Prioritizing the main influencer factors of service quality by using the hysteresis model; a case study on retail banking

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Abstract

Purpose --- previous researches in service quality and customer satisfaction in retail banking because of their partial viewpoint have only partial applications. Fact is that, managers in the process of decision making need comprehensive information about customers. Decisions made with partial information have a little reliability. This study attempts to debate about service quality and customer satisfaction in comprehensive way.

Design/methodology/approach --- the sample of the study consists of Iran's Melli bank customers located in Tehran, the capital of Iran. The questionnaire was based on hysteresis model's variables (Attractiveness, zone of tolerance) and effect. Psychometric properties of the scale (such as reliability) were tested.

Findings --- the hysteresis model presented here and the results of the study reveal the integrity of staff, security of account information and accuracy in operations as the most important factors in retail banking.

Research limitations/implications --- first the sample of the study is small and is limited to the Melli bank customers. Second, the number of factors which were investigated are low.

Originality/value --- it has not been conducted any empirical research using hysteresis model to see whether it replicates previous researches. This study is necessary, useful and relevant because; it focuses on the service quality and the study explores service quality in a comprehensive way (hysteresis model).

Keywords --- service quality, Kano model, hysteresis model, banking

Paper type: research paper

Introduction

Service sector in most countries as a dominant sector has replaced others. With the increase in the share of services came increased consumer concerns over the perceived deterioration of service quality (Mersha and Adlakha, 1992). Because of a positive relationship between service quality and customer satisfaction it has become the subject of many researches. Some provide modeling and measurement scales for customer behavior. For instance, SERVQUAL from Parasuraman *et al*. (1985) in the field of service quality determinants, Kano *et al*.'s (1984) model and Johnston's (1995b) work in determining the effects of the service quality factors, Liljander and Standvik's (1993) and Johnston's (1995a) work in the field of disconfirmation theory and zone of tolerance and finally Johnston's (1997) work in identifying the critical determinants of service quality.

It has often been said that simpler an idea, more powerful it is. Previous researches in consumer behavior and service quality (that some of them mentioned above) because of their partial viewpoint have little applications and some times are contradictory, so have a little reliability. Hysteresis model in consumer behavior is a simple and broader model that clears the Complexity and contradictory of previous models.

Banks are one of the most important financial institutions in all countries. Bank managers in order to increase the profitability of their organization, have focused on productivity so, today they act as bureaucratic service organizations. Some principles of these organizations aren't compatible with human inner. On the other hand, the basic differentiator in today's market is service quality. In general, service quality promotes customer satisfaction and stimulates intention to return. In this paper some characteristics of retail banking service have been selected for investigation and the hysteresis model with it's more variables can give reliable and valid results. First we discuss about service quality determinants, effect and zone of tolerance, then hysteresis model as a broader model and its relationship with previous models comes in the next. The research methodology is explained and finally conclusions end up the discussion.

The determinants of service quality

There is a no universally accepted definition of service quality and most writers in this area support customer centered definition. In other word, quality like a beauty is in the eyes of the beholder (Peters, 1999).

Underpinning our understanding of service quality is an array of factors or determinants. A number of researchers have provided lists of quality determinants (see for example: Parasuraman *et al*. (1985) and (1988); Johnston *et al*. (1990); Bahia and Nantel (2000); and etc.)

Parasuraman *et al.* (1985) provided a list of ten determinants of service quality; access, communication, competence, courtesy, credibility, responsiveness, security, understanding, and tangibles. Later, they developed an instrument called SERVQUAL for measuring customer perceptions of service quality. In the process of developing SERVQUAL, Parasuraman et al. (1988) condensed the ten dimensions of service quality listed above in to five: tangibles, reliability, responsiveness, assurance and empathy (see table I). They reported that, regardless of the service industry, reliability is the most important factor to service quality and tangibles is the least important.

SERVQUAL has been the source of some criticisms. Later, Johnston *et al.* (1990) undertook some testing of the SERVQUAL comprehensiveness. After, further testing and development they provided 18 determinants of service quality; access, aesthetics,

attentiveness/helpfulness, availability, care, cleanliness/tidiness, comfort, commitment, communication, competence, courtesy, flexibility, friendliness, functionality, integrity, reliability, responsiveness and security.

Table I: SERVQUAL Dimensions

SERVQUAL Dimensions	Components
Tangibles	Tangibles
Reliability	Reliability
Responsiveness	Responsiveness
Assurance	Competence Courtesy Credibility Security
Empathy	Access Communication Understanding

Effect

Previous researches in services acknowledge a strong positive correlation between service quality and satisfaction. However, the directionality of the relationship has been the source of much debate. Some models identify factors which will influence consumer behavior in only one direction (for example, satisfiers and dissatisfiers (Johnston, 1995b) and attractive and must be quality (Kano *et al.* (1984)) while others tend to assume that the effect of changes in a variable will be reversible, influencing consumer behavior in both directions. There have been some researches, which have sought to identify some of the determinants of satisfaction or dissatisfaction. First Kano *et al*. in the paper of "Attractive quality and must-be quality" have identified three major types of factors (see figure 1).

1-Basic factors. (Dissatisfiers or Must have) - The minimum requirements which will cause dissatisfaction if they are not fulfilled, but do not cause customer satisfaction if they are fulfilled (or are exceeded). The customer regards these as prerequisites and takes these for granted. Basic factors establish a market entry 'threshold'.

2-Excitement Factors. (Satisfiers or Attractive) - The factors that increase customer satisfaction if delivered but do not cause dissatisfaction if they are not delivered. These factors surprise the customer and generate 'delight'. Using these factors, a company can really distinguish itself from its competitors in a positive way.

3-Performance Factors. The factors that cause satisfaction if the performance is high and they cause dissatisfaction if the performance is low. Here, the attribute performance-overall satisfaction is linear and symmetric. Typically these factors are directly connected to customers' explicit needs and desires and a company should try to be competitive here.

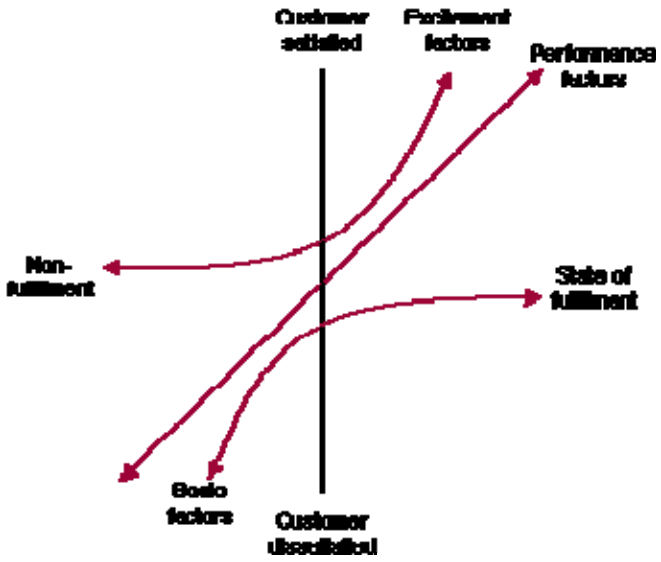

Figure 1: Kano model

Also, Silvestro and Johnston (1990), with inspiration of Herzberg`s (1959) motivating and hygiene factors, identified hygiene (dissatisfiers), enhancing (satisfiers) and dual (both satisfier and dissatisfier) factors.
Bahattacharya and Rahman (2004) conducted a comprehensive test using Kano model in retail banking this research blocks the service quality factors in three main categories (Basic factors, performance factors, Excitement Factors).
Also, Johnston (1995b) provides a comprehensive overview of the literature. He concluded that there might be a distinction between satisfiers and dissatisfiers. He goes on to describe a major study of satisfiers and dissatisfiers in retail banking. There were only four exclusive determinants of satisfaction or dissatisfaction with the bank:
(1) Integrity (dissatisfier);
(2) Commitment (satisfier);
(3) Aesthetics (dissatisfier); and
(4) Cleanliness (satisfier).
The sources of satisfaction (attentiveness, responsiveness, care and friendliness) Concerned with the intangible nature of the service and dissatisfiers have both tangible and intangible aspects. Later, Johnston (1997) to improve his previous work imported the importance variable in his investigation (see figure 2). Johnston noted that: "The problem with this work, and with assessing effect without considering importance, may be a distortion of priorities". Also, Johnston believes that the dissatisfiers are more important than others.
"It is more important to ensure that these dissatisfiers are dealt with before the satisfiers. Having a polite and courteous staff is a little consolation for a customer who feels highly dissatisfied because of an integrity- or security-type error, for example".
Johnston's 1997 work is the best research in this area. This research considers the effect of service quality factors as one of the most important variables in prioritizing. It benefits from Johnston's view ("it is more important to insure dissatisfiers …") in the process of prioritizing.

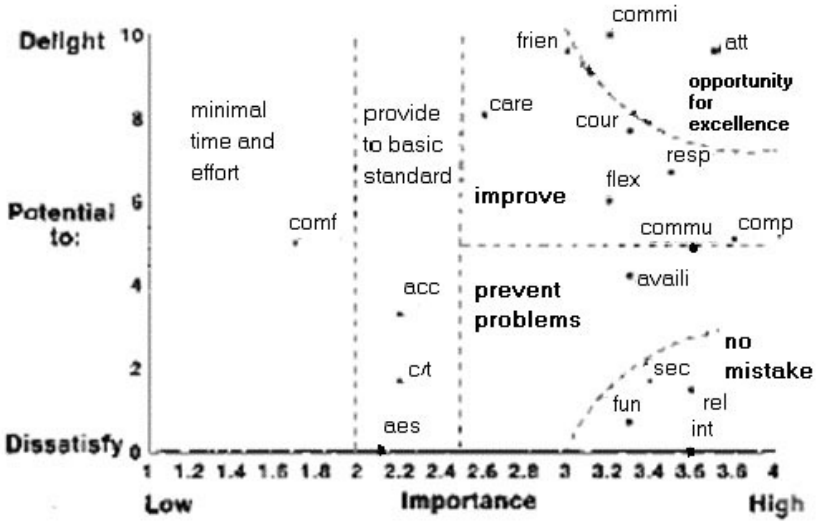

Figure 2: Priorities to improve

Zone of tolerance

One of the most important debates was emerged in service quality concerns the definition and use of zone of tolerance. The zone of tolerance model is based on the view that service quality results from customer's comparing their expectations prior to receiving service to their perceptions of the service experience it-self. If a customer's perceptions were matched by his/her expectations, then the customer is satisfied with the service, if the experience was better than expected, then perceived service quality high and the customer is delighted. If the experience did not meet expectations then service quality is perceived to be poor and the customer is dissatisfied (see for example, Parasuraman *et al.*(1985)).

Poiesz and Bloomer (1991) proposed that the zone of tolerance can be use as the unifying construct between expectations, performance and outcome. Johnston, (1995a) defines three interlinked applications of the zone of tolerance; a description of an outcome state, a description of a range of pre-performance expectations and the satisfactory range of in-process service performance (figure 3 Shows the zone of tolerance applications graphically).

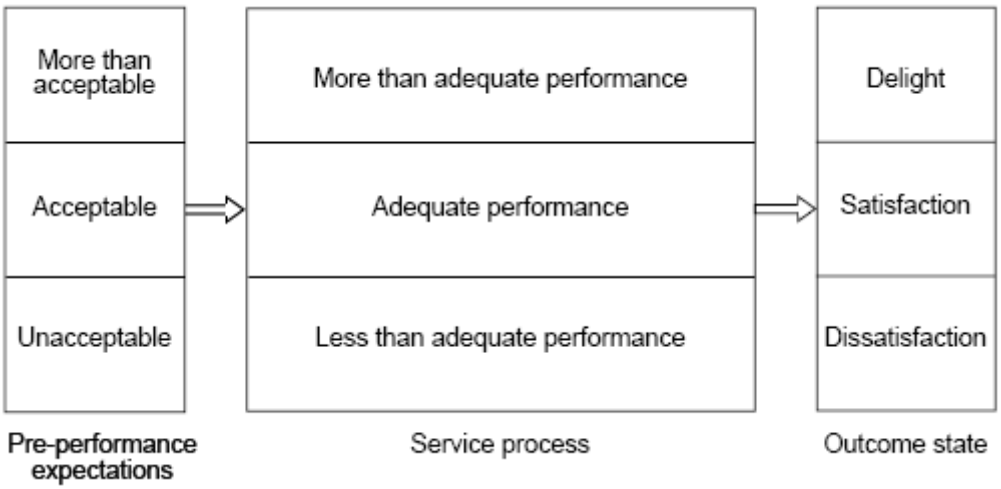

Figure 3: applications of zone of tolerance; adopted from Johnston (1995a)

An interesting new development in the service quality discussion is to consider expectations and evaluations as zones not a discrete point on a scale. They argue that customers might not be capable of giving points on estimates. The most accepted model of the zone of tolerance is an overall measure of the difference between an adequate service and desired service proposed by Zeithamle *et al.* (1993)
Johnston (1995a) proposes that the performance within the zone of tolerance may not be noticed. In other word, sensitivity of perceived service quality to variation in the service is depending upon the zone of tolerance.

Hysteresis model
Galloway (1999) with inspiration of hysteresis Phenomenon in Physical sciences developed the hysteresis model with the aim to reduce the complexity and contradictory of previous researches in service quality literature. As he says, "…at least some of this complexity is an artifact of partial viewpoints". As Galloway says, mathematical details and practical applications of this phenomenon are not needed.
As Galloway`s article, the hysteresis model has three characteristics which it is apply to consumer behavior:

- **First**, there is a non-linear relationship between an applied variable and a response variable. Kano's model, as seen, assumes that there is a linear relationship in performance factors but the other two factors assume non-linear relationship. Also, this is in common with microeconomic utility concepts, which it assumes increasingly or decreasingly increasing relationship between consumption and total utility.
- **Second**, the response variable becomes saturated. As performance increase, the attractiveness receives to a point that more performance beyond on it has no effect on attractiveness. This is in common with microeconomic utility debates too; and
- **Third**, the relationship between the two variables is predictable and consistent, but nonreversible. In contrast with the previous models, the most dominant advantage of the hysteresis model is in this characteristic. The next section describes the relationship between the hysteresis model and the zone of tolerance.

Hysteresis model and the zone of tolerance
The zone of tolerance embodies the concept of non-reversibility implicit in hysteresis (Galloway, 1999). Zeithaml *et al*. (1993), define the zone of tolerance between the expectations of customers. It is distance between adequate and desired service in customer expectations from a service.
Galloway (1999) determines the zone of tolerance within the extremes of the hysteresis envelope. As mentioned above, sensitivity of perceived service quality to variation in the service is depending upon the zone of tolerance (see figure 4 for example).
"If the performance of a service lies within the extremes of the hysteresis envelope, then there will be no change in the state of the customer - the outcome will be satisfactory. If the performance falls outside the envelope on the negative side, dissatisfaction will result, while a performance on the positive side will result in delight" (Galloway, 1999).

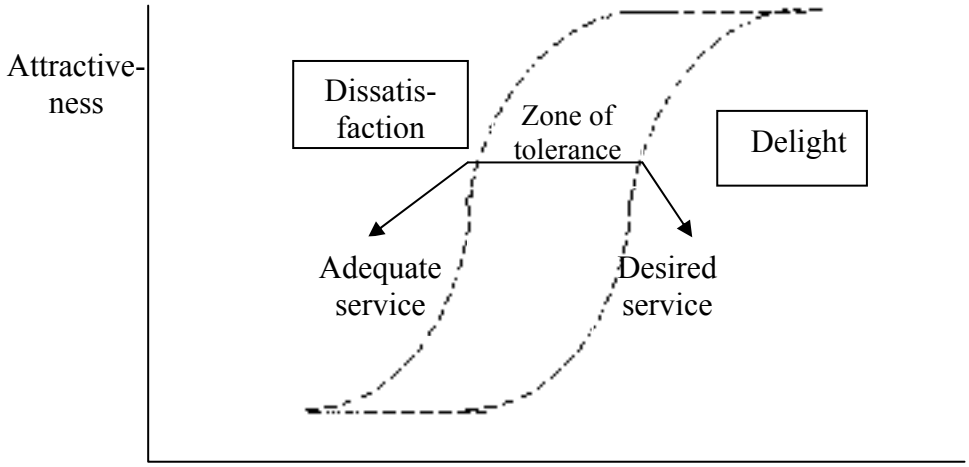

Figure 4: hysteresis model and the zone of tolerance

The most important issue related to this research is in how the zone of tolerance concept is used. Professor Galloway clearly relies on factors with a little zone of tolerance. As can be understand from the zone of tolerance or hysteresis models, it is more likely that variation in performance on factors with a little zone of tolerance could result on significant degree of customer satisfaction/dissatisfaction.

Research questions

This study seeks to priorities the main service quality factors in retail banking based on the hysteresis model's variables (attractiveness, zone of tolerance) and effect. Its purpose is to measure, through empirical research in Iran's banking industry, effect, attractiveness and zone of tolerance of service quality factors, so managers might be better armed to decide how to allocate limited resources to improve or stabilize service quality. This is summarized in terms of three research questions:

1) Which quality factors are the ones which tend to delight customers and which are those that tend to dissatisfy?
2) In which quality factors customers have limited zone of tolerance?
3) In which quality factors, performance of the bank provides little attractiveness to customers?
4) And finally, do empirical evidences confirm comprehensiveness of hysteresis model? (do results replicate previous researches?)

Professor Galloway does not provide any scale or method to measure his model's variables since we designed a simple self-reported measurement scale. It is important to note that performance only aspect used to measure the zone of tolerance rather than gap analysis.

Research method

One major Iranian bank agreed to be involved and to provide direct access to its customers from several branches. Some major quality factors were determined to investigation and a close-ended questionnaire was used to measure; the effect of each quality factors, the Attractiveness of each factor to customers and the amount of tolerance of customers in these factors. The questionnaire was designed in 4 sections. Section one was about the customers' demographic information (sex, education, account type and account amount). Section two measures customer satisfaction in each quality factors (attractiveness of each quality factors for customers) using five

point Likert scale from "very satisfied" to "very dissatisfied". Section three determines the effect of each quality factors. The question of "what's your viewpoint about each of these factors?" was asked. The answers of "it is indifferent" (neural factors indicator), "it is better" (dual factors indicator), "it is excellent" (pure satisfiers indicator), and "it should be" (pure dissatisfiers indicator), were provided as available alternatives for the customers who answer. Moreover, C-S coefficient was calculated for each quality factors using these formulas:

$$\text{Satisfaction coefficient} = \frac{\text{Frequency of answers to "it is excellent"}}{\text{Total answers}}$$

$$\text{Dissatisfaction coefficient} = \frac{\text{Frequency of answers to "it should be"}}{\text{Total answers}}$$

And finally, section four measures the tolerance of customers in each of factors if deterioration occur. The question of "how much you tolerate if deterioration from your desire in each quality factors occur?" was asked. The answer alternatives were scaled from "much more" to "very little". The last three sections, to unifying the effect of variables in the prioritizing process, were ranked from 1 to 9 (1 shows the least important alternative and 9 as the most important one)

In this research ten variables of service quality were selected for investigation. The variables of this research and their dimensionality have been shown in table II (except to e-banking that we excluded it in dimension based analysis because of its multi-dimensionality). Psychometric properties of the scale (such as reliability) were tested. 250 questionnaires were distributed and 199 of them were found to be useful. The final Choronbach's alpha for the whole questionnaire was .83 (the Choronbach's alpha for each section has been provided in table III).

Data analysis

Descriptive statistics were calculated using SPSS 14. Briefly, calculated scores for each of these factors and variables have been provided in table IV. As it shows, Staffs truthfulness, security of account information, and accuracy in operations are the most important factors and staff neatness and beauty of the branch are the least important ones.

Table II: Service quality factors

Reliability/Assurance	Staffs truthfulness (tru) Security of account information (sec) Accuracy in operations (accu)
Empathy/Responsiveness	Staffs attempt in their work (comm) Staffs listen to your questions carefully (att) Speed of operations (fast) Staffs friendly relation (friend)
Tangibles	Staffs are neat (neat) Overall beauty of branch (beauty)

Table III: Choronbach's alpha

Research (hysteresis) dimensions	Choronbach's alpha
Attractiveness	.887
Zone of tolerance	.918
Effect	.884

Table IV: Priorities to improve

factors	Attractiveness scores	Zone of tolerance scores	Effect scores	Total
Staffs truthfulness	7.681	4.861	7.211	19.753
Account information are secure	7.3	5.124	7.034	19.458
Accuracy in operations	7.648	4.78	6.669	19.097
Staffs attempt in their work	7.474	4.328	6.535	18.337
Staffs listen to your question carefully	7.073	4.615	6.358	18.046
Speed in operations	6.743	4.719	6.467	17.929
E-banking	6.453	4.542	6.63	17.625
Staffs friendly Relation	6.997	4.174	5.026	16.177
Staffs are neat	6.625	4.276	5.179	16.08
Overall beauty of branch	5.926	4.3	5.191	15.417

Multiple comparisons were conducted to show whether differences between the items are significant. Test distribution for all of factors was normal and Levens test for homogeneity of variances was controlled. The results of ANOVA table show that from the tolerance view, there is a no difference between the dimensions either between the elements in dimensions (see tables V and VI). But from the Attractiveness view we can see some differences between the items in dimensions. In the empathy/responsiveness dimension we can see difference between the commitment and speed in operations elements. The reliability/assurance and tangibles dimensions had variance problem and any transform process was not resulted to homogeneity of variances since we conducted nonparametric test, inevitably. The result of Kruskal-Wallis test for reliability/assurance dimension shows no difference

between elements but it shows differences between the three dimensions(see table VII). Also Mann-Whitney U shows significant difference between staff's neatness and beauty of branch elements (see table VIII).

Table V: ANOVA Dimension based analysis of Zone of Tolerance

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	144.563	2	72.282	.814	.443
Within Groups	158679.827	1788	88.747		
Total	158824.390	1790			

Table VI: ANOVA factor analysis for tolerance in elements within dimensions

Dependent variable (Tolerance of customers)	Sum of squares	df	Mean Square	F	Sig.
Reliability/Assurance					
Between Groups	3.193	2	1.597	.763	.467
Within Groups	1227.831	587	2.092		
Total	1231.024	589			
Empathy/Responsiveness					
Between Groups	9.410	3	3.137	2.125	.096
Within Groups	1158.547	785	1.476		
Total	1167.957	788			
Tangibles					
Between Groups	.009	1	.009	.007	.933
Within Groups	520.659	393	1.325		
Total	520.668	394			

Table VII: Kruskal-Wallis test for Attractiveness between the reliability/assurance elements and service dimensions

	Reliability/Assurance	Service dimensions
Chi-Square	5.547	86.342
df	2	2
Asymp. Sig.	.062	.000

Table VIII:

	Tangibles
Mann-Whitney U	16604.000
Wilcoxon W	36305.000
Z	-2.813
Asymp. Sig. (2-tailed)	.005

Moreover χ^2 test in the section 3 of questionnaire, which measures the effect, shows that the frequencies of the response alternatives were significantly different from the expected frequencies. With a hysteresis scores (sum of the attractiveness and the zone of tolerance scores) in horizontal curve and effect (C-S coefficients) on vertical, we can show priorities graphically as figure 5. Comparing with Johnston (1997), high correlation is seen between the two studies especially, from the importance view.

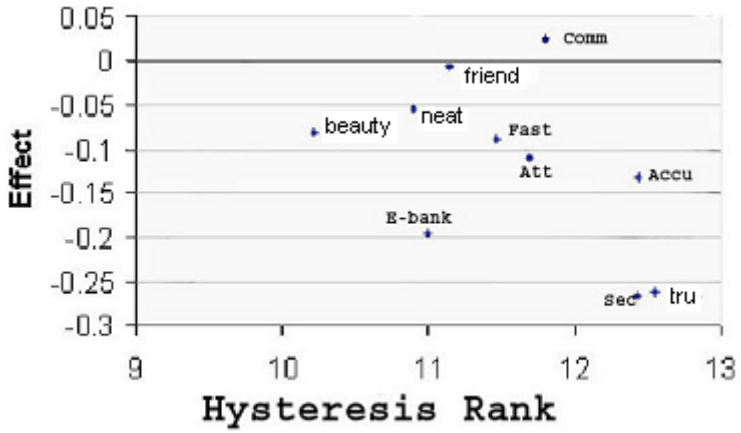

Figure 5: priorities to improve

Conclusion and managerial implications

This research will provide managers with a framework to help them assess the likely impact of service quality factors in terms of its effect, attractiveness, and zone of tolerance.

All variables of this research were in customers' expectations and no one was beyond the expectations.

Staffs' truthfulness, security of account information, and accuracy in operations, have been shown to be the most important factors to customers which supports previous work by Johnston (1997).

Since factors with a little zone of tolerance are the most sensitive and factors with a high zone of tolerance are the least ones so the most sensitive element was security of account information and the least sensitive ones were staffs friendly relation and staffs neatness.

From the effect view, based on the management interests both reliability/assurance and empathy/responsiveness dimensions can be used. If the management interest and or organization problem is customer dissatisfaction since focusing on reliability/assurance dimension can give better results but if the management interest is satisfying customer as much possible empathy/responsiveness dimension elements can give better results. The research has also shown that some areas which have not worth of much attention are tangibles. Any time and money would be better redirected elsewhere.
And finally, the replicability of the results of this research with peer reviews reveals this fact that empirically, the hysteresis mode is a simple reliable and valid model in marketing literature to measure service quality from the customers' view.

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