

# The Effect of Perceived Service Quality in Banking Sector on Customer Satisfaction

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## Abstract

*Today, banking is one of the leading service sectors. The increasing number of banks leads to more competition and forces banks to struggle to find new ways to attract customers. As a result, developing the perceived quality of the services offered by banking managements is a must if they are to stay in competition, protect and increase their market share, and become more preferable.*

*In this study, the effect of the perceived service quality on customer satisfaction in the banking sector is investigated. To this end, the leading banking managements in the sector are studied and the perceived service quality of the managements is measured by SERVQUAL method. The participants are asked to choose one banking management they frequently use. The population consists of 396 people above 18 years of age. A survey is carried out in order to collect data, and a factor analysis, a reliability analysis, independent group T-tests and ANOVA/Welch tests are performed for the acquired data by using the SPSS package program. Moreover, the structure of the model developed for the study is tested through a LISREL structural equation model.*

**Keywords:** *Perceived service quality, customer satisfaction, Structural equation modeling*

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## Bankacılık Sektöründe Algılanan Hizmet Kalitesinin Müşteri Memnuniyeti Üzerine Etkisi

### Özet

*Günümüzde hizmet sektörü denildiğinde akla ilk gelen sektörlerden birisi de bankacılıktır. Her geçen gün banka sayısının artması rekabeti zorlaştırmakta ve banka işletmelerinin müşteri çekebilmesi için daha fazla çaba göstermesini gerektirmektedir. Banka işletmelerinin bu rekabet içerisinde tutunabilmeleri, pazar paylarını koruyabilmeleri ve*

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*artırabilmeleri, daha fazla tercih edilir olabilmeleri için müşterilerinin algıladıkları hizmet kalitesini artırmaları bir zorunluluk olarak karşımıza çıkmaktadır.*

*Bu çalışmada bankacılık sektöründe algılanan hizmet kalitesinin müşteri memnuniyetine etkisi incelenmiştir. Bu maksatla yaygın olarak kullanılan bankalar temel alınarak bir araştırma yapılmış ve algılanan hizmet kalitesi SERVQUAL yöntemi ile ölçülmüştür. Katılımcılardan en çok kullandığı yalnızca bir adet banka seçimi yapmaları istenmiştir. Araştırma eörenini 18 yaş ve üzeri 396 kişi oluşturmaktadır. Veri toplama yöntemi olarak anket kullanılmış, verilere SPSS paket programı kullanılarak faktör analizi, güvenilirlik analizi, bağımsız gruplar t-testi ve ANOVA/Welch testleri yapılmıştır. Aynı zamanda kurulan araştırma modeli ve hipotezler LISREL yapısal eşitlik modeliyle test edilmiştir. **Anahtar Kelimeler:** Algılanan hizmet kalitesi, müşteri memnuniyeti, Yapısal eşitlik modeli*

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## 1. INTRODUCTION

Today, banks have to make their service quality better and create customer satisfaction to save and/or increase their profits and customers. Customer satisfaction is not only about the products but also about the service which is presented. Therefore, banks try to create customer satisfaction by keeping perceived service quality in the foreground.

One of the most important way of learning how the service quality is perceived by the customers is directing them precision tested survey questions. In this study, SERVQUAL method which is one of the most widely used method for measuring the perceived service quality is used and the effects of perceived service quality on customer satisfaction was examined.

### 1.1. The “Service” Concept

When the literature examined it is seen there is an absence of a widely accepted definition of service that is discussed in different dimensions and it is hard to reduce to only one definition. One reason of this difficulty is unlike the concept of good, concept of service doesn't have a tangible property.<sup>1</sup>

Another reason of this difficulty is there is no precise definition of the two components (sub-concepts) of service concept: “Pure Tangible Good” and “Pure Intangible Service”. These sub-concepts are also the reasons of the difficulties because of their transitivity between them.<sup>2</sup> According to

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1 İsmet Mucuk, Pazarlama İlkeleri, (İstanbul, 18. Basım, Türkmen Kitabevi, 2010), s.305.

2 Şevkinaz Gümüőöglü, İge Pınar, Perran Akan ve Atilla Akbaba, Hizmet Kalitesi Kavramları, Yaklaşımlar ve Uygulamalar, (Ankara, Detay Yayıncılık, 2007), s.11-12.

Kotler, even if the service is referred independent from a physical product in a degree;<sup>3</sup> not only exhibition of lots of products includes the exhibition of service and other intangible elements but also a lot of services' definition includes the definition of physical product which is referred as service. Therefore it would be a mistake to define the physical product which is isolated from service and the service which is isolated from physical product.<sup>4</sup>

To avoid all these difficulties that mentioned before, service can be defined as "The untouchable utility offered by a firm".<sup>5</sup>

## **1.2. Characteristics of Service**

Unlike the products, services has some unique characteristics. These characteristics can be listed as;

### **Intangibility**

Services cannot be counted, inventoried, measured and tested in advance of sale to assure quality. Because of intangibility, it is difficult for firms to understand how consumers perceive their services and evaluate service quality.<sup>6</sup> During the marketing process firms must focus on the perceived quality.<sup>7</sup>

### **Untouchability**

Although physical products are tangible, touchable, eatable objects, these features are not available for services.<sup>8</sup> Because of the services are not a physical entity, they can not be stored and seen. It is hard to evaluate them and it is complex to calculate their efficiencies.<sup>9</sup>

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3 Philip Kotler, *Marketing Management: Analysis, Planning, Implementation and Control*, (New Jersey, Prentice hall international inc., 1997), s.467.

4 Şevkinaz Gümüőođlu, vd., 2007, s.11-12.

5 Kotler, 1997, s. 467.

6 Valarie A. Zeithaml, A. Parasuman ve Leonard L. Bery, *Problems and Strategies in Services Marketing*, *Journal of Marketing*, 1985, Vol.49, s.33-46

7 Ömer Torlak, Şuayip Özdemir ve Remzi Altunışık, *Modern Pazarlama*, 2. Baskı, (Deđişim Yayınları, İstanbul, 2002), s. 150

8 M. Nedim Bayuk, *Hizmet Pazarlaması ve Müşteri Tutma*, *Akademik Bakış Uluslararası Hakemli Sosyal Bilgiler E-Dergisi*, 2006, ISSN: 1694-528X.

9 Hüsniye Örs, *Hizmet Pazarlama Etkinliđi ve Kalite*, (Ankara, Gazi Kitapevi, 2007), s.19-20

## Heterogeneity

Even if the services offered are in the same firms, it is almost impossible to be exactly same and standard. This is called as “heterogeneity of services”.<sup>10</sup> Firms are trying to evaluate customer expectations and satisfaction levels to avoid the problems and provide a standard that may arise due to this heterogeneity feature.<sup>11</sup>

## Simultaneous Production and Consumption

Services unlike the products can't be transport, they are consumed when and where they are produced. Contrary to the physical product; production, marketing, placement and consumptions are taken place at the same time (simultaneously).<sup>12</sup>

## Nondurability

Services can't be stored, extradited and sold again. Therefore, services are “nondurable”.<sup>13</sup> Services can't be stored and sold in an another place and time.<sup>14</sup> For example, empty rooms of hotels, empty seats in buses can't be sold after their expiration date.<sup>15</sup>

### 1.3. Perceived Service Quality

Perceived service quality has become a major area of attention during the past decades for managers and researchers because of its huge impact on business performance of firms. Customers prefer companies that provide high service quality and judge service quality relative to what they want by comparing their perceptions of service experiences with their expectations of what the service performance should be. In last years, firms have discovered that in order to increase profits and market share, they should pay much attention to service quality. Perceived service quality has be-

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10 Hüsniye Örs, a.g.e., s.18-19.

11 Kasım Karahan, Hizmet Pazarlaması, 1. Baskı, (İstanbul, Beta Yayınları, 2000), s.52.

12 Ali Eleren, Çetin Bektaş ve A. Şahin Görmüş, Hizmet Sektöründe Hizmet Kalitesinin SERVQUAL Yöntemi İle Ölçülmesi ve Hazır Yemek İşletmesinde Bir Uygulama, Finans politik & ekonomik yorumlar. Cilt: 44 Sayı:514, s.77.

13 A. Sevgi Öztürk, Hizmet Pazarlaması, 4. Baskı, (Bursa, Ekin kitapevi, 2003), s.8.

14 Birol Tenekecioğlu, Pazarlama Yönetimi, 2. Baskı, (Eskişehir., T.C. Anadolu Üniversitesi Yayını No: 1478, Açık Öğretim Fakültesi Yayını No: 791, 2004), s.134

15 A. Sevgi Öztürk, a.g.e., s.12.

come a key factor for firms to differentiate their goods and services from other firms by using service quality as a process that customers evaluate. The importance of service quality to firms and their customers is obvious because of its benefits contributing to market share and return on investment.<sup>16</sup>

Services unlike tangible products are produced and consumed at the same time. Because of this characteristic of services, customer and producer can observe all process. The presence of the human being during the service process increases the probability of error.<sup>17</sup>

There has been consensus how to measure service quality but little advance as to what should be measured. Researchers generally have adopted two concept. The first one is "Nordic Perspective" which defines the dimensions of service quality in global terms as consisting of functional and technical quality. The second "American Perspective" uses terms of reliability, empathy, responsiveness, assurances and tangibles that describe service characters. Although American Perspective dominates the literature, a consensus has not evolved as to which one is the more appropriate approach.<sup>18</sup>

The consumer considers many tangible cues to judge quality: Color, hardness label, package, etc. when purchasing goods. But there are few tangible cues during service purchasing. Generally these few tangible cues are physical facilities, equipment, and personnel. In the insufficiency of tangible evidence on which to evaluate quality, customers must depend on other cues. Because of services intangibilities, firms may find it difficult to understand how consumers perceive services and service quality.<sup>19</sup>

Consumers' alternatives has multiplied and customers have started to change their choices easier with the rapid growth of the service sector and increasing in global competition in recent years. Therefore, the studies which measure and increase the perceived service quality has accelerated. Due to the development of quality and the increasing quality expectations, requirements of measuring and developing quality in service sector has increased.<sup>20</sup>

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16 Biljana Angelova ve Jusuf Zekiri, Measuring Customer Satisfaction with Service Quality Using American Customer Satisfaction Model (ACSI Model), *International Journal of Academic Research in Business and Social Sciences*, 2011, Vol. 1, No. 3, s.245.

17 Prabha Ramseook Munhurrun, Soolakshna D.Lukea Bhiwajee ve Perunjodi Naidoo, *Service Quality In The Public Service*, *International Journal of Management And Marketing Research*, 2010, Vol. 3, No.1, s.38.

18 Michael K. Brady ve J. Joseph Cronin, Some New Thoughts on Conceptualizing Perceived Service Quality: A Hierarchical Approach, *Journal of Marketing*, 2001, Vol. 65, s.34.

19 A. Parasuraman, Valarie A. Zeithaml ve Leonard L. Berry, A Conceptual Model of Service Quality and Implications For Further Research, *Journal of Marketing*, 1985, Vol. 49, s.42.

20 Ronald J. Burke, Jim Graham ve Frank Smith, *Effects of Reengineering On The Employee*

Banking is one of the main actors in the service sector. The service quality in the marketing literature is considered to have important role. Service quality and satisfaction expressions are expressed frequently and defined in various ways in texts and practices that related marketing. Researchers have mentioned the advantages of satisfaction and quality, and have mentioned them as indicator of an organization competitive benefit. Service quality is a key factor in formation of customer's desires for future purchase.<sup>21</sup>

Quality can be defined as suitability for use according to the customer based approach and defined as suitability for requirements according to the production based approach. Quality can be defined in five approach with a more detailed overview. In one of these approaches quality is defined as a result of experience; but another approach defines it as a measurable term.<sup>22</sup>

There are many definitions of service quality. Service quality is associated with customer satisfaction in most of these definitions. Service quality is pointed as one of the most important factors that provides customer satisfaction by Parasuraman and other marketing masters.<sup>23</sup>

The following assessments which related to measuring service quality are made due to the services have different properties in comparison with products;<sup>24</sup>

- Service quality is more difficult for the consumer to evaluate than goods quality.
- Quality evaluations are not made only for a service; they also involve evaluations of the service delivery.
- Service quality perceptions result from a comparison of customer's expectations with service performance.
- Quality can not be evaluated with benefit that result of service.

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Satisfaction–Customer Satisfaction Relationship, The TQM Magazine, 2005, Vol. 17, No. 4, s.358-363.

21 Rahim Mosahab, Osman Mahamad ve T. Ramayah, Service Quality, Customer Satisfaction and Loyalty: A Test of Mediation, International Business Research, 2010, Vol. 3, No. 4, s.72.

22 Emel Kurşunluoğlu Yarimoğlu, "A Review on Dimensions of Service Quality Models", Journal of Marketing Management, 2014, Vol. 2, No. 2, s.80.

23 A. Parasuraman, Valarie A. Zeithaml ve Leonard L. Berry, SERVQUAL: A Multiple-Item Scale For Measuring Consumer Perceptions Of Service Quality, Journal of Retailing, 1988, 64(1), s.12–40.

24 A. Parasuraman, Valarie A. Zeithaml ve Leonard L. Berry, 1985, s.41-50.

As stated previously, there are several studies that aim to measure perceived service quality. Service quality has several components in this studies. According to Christian Grönroos, service quality has three components including technical quality, functional quality and image.<sup>25</sup>

#### **1.4. Perceived Service Quality - Customer Satisfaction Relationship**

The fundamental goal of the firms is high profit. In order to reach that goal, firms ought to have customers that are invaluable to them and try to raise the number of such customers as high as possible. This situation happens only if customer satisfaction is high. It is imperative that firms understand their customers' needs and expectations. To improve customer satisfaction levels firms need to adopt a customer-centered approach. Adopting customer-centered approach is closely relevant with customer preferences, expectations and offered service quality.

Relation between perceived service quality and customer satisfaction is especially important in service sector. Main reason is that customers are not only interested in physical aspect of a product, but also interested in non-physical aspects. It can be said that in order to improve customer satisfaction levels, firms need spare more time improving their service quality.<sup>26</sup> Because customer satisfaction measures the quality, there is a growing interest in it. High customer satisfaction means high profits in the long-term. It can be said that satisfaction is subsequently purchased product quality evaluation.<sup>27</sup>

Satisfaction shouldn't be sought in the product or service itself. Satisfaction is basically based on perception of customers and producer services. Thus, different customers would perceive varying satisfaction levels from the same service provider. Customer satisfaction holds a vital place in providing high profits for firms and raising their share of the market.<sup>28</sup>

High customer satisfaction certainly causes high customer loyalty. By increasing customer loyalty, firms preserve their functionality and reduce

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25 Nitin Seth, S.G. Deshmukh ve Prem Vrat, *Service Quality Models: A Review*, International Journal of Quality and Reliability Management, 2005, Vol.22, Issue 9, s.915.

26 Erkan Sağlık, Çağlar Güllüce, Ufuk Kaya ve Çağlar Kadir Özhan, *Service Quality and Customer Satisfaction Relationship: A Research in Erzurum Ataturk University Refectory*, American International Journal of Contemporary Research, 2014, Vol. 4, No. 1, s.105.

27 Emrah Cengiz, *Measuring Customer Satisfaction: Must Or Not?*, Journal of Naval Science and Engineering, 2010, Vol. 6, No.2, s.79.

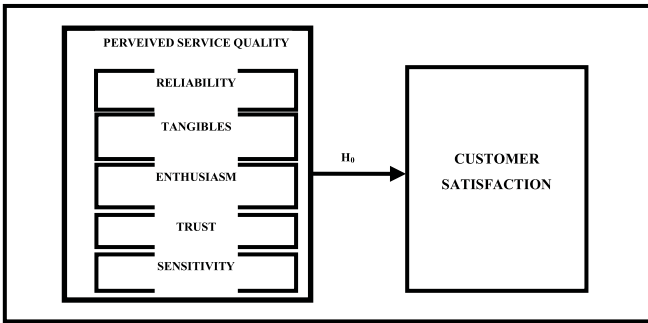
28 Ki-Han Chung, Ji-Eun Yu, Myeong-Guk Choi ve Jae-Ik Shin, *The Effects of CSR on Customer Satisfaction and Loyalty in China: The Moderating Role of Corporate Image*, Journal of Economics, Business and Management, Vol. 3, No. 5, s.543.

the costs and uncertainty levels. Besides recommendations of satisfied customers would reduce the costs of finding new customers and improve the image of the firm.<sup>29</sup>

Due to rising competition, many firms pays more attantion to their service quality and customer satisfaction. Also scholars are working on service quality and customer satisfaction in order to figure out the effective prosseses and factors behind the consumer evaluations. Customer satisfaction is function between the expectations before purchasing and perception after the purchasing the product.<sup>30</sup>

Consumers' evaluations of the performance of a product or service given is customer satisfaction. Satisfaction has positive effects on customer loyalty. Satisfaction built stimulates consumers to rebuy the product or service.<sup>31</sup>

*Fig.1: Effect of "Perceived Service Quality" on "Customer Satisfaction" (Research Modal)*



Research modal is developed through service quality and customer satisfaction studies in the literature and stated above. Research hypthseses are given below.

29 Eugene W. Anderson, Claes Fornell, ve Roland T. Rust, Customer Satisfaction, Productivity and Profitability: Differences Between Goods and Services, Marketing Science, 1997, Vol.16, No.2, s.130-131.  
30 Dawn Iacobucci, Amy Ostrom ve Kent Grayson, Distinguishing Service Quality and Customer Satisfaction: The Voice of The Consumer, Journal of Consumer Psychology, 1995, 4(3), s.278.  
31 Anders Gustafsson, Michael D. Johnson, Inger Roos, The Effects of Customer Satisfaction, Relationship Commitment Dimensions, and Triggers on Customer Retention", Journal of Marketing, 2005, Vol. 69, s.210.



H0: “Perceived Service Quality” is sound statically meaningful in explaining the customer satisfaction.

## **2. METHOD**

Purpose of the research is measuring the customer satisfaction levels of the participants from different demographic characteristics, towards the bank they use, in aspect of reliability, tangibles, Enthusiasm, trust, sensitivity variables which forms the service quality perception.

Main research population involves 396 people who lives in Istanbul city and at the age of 18 and above. Face-to-face survey conducted to total 396 participants and results are evaluated within the scope of the research. The survey used in the research consists of three parts. While the first part involves demographic questions, second part involves 22 five-likert-type scale questions developed by Parasuraman and others <sup>32</sup> about service quality (1=agreed certainly, 5=disagreed certainly). In the last part, there are 4 questions in 5-likert-type about customer satisfaction.<sup>33</sup>

### **2.1. Analysis Of Data**

Data gathered through the survey are analysed via SPSS (Statistical Package for Social Sciences) statistics package program and validity and reliability of the developed modal is tested via LISREL structural equation modelling.

#### **2.1.1. Demographic Characteristics**

“Demografic characteristics” gathered through survey results are stated below.

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32 A. Parasuraman, Valarie A. Zeithaml ve Leonard L. Berry, 1988, s.12-40.

33 Beril Durmuş, E. Serra Yurtkoru ve Murat Çinko, Sosyal Bilimlerde SPSS’le Veri Analizi, (İstanbul: Beta Yayınları, 4.Baskı, 2011), s.13–15.

**Table 1: Demografic Characteristics**

<b>GENDER</b>	<b>Frequency</b>	<b>Ratio</b>
Female	179	45,2
Male	217	54,8
Total	396	100
<b>MARITAL STATUS</b>		
Single	237	59,8
Married	259	40,2
Total	396	100
<b>AGE</b>		
18-29	121	30,6
30-39	151	38,1
40-49	109	27,5
>50	15	3,8
Total	396	100
<b>EDUCATION STATUS</b>		
Elementary School	22	5,6
High School	97	24,5
Associate Degree	81	20,5
Bachelor Degree	155	39,1
Master's Degree/Doctorate	41	10,4
Total	396	100
<b>OCCUPATION</b>		
Public Sector	128	32,3
Private Sector	135	34,1
Student	93	23,5
Retired	32	8,1
Unoccupied	8	2
Total	396	100
<b>MONTHLY SALARY (TL)</b>		
0-1500	140	35,4
1501-3000	157	39,6
3001-4500	73	18,4
>4501	26	6,6
Total	396	100

Division of 396 participants of the survey are as follows; %45,2 female and %54,8 male, %59,8 single and %40,2 married, % 30,6 between 18-29, %38,1 between 30-39, %27,5 between 40-49 and %3,8 above 50, %32,3 public sector employee, %34,1 private sector employee, %23,5 student, %8,1 retired and %2,0 unoccupied. Major percentage distribution in education

status is bachelor degree with %39,1 and in monthly salary is 1501-3000 TL with %39,6.

Table 2: Used Bank\*

Used Bank	Frequency	Percentage
A Bank	48	12,1
B Bank	66	16,7
C Bank	71	17,9
D Bank	38	9,6
E Bank	57	14,4
F Bank	45	11,4
G Bank	40	10,1
H Bank	17	4,3
Others	14	3,5
Total	396	100

\* In the survey original bank names were stated but in this paper bank names are identified as A, B, C..., because our aim is to show the variables effecting the customer satisfaction rather than comparing the banks' service quality.

### 2.1.2. Reliability and Factor Analysis Results

Inner reliability of research is measured by using Cronbach's Alpha coefficient. Obtaining results of Cronbach's Alpha values as 0,917 for perceived service quality and as 0,853 for customer satisfaction shows that reserach has high inner reliability.

Factor analysis which is a statistical method is used to analyse the relevance levels of variables with each other. Purpose of the Factor analysis is summarising the datum from numerous variables and forming factor groups with minimum data loss.<sup>34</sup> In the context of factor analysis, Kaiser-Meyer-Olkin (KMO) sample adequacy criteion is the index that compares magnitudes of corelation coefficients and partial of corelation coefficients. KMO ratio is required to be higher than 0,5. Higher the KMO ratio, it is better to use data package factor analysis.<sup>35</sup>

34 Ercan Gegez, Pazarlama Arařtırmaları, 2.Baskı, (İstanbul, Beta Yayıncılık, 2007), s.288.

35 Şeref Kalaycı, SPSS Uygulamalı Çok Değişkenli İstatistik Teknikleri, (Ankara, Asil Yayınları, 2010), s.322

So that the KMO value is 0,914, convenience of factor analysis for variables is at good levels. But in order to call the factor analysis is suitable, p value from the Barlett test is required to be under 0,05 significance level. As the Kaiser-Meyer-Olkin (KMO) sample adequacy test and Bartlett's test of sphericity are significant, data package is deemed suitable for factor analysis (KMO=0,914,  $\chi^2$ Barlett Test (231)= 11937,698, p=0,000). In the context of applicability test, factor analysis is conducted with the principal component analysis and Varimax rotation using perceived service quality scale. Statements that measures the perceived service quality are accumulated under the five factors which have eigenvalues lesser than 1. Factors obtained expresses a variance at %81,828.

**Table 3: Perceived Service Quality and Customer Satisfaction Factor Analysis Results**

Factors	Questions	Mean	St. Dev.	Factor Weight	Exploriness(%)	Reliability
Reliability	If you have a problem, your bank will try to resolve your concerns.	1,74	0,781	0,876	18,015	0,932
	Bank fulfills its promises on time.	1,79	0,803	0,859		
	Bank keeps accurate records.	1,79	0,800	0,860		
	Bank is trustworthy.	1,74	0,777	0,881		
	Your bank performs its services on time.	1,48	0,622	0,748		
Tangibles	Bank employees have neat and clean appearance.	3,96	0,905	0,914	14,616	0,906
	Bank branches have attractive physical appearance.	3,88	0,919	0,898		
	The appearance of equipment used by the Bank is consistent with the types of services offered.	4,07	0,839	0,720		
	Your bank has modern equipment.	3,97	0,918	0,901		
Enthusiasm	Bank employees' services to the customers are swift.	4,44	0,711	0,850	14,278	0,925
	Bank employees inform when the service will be offered to customers.	4,44	0,732	0,836		
	Bank employees are friendly and willing any time about serving to their customers.	4,41	0,736	0,784		
	Bank staff is never too busy to meet customers' demands.	4,45	0,708	0,790		

Factors	Questions	Mean	St. Dev.	Factor Weight	Exploriness(%)	Reliability
Trust	Customers feel safe during the transactions with your bank.	1,62	0,713	0,725	12,302	0,823
	Attitudes and behavior of bank employees creates a sense of trust in customers.	1,62	0,714	0,772		
	Bank employees are understanding and polite.	1,60	0,677	0,745		
	Bank employees have the knowledge and skills to solve customer problems.	1,58	0,691	0,836		
Sensitivity	Bank employees understand the specific needs of customers.	1,48	0,710	0,960	22,618	0,997
	Bank employees personally interested in customers.	1,48	0,710	0,961		
	At your bank you are personally treated.	1,48	0,710	0,960		
	Your bank deals sincerely with the interests of customers.	1,48	0,710	0,960		
	There are reasonable work hours in your bank for all customers.	1,49	0,710	0,951		
Customer Satisfaction	My bank always meets my expectations.	1,63	0,787	0,889	69,735	0,853
	I am satisfied with my bank's services.	1,79	0,860	0,782		
	I recommend my bank to my friends.	1,72	0,860	0,824		
	I plan to use my bank in the future.	1,70	0,820	0,842		

Variables obtained as consequence of Factor analysis are examined in the context of studies in the literature about Perceived Service Quality and named as "Reliability", "Tangibles", "Trust", "Enthusiasm" and "Sensitivity".

**Table 4: Perceived Service Quality and Customer Satisfaction Correlation Analysis Results**

	Mean	St. Dev.	REL	TAN	ENT	TRU	SEN	SAT
REL	1,70	0,673	(0,716*)					
TAN	3,97	0,791	-0,362	(0,743*)				
ENT	4,43	0,652	-0,476	0,264	(0,665*)			
TRU	1,60	0,564	0,313	-0,260	-0,423	(0,593*)		
SEN	1,48	0,704	0,211	-0,104	-0,496	0,357	(0,918*)	
SAT	1,70	0,693	0,192**	0,146**	-0,121	0,312**	0,236**	(0,697*)

\* AVE values.

\*\* Correlations statistically significant at 0.01 levels. (2-tailed)

Correlation analysis is made to show the relationships between variables. As seen above, all of the variables has some relation with each other. It can be said that the results are good according to standart deviation values (little than 1).

### 2.1.3. Testing The Developed Model Via Structural Equation Modelling

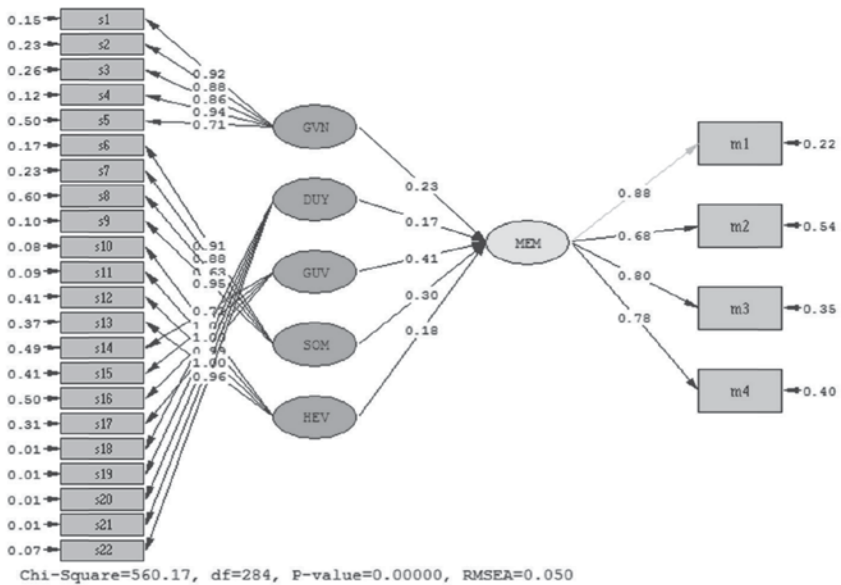
To test the developed model confirmatory factor analysis is made via LISREL structural equation modelling. The results; chi-square ( $\chi^2$ ) 560,17,  $p=0,00$ ; Degrees of Freedom = 284;  $\chi^2/sd= 1,97$ ; Root Mean Square Error of Approximation-RMSEA = 0.050; Goodness of Fit Index -GFI = 0.90; Comparative Fit Index -CFI = 0.99; Normed Fit Index -NFI = 0.97; Root Mean Square Residual -RMR = 0.026 and Standardized Root Mean Square Residual-SRMR = 0.045. Values derived from the structural equation model and the acceptability criteria of the goodness of fit statistics <sup>36</sup> are shown in below.

36 Ömay Çokluk, Güçlü Şekercioğlu ve Şener Büyüköztürk, Sosyal Bilimler İçin Çok Değişkenli İstatistik SPSS ve LISREL Uygulamaları, 2.Baskı, (Ankara, Pegem Akademi, 2012), s.271.

**Table 5:** Values Derived from the Structural Equation Model and the Acceptability Criteria of the Goodness of Fit Statistics

Goodness of fit Index	Values Derived from the Model	Acceptability Criteria
Ki kare ( $\chi^2$ )/ sd	1,97	$\leq 2$ perfect fit
GFI	0,90	$\geq 0,90$ good fit
RMSEA	0,050	$\leq 0,05$ perfect fit
RMR	0,026	$\leq 0,05$ perfect fit
SRMR	0,045	$\leq 0,05$ perfect fit
CFI	0,99	$\geq 0,95$ perfect fit
NFI	0,97	$\geq 0,95$ perfect fit

**Fig.2:** Standardized solution derived from the second-order confirmatory factor analysis.



**Table 6: Structural Equation Analysis Results**

Dependent Variable	Independent Variables	Standardized Solutions	t values
Customer Satisfaction	Reliability	0,23	3,66
	Tangibles	0,30	5,26
	Enthusiasm	0,18	2,58
	Trust	0,41	6,24
	Sensitivity	0,17	2,80

When both the path diagram derived from the second-order confirmatory factor analysis and t values are examined, t values and standardized solution values are seen to be meaningful.

When the goodness of fit statistics and the results of the structural equation analysis are taken into consideration, the model, which is used for investigating the relationship between service quality and customer satisfaction and which is tested by LISREL structural equation model and found satisfying in terms of significance and reliability, through which the fact that this model is acceptable has been tested.

#### 2.1.4. T-tests Results

The dimensions of service quality and customer satisfaction were tested by independent samples t-test according to the participants' gender, age and used bank. The test results show that there is significant difference in dimension named as "trust" according to marital status.

**Table 7: T-Test Results According to Gender**

Variable	Gender	N	Mean	Std.Dev.	p value
Reliability	Female	179	1,733	0,697	0,235
	Male	217	1,686	0,654	
Tangibles	Female	179	3,948	0,776	0,194
	Male	217	3,989	0,804	
Enthusiasm	Female	179	4,437	0,694	0,107
	Male	217	4,436	0,617	
Trust	Female	179	1,636	0,607	0,010
	Male	217	1,577	0,527	
Sensitivity	Female	179	1,522	0,722	0,300
	Male	217	1,456	0,690	
Customer Satisfaction	Female	179	1,708	0,724	0,221
	Male	217	1,709	0,668	



The difference in variables (Tangibles, Reliability, Enthusiasm, Trust, Sensitivity and Customer Satisfaction) is tested through One Way Variance Test (ANOVA/Welch) according to participants' age, and used bank. In the first step of One Way Variance Test, the equation of variances has to be tested. If the variances are homogene the ANOVA test should be used, and if the variances are not homogene the Welch test should be used.<sup>37</sup> The homogeneity and One Way Variance Analysis Tests show that;

- There is significant difference in the variables named as “tangibles”, “enthusiasm” and “sensitivity” according to the participants' age.
- There is significant difference in the variable named as “enthusiasm” according to the participants' used bank.

**Table 8:** One-Way Variance (Anova / Welch) Test results according to age.

Variable	Heterogeneity Test p Value	p Value		Result
		Anova	Welch	
Reliability	0,401	0,758	-	H <sub>0</sub> Accepted
Tangibles	0,000	-	0,000	H <sub>0</sub> Rejected
Enthusiasm	0,007	-	0,015	H <sub>0</sub> Rejected
Trust	0,229	0,563	-	H <sub>0</sub> Accepted
Sensitivity	0,000	-	0,018	H <sub>0</sub> Rejected
Customer Satisfaction	0,222	0,122	-	H <sub>0</sub> Accepted

**Table 9:** One-Way Variance (Anova / Welch) Test results according to Used Bank.

Variable	Heterogeneity Test p Value	p Value		Result
		Anova	Welch	
Reliability	0,299	0,929	-	H <sub>0</sub> Accepted
Tangibles	0,856	0,253	-	H <sub>0</sub> Accepted
Enthusiasm	0,233	0,040	-	H <sub>0</sub> Rejected
Trust	0,076	0,583	-	H <sub>0</sub> Accepted
Sensitivity	0,272	0,899	-	H <sub>0</sub> Accepted
Customer Satisfaction	0,178	0,595	-	H <sub>0</sub> Accepted

37 Beril Durmuş, E. Serra Yurtkoru ve Murat Çinko, 2013, s.133.

### **3. CONCLUSION**

In this study, the relationship between service quality in banking sector and customer satisfaction has been examined. SPSS (Statistical Package for Social Sciences) statistics package has been used in the analysis and interpretation of data. Statistical analyses have been performed and survey results have been examined through SPSS program. Statistical analyses and tests used in research data analysis are as follows: Frequency Analysis, Factor Analysis, Reliability Analysis, t-Tests and ANOVA/Welch tests.

The model is developed according to literature. The Model is consists of 5 independent variable about service quality and one dependent variable. In order to test the significance and reliability of that model, a second-order confirmatory factor analysis has been performed, following which goodness of fit statistics, t value and standardized solution results have been examined. The relationships between customer satisfaction and five independent variables are seen to be meaningful with 0,01 reliability level. The model has been found to be significant and reliable, along with being tested as acceptable. When the t-values taken into consideration, the biggest relationship is between customer satisfaction and trust, and then tangibles, reliability. This results show that customer satisfaction is mostly effected from customers' trust. This means banks should give much importance to trust to make their customers satisfied. Banks must make their customers feel safe and educate their workers about customer relationship management. They must also give much importance to trust issue in their mobile applications and internet sites. A lot of people are not using credit cards because of security issues. This shows us the importance of trust variable. According to analysis results it can be seen that tangibles are also effecting customer satisfaction. This relationship shows that banks should give attention to their banks' and internet sites' physical appearance. Banks should give attention to all of the variables of service quality because all of the reationships are meaningful.

After LISREL structural equation modelling analysis, independent variables T-test and Anova/Welch tests are conducted to find if there is a difference according to gender, age and used bank. When we look at the results there is significant difference in "trust" issue according to gender. An important cause of this could be that the security needs and expectations of female and male customers are differ from each other. Because of this, banks should consider their customers' gender and meet their expectations. The restrictions of this study is that surveys are conducted in only Istanbul province. The effect of customer satisfaction to brand loyalty can be studied in the following researches.

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