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# Prioritizing Factors Affecting Bank Customers Using Kano Model and Analytical Hierarchy Process

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**Abstract**
This study intend to prioritize the factors affecting customer satisfaction of the quality of services provided by EGHTESADE NOVIN BANK, in order to gain more competitive advantage .Because the funding is dependent on the private bank customers ,Customer satisfaction Lead to increased investment in the bank. This is a practical research and its method is descriptive .Using literature research and expert opinion, 24 factors identified, then by using the Kano model, these factors were classified into three groups: Basic needs, Expected needs and Excitement needs. Each Group got respectively 5,9& 7 factors. The there remaining factors are Indifferent requirements. Then by using AHP in EXPERT CHOICE software, the weight of agents within Kano groups calculated. Finally, results from the two methods ( kano & AHP) in prioritizing the needs of customers, are compared.The results of both methods are largely similar and following the rules and employees skills ,indicated as the most important factors in customer satisfaction.

**Key words**: Customer Satisfaction, AHP, KANO, Prioritizing.

## 1-Introduction

The study of management's theories and doctrines shows that after 1990s there was a tendency towards customers and increasing quality, diversity and speed of rendering of services in organization. The focus on customers, in this decade, is a concept, which has a key role in organization's sustainable competition advantage [1]. Customer satisfaction is an essential factor in competition in global market [2].
As Peter Draker claimed, "customer satisfaction is the final goal of all activities". Therefore, each successful organization wants to offer services that provide customer satisfaction [3]. The banking industry like many other financial service industries is facing a rapidly changing market, new technologies, economic uncertainties, fierce competition and more demanding customers and the changing climate has presented an unprecedented set of challenges [4]. In this situation, banks are seeking to obtain competition advantages. Quality of services and

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goods is a major element to increase customer satisfaction, which finally leads to organization competition advantage [5]. The customers are unsatisfied with delivery service's delay, inept employees, inappropriate time of offering services and the mistakes that are made in bank statements [6]. Some researches show that 96 percent of customers never complain about the bad behaviors and poor quality of goods or services and 90 percent of these unsatisfied customers never return to the organization. Each of these unsatisfied customers talk about their unsatisfactory situation with nine people [7].

There are many discussions about difference and relation between quality of services and customer satisfaction. Empirical investigations, such as Cronin and Taylor who showed that the quality of received services lead to increase customer satisfaction, confirm the cause and effect relationship between quality and satisfaction. Asprng and McCoy study also confirms this relationship [8]. Knowing the important factors affecting customer satisfaction has a special importance, especially in developed countries. Kano model is one of the techniques that can help to measure customer satisfaction with improvement in service quality. Kano two-dimensional quality model is an effective tool for analyzing customer needs [9]. This model through dividing customers' needs into three categories of motivational, functional and basic needs, play a key role in management decisions in order to improve the quality of services. However, due to limited resources and time, satisfying all customers' needs cannot be done simultaneously .So necessary and important needs should be identify and priorities for action. Therefore, Analytical Hierarchy Process (AHP), which is a multi-criteria decision-making method, is used. This study categorizes and determines customers' needs and their weights in order to prioritize them by using Kano model and AHP method.Then the results of both methods are compared.

## 2- Literature review

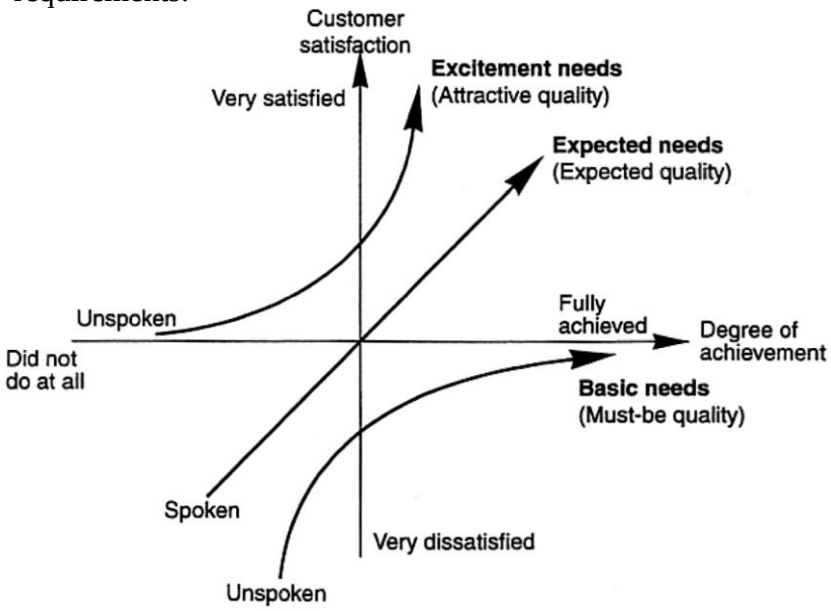
In the last years of the 20th century, the issue of improving the performance of organizations and detection of customer satisfaction has always been one of the basic needs of the managerial systems and workplaces [10]. In an environment where the customers are knowledgeable and have the power of choice, it is not possible to neglect their needs. Many researches showed the relationship between customer satisfaction and loyalty. These studies also found that satisfied customers are the most loyal customers [11]. Kenningham et al studied the existence of relationship between employee's interaction with customers and the level of customer satisfaction in retails. They stressed on the importance of this relationship [12]. Ennew & et al addressed the problems of service quality measurement and represented a collection of indicators for measuring customers' perceptions and expectations and general customer satisfaction [13]. In another study, Stafford presented a list of bank service quality properties which perceived by customers. He also specified the main dimensions of knab service quality and examined the importance of these characteristics [14]. Furthermore, another study has used neural network structure in order to determine the importance of customer needs [15]. Johnston divides the dimensions of service quality into satisfying and dissatisfying categories, like Herzberg's motivational model, and say, that subtle aspect of communication between employees and customers has an important positive or negative impact on service quality [16]. Zhao & Dholakia using Kano model and multi-criteria decision models to evaluate the measurement of customer satisfaction [17]. Baki by using SERVQUAL hybrid model and Kano model logistics has measured customer satisfaction of Turkish logistics companies' services [18]. Gul & Ozgen have used a hybrid model that contains of Kano, AHP and GFD

models to investigate the level of customer satisfaction of Library services [19]. In Iran, Shahin & et al have used a combination of clustering and hierarchical analysis methods and Kano model for describing bank services [20].

**3- Kano model**

Doctor Noriaki Kano a professor in Tokyo and one of the best theorists of quality management has submitted a model, which is used in many models of customer satisfaction today. He categorized customers' needs or quality products into three groups and displayed each three types of needs in a two-dimensional graph (Figure 1).

Vertical axis shows customer satisfaction and horizontal axis shows the level of customers' quality requirements. The Highest and lowest point of the vertical axis of the graph respectively represent customer total satisfaction and customer dissatisfaction. The confluence of vertical and horizontal axis is the place where customer satisfaction and dissatisfaction are equilibrium. The right side of the horizontal axis shows the place, which the expected quality requirements is fully supplied and the left side display the point that the production does not contain quality requirements.




**Source:** Bergman and Klefsjö (2003), but the model was originally presented by Kano *et al*. (1984)

Figure 1:Kano model

Customer satisfaction was considered as one-dimensional process previously.It was considered that high quality perception of goods result in more satisfied customers and conversely. However, the fulfillment of each product features at high levels does not necessarily provide customer satisfaction. Thus, Kano customer satisfaction model introduced the methodology that determines what components of the characteristics of goods and services have influence on customers' satisfaction.

In this model, customers' needs divide into three main groups:

A) Basic needs: If the product does not contain this need, the customer will not buy this product. This need must be contain in the product because the customer want it, although it does not lead to customer satisfaction.

B) Expected or Functional needs: If the product does not meet these requirements, it will result in customer dissatisfaction, but if these requirements are fulfilled, leads to customer satisfaction. Therefore, if Expected needs do not meet, the customer will not buy that product.
C) Exitement or Motivational needs : A fulfilled motivational need lead to customer over satisfaction. Nevertheless, lack of this need in a product does not result in customer dissatisfaction [21].

The relationship between these needs is shown in Kano figure.
Of course meeting basic needs do not pass over indifference boundary and the more the Expected needs are met the greater customer satisfaction happen [22].

## 3- Analytical Hierarchy process (AHP)

The analytic hierarchy process (AHP) is a structured technique for organizing and analyzing complex decisions. This method simplifies non-structured and complex problems into a set of organized components in a hierarchy form with paired comparison. AHP is an analytical technic that is based on decision tree. This method is used to determine priorities and weighting them generally in complexes problems. Since prioritizing customer requirements should be considered as a complex multi-criteria decision-making process, using AHP method, which is a multiple criteria decision making techniques that consider several input parameters and criteria in its multiple levels, is a simple and efficient way to prioritize multi-criteria preferences [18].
Many researchers such as Akao, Aswad and Armacost have used AHP to prioritize and rank the needs of clients[23,24,25]

## 5- Methodology

This study identifies factors affecting bank customers and prioritizes them in order of importance by using background research, expert and customer opinions. As previously mentioned, Kano model divides needs into basic needs, Expected needs and Exitement needs and specifies the rank of each needs within the groups. On the other hand, these needs and criteria are put in five different groups (figure 2) then using AHP to determine the weight of each criterion. Then the needs that respectively obtained by Kano model groups will be measured. For example, the weight of the most urgent need in Expected needs group is determined in comparison with the weight of all needs. In order to recognize affecting factors on customer satisfaction 24 factors were identified after summarizing the data from literature research and expert opinions, and the Kano questionnaire was designed based on them. The sample, which is used for this study, is 140 clients in various branches of Eghtesade Novin Bank in Mashhad. To obtain a sample with initial sample, a sample of 30 persons was selected and after the data collection, the sample size was obtained according to this relation $n > [\frac{S.Z_{\alpha/2}}{d}]^2$ . In this relation, S is standard deviation and d was considered 0.05. After collecting data from questionnaires the criteria affecting customer satisfaction were identified in terms of its type (basic, functional, motivational), which are shown in Table 1. The Indifferent phrase that is seen in front of some of the measures suggests that presence or absence of these criteria, it is not important for customers. On the other hand, in order to determine the weight of each criterion with AHP, the factors were divided into 5 categories and the hierarchical tree, Figure 2, was

drawn. Then the questionnaires were distributed among 10 cases of steady and regular bank customers because fixed customers are more familiar with banking states. Data was analyzed with Expert Choice software. Finally, each of the criteria weight, which is based on three basic, functional and Exitement needs, obtained which are present in Table 2. Three of indifferent criteria were excluded and recognized weights listed in the table after being normalized. As two criteria are rated No. 12 and 14 have obtained equal grade in Kano model, are both in the five Grades of functional requirements. The left column of Table 2 shows the weights of criteria based on AHP method.

| | | | |
|---|---|---|---|
| Customer satisfaction | Employees | 1 | employees' accountability |
| | | 2 | Considering the time of customer and reducing the waiting time |
| | | 3 | Following the rules |
| | | 4 | Knowledge and proficiency of employees |
| | | 5 | Senior management commitment and support of customer-centric strategies and programs |
| | | 6 | Neat appearance of staff |
| | Technology | 7 | Use of modern banking technology (mobile banking, ATM machines, etc.) |
| | | 8 | Use of efficient systems such as turns feeding system |
| | | 9 | Communication and electronic information exchange between banks through the country |
| | | 10 | Sending Email & SMS to specific customers |
| | Physical Features (Location and appearance of the bank) | 11 | Branch proper position in terms of access and car parking |
| | | 12 | Attractive branch structure and layout of the different section |
| | | 13 | Amenities such as Chairs, Reception, and Air Conditioning and... |
| | System and Bank Regulation | 14 | Efficient security systems and customer information security policy |
| | | 15 | Accordance of branch hours with the requirements of customers in an emergency |
| | | 16 | Possibility of direct communication with senior management |
| | | 17 | Releasing and sending important news to customers |
| | Executive Innovation | 18 | Creation of Functional and update unit in order to answer criticism and complaints |
| | | 19 | Single-digit modification of Profit banking facilities |
| | | 20 | Cards emission in the shortest time with the least cost |
| | | 21 | Modification the time of loan borrowing and repay- |

| | | | |
|---|---|---|---|
| | | | ment |
| | | 22 | Creation of Mobile units and increasing the number of ATM in high transaction environments |
| | | 23 | Establishing a Bank Information Center about terms and obligations of the bank |
| | | 24 | Showing the position of bank between domestic and foreign banks in line with international standards |

Figure 2 - Hierarchical tree of criteria that influencing customer satisfaction

| | | | | |
|---|---|---|---|---|
| | Employees | | employees' accountability | Expected needs |
| | | | Considering the time of customer and reducing the waiting time | Expected needs |
| | | | Following the rules | Basic Needs |
| | | | Knowledge and proficiency of employees | Basic Needs |
| | | | Senior management commitment and support of customer-centric strategies and programs | Excitement needs |
| | | | Neat appearance of staff | Expected needs |
| | | | | |
| | Technology | | Use of modern banking technology (mobile banking, ATM machines, etc.) | Expected needs |
| | | | Use of efficient systems such as turns feeding system | Excitement needs |
| | | | Communication and electronic information exchange between banks through the country | Indifferent |
| | | | Sending Email & SMS to specific customers | Excitement needs |
| | | | | |
| | Physical Features (Location and appearance of the bank) | | Branch proper position in terms of access and car parking | Expected needs |
| | | | Attractive branch structure and layout of the different section | Expected needs |
| | | | Amenities such as Chairs, Reception, and Air Conditioning and... | Basic Needs |
| | | | | |
| | System and Bank Regulation | | Efficient security systems and customer information security policy | Expected needs |
| | | | Accordance of branch hours with the requirements of customers in an emergency | Excitement needs |
| | | | Possibility of direct communication with senior management | Expected needs |
| | | | Releasing and sending important news to customers | Indifferent |
| | | | | |

| | | | | |
|---|---|---|---|---|
| | Executive Innovation | | Creation of Functional and update unit in order to answer criticism and complaints | Basic Needs |
| | | | Single-digit modification of Profit banking facilities | Excitement needs |
| | | | Cards emission in the shortest time with the least cost | Expected needs |
| | | | Modification the time of loan borrowing and repayment | Indifferent |
| | | | Creation of Mobile units and increasing the number of ATM in high transaction environments | Excitement needs |
| | | | Establishing a Bank Information Center about terms and obligations of the bank | Basic Needs |
| | | | Showing the position of bank between domestic and foreign banks in line with international standards | Excitement needs |

Table 1 - Classification of customer needs based on Kano Model

| Total weight by AHP | Weight in group | Rank in group | The order of the Kano Models Benchmarks | Rating by Kano | Type of needs |
|---|---|---|---|---|---|
| 0.111 | 0.271 | 1 | Following the rules | 1 | Basic needs |
| 0.103 | 0.256 | 2 | Knowledge and proficiency of employees | 2 | |
| .057 | 0.138 | 4 | Creation of Functional and update unit in order to answer criticism and complaints | 3 | |
| 0.086 | 0.209 | 3 | Establishing a Bank Information Center about terms and obligations of the bank | 4 | |
| 0.052 | 0.126 | 5 | Amenities such as Chairs, Reception, and Air Conditioning and... | 5 | |
| 0.409 | | | Total weight of Basic needs group | | |
| 0.071 | 0.218 | 1 | employees' accountability | 1 | Expected neesds |
| 0.052 | 0.159 | 2 | Considering the time of customer and reducing the waiting time | 2 | |
| 0.036 | 0.111 | 3 | Use of modern banking technology (mobile banking, ATM machines, etc.) | 3 | |
| 0.031 | 0.095 | 4 | Branch proper position in terms of access and car parking | 4 | |
| 0.025 | 0.076 | 6 | Attractive branch structure and layout of the different section | 5 | |
| 0.019 | 0.058 | 7 | Efficient security systems and customer information security policy | | |
| 0.036 | 0.111 | 3 | Cards emission in the shortest time with the least cost | 6 | |
| 0.031 | 0.095 | 4 | Neat appearance of staff | 7 | |
| 0.025 | 0.077 | 5 | Possibility of direct communication with senior management | 8 | |
| 0.326 | | | Total weight of Expected needs group | | |
| 0.064 | 0.242 | 1 | Use of efficient systems such as turns feeding system | 1 | Excitement |
| 0.053 | 0.200 | 2 | Single-digit modification of Profit banking facilities | 2 | |
| 0.046 | 0.174 | 3 | Senior management commitment and support of customer-centric strategies and programs | 3 | |
| 0.038 | 0.143 | 4 | Accordance of branch hours with the requirements of customers in an emergency | 4 | |
| 0.024 | 0.090 | 5 | Creation of Mobile units and increasing the number of ATM in high transaction environments | 5 | |
| 0.018 | 0.068 | 7 | Sending Email & SMS to specific customers | 6 | |
| 0.022 | 0.083 | 6 | Showing the position of bank between domestic and foreign banks in line with international standards | 7 | |
| 0.265 | | | Total weight of Basic needs group | | |

**Table 2**– Comparing ratings of parameters in the Kano model and gained weights from AHP model

## 6- Conclusion

Table 1 shows customer needs in three basic, functional and motivational categories.
As previously, mentioned, basic need is an essential need and lack of this need leads to unsatisfactory. So this group of need must consider as first priority. Functional and motivational are in next priority needs respectively.
According to table one basic, Expected and Exitement needs of customers, depends on different criteria such as technology, employees, appearance and so on. To satisfy any of these requirements all relevant indicators must be considered. For example, we cannot say that only by focusing on employees the basic needs is provided. Because the basic needs is depends on different main criteria. In table 2 customers' needs classified into three groups and the weights that obtained from AHP method is given in front of each of these needs. Therefore, we can compare the priorities, which have gained from AHP method and peruse the findings. Total weight of the main criteria in Table 2 is equal to 0/409, which is more than the total weight of functional requirements of 326/0 and motivation requirements 0/265. Taking these, weights we can claim that AHP approach to prioritization conform to Kano model. Because it confirms the priority of basic, functional and Exitement needs that underlined the Kano Model. Employees following of standards and regulations as well as the employees' proficiency were the main priorities in both AHP and Kano model that highlights the importance of considering these needs. Sending email and texting messages to specific customers AHP are final priority in both Kano and AHP method. Note that, some needs with low weights were in basic needs or some needs with high weights were in motivational group of needs. For example, use of efficient systems with weight of 0/064 is in class of Exitement needs whereas amenities with 0/037 was classified in basic needs group. It is because of difference between samples in both AHP and Kano model. Because we used 140 of customer comments in the Kano, model and 10 regular customer comments in AHP method as input data. Although the overall results obtained from the AHP method, which is achieved by spending less time and money, is consistent with the overall results of Kano method, the Kano model provides more accurate and reliable results. Because the sample size in Kano model contains 140 customers but the sample size in AHP method includes 10 regular and fixed customers.

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