information and communication technology sector is classified as following:

1. Production of office and calculating machines;
2. Production of equipment for radio, television, telecommunications devices, and accessories;
3. Electronic equipment production;
4. Radio and television transporters;
5. Radios, TV, tape recorder, video, and parts related to post and telecommunications, computer, hardware, software and its related industries (Bakhtiari, 2001, p 11).

4- Customer relation management

Using customer relation management, organizations can makes sale cycle shorter, and increase customer loyalty to create closer relations and revenue. System of customer relation management can help the available customers to be kept and new customers to be attracted. Organizations use some methods including customer relationship management, customer value analysis, and corporate strategy the services mechanisms that improve the efficiency of customer communication. Customer relationship management is a strategy for acquiring new customers and keeping them. Customer relationship management is an operation including all activities related directly to customers such companies.

Each activity of operational customer relationship management has been implemented in one of the three following organizational

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processes: sale, marketing, and services. While these processes are directly related to customer, analytical customer relation management provides all components and features for analyzing customer relationships based on the implementation of operational customer relationship management activities with a focus on customer needs and their exceptions. Before an organization will be able to develop marketing or strategies of customer relation management, it must know how customers decide on purchasing. This decision making process is called customer buying cycle (Aurora Garrido, Antonio Padilla , 2011).

The category of customer relation management has been consisted of three main components: 1- customers 2- relation with them 3- management of the relations. In fact, the main attempt of customer relation management is to find a united and integrated view of customers at the company level and establish key relationships with them.

5- Innovation in organization

Organizations need new thoughts and new ideas for their survival in the turbulent and changing world of today. Increasing threats, on one hand, and using opportunities, on the other make organizations to be faced with severe tides in the tense and unpredictable environment, and challenge them toward change and innovation. Innovation is directly related with terms such as creativity, innovation, and change, but they are not synonyms. Creativity is creation and production of a new thought and idea, while innovation means making use of the new thoughts and new ideas. Creativity is a prerequisite of innovation and realization of innovation depends of creativity. Invention means idea or creation of a new technology and creation of a product, a service or a new process in each organization is called innovation. Invention is mostly haphazard, but innovation is a process. Inventions rarely happen but each invention usually leads to several innovations. Organizational change means accepting an idea, an opinion, or a new behavior by an organization. However, organizational innovation is accepting an idea or a behavior that seems new for the market industry or public environment of the organization. Organizational innovation can happen in the Human Resources Department, behavioral and psychological studies and knowledge of the values and abilities of their staff or in technical sector, technology, equipment, modernization and new techniques or in the structure sector which includes a set of rules, procedures, norms and standards. Managers by addressing innovation, whether directly by implementation of new ideas in the administrative, technical, and specialized fields by themselves, or indirectly by welcoming and supporting innovation in the organization can create an atmosphere in which the spirit of doing repetitive and monotonous tasks change to innovative behaviors at the organization level. Therefore, it can be stated that the management demanding innovation and innovative behavioral atmosphere are essential to one another. Some of the activities required to be done by managers in this regard are as the following:

1. -Belief in innovation in higher levels of organization
2. Creating space and favorable conditions for spontaneous activities
3. Supporting and encouraging those who express their opinions and creative ideas.
4. Development of research and innovation cores
5. Bringing innovation into practice
6. The importance of the proposal, even if not useful
7. Sharing innovators in its results
8. Putting the conservative and traditional people together with innovative people and establishing the exchange of information and opinions between them (Moazam BabaSheikhAli and Karimi, 2014)

7- Materials and methods

The method used in the present study to survey the hypotheses experimentally is a survey method of research. The present study is ap-

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plied in regard with its objective and is descriptive regarding the method of data collection. The study is a descriptive- survey study. In the present research, the population is the entire employees working in branches of Mellat Bank in the western Azerbaijan. According to the statistics of the organization, the employees are 613 people and the questionnaire has been distributed among 236 people. In order to gather statistical data, questionnaire conduction was done among the samples. In this regard, the standard questionnaire of new information technologies has been used that Mahmoudi (2013) used it in a research with the title of studying the relation between features of students and communication and information technology in Tehran University, a master thesis of Tehran University. In addition, the organizational innovation questionnaire has been adapted from the research done by Jerefi et al in 2013 and it has 10 questions. Finally, the questionnaire of customer relation management provided by Kalantari et al has been used.

8. Statistical analysis

Figure1 shows confirmatory factor analysis and structural equation model in standard coefficients mode. In the figure, numbers or coefficients are divided into two categories. The first called the equations of measurement are the relations between latent variables (oval) and observed variables (rectangles). This equation is called factor loadings. The second category is structural equations that are relationships between hidden and latent variables and are used to test the assumptions. The coefficients are so-called path coefficients.

Figure 2 shows structural equation modeling in the mode of significant absolute value of coefficients. In fact, this model tests all the equations and structural equation using the statistic t. According to this model, the coefficient is significant at a confidence level of 95% if the value of the t-statistic is greater than 1/96.

Calculation of convergent validity, reliability, and indicators of goodness of model fit

Table 1 shows validity and reliability indicators for all variables. As it can be seen in the table, AVE equals to the average variance, CR equals to the composite reliability, R2 equals to the coefficient of variation, $\sqrt{\overline{AVE}}$ equals to the square root of the average variance, $\sqrt{\overline{R^2}}$ equals to the average absorption coefficient of variation and GOF equals to goodness index of fit of model.

Diagnostic validity has been used in the present research in this sense that the markers of any structure will ultimately provide suitable differentiation in terms of measuring rather than other structures of the model. In a simpler term, each indicator measures only its own structure and combination of them must be so that all the structures can be differentiated well. Using the extracted variance average, it was determined that all the studied structures have an extracted variance average of more than 0/5.

Composite reliability indexes (CR) and Cronbach's alpha are used to study the reliability of questionnaire. Approval of reliability requires indicators higher than the amount of 7/0. All these factors are higher than 7.0 and are indicative of the reliability of the measurement tool.

Goodness indicator of fit of model

This index shows a compromise between the quality of the structural model and the measured model, and it equals to:

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

Where $\sqrt{\overline{AVE}}$ and $\sqrt{\overline{R^2}}$ are averages of AVE and R2. A high index value of 4.0 GOF model shows the fit of model. The value of fit index is 0/547 is higher than the value of 0/4, and it shows the suitable fit of the model. In a simpler term, the data of the present study have a suitable fit with factor structure and the theoretical foundation of research. In addition, it indicates that questions are in line with the theoretical structures.

Validation of structural model (the answer to the hypothesis)

After validation of measuring models, it is

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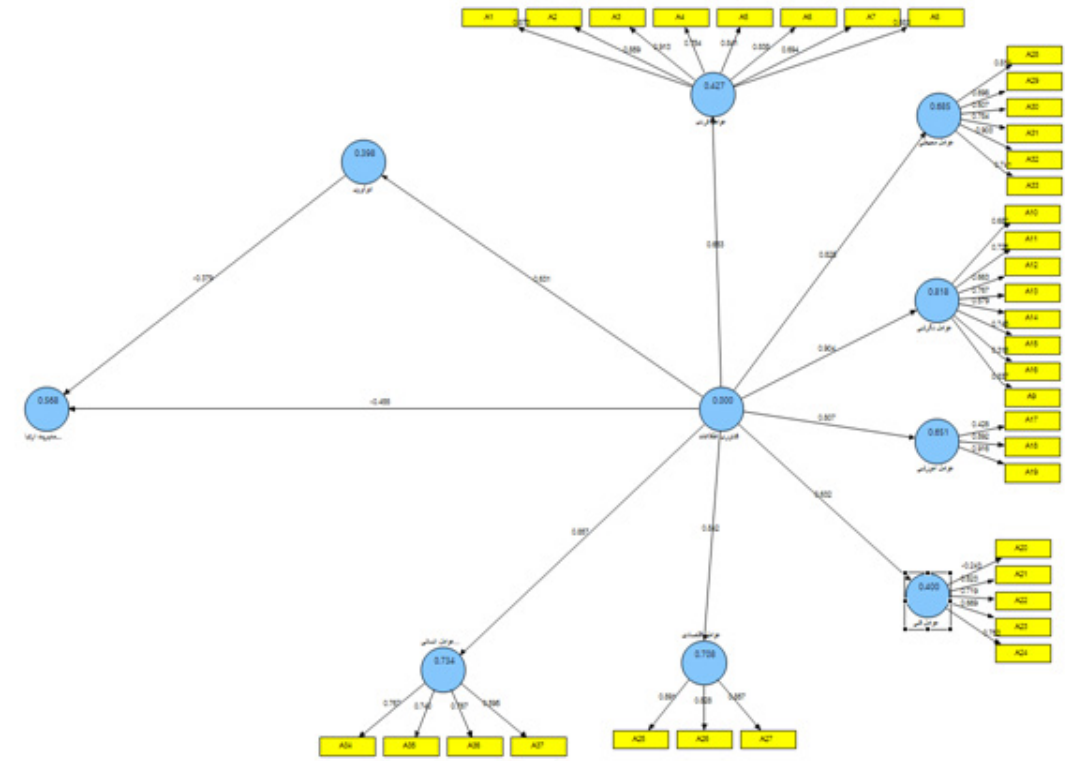


Figure 1. model in standard coefficient estimation mode

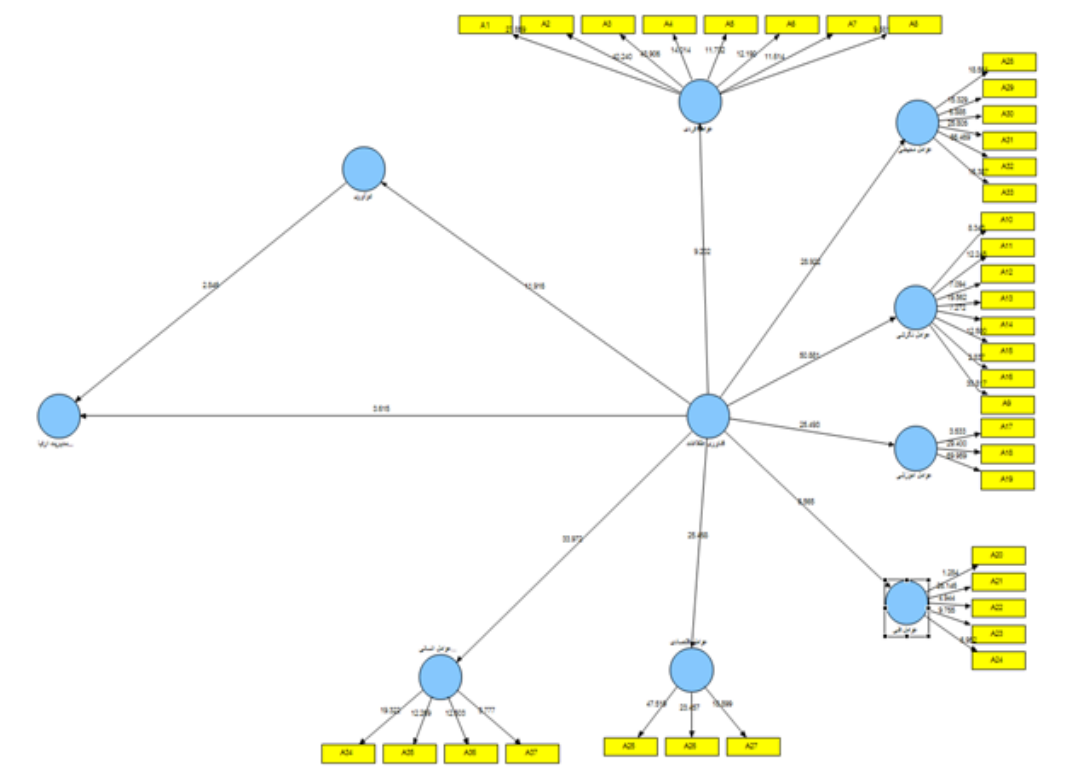


Figure 2. model in absolute significance mode (|T-Value|)

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latent variables	AVE	CR	R2	Cronbach's alpha	$\sqrt{AVE}$	$\sqrt{R^2}$	GOF2
New information technology	0/74	0/93		0/94	0/708	0/773	0/547
Customer relation management	0/60	0/95	0/56	0/95			
Organziational innovation	0/55	0/80	0/39	0/76			
Individual factors	0/65	0/93	0/39	0/88			
Attitude factors	0/56	0/86	0/81	0/83			
Educational factors	0/60	0/80	0/65	0/76			
Technical factors	0/55	0/73	0/42	0/92			
Economic factors	0/73	0/89	0/70	0/82			
Environmental factors	0/58	0/89	0/68	0/85			
Human and management factors	0/51	0/81	0/73	0/78			

Table 1. Validity, reliability indexes

time to survey structural or internal models of the research.

According to the results of structural equation coefficients, t value for this parameter is equal to 9.16 and (according to rule of five percent error in rejection of the null hypothesis for values outside the range of 1/96 to 1/96. Each parameter model) is estimated to be outside the range. Therefore, it can be concluded that the assumption of researcher is confirmed with 95 percent level of confidence and new information technologies have an effect on improvement of customer relation management with an emphasis on the mediating variable of organizational innovation in Mellat Bank in western Azerbaijan. In addition, considering the positive path coefficient, it can be concluded that new information technologies have a positive effect on improvement of customer relation management

The main hypothesis of research	beta	t- statistics	R2	Sig	Direction of relation	result
New information technologies through innovation in customer relationship management	0/765	16/09	0/56	0/001	+	confirmed

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with an emphasis on the mediating variable of organizational innovation in Mellat Bank in western Azerbaijan. 0/56 is the coefficient of determination for customer relationship management. Therefore, the new information technologies explain 56% of variable customer relationship management with an emphasis on organizational innovation mediator.

9-Conclusion

According to the results of structural equation coefficients, t value for this parameter is equal to 9.16 and (according to rule of five percent error in rejection of the null hypothesis for values outside the range of 1/96 to 1/96. Each parameter model) is estimated to be outside the range. Therefore, it can be concluded that the assumption of researcher is confirmed with 95 percent level of confidence and new information technologies have an effect on improvement of customer relation management with an emphasis on the mediating variable of organizational innovation in Mellat Bank in western Azerbaijan. In addition, considering the positive path coefficient, it can be concluded that new information technologies have a positive effect on improvement of customer relation management with an emphasis on the mediating variable of organizational innovation in Mellat Bank in western Azerbaijan. 0/56 is the coefficient of determination for customer relationship management. Therefore, the new information technologies explain 56% of variable customer relationship management with an emphasis on organizational innovation mediator.

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