Investigating the effect of Electronic Customers Relationship Management (e-CRM) on costumers' satisfaction of Fars Petroleum Co. using of Kano Model and Gap Analysis

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Abstract: This paper is aimed to examine the effect of electronic customer relationship management (E-CRM) on customers' satisfaction of Fars Petroleum Company. So, the nature of research is applied and the method of data analysis are in type of correlation and Freidman Test. Customers' Statistical society of this company is taken into account and 170 persons selected for statistical sample. The information gathering instruments constitute of researcher's questionnaire which is draw up based on e-CRM principles and customers' satisfaction, and its validity and reliability is confirmed by scientific methods. Reliability of questionnaire is confirmed by Cronbach's Coefficient Alpha in 0.876. The results show that there is a positive relationship between satisfaction factors obtained by the mixed Model of Kano and gap analysis (basic, performance and attractive quality)on customers' satisfaction of Fars Petroleum Company.

Keywords: e-CRM, Customer satisfaction, loyalty, e-CRM management, Electroninc (e-)

INTRODUCTION

With improving communication technology and entering in various areas of human life especially in business, the managers have attempted to promote the competitive advantage of organizations applying this technology. Since propaganda performance in tradition methods has high expenditures so, the managers have also attempted to reduce using these methods. Reducing propagandas, the marketers have focused on CRM as the best way for progressing, maintaining and growing business[1-3]. Using IT, the organizations have moved to intellectual and knowledge-based organizations and hereby make CRM more applied[3].

Applying and employing e-CRM in organization[2], the relationship with customers has done in less time and more rapidly and increased competitive power in nowadays rough environments. In other words, entering IT, costumers will to be serviced via communication channels such as e-mail, website, and channels like these.

This paper has examined the effect of e-CRM on costumers' satisfaction of Fars Petroleum Company.

CRM (Customer Relationship Management)

The word "CRM" is abbreviation of the phrase "Customer Relationship Management" or "System of CRM", indeed these systems are as strategies gathering customers' needs and behaviors to lead to strong relationship with them[1-3]. Finally, strong relationship with customers in any business is the most important element to be successful. CRM included 3 items: 1) customer, 2) relationship, and 3) management. Customer is defined as the final consumer which has a supportive role in valuable relationship. Relationship is defined as creating more loyalty and effectiveness customers via learned relationship and management is defined as innovation and conducting a customer-based business process and placing customer in the center of organization processes and experiences[4]. Nowadays, CRM in organizations has a strategic significance. In sticky terms of competition, in time and organized relationship with customers is the most appropriate way to increase customers' satisfaction, to increase selling and also to reduce expenditures. Considering these problems, CRM in organizations, is accounted as a type of business strategy[4,5].

E-CRM :

With improving information & communication technology (ICT) and entering in various areas of human life especially in business, the managers have attempted to promote the competitive advantage of organizations applying this technology. Since propaganda performance in tradition methods has high expenditures so, the managers have also attempted to reduce using these methods. Reducing propagandas, the marketers have focused on CRM as the best way for progressing, maintaining and growing business. Using

IT, the organizations have moved to intellectual and knowledge-based organizations and hereby make CRM more applied. In order that the companies can use technologies for obtaining new customers, the Internet Technology cause to transfer CRM to e-CRM[2, 5], in that, it can be said that e-CRM is the strengthening of tradition CRM applying its methods in e-business (electronic business).

E-CRM is an integrated electronic Marketing, selling and services strategy which plays a key role in identifying, obtaining and maintaining the customers as the largest capital of company[6]. E-CRM is the coherence and relationship between management software, hardware and instruments for employing an effectiveness relation with customers[7].

The main purpose of CRM is the extension of sustainable and long-term coherences between companies and customers and indeed the main intention is the creation of loyalty between organizational profitable customers.

In the view to Dyche [4], there are two types of e-CEM, as follows:

1. **Operational e-CRM**
2. **Analytical e-CRM**

Customers' Satisfaction

Customers are the people of operations using the products or the result of an operation or needs them and enjoying them. Because any operation in an organization has certainly a purpose; so, it has some customers [8].

Customers' satisfaction is defined as a degree of a real operation of a company which obviates the customer expectations. In the view to Katler if the operation of company obviates the customer expectations, he/she would have a satisfaction sense otherwise (he/she would have a) dissatisfaction sense[9].

Models of Customers' Satisfaction
Kano Model

Dr. Nouryaki Kano, the professor of Rika University in Tokyo and one the most prominent clear-sighted person in Quality Management Science, has suggested a model which nowadays is used in majority of customer satisfaction patterns[10]. He has divided customers' needs and in other words qualitative features of products in 3 categories and represented each of them in a two-dimensional graph. The vertical axis shows the measure of satisfaction and or gladness of customer and the horizontal axis shows the measure of offering ideal qualitative quality of customer. Highest and lowest points of vertical axis of the graph are extremely satisfaction and dissatisfaction of customer,

respectively. The meeting point of vertical and horizontal axis is where satisfaction and dissatisfaction of customer is in balance status. The right side of horizontal axis is where the expected qualitative quality is offered completely, and the left side is the point of offering a product which is not included the expected qualitative features and they no wise come to account in product or service.

Basic quality

The first category of features are basic quality which in the view to Dr. Kano this category in the case of accounting them completely into product would only avoid from customer dissatisfaction and not provide them satisfaction and gladness. In other words, this category would only provide the existence preliminary of product in market and not help us in being successful against competitors and dominating the market. In general, these features are the cases related to security, reliability and continuity of product. The remarkable point related to this category from qualitative features and quality, is that the customer supposes that these features have accounted in product and in other words, these wills are inexpressible or implicitly. If we have a look at these features in another aspect, there are general standards and rules for any products or services which are the first terms of our existing and entering to expected product market and in the case of disregarding the relevant standards, the expected goods would not meet purchasers' reception and would follow severe dissatisfaction of consumers.

Performance Quality

The second category of qualitative features is performance quality of product which lack of obviating it would lead to dissatisfaction of customers and adversely, obviating it completely and appropriately would lead to satisfaction and gladness of them. The importance of performance quality of the product is that identifying and embedding them in products, is the less attempt which leads to maintain commercial status of organization in competitive organizations. With a view to ability of identifying and determining, this quality in compare to other qualitative features is easier and tangible. Because the majority features of products offering in commercial propagandas, newspapers, mass media, in daily and friendly communications, are included in this type of features. In other hand, this wills (second category) in adverse to first category is oral and is directly said by customers and consumers of products.

Attractive Quality

The third category of qualitative features in Kano model is attractive quality (qualitative wills) which in the view point of customer, the using of the product is not received as a need and quality and in

result lack of estimating this category of qualitative features would not lead to dissatisfaction of customer, but offering them in product, have created higher interest and satisfaction in customer. The clear feature of attractive quality is that does not offer from customers but in the case of identifying and embedding them in model, the expected product would be rapidly replaced other same competitors' products and brought a more appropriate situation for representative company. The remarkable point is that in the case of embedding this type of needs in a product and offering it in high volume in market, the expected qualitative feature would be copied by other competitors and became an applied will and need and/or even a basic need of product.

The model of Gap Analysis

One of models for quality gap analysis is suggested by Parasoraman[11]. In this model the significant activities of an organization and the interaction and the relationship between them (which have effect on quality perception and on offering a satisfactory degree of services quality) are determined. These relationships are explained by gaps and contrasts as "a gap is a main obstacle for obtaining a satisfactory degree of service quality sector".

Each of the models for quality gap analyzing is designed with a different focus and emphasis. However, each models in different areas are profitable, in general, the conceptual models of quality are important in some reasons such as certifying effective elements on the quality of organization services, certifying the quality of the qualitative deficiencies and certifying a frame for performing plans of quality improvement. A desirable quality model should help the management in identifying resources, solving problems, determining the reasons of observed problem in quality area and offering possible scientific strategies[11]. The levels for gaps in Parasoramon model are as follows:

- Gap (1) customer expectation-management perception: the management may have an inaccuracy perception of customer's real expectations. The reason of this gap is lack of appropriate focus on customer or market. The existence of one marketing sector would not guarantee the focus on market, but it would need to an appropriate management process, instruments and theories of market analyzing.
- Gap (2) services quality features: the organization may not be able to translate the customer expectations to services quality features. This gap relates to services designing aspects.
- Gap (3) services offering: the instructions in the case of offering or applying services are not solely a guarantee for offering services in high quality. There are not many reasons for this case: lack of

sufficient supporting of main employee, processing problems, changing the operation of main/communicating employees.

- External communications: customer expectations are formed by external relationships of an organization. A realistic expectation promotes positive perception of services quality. So, marketing sector of a services organization should explain services and the method of offering services.
- Gap (5) expected services-perceived service: perceived quality of service is based on size (difference between perception and expectation) and the side of 5th gap. Negative difference between customer expectations and perceptions represents a degree of services quality less than customer expectation and vice versa, which in general has a relationship with the nature of marketing gaps, designing and offering communication service.

It has been seen that in this model the main gap is customer gap or in other word, 5th gap (the gap between expected service and perceived service from customer) and the key element in minimizing this gap is solving quadruplet gaps[12].

Research Question

Main question: Is there any meaningful relation between E-CRM and customer satisfaction in Fars Petroleum Co. (by using mixed model of Kano and gap analyzing)?

Secondary questions:

1st question: Is there any meaningful relation between E-CRM and customers' satisfaction in Fars Petroleum Co.?

**2nd question: Is there any meaningful relation between E-CRM and expected service in Fars Petroleum Co.?
Related to examining the relationship between E-CRM and Basic Quality**

**3rd question: Is there any meaningful relation between E-CRM and offering service in Fars Petroleum Co.?
Related to examining the relationship between E-CRM and Performance Quality**

4th question: Is there any meaningful relation between E-CRM and quality features of services in Fars Petroleum Co.?

5th question: Is there any meaningful relation between E-CRM and external relationships in Fars Petroleum Co.?

Related to examining the relationship between E-CRM and Attractive Quality.

1st hypothesis: management perception of customers' expectations has an effect on the customers' satisfaction of Fars petroleum Co.

H_0 =There is not a meaningful relationship
H_1 =There is a meaningful relationship

Table -1: correlation test of 1st hypothesis

		Customer expectation-management perception	Customers' Satisfaction
Customer expectation-management perception	Pierson correlation coefficient	1	0.694
	Sig	--	0.000
	N	170	170
Customers' Satisfaction	Pierson correlation coefficient	0.694	1
	Sig	0.000	--
	N	170	170

In accordance with table 1, the results getting by using SPSS software have determined that the correlation coefficient between Customer expectation-management perception with customers' satisfaction is equal to 0.459. And the degree of its meaningful is represented by opposite figure (sig) as a degree of meaningful measure. In above table the degree of meaningful is 0.000 and is lesser than 0.05, so, the hypothesis H_0 is rejected in a meaningful degree and the hypothesis H_1 is accepted. Meaning that, there is a meaningful correlation between Customer expectation-management perception with customers' satisfaction.

And because this relation is positive and meaningful, so, we can say "increasing management perception of customer expectations is caused to increasing customers' satisfactions".

2nd question: Is there any meaningful relation between E-CRM and expected service in Fars Petroleum Co?
H_0 =There is not a meaningful relationship
H_1 =There is a meaningful relationship

Table -2: correlation test of 1st hypothesis

		expected service	Customers' Satisfaction
expected service	Pierson correlation coefficient	1	0.700
	Sig	--	0.000
	N	170	170
Customers' Satisfaction	Pierson correlation coefficient	0.700	1
	Sig	0.000	--
	N	170	170

In accordance with table 2, the results getting by using SPSS software have determined that the correlation coefficient between expected service with customers' satisfaction is equal to 0.700. And the degree of its meaningful is represented by opposite figure (sig) as a degree of meaningful measure. In above table the degree of meaningful is 0.000 and is lesser than 0.05, so, the hypothesis H_0 is rejected in a meaningful degree and the hypothesis H_1 is accepted. Meaning that, there is a meaningful correlation between expected service with customers' satisfaction. And because this relation

is positive and meaningful, so, we can say "increasing management perception of expected service is caused to increasing customers' satisfactions".

3rd question: Is there any meaningful relation between E-CRM and offering service in Fars Petroleum Co?
H_0 =There is not a meaningful relationship
H_1 =There is a meaningful relationship

Table -3: correlation test of 1st hypothesis

		offering service	Customers' Satisfaction
offering service	Pierson correlation coefficient	1	0.699
	Sig	--	0.000
	N	170	170
Customers' Satisfaction	Pierson correlation coefficient	0.699	1
	Sig	0.000	--
	N	170	170

In accordance with table 3, the results getting by using SPSS software have determined that the correlation coefficient between offering service with customers' satisfaction is equal to 0.699. And the degree of its meaningful is represented by opposite figure (sig) as a degree of meaningful measure. In above table the degree of meaningful is 0.000 and is lesser than 0.05, so, the hypothesis H_0 is rejected in a meaningful degree and the hypothesis H_1 is accepted. Meaning that, there

is a meaningful correlation between offering service with customers' satisfaction.

4th question: Is there any meaningful relation between E-CRM and quality features of services in Fars Petroleum Co.?
H_0 =There is not a meaningful relationship
H_1 =There is a meaningful relationship

Table -4: correlation test of 1st hypothesis

		quality features of services	Customers' Satisfaction
quality features of services	Pierson correlation coefficient	1	0.750
	Sig	--	0.000
	N	170	170
Customers' Satisfaction	Pierson correlation coefficient	0.750	1
	Sig	0.000	--
	N	170	170

In accordance with table 4, the results getting by using SPSS software have determined that the correlation coefficient between quality features of services with customers' satisfaction is equal to 0.750And the degree of its meaningful is represented by opposite figure (sig) as a degree of meaningful measure. In above table the degree of meaningful is 0.000 and is lesser than 0.05, so, the hypothesis H_0 is rejected in a meaningful degree and the hypothesis H_1 is accepted. Meaning that, there is a meaningful correlation between quality features of services with customers' satisfaction.

And because this relation is positive and meaningful, so, we can say "increasing quality features of services is caused to increasing customers' satisfactions".

5th question: Is there any meaningful relation between E-CRM and external relationships in Fars Petroleum Co?
H_0 =There is not a meaningful relationship
H_1 =There is a meaningful relationship

Table -5: correlation test of 1st hypothesis

		external relationships	Customers' Satisfaction
external relationships	Pierson correlation coefficient	1	0.593
	Sig	--	0.000
	N	170	170
Customers' Satisfaction	Pierson correlation coefficient	0.593	1
	Sig	0.000	--
	N	170	170

In accordance with table 5, the results getting by using SPSS software have determined that the correlation coefficient between external relationships with customers' satisfaction is equal to 0.593. And the degree of its meaningful is represented by opposite figure (sig) as a degree of meaningful measure. In above table the degree of meaningful is 0.000 and is lesser than 0.05, so, the hypothesis H_0 is rejected in a meaningful degree and the hypothesis H_1 is accepted. Meaning that, there is a meaningful correlation between external relationships with customers' satisfaction. And because this relation is positive and meaningful, so, we can say "increasing management perception of external relationships is caused to increasing customers' satisfactions".

Fridman Test

5 elements have been used for examining the effect of E-CRM on customers' satisfaction of Fars Petroleum Co. which Fridman test has been used for examining the equality of dimensions significance. Considering to table 1-4, the amount of sig is lesser than 0.05 which has represented the significance of these dimensions in view point of customers.

Table 6: Fridman Test

170	Numbers (N)
Chi-Square	16.14
Df	4
Sig	0.003

In table 6 the average rank of these dimensions has been determined. Considering to meaningful difference between ranks, we can say availability to information are the most important element and reliability and confidence is the less one.

Table 7: elements ranking

Rank average	Variable
3.24	Management perception
3.25	The quality of services
3.10	Offering services
2.64	External relations
2.74	Expected service-perceived service

CONCLUSION

This paper is aimed to examine the effect of E-CRM on customers' satisfaction of Fars Petroleum Company. So, the nature of research is applied and the method of data analyzing are type of correlation and Fridman test. The results have shown that there is a positive and meaningful relation between satisfaction factors of mixed model of Kano and gap analysis (basic, performance and attractive quality) on customers' satisfaction of Fars Petroleum Company. And according to examination by Fridman Test, we can claim that availability information is the most important element and reliability and confidence is the less important element.

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