

The Identification and Prioritization of Effective Indices on Optimal Implementation of Customer Relationship Management Using TOPSIS, AHP Methods - Case Study: Pasargad Bank

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Abstract:

One of the reasons of failure of customer relationship management is the lack of suitable criteria to evaluate customer relationship management. If this organizational concept is not assessed, it is not managed well. A comprehensive measure to assess customer relationship is necessary from a systematic view. The present study aims to evaluate and prioritize effective factors on optimal implementation of customer relationship management in Pasargad bank using statistical methods. The study population is managers, deputies, employees, experts and customers of 5 branches of Pasargad bank as 384. The present study evaluates and prioritize the effective factors on optimal implementation of customer relationship management using MADM methods. The results also can be used in the required population and it is an applied design. The present is descriptive-survey in terms of data collection method. The reliability of questionnaire is 0.925. The descriptive statistics of variables are computed using SPSS software. By TOPSIS method, we rank the indices. It is worth to mention that in this model, we need weighting the indices and the weight of each of indices is computed using AHP method and to rank the choices, TOPSIS software is applied. Finally, the organization factor has the highest weight and cultural and technological factors are in the next priorities. Pasargad bank, Vanak branch had the first rank in using effective factors on customer relationship management and branches Shiraz, Mollasadra, Tavanir and Gandi had ranks 2-5.

Keywords:

CRM, Customer Relationship Management, Optimal, Pasargad bank, TOPSIS, AHP

1. Introduction

With transition from traditional economy and much competition in new dimensions, customer is one of the main principles of all activities of organizations. From a competitive perspective, the survival of organizations depends upon the identification and absorption of new customers and retention of existing customers. The term “customer” was defined 100 years ago. The companies attempt to present a new definition of this term. According to most experts, customer is divided into consumer, distributor, economic organization and internal sector. The management and marketing scholars prescribe customer retention and correct relationship as customer relationship management.

As it was found by different researchers, one of the reasons of failure of customer relationship management is the lack of suitable criteria to evaluate customer relationship management. If this organizational concept is not assessed like other concepts, it is not managed well and to have a comprehensive measure to evaluate customer relationship is necessary from a systematic view.

Based on the increase of significance of customer relationship management in private banks, due to the increase of expectations of customers and increase of competition between the banks, it is necessary to use comprehensive tools to recognize this concept as one of the competitive tools. A good measure should be designed to reduce the relevant risks and facilitate its management.

Based on the increasing importance of customers in bank and increasing importance of effective management of customer relationship, the identification and prioritization of key success factors of customer relationship management is of great importance in banks. The organizations successful in implementation of customer relationship management have achieved various economic and non-economic benefits. These benefits cover the investment and expenditures on development of customer relationship management (CRM). The benefits of an effective CRM plan is improvement of customers satisfaction, increase of income growth and achieving competitive advantage as the result of keeping the customers. CRM changes the concentration of an organization from much investment on new customers to keep the existing customers.

CRM creates some benefits for the employees including the easy use of system by users, more activities in a similar time, receiving more benefits, self-management and leadership. By CRM, profitability and development of organization (bank) is fulfilled and in competition world, an important competitive advantage is achieved.

This study attempts to identify the key factors for implementation of CRM and then presents a model for prioritization of CRM system using TOPSIS, AHP techniques and answers this question that what are the important factors in implementation of the system?

2. Materials and Methods

This study attempts to evaluate key success factors of CRM expressed by theorists of this field. An Interview with experts and managers of Passargad bank is made and key success factors of CRM are identified. A conceptual model is presented in Figure 1.

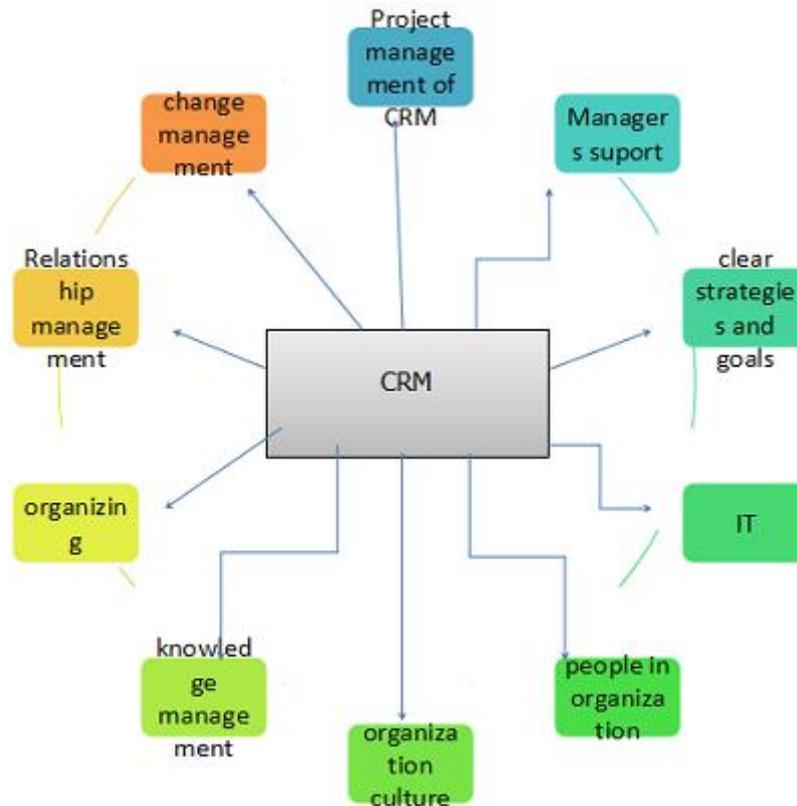


Figure 1. The conceptual model of study.

The present study develops an applied knowledge and is applied in terms of purpose and attempts to develop technical knowledge in using model by the bank managers.

Regarding the researches done by researchers regarding the effective factors on CRM indicating vital dimensions of success of knowledge management system, it can be said: The present study evaluates the key success factors of CRM presented by scholars of this field. Also, an interview is made with the experts of key success factors and evaluation of CRM.

As shown in the model, some independent variables include organizational, cultural and technological factors. These factors are effective on dependent variables of this model, the revenue increase, productivity, services and reduction of costs. The study model is depicted in Figure 2.

In this study, the population consists of two groups: The customers of Pasargad bank, Managers and employees of Pasargad bank. The sampling method is random. The study method is field. The measure of study is documents, observation and interview. In this study, the data is collected using library studies, interview and questionnaire. After the study of books and papers, an interview is made with the experts and managers of banks and effective factors on implementation and evaluation of CRM are identified. After the end of interview, the main factors are extracted and collected in a list. Finally, this list is completed using the review of literature and a questionnaire is designed. A good CRM system guarantees the marketing processes success.

CRM is not a strategy but a tool to help the strategies of organization and their modification. Before fulfillment of CRM system, the organizations need correct strategies to the customer's value and using CRM requires high commitment of

organization to customers and this is not possible without presenting competitive services and products. By CRM, the organizations should act only based on customer segmentation not products segmentation. Re-organizing the structure is time consuming and costly and this is not possible without the coordination with other organizational functions and units. For example, distribution strategies should be combined effectively with CRM capabilities. This is true about all units in organization.

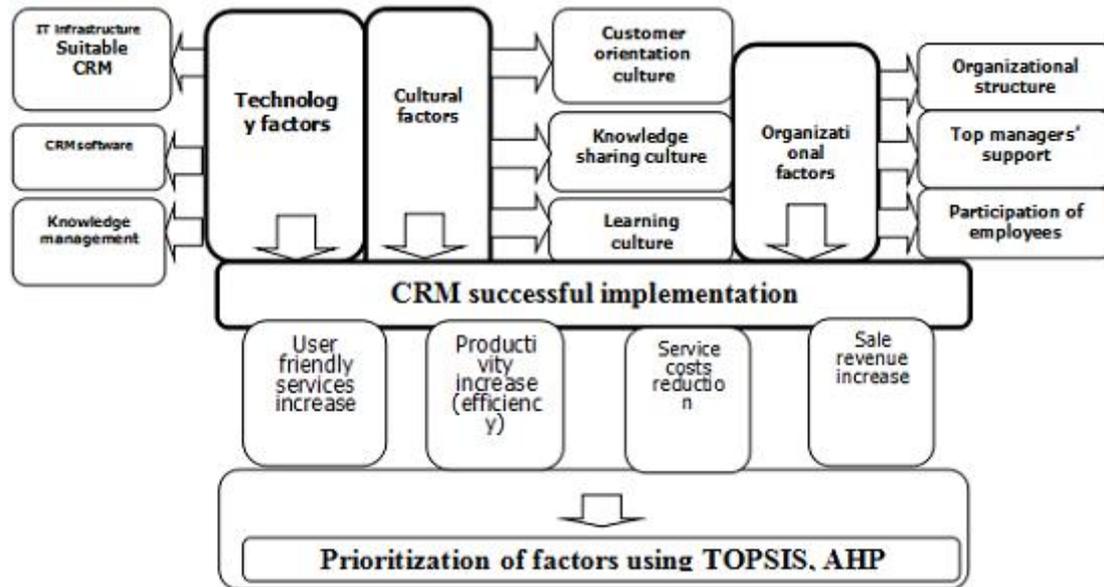


Figure 2. The study model.

Seyed Hamed Khosrovani Shariati raised two basic concepts in new marketing as Up selling and cross selling of CRM implemented in the first national conference of CRM and new marketing methodologies with the approach of Iran market. He considered using CRM in organizations as a profitable solution independent from customer satisfaction. He believes that CRM implementation is a factor to fulfill Up selling and cross selling and up selling is selling new products, additives to the previous customer and Cross selling is selling additional goods or services to the previous customer.

Some of the reasons of investing on CRM: Using current relationship with current customers to maximize the growth of incomes, defining, absorbing and retaining the best customers, introduction and defining sale processes as replicated mostly. Fulfilling the customers' demands, creation and implementation of an active marketer strategy leading to the reduction of costs and deep cognition of customer.

In the past decades, the changes in delivery channels have changed banking industry. Since 1980, by relational business and its multiple use, some changes were made in banking industry [1]. The emergence of delivery channels and ATM systems, telephone banks, internet banking and credit cards are alternatives of traditional financial transactions and this has inclined the banks to e-banking industry.

Banks are financial and service institutes in direct relationship with customers to present the products and services. In the current competitive market, to take different strategies from the competitors' strategies, we should collect the behavioral data of customers, even satisfied and loyal customers. If we don't change, others outperform us (Peter Drucker). The banks compete to adjust the earnings rate of deposits. The

change of customers behavior in banks is much important due to the monetary nature of their activities and this needs exact and timely planning by managers of bank network. CRM in banks is created by maintaining personal relationship with profitable customers of bank using customers' accounts, appropriate use of ICT, supervision on customer, management and data assessment [1].

A scientific research is based on the evaluation of the relationship between variables and their relationship and some of them rank the effective factors on phenomena in decision making fields.

There are various methods of study and normally, the researchers don't agree regarding a definite definition of different study methods. The study method is historical, descriptive and empirical in terms of study methodology. The study is divided into fundamental, theoretical and applied in terms of method [2].

Each of these researches is used in different fields and based on the purposes of researchers. The present study identifies and prioritizes the effective factors on CRM using MADM and their results are used in Pasargad bank. This study is applied, descriptive-survey.

This study is descriptive as it presents an image of the existing condition and survey as data collection is performed via sampling in a field study. The study population is composed of two groups: The customers of Pasargad bank, managers and employees of Pasargad bank. We consider an infinite population. A statistical sample is also used.

Each part of study population indicating the main properties is called study sample [3]. Based on infinite population, Cochran's formula in infinite population is used as 384.

The research method is applied based on the purpose and descriptive-survey based on data collection method. For library studies, statistics, papers and books of CRM are used and for field study, a questionnaire is used for data collection and statistical hypotheses tests are also performed.

In a general classification, there are four methods for data classification as interview, questionnaire, observation and library. Based on time and costs, the researcher selects the type of measure. In this study, for data collection, a questionnaire is used. The questionnaire of study consists of four questions about age, gender, education. In this questionnaire, the members define their opinion based on a 5-Likert scale regarding the effective factors on CRM (Strongly disagree=1, Disagree=2, No idea =3, Agree=4 and strongly agree=5). This questionnaire is formulated with the supervision of the supervisor. For ranking, a questionnaire with low, average and much of Saaty spectrum is used. A questionnaire is used in the study and supervisor and experts are also applied to increase the validity of measures and design a questionnaire including our hypotheses. The study has good content and face validity from the view of experts.

A pre-test is performed on 30 questionnaires, then it is completed by managers and project experts. The reliability is computed as 0.925 using SPSS and Cronbach's alpha. Cronbach's alpha is shown in Table 1. The questionnaire has good reliability. This method is used for internal consistency of measures including questionnaire.

Table 1 shows the internal consistency (Cronbach's alpha) of total questionnaire with its components. As shown, alpha value in organizational and cultural factors is good and it is average in technological component. One of the bases of each study is data analysis. In this study, data analysis consists of statistical and decision making. In

statistical section, by SPSS software version 20, demographic indices and hypothesis test of effective factors on CRM in Pasargad bank are evaluated using Kolmogorov-Smirnov and t-tests.

Table 1. *The reliability of internal consistency (Cronbach's alpha).*

Number of items	Cronbach's alpha	Components
9	0/901	Organizational factors
10	0/849	Cultural factors
7	0/924	Technological factors
26	0/925	Total variables

The normality of statistical hypotheses is evaluated using Kolmogorov-Smirnov test:

H0=The data distribution of each of variables is normal.

H1= The data distribution of each of variables is not normal.

If significance level in Kolmogorov-Smirnov test is higher than 0.05, the data is normal with high confidence, otherwise, we can not say the distribution of data is normal. T-test is used for effectiveness of indices on CRM and the data are normal. Null hypothesis is the equality of means 3. If $\text{sig} < 5\%$, H0 is rejected and it means the significance of the effect of index.

In the next step, by TOPSIS method as one of the multiple decision making methods, we rank 5 branches of Pasargad bank based on the CRM indices.

In MCDM method, we need the weight of indices and AHP method is used to compute their weight and ranking of indices.

Finally, hierarchy analysis process combines the matrices of pairwise comparison to achieve the optimum decision. To do this, we use the comparison of choices with its indices to Jet choices. The indices The valuation of choices shows preference value of comparison of I to j. 1 is equal importance of choice it to j. 3 Relatively important, i is relatively important than j. 5 much important: i is much important than j. 7: Much more important: i is highly preferred compared to j. 9 Totally important: i is absolutely important than J and is not compared to j. 2, 4, 6, 8 show middle values between preferred values. This method is used in this study to compute the relative weights of identified indices on CRM to define the relative value and use them in ranking branches using TOPSIS method. The summary of math formula is as follows: The sum of values in each column of pairwise comparison matrix is computed, then each element is divided by the sum of values. A new matrix achieved by this formula is called "Normalized pairwise comparison". The mean of values in each row is computed of the matrix of normalized comparison. This mean presents the relative weight of elements with matrix rows. In this study, the descriptive statistics are computed using SPSS software. For nominal and rank variables, absolute frequency and relative frequency are computed. Then, we rank the choices using TOPSIS method. As we need the weight of choices in this model, we compute their weight using AHP method and Expert Choice software and TOPSIS software is used for ranking the choices.

3. A Review of Research History

Abdi Hevelayi et al.[4], studied Predicting Entrepreneurial Marketing through Strategic Planning (Including Case Study). In the relevant study, the relationship

between strategic planning and entrepreneurial marketing in Bank Saderat in the northern region of Tehran was examined.

Haj Abukahaki et al.[5], studied Identification and prioritization of effective indicators on optimal implementation of customer relationship management in the insurance industry(including case study).The present Nowadays, importance of customer within organizations has gone beyond such that the trend of organizations has changed from product-orientation to customer-orientation. Therefore, since the last decade, approach to the issues such as customer relationship management has increased within organizations, that the organizations have felt necessity of the issues such as understanding the customer's needs, reducing the costs for acquisition of new customers, and maintain old customers.

Taghipour et al.[6], studied Risk analysis in the management of urban construction projects from the perspective of the employer and the contractor.Imbalance between anticipated and actual progress in the development of urban construction projects suggests that there are many obstacles and risks which not only causes the urban management be unsustainable, but the reconstruction and development of urban space is also seriously threatened. the results indicated that the experts listed the most significant risks as the delays in the payment of contractors' claims and statements due to the lack of handling financial instruments, the governance of relationships rather than rules in the tenders resulting from employer actions, low commitment to the quality of work provided by their subcontractors, failure to complete the detail engineering by foreign contractors on time, weaknesses in contractors' financial resources, and offering lower prices than reasonable by contractors to win the tender. Finally, the solutions for eliminating or reducing risks in high risk areas have been offered to provide tranquility for contractors and employers.

Rezvani Befrouei MA et al.[7], discussed Identification and Management of Risks in Construction Projects. Today, risk management in construction projects is considered to be a very important managerial process for achievement of project's objectives in terms of time, costs, quality, safety, and environmental sustainability. Instead of employing a systematic approach for identification of risks, their probability and their effects, most of the studies conducted in this area have focused only on a few aspects of risk management in construction project. the present study aims to identify and analyze the risks associated with development of construction in the greater city of Tehran, employing a comprehensive approach that is consisted of five aspects. After the collection and observation of the data, the output was examined by Pearson correlation also, using charts and tables. The results indicated that "tight project schedule" present in all five categories- imposed the maximum risk. Also "design variations", "excessive approval procedures in administrative government departments" and "unsuitable construction program planning" were identified as next high risk factors.

Alamdar khoolaki et al.[8], studied Effect of integrated marketing communication on brand value with the role of agency's reputation . In today's world, the core capital of many organizations is the brand of that organization. In this research, the effect of integrated marketing communications on brand value has been considered with the mediating role of the reputation of the organization in Iranian insurance.

Taghipour et al.[9], studied Analysing the Effects of Physical Conditions of the Workplace on Employees Productivity. One of the issues that today will improve the productivity of any organization is attention to the human factors engineering. The

aim of this study was to find the amount of employee's satisfaction from environmental and organizational factors of their jobs, thus providing guidelines for improving the identified problems which eventually will lead to increase the productivity.

Baghipour sarami et al.[10], studied Modeling of Nurses' shift Work schedules According to Ergonomics: A case study in Imam sajjad (As) Hospital of Ramsar. In this study, 35 nurses working in the emergency ward of Imam Sajjad (AS) Hospital of Ramsar city, Iran, were considered. The final model was implemented with GAMS and at the end, shift working with ergonomic criteria were proposed. The results showed that the proposed working program on one hand will improve satisfaction and efficiency of nurses and on the other hand it can decrease the effects of disorders on shift work.

Taghipour et al.[11], studied Supply Chain Performance Evaluation in IN The IT Industry. The appraisal of several performance measure agendas and metrics already accessible proposes that supply chain performance measure can be detected under different categories such as cost and non-cost. In this study, developed supply chain of IT industry based on BSC from existing decision making models. Then, industrial projects performance and performance evaluation measures have been determined using a designed questionnaire.

Taghipour et al.[12], studied the Study of the Application of Risk Management in the operation and Maintenance of Power Plant Projects. one of the methods used in good decision making, pay attention to risk management, which is known as an important part of project management and control. Risk management has evolved over time and its systematic method has provided managers with a definite path so that they reduce potential threats to a minimum and reach project goals by the least possible deviations. In this paper, subsequent to an introduction of fundamental concepts of risk, risk management, an account of risk management, methods and its techniques are presented. In the end, following a discussion on how it is practically used in projects in a real and practical sample, risk management and its application are implemented and essential investigations are undertaken into its effects.

Mahboobi et al.[13], discussed Assessing Ergonomic Risk Factors Using Combined Data Envelopment Analysis and Conventional Methods for an Auto Parts Manufacturer. occupational injuries are currently a major contributor to job loss around the world. They are also costly for business. The absence of rational analysis is felt in this area, so mathematical analysis is needed to obtain the logical results of these injuries in order to find gaps or loss points of industry. OBJECTIVE: This paper assesses the effect of five demographic factors on ergonomic risk and occupational injuries using an integrated mathematical programming approach. The obtained results will help managers to carry out any required corrective actions or establish benchmarks.

Taghipour et al.[14], studied Assessment and Analysis of Risk Associated with the Implementation of Enterprise Resource Planning (ERP) Project Using FMEA Technique. Enterprise resource planning (ERP) is one of the latest management tools that can take advantage of information technology to comprehensively gather resources and information in all parts of the organization by an interlocking, system with fast speed and high quality and help users in all organizations and sectors by giving certain modules for managing different sectors such as projects, human

resources, and services. Despite the many benefits this system can have for the organization, its implementation and deployment is very risky and costly.

Taghipour et al.[15], studied Construction projects risk management by risk allocation approach using PMBOK standard. Projects' managers in plenty of construction projects which are assumed that are under control, are facing risk as an unknown occurrences and they are attempting to control it and are suffering more costs. Though, by a comprehensible effort and applying risk management, risks are identified and controlled before happening or a plan is provided in order to deal with these occurrences and time and cost are saved. Thus, they have to be controlled and appropriately responded by risk management methods. In this regard, risk management process in PMBOK standard can be a suitable approach to solve this problem.

Taghipour et al.[16], studied The Evaluation of the Relationship between Occupational Accidents and Usage of Personal Protective Equipment in an Auto Making Unit. One of the problems that encounter each work society is occupational accidents. Today, despite the improvements of facilities and working conditions, the possibility of accident occurrence in workplaces and especially in industrial places is inevitable. Since the non-use or misuse of PPE is one of the main causes of accidents in industrial units, the aim of this study is to evaluate the association between occupational accidents and the use of PPE in the body section of a vehicle manufacturing unit. The results showed that there is a meaningful positive relationship between the factor of inadequate PPE and probable hazards of the industrial workplace.

Taghipour et al.[17], studied Necessity Analysis and Optimization of Implementing Projects with The Integration Approach of Risk Management and Value Engineering. Risk management and value engineering have appeared as modern management tools since the mid-19th century and have been used separately in different projects. Due to the ineffectiveness resulting from separate implementation of the two approaches in major projects as well as the similarity between them in terms of their goals and executive structures, this research tries to analyze the separate role of each approach in the project process and examine the possibility of integration and correlation between their different phases. This article aims at introducing and examining a tool that simultaneously has the capability of the two categories.

Taghipour et al.[18], studied Evaluating Project Planning and Control System in Multi-project Organizations under Fuzzy Data Approach Considering Resource Constraints. Projects can be repetitive tasks in specified periods of time and also it may involve some functions which are performed just once. However, in any project, managers and experts consider three basic and important goals: least time, lowest cost and best quality, so all efforts are directed toward achieving these basic goals. Statistics indicate that projects are either conducted on estimated time or delayed and rarely are delivered before due date.

Taghipour et al.[19], studied Implementation of Software-Efficient DES Algorithm. By increasing development of digital telecommunication and the increase of sending and receiving data of various network of data transfer, protection of the safety of data are the most important necessities of the current world. The increase of different bank trading, increasing use of smart cards, moving to electronic government, are the examples of significance of this issue. In this study, an efficient algorithm

implementation by MATLAB and C language is presented and is compared with the latest works in this field.

Taghipour et al.[20], studied Risk assessment and analysis of the state DAM construction projects using FMEA technique. Dam construction projects are the most important projects of the country and absorb a considerable amount of the state budget on annual basis. As they take a long time to be completed, they always face risks and many uncertainties. In this study, the researcher intends to use a highly applied qualitative-quantitative methodology (FMEA) to analyze the risks of state dam.

Taghipour et al.[21], studied the impact of ICT on knowledge sharing obstacles in knowledge management process. Today, knowledge is known as a valuable asset in any organization so management of such insensible asset is one of the factors cause success in organizations. But knowledge can be effective when it is shared across the organization. Therefore, knowledge sharing is a key element in the process of knowledge management. This study aimed to check the impact of ICT on knowledge sharing barriers in one of the mobile operator, in Tehran.

Taghipour et al.[22], studied Assessment of the Relationship Between Knowledge Management Implementation and Managers Skills. The Purpose of this study is to consider the effects of knowledge management implementation on manager's skills of Reezmouj System Company. Results showed that there is a relation between knowledge management.

Taghipour et al.[23], studied Evaluation of the effective variables of the value engineering in services. The value engineering is a systematic method for resolving the problems, reducing the cost and improving the function and quality simultaneously and this leads to the increase of customer satisfaction by investigating and improving the value index. The results of this research which are based on the post managers and specialists responses show that applying value engineering by the post managers has significant effects on reducing the cost, saving time and customer satisfaction.

Khalilpour et al.[24], studied The Impact of Accountants Ethical Approaches on the Disclosure Quality of Corporate Social Responsibility Information an Islamic in Iran. The focus of business units on maximizing profits, tackling competitive challenges, emphasizing short-term outcomes, and delivering diverse accounting services has put accountants in a climate of conflict and pressure that has led to unethical outcomes for them. The main purpose of this study is to test a modified Multidimensional Ethics Scale (MES) to measure the ethical evaluations of accountants and financial managers.

Taghipour et al.[25], studied Identification and Modeling of Radio Wave Propagation Channel in Industrial Environments. Wireless technology in industrial environments is considered due to potential for saving in cable cost, high flexibility in factories, tracing the products and increasing optimization of process.

Taghipour et al.[26], studied Evaluating CCPM method versus CPM in multiple petrochemical projects. Although project management has long been under consideration and various methods have been proposed for timing projects, but they have not been completely responsive to the needs of the project for increasing productivity and customer satisfaction. As a result, increased risks and the incompatibility of the project with the initial Base line plan, necessitate using modern techniques (such as CCPM) as opposed to common methods (such as CPM).

Soleymanpour et al.[27], studied Mathematical modeling for the location-allocation problem - allocation of mobile operator subscribers' affairs' agencies under uncertainty conditions. Mobile phone is one of the inventions of the twentieth century that no one could have imagined that it will grow and become a profitable and huge industry in the world. In fact, mobile operators provide access to telecommunications services for users.

Taghipour et al.[28], studied Application of Cloud Computing in System Management in Order to Control the Process. The implementation and maintenance of organizational resources planning systems is really costly for each business. Large business institutes can pay the costs of organizational systems but due to high costs, small to medium businesses prefer the purchase of these systems and their relevant implementation. Cloud has some advantages in comparison to traditional data centers.

Taghipour et al.[29], studied Evaluation of Tourist Attractions in Borujerd County with Emphasis on Development of New Markets by Using Topsis Model. This research aims to identify tourist attractions in Borujerd County in order to develop new tourism markets in Lorestan province of Iran. For that purpose and with the use of GIS, parameters such as slope, aspect, elevation, precipitation, land use, topography, and landform geology are separately studied and digital maps for each feature are created. These activities have been analyzed using TOPSIS multi-criteria decision model and based on marketing factors.

Abdollahzadeh & Taghipour [30], studied Identify and Priorize Suitable Area for Ecotourism Development using Multi-criteria Analysis for Development of the Tourism Market in Iran (Nathanz City). Nathanz city having regard to natural attraction, desert, Karkas mountain, geo sites, protected areas have great potential to develop eco-tourism. The development of tourism in the city requires recognition of the potential and actual potential of the region. The aim of this study is to identify attractions of Nathanz city to develop new markets by using geographic information system. TOPSIS model were prioritized according to the marketing indicators.

Mirzaie et al.[31], studied The Relationship Between Social Bearing Capacities with Conflict as a Result, in the Perception of the Visiting Historical Sites. Sustainable tourism needs to prevent the destruction and degradation of social, cultural and ecological systems in the host society. It is obvious that tourism development and social characteristics is changing. But this, and severity of these changes depend on the size and number of tourism activities.

Taghipour et al.[32], studied Investigating the Relationship between Competitive Strategies and Corporates Performance. The purpose of this study was to investigate the relationship between competitive strategies and corporates performance. Statistical population of research was consisted active experts and specialists in Parsian Bank in Tehran. The results of this research showed that the relationship between competitive strategies and corporates performance among active experts and specialists in Parsian Bank approved.

Abdi et al.[33], studied the relationship between strategic planning with entrepreneurial marketing in the saderat bank of north tehran. Data analysis using SPSS software showed a significant correlation between strategic planning and the four components of entrepreneurial marketing, including consumer awareness, consumer-oriented innovation, value creation, and risk management.

4. Results

The independent variables include organizational factors (with organizational structure, top managers support, participation of employees), cultural factors (customer-orientation culture, learning culture, knowledge sharing culture) and technological factors (IT infrastructure, software and knowledge management).

The studies show that customer satisfaction is presented at least via three methods to income increase and supplier profit:

- a. The repetition of satisfied customer purchase about the routine goods
- b. Purchase of new goods by satisfied customer with the lowest advertising costs
- c. Purchase of goods by new customers inclining to the goods by satisfied customers

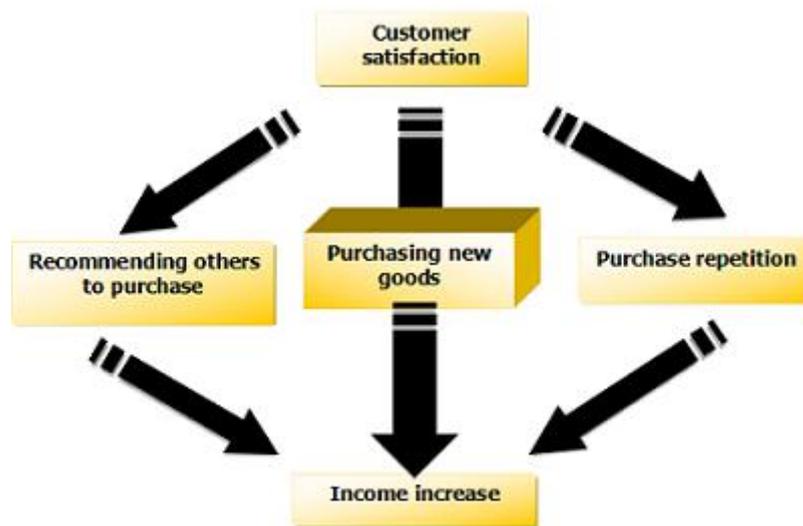


Figure 3. The customer satisfaction effect cycle.

Goal setting for one by one of customers: One of the principles of CRM is the high choice of customers and special services and products for the customers.

Other principles of CRM are absorption and retention of loyalty of customers via personal relationship. [34].

The customer selection based on customer life value: In CRM, this principle is considered and different customers have different value for organization and the most profitable should be retained and absorbed.

The data show that:

Of total 364, there are 150 (41.2%) women and 214 (58.8%) men.

The age variable of study sample shows that there are 85 (23.4%) at age group 20-30, 196 (54%) at age group 30-40 year and 82 (22.6%) at age group 40-50 year.

Four questionnaires are not completed. The data show that the majority of age group is dedicated to 30-40 year and lowest age group is regarding 40-50 year.

4 people (1.1%) are diploma and below Diploma, 82(22.7%) are associate, 116(32%) BA and 136 with MA and 24(6.6%) with Ph.D. and 5 questionnaires have no answer.

Based on normality test, the normality of variables is supported at significant level 5%. Parametric tests including t-test are used.

H1: The technological factors have significant effect on CRM.

For hypothesis test, a single t-test is used and if sig is lower than 5%, H0 is rejected and the factor has significant effect on CRM.

Based on normality test results, as the data have a normal distribution, a single t-test is used for testing this hypothesis.

As shown in the results of Table, as sig=0.00, smaller than 0.05, H0 is rejected and these factors have significant effect on CRM and it is also significant at the level 1% and this indicates the significance of this effect.

Responding the hypotheses:

Table 2. The results of hypothesis test for the main variables of study.

Result	Hypothesis
Supported	H1: The organizational factors have significant effect on CRM.
Supported	H1: The organizational factors have significant effect on CRM.
Supported	H1: The organizational factors have significant effect on CRM.

For ranking the weight of choices, the questionnaires of pairwise comparison completed by 10 experts are analyzed using a group AHP by EXPERT CHOICE software and the output is as follows:

As shown in the output, the organizational factors with the weight 0.612 have the highest rank and cultural factors with the weight 0.268 second rank and technological factors with the weight 0.117, have the third rank.

The inconsistency rate of pairwise comparison matrix is 0.07 and this shows that pairwise comparison matrix has acceptable consistency.

In this section, TOPSIS software is used for ranking the branches. A questionnaire is sent to a 10 experts and they were asked to assess the indices in CRM of the required branch with a bipolar scale as low, average and high. They are turned into quantitative data in decision matrices. Low=3, average =5 and high=7. To combine the opinion of respondents, a geometry mean is used. As shown in the software output, Vanak branch has the first rank in CRM and Shiraz Shomali, Molasadra, Tavanir and Gandy are in next ranks.

Table 3. Topsis software output.

Criteria name	Organizational	Cultural	Technological	Final index	Rank
Type of criteria	(+)	(+)	(+)		
	0.612	0.268	0.117		
Shiraz	5.109255807	2.823812524	421946843	0.76238	Rank 2
Gandy	2.080083823	3.088040027	2.080083823	0.03692	Rank 5
Tavanir	353869056	3.919334564	4.099171377	0.49389	Rank 4
Molasadra	3.883445736	4.362078053	4.125873163	0.61264	Rank 3
Vanak	5.105090214	4.885105071	4.563458189	0.9987	Rank 1

5. Discussion

The required data of this study is collected by library, field method and questionnaire. The study population is managers, deputies, employees and experts of

branches of Pasargad bank as 384. After distributing questionnaires, 367 valid questionnaires are collected.

The study hypotheses including the identification of effective indices on CRM in Pasargad bank branches. This study is applied in terms of purpose. Also, this is a descriptive-survey design as the researcher distributes questionnaire among the customers, managers, deputies, employees and experts of Pasargad bank branches. To select the samples, Cochran's formula in infinite population is used. By Likert scale, the opinion of experts is collected. In weighting of choices, AHP questionnaire is used for ranking choices and for ranking branches, a bipolar scale questionnaire is used. The reliability is computed using Cronbach's alpha. A content validity is used to support the validity. The study hypotheses results are as follows:

a. Of total 364 people, there are 150 (41.2%) women and 214 (58.8%) men (Three questionnaires had no answer).

b. There are 85 (23.4%) at age group 20-30, 196 (54%) at age group 30-40 year and 82 (22.6%) at age group 40-50 year (Four questionnaires had no answer).

c. The highest age group is dedicated to 30-40 year and lowest age group 40-50 year.

d. 4 people (1.1%) are diploma and below Diploma, 82(22.7%) are associate, 116(32%) BA and 136 with MA and 24(6.6%) with Ph.D. and 5 questionnaires have no answer.

Based on Kolmogorov-Smirnov test, the test value for organizational factors is 0.068, cultural factor 0.092 and technological factor 0.14 and with confidence interval 95%, the data of variables follow normal distribution.

Based on a single t-test ($\text{sig}=0.000$), organizational, cultural and technological factors are effective on CRM implementation in Pasargad bank. EXOERT CHOISE software output showed that:

The organizational factor with the weight 0.612 had the highest weight and first rank and cultural factors with the weight 0.268 and technology with the weight 0.117 were in next priorities.

The output of TOPSIS software showed that:

Pasargad bank, Vanak branch has dedicated the first rank in using effective factors on CRM and Shiraz, Molasadra, Tavanir and Gandy branches have dedicated ranks 2-5.

6. Conclusion

Decision making is one of the most important duties of management and fulfilling organization goals depends upon its quality. According to the view of one of the experts in decision making of Herbert Simon, decision making is one of the main principles of management. Decision making is regarding the selection of the best choices as the selected choice can have the highest profit and success.

The satisfied customers are turned into advertising tools and the effect of these messages is higher than that of costly advertising of companies. The results of study showed that:

The technological factors had low eight in CRM. It was proposed to conduct serious studies to increase the effect of this factor on CRM in branches of Pasargad bank.

Recognition of the importance of CRM in bank branches for all employees

Implementation of learning plans and CRM development based on vision, goals and missions of bank

The emphasis on team working and encouraging the employees to team working

Development of skills of employees based on the effect of CRM as a competitive advantage.

Consider benefits and reward for those learning and teaching CRM.

Encourage employees to perform the activities fulfilling their growth and learning needs.

Holding educational courses fulfilling the CRM recognition of employees.

Study limitations:

Lack of awareness of respondents regarding CRM has caused that the researcher dedicated much time to explain it and sometimes the explanations were not justifying.

The lack of tendency of most of bank customers for collaboration in responding the questions has made the data collection as challenging.

The lack of adequate time to present more aspects of the topic

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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