

An Investigation and Prioritization of the Factors Affecting Customer Satisfaction with Banking Services by MCDM Method (A Case Study: Bankmeliiran, Isfahan's Branches)

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ABSTRACT

Like other service industries, offering high quality services would increase customer satisfaction in banking industry and would lead to greater profitability. High quality services will decrease losses- resulting from customers. Moreover, they will increase customer loyalty, sale opportunities and positive word-of-mouth. All the mentioned factors themselves, would improve the customer perception of the organization. Nowadays, many industries are paying great attention to service quality and customer satisfaction. The purpose of the current study was the investigation of the factors affecting customer satisfaction in the Meli Iran bank (Isfahan branches). The current study is categorized as descriptive survey that has been done in order to investigate the factors affecting customer satisfaction in banking sector. All the customers of Meli Iran Bank were the population of the study and 230 customers were randomly selected as the sample of the study. In order to collect data, a researcher- made questionnaire was used. The Cronbach's alpha coefficients were calculated as the reliability index of the questionnaire and it was equal to .8549. In order to analyze the hypothesis of the study the fuzzy TOPSIS method has been used. The results of the study indicated that the assess to the bank branches has little impact on customer satisfaction; on the contrary, the features of the services would increase customer satisfaction.

KEY WORDS: customer satisfaction, banking services, fuzzy TOPSIS, the features of the services,

1-INTRODUCTION

Today, business world has become more dynamic and competitive environment and different organizations are faced with challenges such as expanding and reaching new markets and finding new ways to attract and keep customers. Moreover, the organizations are constantly seeking ways to increase productivity, to reduce overhead costs and to maximize shareholder value.

In recent years, due to various socio-economic problems, state banking system and excess of demand over supply the Iranian Banks has been constantly neglected customer –focused culture and they have not been able to efficiently make use of modern marketing techniques.

Neglecting the needs and demands of the customers and offering identical and similar services by different Iranian banks, customers have no option to choose (Shakraki and others,2010) The customers go to the banks to address their basic financial needs . In other words, currently, the people serve the banks and the banks do not serve people. The rapid and ever-increasing changes, the banks should equip themselves with new technologies. Furthermore, the identification of customer's needs and expectations as well as market conditions are measures needed to be implemented by the banks. A bank would be the winner of the competition if it can identify and meet the needs of the customers before other competitors. Creating and maintaining customer loyalty is the key element in achieving sustainable competitive advantage for organizations. It should be notified that customer's loyalty represents their satisfaction, but the satisfaction does not necessarily lead to loyalty (Venos and Safaeeyan,2005).

The transition to industrial economy and global labor market has intensified the competition among banks and the customer, as an essential component of competition, has been considered as the center of the banks' activities.

Organizations have concluded that the keeping old customers are less expensive that attracting new ones and the best way to keep customers is seeking their satisfaction. In the same vein, the studies proved that customers' satisfaction may result in commercial credit and greater profitability as well. Satisfaction is one the factors that play central role in keeping and attracting customers (Ijaz, 2003. 1-40).

2-Problem Statement

There is a relationship between the bank's capital and the number of customer's .Thus, the banks need to have organized customer – oriented plans and activities in order to survive. Collecting and storing customer

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information, developing customer loyalty schemes, and measuring customer satisfaction should be considered as the main objectives and policies by the bank managers (Hasani, 2011: 15).

Banking services must be designed and provided based on a strategic point view; and customer satisfaction must be the central goal. Achieving this goal would be only possible by understanding, analyzing and prioritizing the factors affecting customer satisfaction from the customers' viewpoints (Kazami, 2011: 101).

Like any other organization that offer financial services, Meli Iran bank should assess customer satisfaction or dissatisfaction with the services they received. Moreover, understanding customer expectations, finding ways to attract customers and meeting customer expectations are other factors that must be considered in order to improve the relation between the organization and its customers.

1- LITERATURE REVIEW

Customer satisfaction is a key factor affecting willingness to purchase similar services in future. Moreover, satisfied customers are likely to share their experiences with others. The issue could be positively exploited in eastern cultures where the social communications is the important aspect of people life and it would be improved by social interactions (Jamal and Naser, 2000: 147).

3.1 . Customer satisfaction theories

The proposed theories regarding customer satisfaction determine factors influencing customer satisfaction and they are as the followings :disconfirmatory theory , performance theory and equity theory (Oliver and Desarbo ,1998 ; Szymanski and Henard , 2001) .

- ✓ Disconfirmatory theory :disconfirmatory paradigm has four parts : expectations , performance , disconfirmation , and dissatisfaction . Based on the theory , disconfirmation arises from the difference between expectations and performance and disconfirmation would affect satisfaction .
- ✓ Performance theory : the performance is a part of disconfirmatory theory as well as an affecting factor in satisfaction. From the performance point of view , there are various aspects for offered services. This can lead to confusion and it is not clear what features must be considered in performance evaluation (Oliver , 1997). Equity theory: Basically , equity is defined as the assessment of fairness and quality . (Oliver , 1997) . Bolton and Lemon (1999) generalized theory to perceived value concept. From their viewpoint , equity refers to customer evaluation of what she/he gives and receives . It has been proved that there is a positive relation between equity and satisfaction (Oliver , 1997 :118) .
- ✓ Consequences of customer satisfaction : Although the customer satisfaction is not the ultimate goal of organization , it has considerable financial consequences for the organization . The consequences are divided in to two categories : loyalty and complains (Wen Wu, 2006 : 48)
- ✓ Loyalty : the loyalty dimension includes cases such as word-of-mouth marketing and intension to future purchasing (Zeithaml and others , 1996 :220) . Thus , the loyalty includes intension to futures purchasing as well as willing to pay more .
- ✓ Customer complaints : customer complaints is considered as the side effect of customer dissatisfaction . The complaints may be verbal (to seller) . Customer may complaint to their friends or they may complaint via a third party. According to the findings of Zeithaml and others (1996) these are the main forms of customer complaints.

3.2 .Banking services

Services are defined as a set of benefit that is offered to customers. In banking system , the services may be offered by ATM machines , bank employees (advisors) or a combination of both (cashier) (Venus , 2005 :154)

3.2.1 . The features of banking services

The features of banking services are classified in to seven categories.

- 1) Fiduciary responsibilities: fiduciary responsibilities refer to the services that are offered by banks and financial organizations in order to manage customers' money. Such organizations are required to give appropriate financial advices to their customers. Trust and confidence in the organization may be gained only via constant interaction between customer ,the organization and its staff (Venus and Saffaeian , 2005 : 122) .
- 2) A two-way flow of information: examples of two –way flow of information are : billing , controlling accounts , going to bank branches , using ATM machines and etc . These mutual interactions are potential opportunities to make wealth via the gathered data from customers. The data may included the potentials to buy credit cards. Vahdati ,(2007) .
- 3) Invisibility of services : Invisibility of services means that the services are not perceived by the human senses . Buyers are trying to find clues about the quality of services and reduce their distrust. The location , staff , prices of services ,and equipments are visible cues that may help them to decide about the quality of services (Kotler and Armstrong, 1999 : 32) .
- 4) Inextricably linked services and service providers: The services could not be separated from service providers. The customer is present while the services are offered and this is one the specific features of

such services .Thus , there is a mutual interaction between service provider and customer, and both of them influence the service quality .

5) Variability : by variability we mean that the quality of services is dependent on factors such service provider , time of service , location of service and the way in which services are offered (Kotler and Armesterang , 1999 : 35) .

6) Unstorability : unstorability means that the services could not be stored for future consumption or sales . Thus , to solve the problem there must be balance between supply and demand(Kotler and Armesterang 1999 : 38).

7) Ownership: When a customer orders a specific service ,no ownership is transferred from the buyer to the seller . In other words , the seller buys the service production process . As an illustration, using car parks can be noted (Palmer , 2005 : 78) .

3.3. Customer satisfaction with banking service

Several studies have been done in this field :

- Yuksel and others (2010) investigated the effects of customer recognition and satisfaction on customer loyalty . The results of the Structural Equation Modeling indicated that positive feelings may increase customer loyalty .
- Arbore and Busacca (2005) conducted a study on customer satisfaction and dissatisfaction and their potential effects on the banks performance . The hypotheses of the study were : 1) there is a non-linear relationship between performance and customer satisfaction . 2) when multiple regression coefficient is used as an indirect indicator of the importance of the features , the estimated results may ignore non-linear effects . It worth mentioning that both hypotheses were confirmed.
- Cohen (2006) investigated the customer retention in New Zealand banking system . He concluded that there are two critical factors for customer satisfaction ; namely , collaboration with customers by offering their needed services and advices and the flexibility of the banks ' rules to meet the needs of the customers .
- Khalifa and others (2002) proposed that satisfied customers would be the potential good customers and the good customers will increase the profitability of banks . The researchers proposed the following inequality : customer satisfaction > good customer > profitability .

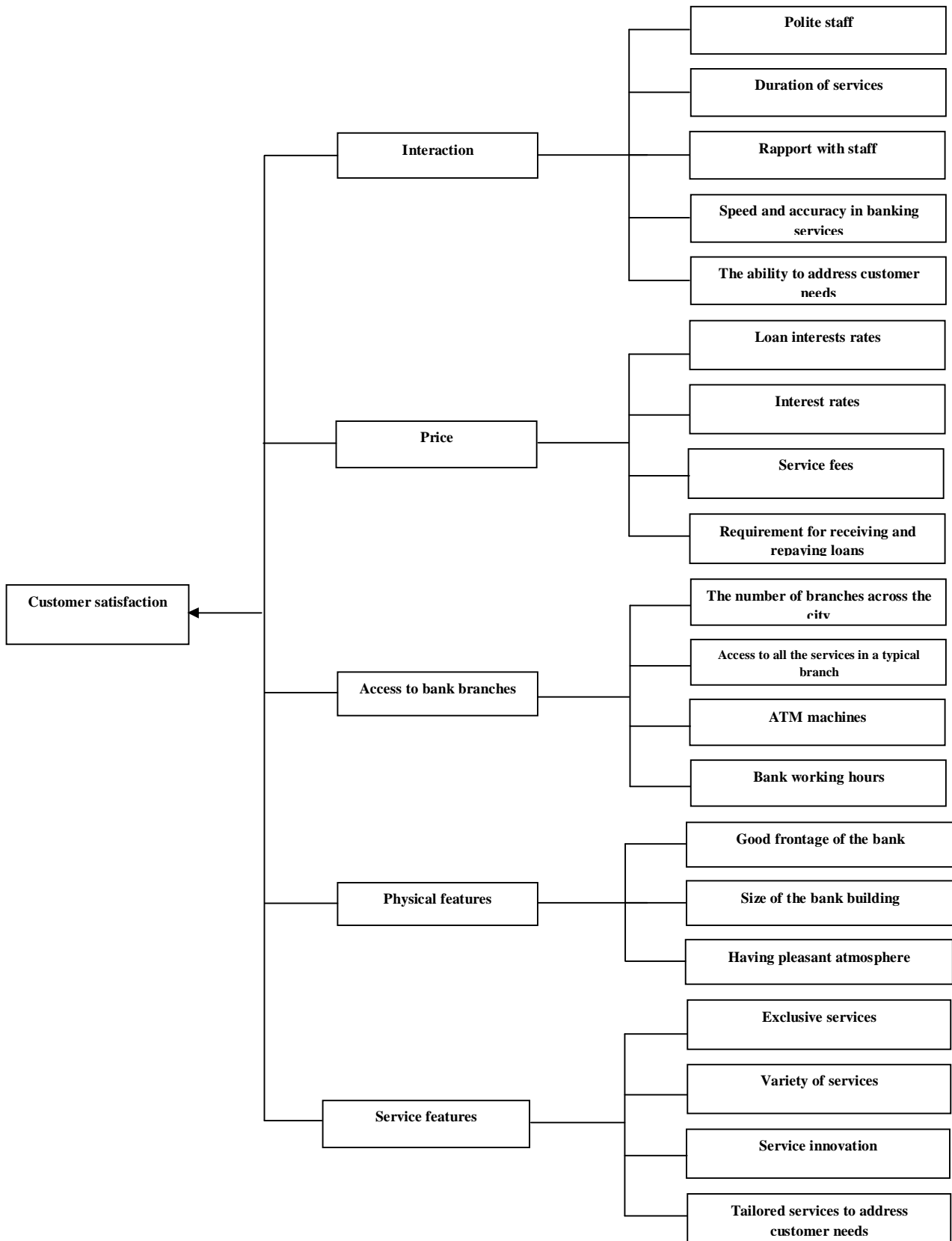
4- Introduction of research indicators

Reviewing the literature on customer satisfaction and loyalty , common affective factors on customer satisfactions are: employees' behavior with customers (dealing with customers) , easy access to bank branches ,and physical features . Since the population of the current study are banks , the financial benefits such as interest rates and bank fees may have a large impact on the customer satisfaction . The conceptual model of the study was adapted from Athanassopoulos model and its variables have been tested. The model would be presented subsequently.

5. Objectives of the study and research questions

5.1 . The objectives of the study

- 1- Identification of the effective factors on customer satisfaction in Meli Iran bank (Isfahan branches) .
- 2- Prioritization of effective factors on customer satisfaction using fuzzy TOPSIS method .



5.2 . Research questions :

- 1- What are the effective factors on customer satisfaction in Meli Iran bank (Isfahan branches) ?
- 2- How the customer satisfaction factors in Meli Iran bank are prioritized using fuzzy TOPSIS Method ?

6. Population and sample of the study

The population of the current study included all the natural customers of Meli Iran Bank (Isfahan branches) . Natural customers are customers with at least one the following accounts :Short-term savings account , long-term savings account , loan account , and current account . The natural customers should visit their bank at least once a week .Firstly , they were asked about having mentioned accounts and the number of their bank visits . If the answer was positive, they were given a questionnaire . One can say that the population of study was infinite .

The population of the study included infinite number of people with a large size from a large geographical area .Thus , a group of customers were selected as the sample of the study and the results were generalized to the population . Based on calculations , the sample size was 230 .

In order to determine the sample size , the variance of preliminary sample was calculated and then the sample size was obtained .

Table 1 :The standard deviation of the preliminary sample

	Min	Max	Mean	SD
average of data	1.61	3.22	2.3317	0.38727

The variables of the study (questions) were multi- valued with interval scale . The population of the study was infinite and the sample size was calculated with 95 % confidence level . The standard error of measurement was 5 % and standard deviation was 0.38727. Using the following formula the sample size was calculated.

$$n = \frac{Z^2 \cdot \frac{\sigma^2}{\epsilon^2}}{1 - \frac{\alpha}{2}} \Rightarrow \frac{1.96^2 \times (0.38727)^2}{(0.05)^2} \cong 230$$

Z= Standard normal probabilities
 σ= standard deviation
 ε= maximum error of measurement
 α= error

7. METHODOLOGY

Generally , the research method for behavioral sciences could be categorized based on two criteria : a) the purpose of the study , b) data collection methods (Sarmad and others , 1389) . The study was categorized as applied research regarding the purpose of the study . From the data collection point of view , this is a survey research . The descriptive survey is composed of different methods with the aim of describing investigated phenomena . Conducting descriptive research may be to know more, existing conditions or to facilitate decision making process (Sarmad , Bazargan and Hejazi , 1385 : 81) .

8. Data collection methods

The data collection stage involves processes through which the researcher collects field and library findings . Then , the data would be classified by inductive method, and research hypotheses would be hypothesized . The hypotheses would be evaluated based on findings . Differently stated, the researcher discovers the facts based on the findings of the study . Thus , the data should be reliable and unreliable data prevent discovering the truth (Hafeznia , 1999 : 162) .

8.1. Library research method

This method was used to gather information about research literature . The data gathered via studying books , articles , other related studies and the Internet search .

8.2 . Field Data collection

The current study is a descriptive one and like other descriptive studies questionnaire and interview were used to collect data . The questionnaire had two parts . The first part included questions asking about factors affecting customer satisfaction and sample size . The second part included the prioritization of the factors .

9. The indicators of research variables and their related questions in the questionnaire

Two separated questionnaires was used to calculate the sample size and to prioritize factors affecting customer satisfaction .

The first questionnaire included 48 questions . 41 questions were asking about factors affecting customer satisfaction from banking services , 6 questions were asking about demographic features and 1 question was an open –ended one . The responses quantified based on 5-point Likert scale. (5= very high , 4=high , 3= medium ,2=low ,1= very low) .

There were different subscales for the questionnaire. Subscales and their related questions are presented in the following table . The questionnaire was used to determine the sample size .

The second questionnaire also included 41 questions asking about customer satisfaction . The responses quantified based on 7-point Chen scale (1= very strongly disagree , 2= disagree , 3= somewhat disagree , 4= have no idea , 5= somewhat agree , 6= I agree , 7= totally agree) . The later questionnaire was used to prioritize factors affecting customer satisfaction with banking services .

9.1. The reliability and validity of the questionnaire

The reliability and validity of the questionnaire was assessed by a review of the survey questionnaire by experts of the field . In addition to the reviews, 30 questionnaires was also reviewed and completed by a group of customers from target population. Responses and feedbacks from all these reviews affirmed the validity and reliability of the questionnaire. In order to estimate the reliability of the questionnaire as an indicator of internal consistency of the questionnaire, Chronbach’s alpha coefficient has been calculated:

$$\alpha^2 = \frac{N}{N-1} \left[\frac{S_t^2 - S_i^2}{S_t^2} \right]$$

- S_i² = variance
- α = Chronbach's alpha coefficient
- S_t² = total variance
- N = the number of questions

Table 2 : the Chronbach’s alpha coefficient for variables of the study

Number	Questionnaire	Chronbach’s alpha coefficient
1	Customer satisfaction	0.7624
2	fuzzy TOPSIS ranking	0.8459

DATA ANALYSIS

In order to analyze the collected data, the excel Software has been used (Using fuzzy TOPSIS method to prioritize factors affecting customer satisfaction) . The SPSS software has been used to determine the sample size of the study as well.

Factor prioritization using fuzzy TOPSIS method

Chen (2000) has expanded the TOPSIS method in fuzzy environment. Because of the vague and unrealistic concepts in the data of the study , the real values are not suitable for real situations . In this method , the ranking of each option and their weights are determined by linguistic variables and they expressed as trapezoidal fuzzy numbers .

Table 3 . linguistic variables to determine the weight of each criteria

Very low	VL	(0, 0, 1, 2)
Low	L	(1, 2, 2, 3)
Lower than average	ML	(2, 3, 4, 5)
Average	M	(4, 5, 5, 6)
More than average	MH	(5, 6, 7, 8)
High	H	(7, 8, 8, 9)
Very high	VH	(8, 9, 10, 10)

A Multi-criteria fuzzy group decision-making problem could be summarized as the following:

$$\tilde{D} = \begin{bmatrix} \tilde{x}_{11} & \tilde{x}_{12} & \cdots & \tilde{x}_{1n} \\ \tilde{x}_{21} & \tilde{x}_{22} & \cdots & \tilde{x}_{2n} \\ \vdots & \vdots & \cdots & \vdots \\ \tilde{x}_{m1} & \tilde{x}_{m2} & \cdots & \tilde{x}_{mn} \end{bmatrix}$$

$$\tilde{W} = [\tilde{w}_1, \tilde{w}_2, \cdots, \tilde{w}_n]$$

$(i = 1, 2, \dots, m, j = 1, 2, \dots, n)$ \tilde{x}_{ij} and $(j = 1, 2, \dots, n)$ \tilde{w}_j are linguistic variables that could be stated as Trapezoidal fuzzy numbers $\tilde{w}_j = (\tilde{w}_{j1}, \tilde{w}_{j2}, \tilde{w}_{j3}, \tilde{w}_{j4})$ $\tilde{x}_{ij} = (\tilde{a}_{ij}, \tilde{b}_{ij}, \tilde{c}_{ij}, \tilde{d}_{ij})$.

Paying attention to the fact that ranks of different criteria are different, the weighted normalized fuzzy decision matrix is created as follows:

$$\tilde{V} = [\tilde{v}_{ij}]_{m \times n}, \quad i = 1, 2, \dots, m, \quad j = 1, 2, \dots, n$$

$$(1) \tilde{v}_{ij} = \tilde{r}_{ij} \otimes \tilde{w}_j \ \&$$

Thus, we can the distance of each alternative from the positive ideal and negative ideal is calculated using the following formulas:

$$(2) D_i^* = \sum_{j=1}^n D(\tilde{v}_{ij}, v_j^*), \quad i = 1, 2, \dots, m,$$

$$(3) D_i^- = \sum_{j=1}^n D(\tilde{v}_{ij}, v_j^-), \quad i = 1, 2, \dots, m,$$

To calculate the ranking of the alternatives, D_i^* and D_i^- , the closeness coefficient should be defined for each alternative. The closeness coefficient is calculated using the following formula:

$$CC_i = \frac{D_i^-}{D_i^* + D_i^-}, \quad i = 1, 2, \dots, m \quad (4)$$

Finally, one can conclude that the alternative which is closer to positive ideal and far from negative ideal is the alternative that its closeness coefficient is closer to 1.

Paying attention to closeness coefficient, one can rank the alternatives and select the best option.

10. Summary and answers to the research questions

The demographic characteristics of the respondents have been investigated and the components of customer satisfaction has been ranked using fuzzy TOPSIS method. In order to analyze the data the responses of the second questionnaire (7-point Chen scale) have been used.

The results of the study indicated that access to bank branches has impact on customer satisfaction and the servicefaures would increase customer satisfaction.

In order to rank the factors affecting customer satisfaction, fuzzy TOPSIS method was used. The findings indicated that "reducing waiting period for financial facilities" with the weight of 0.664 and "amenities (such as chairs, money counting machines)" and "opening a letter of credit" with weights of 0.661 and 0.654 are the highest rank sub criteria subsequently.

The lowest rank sub criteria were: "phone reservations", "Reducing the amount of foreign money transfer fees" and "quality of bank frontage" with weights of 0.197, 0.314 and 0.338 respectively.

10-1 Practical suggestions based on the findings of the study

The following practical suggestions are proposed based on the results of the study.

- 1- According to the responses to the questions related to interaction, having experienced and resourceful staff and taking suitable approaches in dealing with customers are among the factors that tend to customer satisfaction. Consequently, it is suggested that related in-service training courses be held by the bank.
- 2- Investigating sub-criteria of the services, one can conclude that collecting customer feedback and addressing current deficiencies may increase customer satisfaction.
- 3- The quality and access to ATM machines are among factors mentioned by customers. Therefore, the banks should increase the number of machines and make sure they work properly.
- 4- Good and loyal customers should be identified and facilities should be provided for them.

According to the scope and limitations of this study, there are following opportunities for further research:

- Identification and prioritization of the factors affecting customer satisfaction using fuzzy TOPSIS method and from the view point of the banks' managers and staff.
- Investigation of the quality of electronic services and prioritization of the banks based on this factor using fuzzy TOPIS method.

- Prioritization of the Iranian banks based on the quality of their services using multiple-criteria decision-making methods .

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