# Prioritization and Assessment of the Relationship of Factors Affecting Customer Relationship Management in the Banking Sector of Iran (A Study with DEMATEL Approach)

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### Abstract

Customer Relationship Management (CRM) is key strategic tool for all organizations, especially for banks, thereby deep understanding of critical success factors of CRM can be so useful for banks. In this study we prioritized and assessed the relationship of the factors affecting customer relationship management in the Banking Sector of IRAN. Our method in this research is descriptive-survey. In this way, after the library study, based on Delphi method, 13 factors have been chosen. Then, by helping DEMATEL approach we prioritized and assessed the relationship between the factors. Result showed that project management of CRM and IT are the most affecting factors and Effective leadership and Top management commitment and support are the most affected factors.

**Keywords:** management, Customer Relationship Management (CRM), Critical success factors (CSFs), DEMATEL approach

### Introduction

Today's organizations start to realize more and more the importance of the client orientation, respectively the importance of placing the clients in the center of the organizations attentions (dumitrescu and fuciu, 2009). Customer relationship management is a high customer retention strategy, It is very important to know more about customers needs and offer customized products and services to improve customers satisfactions and loyalty (osarenkho and bennani, 2007). Thereby customer relationship management have gained important role for success of organizations to satisfy and keep their customer. Customer Relationship Management (CRM) is no longer a new term but a reality for many organizations. Banking is a prime candidate for CRM transformation, as competition in this sector increases; an excellence in service becomes a critical success factor (Patwardhan et al, 2009). The factors that affect success of CRM implantation are different thus in this paper we prioritize and assess the relationship among relevant factors for better CRM.

### Literature Review

#### *CRM overview*

Customer Relationship Management is a concept that is based on the philosophy of using a combination of customers and marketing for relationship building (Kotler, 2003). Despite the recent birth of this term, which stands in the nineties, since then it has become a key tool for business management (Ngai, 2005) and a lot of definitions presented for that. Wyner (1999) stated that CRM is a business strategy that increases volume of transaction, revenue and customer satisfaction. Xu (2002) mentioned that CRM is an idea about how a company can keep most profitable customers by increasing the value of interaction. Levine (2000) stated CRM is the utilization of customer-related information or knowledge to deliver relevant products or services to consumers. Kim and et al. (2003) define CRM in terms of business processes and technologies that seek to understand a

company's customer. Interesting view on the term CRM has been brought by Payne He understands customer relationship management as a strategic approach concerned with creating improved shareholder value through the development of appropriate relationships with key customers and customer segments. In his opinion CRM unites the potential of information technologies and relationship marketing strategies to deliver profitable, long-term relationships (Kubina and landel, 2012). Mendoza and et al. (2007) explained CRM as a strategy within the organization that aims to satisfy and create a long-term relationship with the client. From the literature review, Moreno and Meléndez (2011) said that CRM is a business strategy that aims to establish and develop value-creating relationships with customers based on knowledge. Using IT as an enabler, CRM requires a redesign of the organization and its processes to orient them to the customer, so that by personalizing its products and services, the firm can optimally satisfy customer needs and thereby generate long-term, mutually beneficial, loyalty relationships.

### *Factors affecting CRM*

Research on CRM has increased significantly over the past few years (Romano and Fjermestad, 2003) In view of the high failure rate in CRM implementation, and of the need to improve understanding of why some initiatives are successful while others are not (Roh and et al., 2005) there is a need for a better understanding of critical factors of CRM. The factors behind the success of CRM include items that drive a successful implementation which become the key components underlying the success of CRM (Rajola, 2003). Many academics have conducted studies and proposed important factors. The success key elements for CRM implementations have been described in many previous publications.

Coltman (2006) presented where the benefits are in CRM technology investment and shows that to be successful, CRM programs must be feasible and this requires a wider understanding of the structural and behavioral limits to performance. Mendoza and et al. (2007) explained a model based on critical success factors (CSFs) that will constitute a guide for the implementation and diagnosis of a CRM strategy and the model is confirmed by a set of 13 CSFs with their 55 corresponding metrics. These factors include Marketing, Sales, Services, Related aspects to the client, Organizational aspects, Information Systems (IS), and Software for CRM, Sales Force Automation (SFA), Data warehouse and Data mining, Help desk, Internet influence, Call centers, coordinating the CRM implementation. These factors cover the three key aspects of every CRM strategy (human factor, processes, and technology). Pan and et al. (2007) summarized 11 success factors and described Evolution path, time frame, reorganization, minimize customization, time and budget management, customer involvement, no culture conflict, use of the CRM system by managers, measurement, management involvement, training of CRM concepts. Arab and et al. (2011) by review of literature about factors, expressed three aspects with their divisions: 1) process (Marketing, Sales, Services, Define and communicate CRM strategy, Customer involvement, Personalization process, Time and budget management); 2). human (Value, Satisfaction, Retention and loyalty, Skilful staff, Consideration of employee's importance, Top management commitment and support, Define and communicate CRM strategy, Assurance of top management commitment for CRM, Change in culture, No culture conflict) and; 3) technology (Call centers, Help desk, Data warehouse and data mining, Software for CRM, Sales force automation, internet influence). In banking sector, a research in the banking industry of Taiwan revealed that primacy of customer services, customizing CRM functions and modules, discovering customers needs, maintaining employees morale, and conducting a decision support system are considered to be factors to guide companies for a successful CRM deployment. Moreover, the study found that managers should place more emphasis on customizing the CRM functions or modules and privacy of customer

service (Lin and et al, 2009). Patwardhan and et al. (2009) explored the CSFs in the Indian banking sector. The data was collected from the 17 largest Indian banks. The 17 respondents included 11 public banks and six private banks. The findings of this study revealed that four essential factors managed the flow of CRM in any organization, including banks. These factors are: 1) Company, 2) Staff, 3) Technology and 4) Customers. The researchers suggested that private banks are concerned with customer and staff, while public banks are concerned with a significant correlation between company and technology, and between staff and technology.

For the purpose of this research, The following factors have been selected among several credible papers according to the number of citations with the aim to study Iranian Banking sector and ask experts about their importance as critical factors in CRM implementation.

**Table 1:Summarized critical success factors (CSFs) proposed by different researchers**

| critical success factors | Researchers |
|---|---|
| Top management commitment and support | Somers and Nelson (2001), Eid and et al. (2002), Croteau and Li (2003), Bohling (2006), Mendoza (2007) |
| Define and communicate CRM strategy | Somers and Nelson (2001), Bohling (2006), Mendoza (2007), Shiah S (2005), Almotairi and et al. (2008) |
| IT | Somers and Nelson (2001), Eid et al. (2002), Lindgreen (2006), Muazu (2007), Piyawan Siriprasoetsin and et al. (2011) |
| Staff | Wilson and et al. ( 2002), Mendoza (2007), Lindgreen (2006), arab and et al. (2010) |
| Organizational culture | Lindgreen (2006), Shiah S. (2005), Piyawan Siriprasoetsin and et al. (2011) |
| Knowledge management | Croteau & Li (2003), King & Burgess (2007), Moreno and Meléndez (2011) |
| Integration | Christopher (2003), Lindgreen (2006), Mendoza (2006), King & Burgess, (2007) |
| Management of customer contact channels | Mendoza 2007, Piyawan Siriprasoetsin and et al. (2011) |
| change management | Barnes (2001), King & Burgess (2007) |
| Customer orientation culture and attitudes | Croteau and Li (2003), King & Burgess 2007, ALghaswyneh (2014), Lindgreen (2006) |
| Training programs | Eid and et al. (2002), Somers and Nelson (2001), Mankoff (2008), HSIN CHANG (2007) |
| Effective leadership | Christopher (2003), Mendoza and et al. (2007), Mankoff (2008), King & Burgess (2007) |
| Project management of CRM | Somers and Nelson (2001), Zhang and et al. (2003), Eid and et al. (2002), Muazu Z (2007) |

**Related works**

Almotairi (2008) focused on success factors that could facilitate successful implementation of CRM. He aims to provide taxonomy for success factors based on the analysis of the main components of CRM (People, Processes and Technology). He stated Eight success factors that is agreed upon by most of the literature: Top management commitment, definition of CRM strategy, culture change, inter-departmental integration, skilful staff, key information on customers, and manage IT structure, customer involvement. Mohd et al. (2011) expressed that the most recommended success factors to be given more attention for the successful CRM initiatives are top

management support, managing organizational and cultural change, users training and involvement, understanding CRM, the assessment of the organizational readiness, and choosing the right technology. Zahedi et al. (2011) in a case study of oil products distribution ranked CSFs in customer relationship management they stated respectively that CRM strategy, knowledge management in customer relationship, CRM technology and effective strategic committee play vital roles on the success of CRM implementation. Mohebbi et al. (2012) Prioritized the Affecting Factors on CRM Implementation in Edible Oil Industry, in their study each of The first prioritize was Leadership support and the other prioritize by respectively customer and customer strategy then organization's strategy and value creation structure of the organization, technology, knowledge management, human and staff factor, culture of the organization and the stages of the organization. Rezaeegiglo et al. (2014) in a case study of Nestle Company utilized 4 factors for Deployment of Customer Relationship Management and ranked them result showed that Strategy, Current Culture, Technology and finally Structure were respectively more effective .in most aforementioned works Friedman rank test were employed and relationships among factors were not considered.

### The Research Method
This research is applied in terms of performing goal, and it is descriptive-survey in terms of performing method. Artificial technique of this study is DEMATEL methodology which was mainly applied in the early 1970s to study chooses the complex problems of the world with the aim of understanding and recognition of the way and level of relations between studied components in terms of the influence and effectiveness from cause and effect perspective in order to structure the sequence of considered information about studied components (Asgharpour, 2003), Due to the nature of research, the main issue in this study is identification of affecting factors on CRM by using the previous researches which have been collected via expert group comments (Delphi). This research has been carried out in 2014. The studied population consists of 10 Banks experts who are known as active professionals and researchers, were identified as potential candidates of decision making group to collect the data in this study. The main basis of selecting certified team have been having at least 5 years scientific-research or practical experiences related to the subject of the study. Regarding to number of identified certified individuals limitation have been as statistical population, not done sampling and all identified individuals have been considered as the studied expert and decision-making group of methodology (Yavaran et al., 2014). The questionnaires have been used to determine severity of relationships between specified components that are set as cardinal (scoring) and are distributed among the members of expert team (Asgharpour, 2003). More in the article, the process of data collection and data analysis have been described.

### Results
As it was mentioned, Delphi method was used to identify effective factors on CRM.

**Table 2: final affecting indices on effective factors on investment in stock**

| symbol | Index name | symbol | Index name |
|---|---|---|---|
| F1 | Top management commitment and support | F8 | Management of customer contact channels |
| F2 | Define and communicate CRM strategy | F9 | change management |
| F3 | IT | F10 | Customer orientation culture and attitudes |
| F4 | Staff | F11 | Training programs |
| F5 | Organizational culture | F12 | Effective leadership |
| F6 | Knowledge management | F13 | Project management of CRM |
| F7 | Integration | | |

In the first stage by using this method, the experts group was asked to list indexes which can be some of these factors, that finally after scoring at this stage, 13 indices have been determined as final affecting indices on CRM. (Table 2)

Then, in order to evaluate the intensity of relationship between effective factors, the scoring was done from zero to four. Thus, the zero represents there is no effect intensity of the most intense and four has the extreme effect, middle of given scores by experts has been calculated with per two factors and the basis of severity is direct relationship between both factors, and more, to study feedbacks along with their effect importance, DEMATEL technique was used and by use of MATLAB software, survey results of final relations were achieved. (Asgharpour, 2003)

According to the results of the stage prior to the intensity of the relations in this system, matrix $\widehat{M}$ is formed. The product of $\widehat{M}$ matrix in reverse of highest total row of the desired matrix provides the relative intensity of direct relations. It means that we multiply each entry of $\widehat{M}$ matrix in reverse of that matrix highest total row ($\alpha$).

The highest total row is number 31, that its revers is 0.03225, thus, $\alpha$=0.03225

$M = \alpha \cdot \widehat{M}$

We calculate the sum of infinite sequences of direct and indirect effects of the elements on each other (with all possible feedbacks) in form of a geometrical progression, based on the existing laws of the graphs.

$$S = M + M^2 + \ldots + M^t = \frac{M(I- M^t)}{I-M} = \frac{M}{I-M} = M(I - M)^{-1}$$

$$\lim_{t \to \infty}(M)^t = 0$$

The calculation of this set is by $(I - M)^{-1}$ (inverse). Indirect effects of existing elements are convergent to the inverse matrix as indirect effects along chains of existing diagraph are decreasing. Thus, by calculation of the matrix in the above formula, $(I - M)^{-1}$ inverse is used (I unit matrix corresponding with M, it means that square matrix with all its main diameter elements 1 and other elements 0)

In table (3) we get possible intensity of all direct and indirect relationships:

**Table 3: possible intensity of all direct and indirect relations** $(I\text{-}M)^{-1}$

|     | F1    | F2    | F3    | F4    | F5    | F6    | F7    | F8    | F9    | F10   | F11   | F12   | F13   |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| F1  | 1.397 | 0.402 | 0.275 | 0.312 | 0.416 | 0.302 | 0.234 | 0.324 | 0.339 | 0.362 | 0.425 | 0.364 | 0.317 |
| F2  | 0.473 | 1.297 | 0.318 | 0.295 | 0.399 | 0.369 | 0.276 | 0.370 | 0.354 | 0.406 | 0.409 | 0.349 | 0.331 |
| F3  | 0.601 | 0.429 | 1.318 | 0.386 | 0.480 | 0.429 | 0.360 | 0.467 | 0.484 | 0.423 | 0.495 | 0.480 | 0.421 |
| F4  | 0.577 | 0.413 | 0.334 | 1.314 | 0.519 | 0.387 | 0.346 | 0.420 | 0.467 | 0.406 | 0.504 | 0.435 | 0.375 |
| F5  | 0.655 | 0.450 | 0.392 | 0.435 | 1.447 | 0.449 | 0.402 | 0.459 | 0.506 | 0.472 | 0.548 | 0.503 | 0.382 |
| F6  | 0.575 | 0.409 | 0.388 | 0.372 | 0.463 | 1.327 | 0.318 | 0.423 | 0.467 | 0.459 | 0.501 | 0.435 | 0.351 |
| F7  | 0.548 | 0.439 | 0.363 | 0.371 | 0.462 | 0.390 | 1.290 | 0.454 | 0.439 | 0.463 | 0.473 | 0.434 | 0.381 |
| F8  | 0.629 | 0.453 | 0.423 | 0.433 | 0.507 | 0.397 | 0.438 | 1.407 | 0.481 | 0.501 | 0.518 | 0.476 | 0.445 |
| F9  | 0.583 | 0.388 | 0.364 | 0.378 | 0.496 | 0.363 | 0.354 | 0.457 | 1.384 | 0.465 | 0.506 | 0.441 | 0.384 |
| F10 | 0.625 | 0.417 | 0.366 | 0.375 | 0.527 | 0.444 | 0.407 | 0.515 | 0.503 | 1.411 | 0.515 | 0.499 | 0.436 |
| F11 | 0.617 | 0.465 | 0.384 | 0.424 | 0.524 | 0.415 | 0.342 | 0.452 | 0.497 | 0.489 | 1.448 | 0.493 | 0.403 |
| F12 | 0.233 | 0.109 | 0.088 | 0.096 | 0.152 | 0.125 | 0.079 | 0.104 | 0.141 | 0.112 | 0.185 | 1.112 | 0.093 |
| F13 | 0.670 | 0.490 | 0.432 | 0.386 | 0.517 | 0.433 | 0.387 | 0.503 | 0.517 | 0.514 | 0.558 | 0.486 | 1.365 |

Table (4) states the influence of all possible factors on each other during long time period of a hoax. Of course, in this matrix, possible intense of all direct and indirect relations of feedback and on each other will be achieved.

**Table 4: existing relative intensity of direct and indirect relations  M(I-M)$^{-1}$**

|  | F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 | F9 | F10 | F11 | F12 | F13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| F1 | 0.397 | 0.402 | 0.275 | 0.312 | 0.416 | 0.302 | 0.234 | 0.324 | 0.339 | 0.362 | 0.425 | 0.364 | 0.317 |
| F2 | 0.473 | 0.297 | 0.318 | 0.295 | 0.399 | 0.369 | 0.276 | 0.37 | 0.354 | 0.406 | 0.409 | 0.349 | 0.331 |
| F3 | 0.601 | 0.429 | 0.318 | 0.386 | 0.48 | 0.429 | 0.36 | 0.467 | 0.484 | 0.423 | 0.495 | 0.48 | 0.421 |
| F4 | 0.577 | 0.413 | 0.334 | 0.314 | 0.519 | 0.387 | 0.346 | 0.42 | 0.467 | 0.406 | 0.504 | 0.435 | 0.375 |
| F5 | 0.655 | 0.45 | 0.392 | 0.435 | 0.447 | 0.449 | 0.402 | 0.459 | 0.506 | 0.472 | 0.548 | 0.503 | 0.382 |
| F6 | 0.575 | 0.409 | 0.388 | 0.372 | 0.463 | 0.327 | 0.318 | 0.423 | 0.467 | 0.459 | 0.501 | 0.435 | 0.351 |
| F7 | 0.548 | 0.439 | 0.363 | 0.371 | 0.462 | 0.39 | 0.29 | 0.454 | 0.439 | 0.463 | 0.473 | 0.434 | 0.381 |
| F8 | 0.629 | 0.453 | 0.423 | 0.433 | 0.507 | 0.397 | 0.438 | 0.407 | 0.481 | 0.501 | 0.518 | 0.476 | 0.445 |
| F9 | 0.583 | 0.388 | 0.364 | 0.378 | 0.496 | 0.363 | 0.354 | 0.457 | 0.384 | 0.465 | 0.506 | 0.441 | 0.384 |
| F10 | 0.625 | 0.417 | 0.366 | 0.375 | 0.527 | 0.444 | 0.407 | 0.515 | 0.503 | 0.411 | 0.515 | 0.499 | 0.436 |
| F11 | 0.617 | 0.465 | 0.384 | 0.424 | 0.524 | 0.415 | 0.342 | 0.452 | 0.497 | 0.489 | 0.448 | 0.493 | 0.403 |
| F12 | 0.233 | 0.109 | 0.088 | 0.096 | 0.152 | 0.125 | 0.079 | 0.104 | 0.141 | 0.112 | 0.185 | 0.112 | 0.093 |
| F13 | 0.67 | 0.49 | 0.432 | 0.386 | 0.517 | 0.433 | 0.387 | 0.503 | 0.517 | 0.514 | 0.558 | 0.486 | 0.365 |

In final step, the effect order of each of these factors on each other or being affected by other factors is studied. With the study of these relations, possible structure in the hierarchy of influence and effectiveness will be achieved, that will guide us in improving our recognition and identification of affecting factors on CRM. Therefore, according to table (4) titled as direct and indirect effects, table (5) titled as the table of affecting and affected factors can be calculated.

The highest total row of R represents the order of factors that intensely affect other factors.

The highest total classified of J represents the order of factors that are affected.

R+J represent the total intensity of an important factor in terms of both influence and effectiveness in the length of longitude axis and R-J represents the position of a factor in the length of latitude axis, and this position is definitely an affecting factor in the case of positive R-J and it is definitely affected in the case of to a negative R-J. In other words, the agent of F13 and F3 (Project management and IT) is the most affecting factors, and the agent of F12 and F1 (Effective leadership and Top management commitment and support) is the most affected factor.

**Table 5: effect order of factors on each other**

| Variables order | Affecting variables R | Variables order | Affected variables J | Variables order | R+J | Variables order | R-j |
|---|---|---|---|---|---|---|---|
| Project management of CRM | 6.258 | Top management commitment and support | 7.183 | Training programs | 12.037 | Project management of CRM | 1.575 |
| Management of customer contact channels | 6.108 | Training programs | 6.084 | Organizational culture | 12.009 | IT | 1.329 |
| Organizational culture | 6.100 | Organizational culture | 5.909 | Top management | 11.650 | Integration | 1.277 |

| | | | | commitment and support | | | |
|---|---|---|---|---|---|---|---|
| Customer orientation culture and attitudes | 6.040 | change management | 5.581 | Customer orientation culture and attitudes | 11.522 | Staff | 0.920 |
| Training programs | 5.953 | Effective leadership | 5.508 | Management of customer contact channels | 11.463 | Management of customer contact channels | 0.753 |
| IT | 5.772 | Customer orientation culture and attitudes | 5.482 | change management | 11.143 | Knowledge management | 0.656 |
| change management | 5.562 | Management of customer contact channels | 5.355 | Project management of CRM | 10.941 | Customer orientation culture and attitudes | 0.558 |
| Integration | 5.509 | Define and communicate CRM strategy | 5.161 | Knowledge management | 10.316 | Organizational culture | 0.192 |
| Staff | 5.496 | Knowledge management | 4.83 | IT | 10.215 | change management | -0.019 |
| Knowledge management | 5.486 | Project management of CRM | 4.683 | Staff | 10.073 | Training programs | -0.131 |
| Define and communicate CRM strategy | 4.647 | Staff | 4.576 | Define and communicate CRM strategy | 9.808 | Define and communicate CRM strategy | -0.514 |
| Top management commitment and support | 4.467 | IT | 4.443 | Integration | 9.742 | Top management commitment and support | -2.716 |
| Effective leadership | 1.627 | Integration | 4.232 | Effective leadership | 7.135 | Effective leadership | -3.881 |

### Conclusions

In conclusion, we should mention that critical success factors of CRM is very essential for better CRM. The review of literature has shown that The success factors of CRM covering different issues. Result showed that project management of CRM and IT are the most affecting factors and Effective leadership and Top management commitment and support are the most affected factors. based on the research, for CRM in banking sector of Iran it is essential to consider project management of CRM thereby banks that have suitable CRM project management can be successful but to implement CRM project, many items were required such as time and budget to obtain desirable results .further more IT, Integration, Staff, Management of customer contact channels,

Knowledge management, Customer orientation culture and attitudes and Organizational culture should be regarded respectively.

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