SERVICE QUALITY AND CUSTOMER

SATISFACTION

IN

HIGH SCHOOLS

Thesis submitted to the

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in

Management

By

Mustafa KARA

Fatih University

January 2006

APPROVAL PAGE

I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Arts.

_____

Assist. Prof. Nuri Gökhan TORLAK
Head of Department

This is to certify that I have read this thesis and that in my opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Arts.

_____

Assoc. Prof. Selim ZAİM
Supervisor

Examining Committee Members

Prof. Dr. Vildan SERİN   _____

Prof. Dr. Mustafa DİLBER   _____

Assoc. Prof. Selim ZAİM   _____

It is approved that this thesis has been written in compliance with the formatting rules laid down by the Graduate Institute of Social Sciences.

_____

Assist. Prof. Mehmet ORHAN
Director

January 2006

AUTHOR DECLARATIONS

The reason for having my master degree about service quality and customer satisfaction in high schools in Fatih University is that I had this questionnaire in the school of which I have been the principal since 2001. In this study we tried to analyse the customer satisfaction with six factors. We had a conclusion by evaluating the customer satisfaction depending on service quality.

This is a summary of a five-year study we made for five years. After this study we made a serious progress in customer satisfaction and service quality. We took the necessary pracautions for deficient points.

The material included in this thesis has not been submitted wholly or in part for any academic award or qualification other than that for which it is now submitted without permission or copyright.

The advanced study of which thesis has consisted of these parts:

i)   Service quality experiences of an educational institution.

ii)   The courses, certification programs and seminars I had participated or organized as a principal.

Mustafa KARA

January, 2006

ABSTRACT

MUSTAFA KARA   **January 2006**

SERVICE QUALITY AND CUSTOMER SATISFACTION IN HIGH SCHOOLS

All nations noticed that, while facing the 21st century, no program supports to have a higher level in the world unless it originates from education. Thus, education has become remarkably important. Every organisation in the state has been included an area in which there is a serious competition. Positive movements in education can be provided in this area by increasing the total quality.

In this study we tried to find out the critics of quality in education and measure the effects of this quality on customer satisfaction in a high school in Istanbul. We prepared a questionnaire with 25 questions and applied it to a group of 15 people. After that, considering the school management and parents' needs, the questions decreased to 19. this questionnaire contained 6 main categories which are counseling, catering & school bus service, preference reasons, laboratories, educational clubs and advertising.

We used Likert method to measure the results in 2001, 2002, 2003. The results were valued carefully. Bad results were corrected. Expected and normal results were tried to make better. The school is remaining as a structure of continuous learning and improving institution.

In this study, we used Spad Decisia program and the result were made in Excel.

In the first part, we gave information about the concept of quality, its history, quality experts and quality management systems.

In the second part, the explanation of service quality, customer satisfaction, quality in education service are explained in details.

In the third which is application part, the model explained, the analyses of the work was done. It is stated that necessary precautions should be taken according to the results of analyses.

The fourth part is the conclusion part.

Key Words

Quality	Quality Management System	Structural Equation Modelling
EFQM	Customer Satisfaction	Counselor Teacher
Questionnaire	Service Quality	Service

KISA ÖZET

MUSTAFA KARA   **Ocak 2006**

LİSE DÜZEYİNDEKİ EĞİTİM KURUMLARINDA HİZMET KALİTESİ VE MÜŞTERİ MEMNUNİYETİ

Dünya devletlerinin, 21. yüzyıla girerken edindikleri en önemli tecrübe şudur ki, eğitim endeksli olmayan hiçbir program toplumların, çağdaş yönde, ilerlemesini sağlamıyor. Bunun için eğitime daha çok önem verilmeye başlandı. Bu konuda devletler, kendi iç dinamiklerini harekete geçirdi ve bütün kurumlarda ciddi bir rekabet ortamına girildi. Eğitimdeki pozitif ilerlemeler, müspet yönde oluşturulan bu rekabet ortamlarında, toplam kalitenin arttırılmasıyla mümkün olacaktır.

Biz bu çalışmamızda İstanbul'daki özel bir lisedeki hizmet kalitesine bağlı olarak, veli-öğrenci memnuniyetini ölçtük. Müşteri memnuniyetini ölçmek için ilk olarak 25 soruluk bir anket, yaklaşık 10 – 15 kişilik bir gruba uygulandı. Bu pilot uygulamanın sonucunda, okul idaresi ve veli-öğrenci ihtiyaçları göz önünde bulundurularak anket 19 soruya düşürüldü. On dokuz soruluk bu anket altı ana faktörden oluştu. Bunlar danışman öğretmen, catering şirketi – taşıma servisi, tercih sebebi, laboratuarlar, eğitsel kollar ve tanıtımdan ibarettir.

Bu çalışmada 1'in en kötü, 5'in en iyi olduğu 5'li Likert Metodu'nu kullandık. Bu anket 2001, 2002 ve 2003 olmak üzere üç yıl ard arda uygulandı. Çıkan sonuçlar titizlikle değerlendirildi. Kötü olan faktörlerde değişikliklere gidildi. Normal çıkan faktörlerde ise, daha iyi olması için ekstra çalışmalar yapıldı. Kurum kendisini "sürekli öğrenen" ve "sürekli geliştiren" ilkelerini esas alarak çalışmalara devam etmektedir.

Yapılan bu çalışmada Spad Decisia programı kullanıldı. Daha sonra çıkan sonuçlardan bazıları Excel ortamına aktarıldı.

Birinci bölümde "kalite" kavramı, tarihçesi, kalite uzmanları ve kalite yönetim sistemleri genel bilgiler verilmektedir.

İkinci bölümde; literatürden hizmet kalitesi ve müşteri memnuniyeti, eğitimde hizmet ve servis kalitesi hakkındaki tanımlar ve açıklanmaktadır.

Üçüncü bölümde; yapılan çalışmanın uygulama aşamaları yer almaktadır.

Dördüncü bölüm ise, sonuç bölümüdür.

Anahtar Kelimeler:

Hizmet kalitesi	Toplam Kalite	EFQM	Yönetim	Anket
MüşteriMemnuniyeti	DanışmanÖğretmen	ServisKalitesi	Kalite	Servis

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LIST OF ABBREVIATIONS

SQ	Service Quality
CS	Customer satisfaction
CT	Counselor Teacher
EFQM	European Foundation of Quality Management
EM	Excellence Model
F. U.	Fatih University
I. S. S.	Institute of Social Sciences
KYS	Kalite Yönetim Sistemi (Quality Management System)
M. A.	Master of Arts
MBNQA	Malcolm Baldridge National Quality Awards
PDCA	Plan Do Check Act
SEM	Software Estimate Model
Ph. D.	Doctor of Philosophy
QMS	Quality Management System
TQM	Total Quality Management
PLS	Partial Least Square
QM	Questionnaire Form

ACKNOWLEDGEMENTS

INTRODUCTION

As a society advances economically, matures culturally, and increases its knowledge base, the societal demands for quality service increase (Lakhe & Mohanty, 1995). Organizations try to provide the best for their customers. Education has been noticed as an increasing sector in the area which the competition is based on providing the customer satisfaction. Quality in service and customer satisfaction are two inevitable factors for today where the competition is increasing rapidly. Organizations should find some programs focused on improving customer satisfaction to follow a competitive policy in today's business environment.

In this study we tried to find out the critics of quality in education and measure the effects of this quality on customer satisfaction in a high school in Istanbul. We prepared a questionnaire with 25 questions and applied it to a group of 15 people. After that, considering the school management and parents' needs, the questions decreased to 19. this questionnaire contained 6 main categories which are counseling, catering service & school bus, preference reasons, laboratories, educational clubs and advertising.

Accordingly, the interest in 'service quality' has increased exponentially during the 1980s (Gronroos, 1990). Today, service quality has been recognized as one of the most important topics in the field of education and management,

(Greising, 1994; Gronroos, 1990; Fisk, Brown, & Bitner, 1995). The increased interest of service quality can best be described in the following definition of service management: "a total organizational approach that makes quality of service, as perceived by the customer, the number one deriving force for the operation of the business" (Albrecht, 1990; p. 10).

The best conceptualization of service quality, researchers need to understand the meaning of service quality, the determinants of service quality, and measurement means (Lewis, 1994). In addition, the identification/prevention of the potential shortfalls in service quality is important for management. Although, the issue of quality now dominates the field of education and management, researchers are divided on three issues, which include (a) how the service quality construct is conceptualized, (b) the factors which determine the costumer's perception of service quality, and (c) the relationship between service quality and other marketing constructs such as satisfaction (Brady, 1997).

Therefore, this research is conducted to provide a conceptual framework of perceived service quality for the participant high school with a specific focus on the participants' quality perceptions of the education quality related factors. The intent of the proposed conceptual model is to advance the knowledge base of customers and to provide a comprehensive service quality model for the participant high school.

CHAPTER 1

GENERAL KNOWLEDGE ABOUT QUALITY

Until so far, "Quality" concept has been defined in different ways by experts. These different definitions obstruct to define the quality in universal principles. Some of the expert's definitions of "Quality" concepts are built upon followings;

1.1. Quality

"Quality is conformance to requirements."*(Crosby, 1979)* "Quality is fitness for purpose."*(Juran, 1993)* "Quality is a predicatable degree of uniformity and dependability, at low cost and suited to the market." *(Deming, 1986)*

"Quality is the total composite product and service characteristics of marketing, engineering, manufacturing and maintenance through which the product and service in use will meet the expectations by the customer."*(Feigenbaum, 1961)*

"Totality of characteristics of an entity that bear on its ability to satisfy stated and implied needs."*(ISO 8402 : 1994)*

"Degree to which a set of inherent characteristics fulfils requirements." *(ISO 9000 : 2000)*

1.2. History Of Quality

Quality always has been an integral part of virtually all products and services. However, our awareness of its importance and the introduction of formal

methods for quality control and improvement have been an evolutionary development. We will briefly discuss some of the events on this time.

Frederick W. Taylor introduced some principles of scientific management as mass production industries began to develop prior to 1900. Taylor pioneered dividing work into tasks so that the product could be manufactured and assembled more easily. His work led to substantial improvements in productivity. Also, because of standardized production and assembly methods, the quality of manufactured goods was positively impacted as well. However, along with the standardization of work methods came the concept of work standards—a standard time to accomplish the work, or a specified number of units that must be produced per period. Frank Gilbreth and others extended this concept to the study of motion and work design. Much of this had a positive impact on productivity, but it often de-emphasized the quality aspect of work. Furthermore, if carried to extremes, work standards have the risk of halting innovation and continuous improvement, which we recognize today as being a vital aspect of all work activities. (Montgomery, 1997:8)

Statistical methods and their application in quality improvement have had a long history. In 1924 Walter A. Shewhart of the Bell Telephone Laboratories developed the statistical control-chart concept. This is often considered as the formal beginning of statistical quality control (Ishakawa, 1985). Toward the end of the 1920s, Harold F. Dodge and Harry G. Romig, both of Bell Telephone

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Laboratories, developed statistically based acceptance sampling as an alternative to 100% inspection. By the middle of the 1930s, statistical quality-control methods were in wide use at Western Electric, the manufacturing arm of the Bell System. However, the value of statistical quality control was not widely recognized by industry.

World War- II saw a greatly expanded use and acceptance of statistical quality-control concepts in manufacturing industries. Wartime experience made it apparent that statistical techniques were necessary to control and improve product quality. The American Society for Quality Control was formed in 1946. This organization promotes the use of quality improvement techniques for all types of products and services. It offers a number of conferences, technical publications, and training programs in quality assurance. The 1950s and 1960s saw the emergence of reliability engineering, the introduction of several important textbooks on statistical quality control, and the viewpoint that quality is a way of managing the organization. (Montgomery, 1997:9)

In the 1950s designed experiments for product and process improvement were first introduced in the United States. The initial applications were in the chemical industry. These methods were widely exploited in the chemical industry, and they are often cited as one of the primary reasons that the U.S. chemical industry is one of the most competitive in the world, and has lost little business to foreign companies. The spread of these methods outside the chemical

industry was relatively slow until the late 1970s or early 1980s, when many Western companies discovered that their Japanese competitors had been systematically using designed experiments since the 1960s for process trouble-shooting, new process development, evaluation of new product designs, improvement of reliability and field performance of products, and many other aspects of product design, including selection of component and system tolerances. This discovery sparked further interest in statistically designed experiments and resulted in extensive efforts to introduce the methodology in engineering and development organizations in industry, as well as in academic engineering curricula.

Since 1980 there has been a profound growth in the use of statistical methods for quality improvement in the United States. This has been motivated, in part, by the widespread loss of business and markets suffered by many domestic companies that began during the 1970s. For example, the U.S. automobile industry was nearly destroyed by foreign competition during this period. One domestic automobile company estimated its operating losses at nearly $1 million *per hour* in 1980. The adoption and use of statistical methods have played a central role in the re-emergence of U.S. industry. The concept of Total Quality Management (TQM) is a useful management structure in which to implement statistical methods. (Montgomery, 1997:9)

1.3. Gurus Of Quality

1.3.1. Philip Crosby

He was the founder and chairman of the board of Career IV, an executive management consulting firm. Crosby also founded Philip Crosby Associates Inc. and the Quality College. He has authored many books, including "Quality is free", "Quality Without Tears", "Let's talk Quality and Leading: The Art Of Becoming An Executive". Crosby originated the concept of zero defects.

1.3.1.1. Crosby's Four Absolutes of Quality

The first absolute : The definition of quality is conformance to requirements, not as goodness.

The second absolute : The system for causing quality is preventive, not appraisal.

The third absolute : The performance standard must be zero defect, not "that's close enough".

The fourth absolute : The measurement of quality is the price of nonconformance, not indexes. (Crosby, 1989)

1.3.2. Joseph M. Juran

He was the chairman emeritus of the Juran Instituite and an ASQC Honorary member. Since 1924, Juran has pursued a variety career in management as an engineer, executive, government administrator, university professor, labour arbitrator, corporate director, and consultant. Specializing in managing for

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quality, he has authored hundreds of papers and 12 books, including Juran's Quality Control Handbook, Quality Planning and Analysis, and Juran on Leadership for Quality. (Montgomery, 1997:20)

1.3.2.1. Juran's Trilogy

Juran's trilogy is an approach to cross functional management that is composed of three managerial processes: planning, control, and improvement.

a- Quality Planning; This is the activity of developing the products and processes required to meet customer's needs. It involves a series of universal steps which can be abbreviated as follows:

*Establish quality goals

*Identify the customers- those who will be impacted by the efforts to meet the goal.

*Determine the customers' needs

*Develop product features that respond to customers' needs

*Develop processes that are able to produce those product features

*Establish process controls, and transfer the resulting plans to the operating forces

b- Quality Control; This process consists of the following steps:

*Evaluate actual quality performance

*Compare actual performance to quality goals

*Act on the difference.

c- Quality improvement; This process is the means of raising quality performance to unprecedented levels ("breakthrough"). The methodology consists of a series of universal steps:

*Establish the infrastructure needed to secure annual quality improvement.

*Identify the specific needs for improvement -the improvement projects

*For each project establish a project team with clear responsibility for bringing the project to a successful conclusion

*Provide the resource, motivation, and training needed by the team to:

1. Diagnose the cause

2. Stimulate establishment of remedies

3. Establish controls to hold the gains

Illustration of Quality Trilogy via a Control Chart.
(Adapted from Juran on Planning for Quality 1988)
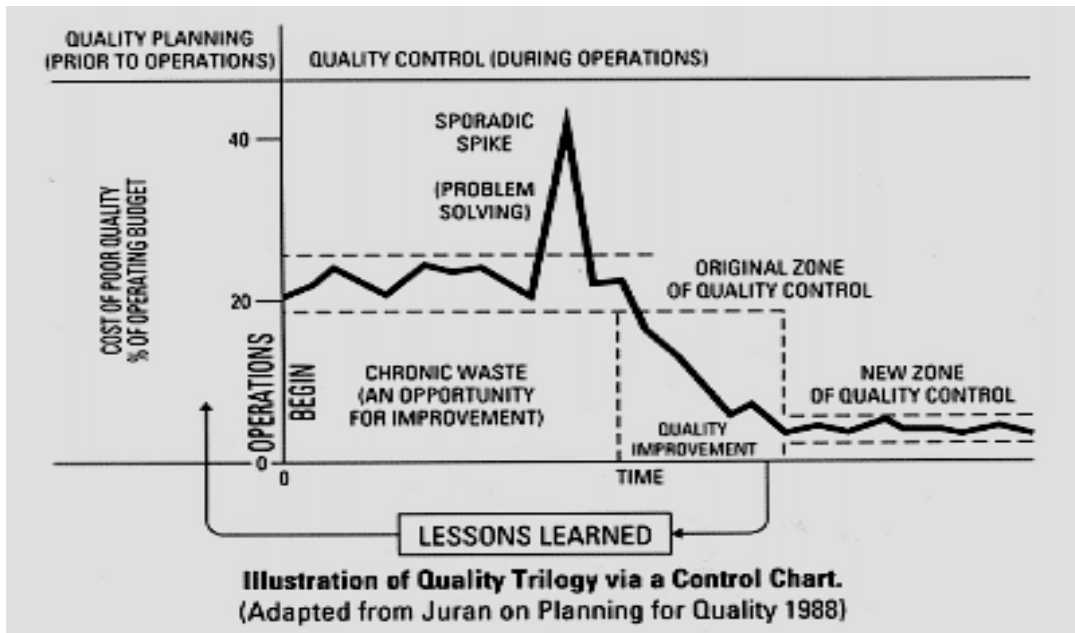
FIGURE 1. **JURAN'S QUALITY TRILOGY**

1.3.3. W. Edward Deming

One of the fathers of the total quality revolution. He was a statistician and a student of Dr. Shewhart. His early career was spent teaching the application of statistical concepts and tools within industry. Latterly he developed a theory of management and "Profound Knowledge". Deming was well known to the Japanese and their national award for quality management was named for him. He remained largely unknown in his native USA until he was 'discovered' by the media in 1981.

The Japanese had noticed that the high quality of American military material was due to W Edwards Deming who had taught 35 000 American engineers and technicians how to use statistics to improve quality.

In 1950, Deming was invited to meet the heads of Japan's leading companies. In 1951 the Japanese created the Deming prize (awarded to companies who put quality first). It took over 30 years, and the destruction of several industries, before the West took on Deming's philosophy.

According to Deming traditional quality control was a failure because it focused on inspecting for quality rather than preventing failures. Inspection, rejection and re-work can account for as much as 40 per cent of a product's costs. Build the product right the first time and you don't have to inspect.

Deming rejected the idea that defects result from workers' sloppiness, asserting that 94 per cent of quality failures resulted from the system itself.

Deming has published more than 200 works, including well known books Quality, Productivity and Competitive Position and Out of the crisis. (Şimşek, 2001:110)

Deming developed 14 points for managing. (Deming, 1986:23)

1.3.3.1. Deming's 14 Points for Managing

Create constancy of purpose toward improvement of product and service, with the aim to become competitive and to stay in business, and to provide jobs.

1. Adopt the new philosophy. We are in a new economic age. Western management must awaken to the challenge, must learn their responsibilities, and take on leadership for change.

2. Cease dependence on inspection to achieve quality. Eliminate the need for inspection on a mass basis by building quality into the product in the first place.

3. End the practice of awarding business on the basis of price tag. Instead, minimize total cost. Move toward a single supplier for any one item, on a long-term relationship of loyalty and trust.

4. Improve constantly and forever the system of production and service, to improve quality and productivity, and thus constantly decrease costs.

5. Institute training on the job.

6. Institute leadership (see Point 12). The aim of supervision should be to help people and machines and gadgets to do a better job. Supervision of management is in need of overhaul, as well as supervision of production workers.

7. Drive out fear, so that everyone may work effectively for the company.

8. Break down barriers between departments. People in research, design, sales, and production must work as a team, to foresee problems of production and in use that may be encountered with the product or service.

9. Eliminate slogans, exhortations, and targets for the work force asking for zero defects and new levels of productivity. Such exhortations only create adversarial relationships, as the bulk of the causes of low quality and low

productivity belong to the system and thus lie beyond the power of the work force.

- Eliminate work standards (quotas) on the factory floor. Substitute leadership.

- Eliminate management by objective. Eliminate management by numbers, numerical goals. Substitute leadership.

10. Remove barriers that rob the hourly worker of his right to pride of workmanship. The responsibility of supervisors must be changed from sheer numbers to quality.

11. Remove barriers that rob people in management and in engineering of their right to pride of workmanship. This means, inter alia, abolishment of the annual or merit rating and of management by objective.

12. Institute a vigorous program of education and self-improvement.

13. Put everybody in the company to work to accomplish the transformation. The transformation is everybody's job.

4 Take **act**ions to continually improve process performance

ACT **PLAN**

1 Make a **plan** for any development

Study on the implementation or **check** its results

STUDY
CHECK

DO

Do a small scale of implementation on that development

3

2

5 Use the cycle how many times you want. It will provide you a continuous learning and improvement.
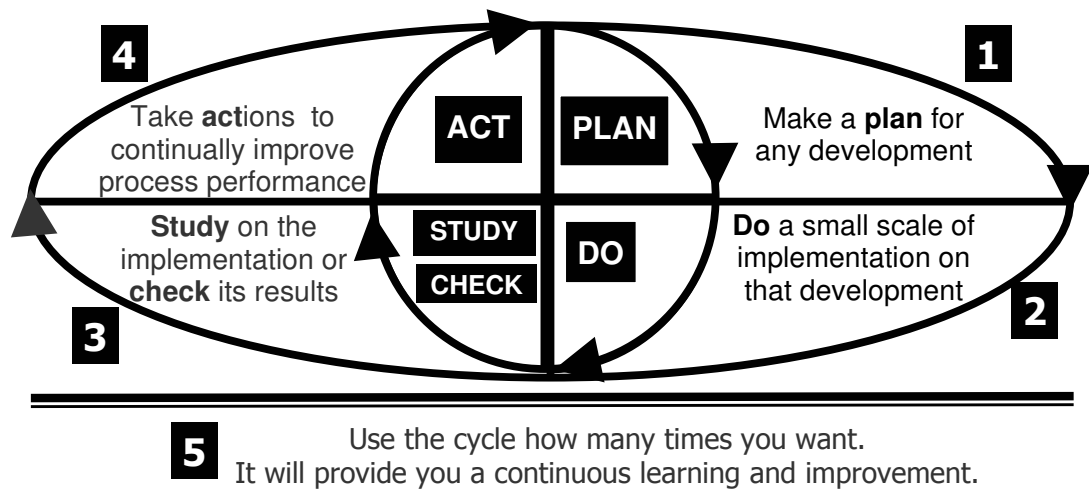
FIGURE 2. SHEWHART CYCLE

1.3.4. Armand V. Feigenbaum

He was the founder and president of General System Co., an international engineering company that designs and implements total quality systems. Feigenbaum originated the concept of total quality control in his book Total Quality Control, which was published in 1951. The book has been translated into many languages. (Şimşek, 2001:121)

1.3.5. Kaoru Ishakawa

He was a pioneer in quality control activities in Japan. In 1943, he developed the cause-and-effect diagram. Ishikawa, an ASQC Honorary member, published many works including What is Total Quality Control? The Japanese Way, Quality Control Circles at Work, and Guide to Quality Control. He was a member of Quality control research group of the Union of Japanese

Scientists and Engineers while also working as an assistant professor at the University of Tokyo. (Rao & Carr, 1986:48)

1.3.6. Genichi Taguchi

He was the executive director of the American Supplier Institute, the director of the Japan Industrial Technolgy Institute, and an honorary professor at Nanjing Institue of Technology in China. Taguchi is well known for developing a methodology to improve quality and reduce costs, which, in the United States, is referred to as the Taguchi Methods. He also developed the quality loss function. (Rao & Carr, 1986:49)

1.3.7. Malcolm Baldrige

He is not generally considered to be one of the quality management 'gurus' (he was the US Secretary of Commerce from 1981 to 1987), but the creation of the award named for him was one of the landmark events in rekindling interest in quality management in North America. The Baldrige award criteria is an important tool that defines the elements of an effective, customer-focused management system based upon quality principles. It is widely used for educational and assessment purposes. (Rao & Carr, 1986:63)

1.3.8. Walter A. Shewhart

He is considered the father of Statistical Process Control (SPC). Shewhart worked in Bell Laboratories and was engaged in a search for practical methods of quality control for the emerging telephone industry, which required mass

production on a huge scale. His ideas, published in the 1930's, formed the basis for a system/process oriented approach to quality control, by viewing any repetitive activity as a process and using statistics to understand and to manage the variations that will always occur. (The web site of "Quality Gurus" – August 2003)

1.4. Quality Awards and Quality System Standards

1.4.1. European Quality Awards (EFQM)

It is based in Brussels, with members and valued National Partner Organisations (NPOs) in every important European region, EFQM helps European businesses make better products and deliver improved services through the effective use of leading edge management practices.

EFQM is a not-for-profit membership foundation – It is solely concerned with serving its members' information and networking needs. It manages and directs the prestigious "European Quality Awards" and levels of excellence and run training courses, workshops, work groups and special projects on many different types of business and quality improvement disciplines, tools and techniques.

EFQM was founded in 1988 by the Presidents of 14 major European companies (Bosch, BT, Bull, Ciba-Geigy, Dassault, Electrolux, Fiat, KLM, Nestlé, Olivetti, Philips, Renault, Sulzer, Volkswagen) with the endorsement of the European Commission. The impetus for this powerful management network

was the need to develop a European framework for quality improvement along the lines of the Malcolm Baldrige Model in the USA and the Deming Prize in Japan. Both these awards had demonstrably improved service and manufacturing quality in the organizations that used them. The words of Jacques Delors, EC President at the time the EFQM was founded, still hold true today: "the battle for quality is one of the prerequisites for the success of your companies and for our competitive success".

The European Model for Business Excellence - now called the EFQM Excellence Model - was introduced in 1991 as the framework for organizational self assessment and as the basis for judging entrants to the European Quality Award, which was awarded for the first time in 1992.

From the outset, EFQM has been driven by a vision of helping to create strong European organizations that practise the principles of Total Quality Management (TQM) in the way they do business and in their relationships with their employees, shareholders, customers and communities in which they operate. Today, EFQM has more than 800 member organizations based in more than 38 countries worldwide. (Web site of EFQM, August 2003)

1.4.2. The Malcolm Baldridge National Quality Awards (MBNQA)

The Malcolm Baldrige National Quality Award was created by Public Law 100-107, signed into law on August 20, 1987. The Award Program, responsive to the purposes of Public Law 100-107 in USA, led to the creation of a new

public-private partnership. Principal support for the program comes from the Foundation for the Malcolm Baldrige National Quality Award, established in 1988.

The Award is named for Malcolm Baldrige, who served as Secretary of Commerce from 1981 until his tragic death in a rodeo accident in 1987. His managerial excellence contributed to long-term improvement in efficiency and effectiveness of government. The Findings and Purposes Section of Public Law 100-107 states that:"

1.   The leadership of the United States in product and process quality has been challenged strongly (and sometimes successfully) by foreign competition, and our Nation's productivity growth has improved less than our competitors' over the last two decades.

2.   American business and industry are beginning to understand that poor quality costs companies as much as 20 percent of sales revenues nationally and that improved quality of goods and services goes hand in hand with improved productivity, lower costs, and increased profitability.

3.   Strategic planning for quality and quality improvement programs, through a commitment to excellence in manufacturing and services, are becoming more and more essential to the well-being of our Nation's economy and our ability to compete effectively in the global marketplace.

4. Improved management understanding of the factory floor, worker involvement in quality, and greater emphasis on statistical process control can lead to dramatic improvements in the cost and quality of manufactured products.

5. The concept of quality improvement is directly applicable to small companies as well as large, to service industries as well as manufacturing, and to the public sector as well as private enterprise.

6. In order to be successful, quality improvement programs must be management-led and customer-oriented, and this may require fundamental changes in the way companies and agencies do business.

7. Several major industrial nations have successfully coupled rigorous private-sector quality audits with national awards giving special recognition to those enterprises the audits identify as the very best; and

8. A national quality award program of this kind in the United States would help improve quality and productivity by:

a. Helping to stimulate American companies to improve quality and productivity for the pride of recognition while obtaining a competitive edge through increased profits;

b. Recognizing the achievements of those companies that improve the quality of their goods and services and providing an example to others;

c. Establishing guidelines and criteria that can be used by business, industrial, governmental, and other organizations in evaluating their own quality improvement efforts; and

d. Providing specific guidance for other American organizations that wish to learn how to manage for high quality by making available detailed information on how winning organizations were able to change their cultures and achieve eminence." (The web site of MBNQA, August 2003)

1.4.3. Dr. Deming Quality Awards

The Union of Japanese Scientists and Engineers (JUSE) invited Dr. Deming to Japan in July 1950. He held a series of lectures and seminars during which he taught the basic principles of statistical quality control to executives, managers and engineers of Japanese industries. His teachings made a deep impression on the participants' minds and provided great impetus in implementing quality control in Japan.

In appreciation, JUSE created a prize to commemorate Dr. Deming's contribution and friendship and to promote the continued development of quality control in Japan. The prize was established in 1950 and annual awards are still given each year.

The Deming Prize, especially the Deming Application Prize which is given to companies, has exerted an immeasurable influence directly or indirectly on the

development of quality control and management in Japan. (The web site of Deming price, August 2003)

1.4.4. The Definition of Some Terms

The followings are important terms that will be used for this study and a definition is provided for each. *Customer Satisfaction* is defined as;

"the consumer's fulfillment response. It is a judgment that a product or service feature, or the product or service itself, provided (or is providing) a pleasurable level of consumption related fulfillment, including levels of under- or over-fulfillment" (Oliver, 1997, p. 13).

The definition of Perceived *Service Quality* is "global judgment, or attitude, relating to the superiority of the service" (Parasuraman, et.al., 1988, p. 16).

Service is defined as; "a production system where various inputs are processed, transformed and value-added to produce some outputs which have utility to the service seekers, not merely in an economic sense but from supporting the life of the human system in general, even may be for the sake of pleasure" (Lakhe and Mohanty. 1995, p. 140).

Service Quality's definition is "the consumer's overall impression of the relative inferiority/superiority of the organization and its services" (Bitner & Hubbert, 1994, p.77).

CHAPTER 2

LITERATURE REVIEW

The importance of service quality in the education requires additional research. Up to now, academic efforts on the topic of service quality, there is not an agreement in service quality in the business and also in education. Therefore, the purpose of this study was to provide a conceptual framework of service quality for education. To understand the topics better, this chapter provides a review of the current literature in the field of service management and quality.

The issues are presented next in this chapter. First, this chapter included a discussion of the concept of services in education. Second, this chapter discusses the basic concepts, dimensions, and several measurement methods of service quality and management. Third, the conceptual differences and causal relationships among service quality, customer satisfaction are discussed.

2.1. Service Industry

Service industries have dominated most Western industrialized economies. It has been increasing each day. There are several studies which shows the growth of the service sector.

The continued growth of the service industry is expected due to the following reasons: (a) movement to the information age, (b) a shift to an industrialized economy, (c) an aging population, (d) longer life expectancies, (e) increased

leisure time, (f) higher per capita income, (g) changing social and cultural values, and (h) advances in product technology (Kurtz & Clow, 1998).

Gronroos (1990) clarified service management with four elements and these are were: (a) to understand the utility of the value customers receive by consuming or using the offerings from the organization and how services alone or together with physical goods or other kinds of tangibles contribute to this utility, that is, to understand how the concept of total quality is perceived in customer relationships and how it changes over time, (b) to understand how the organization will be able to produce and deliver this utility or quality, (c) to understand how the organization should be developed and managed so that the intended utility or quality is achieved, and (d) make the organization function so that this utility or quality is achieved and the objectives of the parties involved are met.

As a result, we can say that service marketing and management is so vital that many scholars try to find the issues of service quality. It is not only the most important factor for customer satisfaction but also for a service organization. So it is necassary to understand the characteristics of service.

2.2. The Characteristics of Service

Service has been defined in different ways in the business literature. We can look at adequate definition of service. Service can be defined as:

"The business transactions that take place between a donor (service provider) and a receiver (customer) in order to produce an outcome that satisfies the customer" (Ramaswamy, 1996: p.3).

"Deeds, processes, and performances" (Zeithaml & Bitner, 1996: p. 5)

"A service is an activity or series of activities of more or less intangible nature that normally, but not necessarily, take place in interactions between the customer and service employees and/or physical resources or goods and/or systems of the service provider, which are provided as solutions to customer problems" (Gronroos, 1990: p.27).

Service has some concepts firstly, it is a performance which happens with the relationship between customers and service supplier. Secondly, all physical sources and goods are the important for the service production. Third, consumers buy a service to solve their problems (Gronroos, 1990; Ramaswamy, 1996). We can say that service combined with the goods, products and customers.

To understand the unique characteristics of a service product and its delivery system is a first step for the future analysis of service in education. And also, it is the first step in service quality. Today's arguments on service can be divided into two groups.   Each approach emphasizes different aspects of service.

The first approach is determined distinction between service and goods. In this point of view, it is suggested that the marketing strategy in service should be

distinguished from these goods. Therefore, the service marketing literature has focused on the hypothesis with these four unique characteristics.   These characteristics were identified by Parasuraman, Zeithaml, and Berry (1985), and Zeithaml and Bitner (1996) and include:

(a) Intangible - Services cannot be inventoried, patented, readily displayed or communicated.   Pricing is difficult.

(b) Heterogeneous — Service delivery and customer satisfaction depend on employee actions. Service quality depends on many uncontrollable factors. There is no sure knowledge that the service delivered matches what was planned and promoted.

(c) Simultaneous production and consumption - Customers participate in and affect the transaction. Customers affect each other. Employees affect the service outcome.   Decentralization may be essential. Mass production is difficult.

(d) Perishable - It is difficult to synchronize supply and demand with service. Service cannot be returned or resold. (Zeithaml, Parasuraman, & Berry, 1985; Zeithaml & Bitner, 1996).

These characteristics of service have given a positive influence on the development of service marketing and management. However this approaches, goods/services differentiation has been criticized because it focuses on the product itself rather than on the customer (Wyckham, Fitzroy, & Mandry, 1975) and, in turn, hinders the development of effective marketing strategies.

According to Wright (1995), "(the) historic focus on separating services from goods (in service marketing) may now be limiting our ability to develop comprehensive product marketing strategies. The emphasis on the goods/services dichotomy has led to an oversimplified assumption that services are relatively homogeneous and that the same marketing factors are important for most service offerings" (p.41). The good/service differentiation paradigm, the differences between the various service sectors have been minimized or overlooked. However, the principles of service marketing may not be equally valid across all service industries (Swartz, Bowen, & Brown, 1992). For instance, the services in participant sport differ from those of spectator sport. While the core service of the spectator service is the game itself (entertainment), participant sport service is the instruction or programs which the customer experiences through active participation. In addition, the customers' purchase motivation in these segments is different (Milne & McDonald, 1999). Thus, marketing strategies for the two different industries cannot be the same.

These different discussions teach us we should understand the concept of service in large area. An awareness of the unique characteristics of education service is an important task to understand the service quality. Service quality model and measurement tool is essential for the development of industry.

2.3. Service Quality Concept

Due to the distinct characteristics of service (e.g., intangibility, heterogeneity, simultaneous production and consumption, and perish ability), there is confusion relative to how consumers develop perceptions of service quality (Cronin & Taylor, 1992; Rust & Oliver, 1994). Thus, researchers have developed various perspectives for the issues of (a) how service quality is conceptualized, (b) the factors which are salient determinants of consumer service quality perceptions, (c) measurement issues of service quality, and (d) the relationship between service quality, satisfaction, and purchase intentions (Brady, 1997).

The purpose of this study is to gain a better understanding of the factors, which determine consumers' perceptions of service quality, and the causal relationships between service quality, and other marketing variables

2.4. Explanation of Service Quality

This section includes the specific ways for defining service quality. There have been kinds of ways for defining quality.

Reeves and Bednar (1994) summarized different definitions for quality as follows: (a) quality as excellence, (b) quality as value, (c) quality as conformance to specifications, and (d) quality as meeting or exceeding customer's expectations.

In the modern marketing literature, the most common definition of quality focuses on the customer's perception of service excellence. Quality is defined by

the customer (Berry. Parasuraman, & Zeithaml, 1988; Gronroos, 1984, 1990; Parasuraman, Zeithaml, & Berry, 1985; Schneider & Bowen, 1995).   From this perspective, quality reflects the customer's perception of service excellence (Parasuraman, Zeithaml, & Berry, 1990, 1998) or relative superiority of service performance (Bitner & Hubbert, 1994; Gronroos, 1982).

In the business and education, the customer's perception of quality has been the major focus on service quality. For this reason, the meaning of service quality is defined as a consumer's quality perception. Gronroos (1990), for instance, emphasized the importance of customer's perception in defining service quality and noted "what counts is quality as it is perceived by the customers" (p.37).

The following current definitions of service quality reflect the above arguments.

Service quality is defined as:

"The consumer's overall impression of the relative inferiority/superiority of the organization and its services" (Bitner & Hubbert, 1994, p.77).

"the degree and direction of discrepancy between customers' service perceptions and expectations" (Parasuraman, Zeithaml, & Berry, 1985).

"the extent of discrepancy between customers' expectations or desire and their perceptions" (Zeithaml, Parasuraman, & Berry, 1990, p. 19).

From these different explanations of service quality, it is understood that service quality is the most complex way to define.

2.5. Dimensions of Service Quality

This section includes a discussion about service quality measurements and important factors (or dimensions) of service quality.

The traditional approach of service quality focuses on three basic assumptions. First, services differ from goods in that they are intangible, heterogeneous and are simultaneously produced and consumed. Second, service quality is a comparison between the expectations and the perceptions of the service performance (i.e., disconfirmation paradigm). Third, the customer's evaluation of quality involves both the service outcome and processes because services are simultaneously produced and consumed (Gronroos, 1984; Parasuraman, et al., 1985). These factors have influenced service quality research.

Parasuraman, Zeithaml, and Berry (1985) developed the "Gap Model" to fill the void and provide factors of service quality. This research has become the most popular model in the service quality literature. This model is based on a series of five gaps. At the marketer's level, four key differences explain how the service organization or a marketer can influence a customer's service quality perception. They are gaps between: (a) management perceptions of consumer's expectations and expected service, (b) management perceptions of consumer's expectations and the translation of perceptions into service quality specification, (c) translation of perceptions of service quality specification and service delivery,

and (d) service delivery and external communications to consumers. This represents the difference between the customer's expected level of service and the service performance. The researchers identified ten dimensions which the customer uses to evaluate the service. These factors are; access, communication, competence, courtesy, credibility, reliability, responsiveness, security, tangibles, and understanding. So, if the customer's perceptions (based on the above ten dimensions) exceed the customer expectations, then the service provider provides quality service.

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Service quality = Perceived Service — Expected Service

_____

The author put the major service quality issues together and showed the gaps which might affect the customers' evaluation of service quality.

2.6. Service Quality in the Education Sector

In the education and in the other industries, service quality hadn't been recognized as a main research theme until 1980s. The satisfaction and the maintenance of customer's make the service quality important.

"Quality has become a dynamic concept that has constantly to adapt to a world whose societies are undergoing profound social and economic

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transformation. Encouragement for future-oriented thinking and anticipation is gaining importance. Old notions of quality are no longer enough … despite the different contexts there are many common elements in the pursuit of a quality education, which should equip all people, women and men, to be fully participating members of their own communities and also citizens of the world" (Ministerial Round Table on Quality Education, UNESCO, 2003, p. 1).

Dynamic changes worldwide are the concepts of quality in education. Unesco is one of the organization which plays a leading role in the worldwide in quality in education. So we will study Unesco's approach to quality in education.

 At this point in time, quality education has essential characteristic

Quality Education:

-   supports a rights-based approach to all educational endeavours. Education is a human right, and therefore quality education supports all of the human rights;

-   is based on the four pillars of Education for All – learning to know, learning to do, learning to live together and with others, and learning to be (Delors, etal.,1996);

 - views the learner as an individual, a family member, community member, and a global citizen and educates to create individual competency in all four roles;

-    upholds and conveys the ideals of a sustainable world – a world that is just, equitable, and peaceable, in which individuals care for the environment to contribute to intergenerational equity;

- takes into consideration the social, economic, and environmental contexts of a particular place and shapes the curriculum or programme to reflect these unique conditions. Quality education is locally relevant and culturally appropriate;

- is informed by the past (e.g. indigenous and traditional knowledge), is relevant to the present, and prepares individuals for the future;

-    builds knowledge, life skills, perspectives, attitudes and values;

- provides the tools to transform current societies to more sustainable societies; is measurable. (http://portal.unesco.org/education)

-    Past research has provided very little information about the nature and stability of consumer expectations. Most researchers would agree that expectations prior to a service encounter impacts customers' evaluation of the service performance and customer satisfaction (Bitner, 1990; Cronin and Taylor, 1992, Oliver, 1980; Oliver and DeSarbo, 1988; Parasuraman, Zeithaml, and Berry, 1985, 1988; Stayman, Alden, and Smith, 1992; Tse and Wilton, 1988).

The focus on quality and quality management has spread from the manufacturing sector to the service sector. Services quality is very different

from manufacturing sector because of service quality is to offer service guarantee.

A service guarantee is a promise by a firm that they will perform at a certain level, and, if that level is not met, the firm also promises to compensate the customer in some way. A service guarantee can covey to customers the specific benefits they will get from using a service, convey to employees the results they are expected to produce for customers, and explicit recognize and make amends for service failures (Harvey, J 1998. 'Service Quality: A Tutorial,' Journal of Operations Management 16. 5. 583 – 597).

In previous sections we see that three service quality authorities-Leonard Berry, A. Parasuraman and Valarie Zeithaml- found customers used ten determinants to evaluate the service quality of any organization. In hierarchical order the list includes:

1- reliability

2- responsiveness

3- competence

4- accessibility

5- courtesy

6- communication

7- credibility

8- security

9- understanding

10- tangibility

A decade later, Berry, et all (1994) summarized their collective research with ten lessons

1- Listening to customers precedes action

2- Reability is essential.

3- customers want basic service

4- Poor service quality is a system design problem, not an employee problem.

5- Good service recovery can overcome poor service delivery.

6- Service excellence includes both outcome and process

7- Customers expect fairness.

8- Service takes teamwork

9- employee feedback is vital to service improvement

10- Leaders should serve employees.

Using the techniques such as interview, questionnaire, and factor analyses we can reach the information about the service quality in the sector.

Education is one of the important sector which must have also service quality in itself. When we look at education service quality, we see that

education service quality includes   all these ten dimensions and Berry's research about ten lessons.

There have been a large number of studies that have attempted to empirically evaluate the strength of the relationship between school quality and student attainment by estimating what are usually referred to as education production functions. These functions are essentially multiple regression equations of varying degrees of technical sophistication, where some measure of attainment is related to a set of school quality variables (e.g. class size, teacher education /salaries/ experience, etc.) and a set of control variables aimed at netting out the effects of family background and other factors thought to affect attainment. These functions are estimated at various levels of aggregation, such as across individuals, schools, school districts (or the equivalent) geographic regions or countries. There are also studies that mix the levels at which the variables are measured. (Michael Fertiga,b, Robert E. Wrightb,c,d,e,T. School quality, educational attainment and aggregation bias. 20 April 2005)

Customers are defined as "people who purchase, are provided with, or benefit from, your products and services". So there are two main customer groups in education:

1- Students : There are many reasons why we need to understand and address the factors that contribute to student satisfaction, one of the principal

reasons why education institutions exist is to educate students and professionals, the competitive nature of higher education makes customer service a key point of competitive differentiation between universities, there is a direct association between student satisfaction and retention. One way to reduce the wastage of students is to ensure they have an enriching experience, the greater diversity of students now participating in higher education means greater diversity of expectations, which universities need to understand and address , customer expectations are rising generally as people experiencing high levels of service in one area expect higher levels of service.

Staff : In talking about students as customers, we should also acknowledge that staff are customers too, in two ways. Staff of the education institutions are internal customers, that is, people who depend on services from somewhere else in the education institutions in order to deliver their own services. For example, academics depend on a whole range of administrative and support services to deliver classes, school's expenses about dining hall, school bus, advertising, supplies of laboratories etc.

Another important reason for regarding staff as customers is that research shows a direct correlation between staff satisfaction and external customer satisfaction. That is, when staffs receive high quality services from their own organization, they will be both enabled and motivated to deliver high quality service to their external customers.

'Support services' by definition, provide support for other units within the education institutions and for individuals - both staff and students - in achieving their goals and objectives. The provision of service is their reason for being. They may operate a front-line function, providing direct services to individuals. Many support services provide services to other units and to individuals.

A key element for effective functioning in support services is the ability to understand the goals, needs, expectations and circumstances of their customers. It is the prompt, effective, reliable delivery of services that makes it possible for their customers to achieve their aims, so the concept of enabling other groups or individuals to achieve their goals is central to the mission of support services.

Quality for support services therefore has a considerable focus on customer service and the quality of services provided.

Deming and Dr. Juran were the great brains of the quality revolution and their ideas about quality have been used in education. . Deming's famous 14 Points serve as management guidelines. These are;

1- **Constancy of Purpose;** Create and communicate to all employees a statement of the aims and purposes of the company with a plan to become competitive, to stay in business, and to provide jobs.

2- **The new philosophy;** Adapt to the new philosophy of the day; industries and economics are always changing. We can no longer live with commonly accepted levels of delays, mistakes, defective materials, and defective workmanship.

3- **Cease dependence on mass inspection;** Build quality into a product throughout production. Eliminate the need for mass inspection as the way of life to achieve quality by building quality into the product in the first place

4- **End lowest tender contracts;** End the practice of awarding business on the basis of price tag alone; instead, try a long-term relationship based on established loyalty and trust.

5- **Improve every process;** Work to constantly improve quality and productivity. Improve constantly and forever every process for planning, production, and service. Search continually for problems in order to improve every activity in the education, to improve quality and productivity, and thus to constantly decrease costs. It is management's job to work continually on the system (design, incoming materials, maintenance, improvement of machines, supervision, training, retraining).

6- **Institute training on the job;** Institute on-the-job training. Institute modern methods of training on the job for all, including management, to make better use of every employee. New skills are required to keep up with changes

in materials, methods, product and service design, machinery, techniques, and service

7- **_Institute leadership;_** Teach and institute leadership to improve all job functions. Adopt and institute leadership aimed at helping people do a better job. Improvement of quality will automatically improve productivity

8- **_Drive out fear;_** Drive out fear; create trust. Encourage effective two way communication and other means to drive out fear throughout the organization so that everybody may work effectively and more productively for the company

9- **_Break down barriers;_** Strive to reduce intradepartmental conflicts. Break down barriers between departments and staff areas

10- **_Eliminate exhortations;_** Eliminate exhortations for the work force; instead, focus on the system and morale.

11- **_Eliminate arbitrary numerical targets;_** (a) Eliminate work standard quotas for production. Substitute leadership methods for improvement. (b) Eliminate MBO. Avoid numerical goals. Alternatively, learn the capabilities of processes, and how to improve them.

12- **_Permit pride of workmanship;_** Remove barriers that rob people of pride of workmanship. Remove the barriers that rob hourly workers, and people in management, of their right to pride of workmanship

13- **_Encourage education;_** Educate with self-improvement programs. Institute a vigorous program of education, and encourage self improvement for everyone. What an organization needs is not just good people; it needs people that are improving with education.

14- **_Top management commitment and action;_** include everyone in the company to accomplish the transformation. (Gencyilmaz Gunes, Zaim Selim. Egitimde Toplam Kalite Yonetimi. I.U Isletme Fakultesi Dergisi,C:28, S: 2 / Kasim 1999, s:9-35)

The above 14 points are very general, when they are successfully applied. It is a result of a careful study of each point and a clear determination of how each applies to the situations. These 14 points can be powerful tool in the educational setting even though it was developed with manufacturing process in mind. The key elements to a successful implementations are (1) gain the support of everyone in the chain of supervision   (2) identify your customers (3) focus on refining the process   (4) use Deming's 14 points as a guide and checklist during the implementation effort.   (Applying Total Quality Management to the

Educational Process, ROBERT C. WINN,ROBERT S. GREEN, Printed in Great Britain. 1998 TEMPUS Publications.)

In education service, there are also another quality, Baldrige Criteria, which is about performance excellent of Student and education institution. The

Baldrige Education Criteria focus on its student, faculty and staff in high performing. Education criteria provide valuable framework which can help you measure plan, organization, and performance in the education institutions.

There are Education Criteria for Performance Excellence Goals which help organizations to use performance management

* Delivery of ever-improving value to students and contributing to education quality

* Improvement of overall organizational effectiveness and capabilities.

* Organizational and personal learning
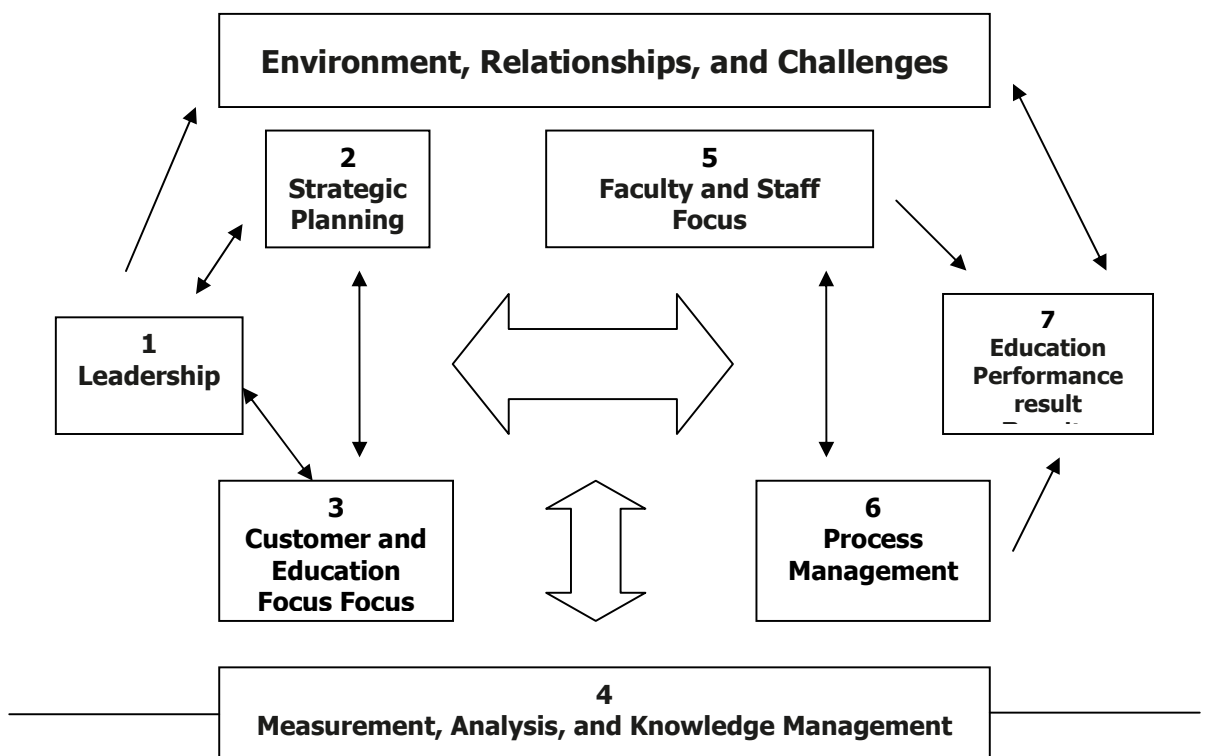
FIGURE 3. BALDRIGE EDUCATION CRITERIA FOR PERFORMANCE EXCELLENCE FRAMEWORK

This criteria is built upon seven following concepts and values;

1- Leadership

2- Strategic Planning

3- Customer (student) and Education Focus

4- Measurement, Analysis, and Knowledge Management

5- Faculty and Staff Focus

6- Process Management

7- Education Performance Results

This quality for the education sector is largely basic concepts of business excellence as well as education excellence. (Gencyilmaz Gunes, Zaim Selim. Egitimde Toplam Kalite Yonetimi. I.U Isletme Fakultesi Dergisi,C:28, S: 2 / Kasim 1999, s:9-35)

2.7. Customer Satisfaction in the Education Sector

During and after the consumption of a service or product, consumers develop feelings of satisfaction or dissatisfaction (Mowen & Minor, 1998). In the business context, satisfaction is an important determinant of corporate long-term financial health as well as consumer well being (Anderson & Fornell, 1994; Oliver, 1997; Zeithaml, Berry. & Parasuraman, 1996). For instance, Anderson, Fornell, and Lehmann (1994) provided empirical evidence of positive relationships between satisfaction and a number of desirable outcomes such as loyalty, price inelasticity, positive word of mouth, favorable image, and corporate profitability.

It is postulated that satisfied customers are more likely: (a) to recommend the organization to others, which is the cheapest and most effective form of promotion, (b) to be loyal customers (e.g., five to seven times more expensive to attract a new customer than to keep an old one), and (c) to be better customers because they buy more, more often and are willing to pay higher prices (Crosby, 1993).

The definition of customer satisfaction varies and depends on its theoretical assumption. The followings are examples of several different definitions. Customer satisfaction was defined as:

"the summary psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with the consumer's prior feelings about the consumption experience" (Oliver, 1981, p.27).

"the consumer's fulfillment response. It is a judgment that a product or service feature, or the product or service itself, provided (or is providing) a pleasurable level of consumption related fulfillment, including levels of under- or overfulfillment" (Oliver, 1997. p. 13).

"the consumer's response to the evaluation of the perceived discrepancy between prior expectations and the actual performance of the product as perceived after its consumption" (Tse & Wilton, 1988, p.204)

"a post-consumption evaluation that a chosen alternative at least meets or exceeds expectations" (EngeL Blackwell, & Miniard, 1995, p.273).

In the above definitions, four important characteristics of customer satisfaction are identified. First, satisfaction has been perceived to encompass an emotional reaction to disconfirmed expectations (Engel, et al., 1995; Oliver, 1981; Tse & Wilton, 1988). Second, satisfaction responds to both cognitive knowledge of the outcome of purchasing and the emotions that accompany this outcome and related events (Oliver, 1997). Third, the definition of satisfaction tends to be based on a comparison between expectations and performance (i.e., disconfirmation paradigm) (Bloemer & Kasper, 1995). Fourth, satisfaction requires actual consumer experience (Oliver, 1997).

To understand better, customer satisfaction needs further examination of the different types and levels of satisfaction. First, several types of satisfaction have been identified. Oliver (1997) argued that transaction satisfaction (or encounter specific satisfaction - one transaction) should be differentiated from summary satisfaction (i.e., time accumulated). The first type of satisfaction requires only a single observation or transaction while the second type requires many samplings or occurrences of the same experience. Anderson and Fornell (1994) named these two types of satisfactions as transaction specific and brand specific satisfaction, respectively. Similarly, Bloemer and Kasper (1995) differentiated manifest satisfaction from latent satisfaction. Manifestation satisfaction indicates that customers compare expectations to performance, and that they are likely to be aware of the outcome of his/her evaluation and satisfaction. In contrast,

latent satisfaction suggests that consumers who do not have previous experience or enough knowledge cannot compare expectations and performance due to the lack of motivation or ability to evaluate the brand choice, and they are not likely to be fully aware of their satisfaction. In short, certain levels of experiences are required for both summary satisfaction and manifestation satisfaction, while transaction satisfaction and latent satisfaction require no or few experiences. Second, consumer satisfaction has been measured in different ways. The traditional measurement methods of consumer satisfaction focus on the people's overall evaluation of the product as well as their evaluations of the specific attributes.   However, recently, satisfaction has been measured through the use of rating scales on which the respondents evaluate the performance of a service on various dimensions. Therefore, regression equations have been developed where the attribute questions are used to predict the overall satisfaction rating (Mowen & Minor, 1998). Consumers place different importance weights on the various attributes of a good or service, so some dimensions will have a greater impact on overall satisfaction than others.

However, measuring consumer satisfaction is difficult due to several reasons. First, there are many attributes that may affect both perceived quality and satisfaction. In this case, multicollinearity can be a significant problem. Therefore, satisfaction should be clearly distinguished from other antecedent constructs such as service quality, expectations, or experienced utility and from

consequences of satisfaction such as attitude, loyalty, and switching behavior (Anderson & Fornell, 1994; Oliver, 1997). Second, responses to current survey instruments may lead to highly skewed or unnormal distributions (Anderson & Fornell, 1994). So we must ask about dissatisfaction as well as satisfaction, because most of the customers are looking for high levels of satisfaction.Recent studies have focused on the customers' overall evaluation based on many transient experiences with a service over time (Anderson & Fornell, 1994). This means that consumers develop an attitude (for example; like or dislike) toward a service. In other words, it is necessary to have repeated purchase and consumption for the consumers to have a rather stable attitude. The consumer attitude is tied strongly to the consumer's intention to repurchase the product the service in the future.

Satisfaction researchers have focused on several theoretical assumptions: (a) expectancy disconfirmation model, (b) equity theory, (c) attribution theory, and (d) experientially based affective feeling (Mowen & Minor, 1998).

In the expectancy disconfirmation model, disconfirmation refers to the consumer's comparison of the service performance to an expectation (Hunt, 1977).

The equity theory has an assumption that customers analyze the exchanges between themselves and other parties to determine the extent to which those exchanges are equitable or fair (i.e., ratio of outcomes and inputs) (Adams,

1963). Therefore, equity can be defined as "a fairness, lightness, or deservingness comparison to other entities, whether real or imaginary, individual or collective, person or non-person" (Oliver, 1997. p. 194). Fairness and justice are interchangeable terms (Sheppard, Lewicki, & Minton, 1992) and equity is categorized under distributive justice where equality and need are also included. Fairness is especially important for service products that are intangible, and difficult to evaluate (Seiders & Berry, 1998).

In the expectancy disconfirmation model, customer satisfaction / dissatisfaction results from the comparison of actual performance to expected performance. However, equity theory suggests that satisfaction also results from comparing one's inputs and outcomes with those of others. Perceptions of fairness / equity had a greater impact on consumers' overall satisfaction than perceptions that expectations were disconfirmed (Oliver & Swan. 1989).

To increase customer satisfaction, education companies need to make that customers recognize all of the inputs.

2.8. The Relationship Between Service Qualities and Satisfaction of Customers

This section discusses the basic concepts of customer satisfaction, service quality, which are the most important factors in consumer's decision-making procedures. A comparison between service quality and satisfaction are discussed

in more detail to understand better relationship between service quality, overall satisfaction.

The basic similarity in nowadays studies published that a satisfied customer tends to be highly committed to a service and eventually becomes a loyal customer. So, distinction between satisfaction and service quality needs to be clarified. It is an important task for both researchers and practitioners to identify the relationship between consumer satisfaction judgment and consumer service quality attitudes because it helps develop effective strategies.

So far, a number of researchers have completed analysis of service quality, satisfaction, and relationships between them and to analyze the customer's post consumption evaluation about provided service.

First, quality perceptions do not require exposure to experiences, rather it can be externally or vicariously mediated, while satisfaction is purely experiential. Second, the dimensions underlying quality judgments are rather specific to characteristics defining quality for a product or service. In contrast, satisfaction dimensions are potentially all attributes of product or service. Third, quality judgment standards are based on ideals or excellence perceptions, while satisfaction judgments include predictive expectations, needs, product category norms, and even expectations of service quality (Oliver, 1997). For instance, Parasuraman, et al. (1990) distinguished satisfaction from service quality by proposing that service quality represents a comparison to excellence while

satisfaction is a comparison to the predicted service. Fourth, quality judgment is attribute-based, and primarily cognitive, while satisfaction is both a cognitive and affective response (Bitner & Hubbert, 1994; Oliver, 1994). Fifth, service quality has fewer conceptual antecedents (external cues such as price, reputation, and various communication sources), while satisfaction is known to be influenced by a number of cognitive and affective processes including equity, attribution, and emotion. For example, the antecedents of satisfaction include perceived service quality, performance, or utility actually experienced and a comparison standard such as expectations (i.e., expectancy disconfirmation) (e.g., Brady, 1997; Cronin & Taylor, 1992; Anderson & Fornell, 1994; Anderson & Sullivan, 1993; Rust & Oliver, 1994). Sixth, quality is primarily long-term (overall or summary), while satisfaction is primarily short-term (transaction or encounter specific). It is because quality attaches to a product or service in a global sense whereas satisfaction is experience-specific.

Cronin and Taylor (1994) also noted that service quality is a form of attitude representing a long-run overall evaluation, whereas satisfaction represents a more short term, transaction-specific measure (Cronin & Taylor, 1994). However, this distinction needs further analysis. In the business literature, when service quality is used to refer to a global, long-term attitude about a service, customer satisfaction is recognized as an antecedent of service quality. In contrast, when service quality is used to refer to specific information about the

service, service quality is recognized as an antecedent of customer satisfaction (Zeithaml, 1988).

In this section, the basic distinctions of customer satisfaction and service quality were discussed. Several different approaches for satisfaction and service quality were introduced.

CHAPTER 3

APPLICATION

3.1. Description of the Model

Model's figure and description are prepared in here:

In this study, we focus on measuring and increasing of parents satisfaction related to the service quality. As it is seen below that service quality influences the customers satisfaction, on the other hand six variable factors influence the service quality. These are occurring with their order; guidance, catering service and school bus, preference reasons, laboratories, educational clubs and advertising. To make each of them better, we need to expand the service quality, and service quality will expand the parents satisfaction. For these six variable factors; we prepared 4 questions for guidance, 5 questions for catering service- school bus, 4 questions for preference reasons, 2 questions for laboratories, and 2 questions for educational clubs, 2 questions for advertising, in addition questionnaire that includes 19 questions. This questionnaire was carried out in 2001, 2002 , 2003 years with approximately 200 -250 parents and its results were evaluated. In this evaluation SPAD DECISIA program was used, the results were evaluated with the Excel program.
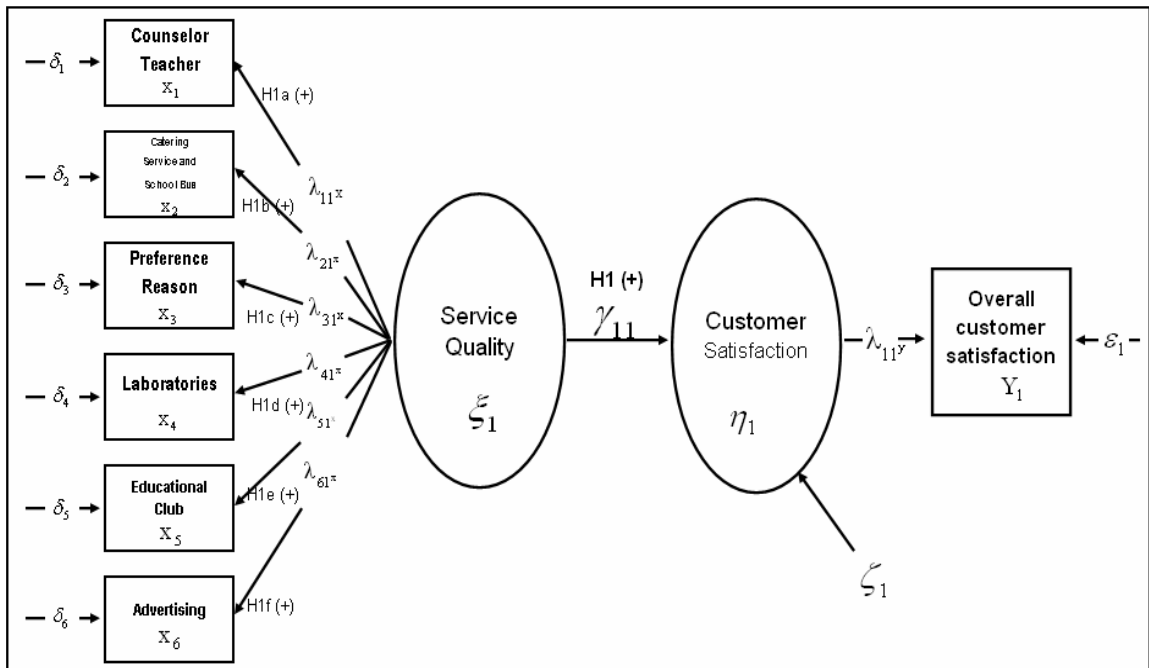
FIGURE 4. PATH MODEL BETWEEN SERVICE QUALITY AND CUSTOMER SATISFACTION

We have determined six factors and questionnaires about the guests who are students, parents, school director, executive committee, and the education experts from our country and outside the country by discussing with others. In that sense, the basic aim is to increase the service quality according to necessities and of course to provide the customer satisfaction.

The importance of these that we have determined are explained below.

1- The Counselor Teacher : the counselor teacher has an important role in the educational system. The counselor teacher has some impressions on canalizing or recognizing the students and some impressions on trying to

understand the lessons. Moreover, the counselor teacher provides communication between the school and the parents. The counselor teacher should know every detail about the students. They should share the information about the students with their parents by visiting them in their house or office.

2- Catering Service – School Bus : Parents want to give the best education to their children every time. They want a comfortable and safe way for their children while they are going to school. On the other hand, catering service and catering company has a big role for students to be healthier, so dining hall should be clean and food should be of good quality for students' health.

3- The Reason for Choosing the School : Parents want to provide the best education for their children and they know that the first step is to choose the best school. The national or international achievements of the school, the quality of education, the physical structure of the school and its opportunities, social activities are important reasons for choosing the school.

4- Laboratories : The visual and practical education models are the most important models that are preferred mostly. Students can work on his / her research whenever he / she wants and this provides him many advantages. For instance, students can search anything whenever they want on the net. For these reasons, laboratories are very significant for a school to provide a high quality education.

5- Educational Clubs : Nowadays it is not enough to educate students in only one way. The activities, which are made from outside the class, become very important. According to parents, children should know math or physics well but at the same time, parents want their children to be a good swimmer, a good basketball player etc.

6- Advertising : If an educational association makes everything for a good educational quality, it should have a good advertising. For this reason, this association should be activate in advertising. It should share the achievements of students with their parents.

3.2. Research Hypothesis

For example; expanding of service quality provides customer satisfaction. For this reason, these 7 main hypotheses must occur;

Hypothesis 1 : Counselor teacher has a positive and significant direct effect on service quality.

Hypothesis 2 : Catering Service and School Bus have a positive and significant direct effect on service quality.

Hypothesis 3 : Preference Reason has a positive and significant direct effect on service quality.

Hypothesis 4 : Laboratory has a positive and significant direct effect on service quality.

Hypothesis 5 : Educational Club has a positive and significant direct effect on service quality.

Hypothesis 6 : Advertising has a positive and significant direct effect on service quality.

Hypothesis 7 : Service Quality has a positive and significant direct effect on service quality.

3.3. Research methodology

The previous parts presented a literature review of previous works and studies and conceptual framework tied to the hypotheses of this study. This part describes the methodology used during this study as a guideline to help the reader to follow how the study is approached. In the previous topic under the conceptual framework, the purpose of this study and the hypothesis were discussed and in this section, the data collection method and the sample selection used during the study are presented. After describing the analysis of data, the quality standards of this study are finally assessed.

In this section, this study's aim must be brought up clearly. This study's basic aim is to provide parent's satisfaction by expanding the quality for high school education.

In todays global world, service industry is dominant in developed countries and also service industry has become more intense sector in the developed

countries. Basic concepts of service quality keep on changing. Two main alterations are;

a) Changing of connection from interior of performance (such as; productivity rate – teacher and profit productivity-)connection to exterior of performance (such as; servive quality, customer behavior, customer satisfaction and loyalty)

b) Construction focalization is changing to process focalization. For this reason, marketing experts and managers focus on production and consumption because of relating with customer's satisfaction.

Lately, education sector has become a more intense industry in service sector. However, all of education institutions have the same quality and the service quality makes them different from each other. To have an excellent service quality, education institutions should struggle for 'no-error'. To improve 'no-error' service quality and customer satisfaction there must be exertion.

The aim of this study is to determine the important factors of service quality in education sector and to evaluate the effect of service quality on customer satisfaction (students and their families). This study is more different in many ways than the previous studies. Firstly, it is studied that the relationship between service quality and the customer satisfaction in Turkey's educational sector. Secondly, all items in questionnaire are prepared by top managers of the school considering previous literature studies and using several focus group

studies. And lastly; for solving structural equation models, 25 questions in 5 multiple choice of Likert method is used.

3.4. The Sample

Data for this study was collected for three academic years from students and their families using a questionnaire. This questionnaire that includes 19 questions was applied on approximately 200 -250 parents during three years (in 2001 – 2002 -2003). Each year, 250 useable questionnaires were returned giving a response rate of 98 percent, which was considered satisfactory for subsequent analysis. In each year this questionnaire was used at the final of the first semester. Its result was evaluated by an optical reader. With using SPAD DECISIA program, data evaluation was done for each year. The model was determined about service quality and customer satisfaction with using this data evaluation's result.

3.5. The Research Instrument

The instrument used in this study was developed considering several studies which were developed for higher education to measure the performance of service quality and its impact on customer satisfaction. The instrument employed in this study is essentially similar to their instrument with a couple of modifications. In the present questionnaire, 25 questions were reduced to 19.

Each item was rated on a five-point Likert scale, ranging from "very low" to "very high". The questionnaire was pre-tested several times to ensure that the

wording, format, and sequencing of questions were appropriate. Performance of service quality, and customer satisfaction were measured using judgmental measures based on student and their families' perceptions of how the organization was performing on multiple indicators of each construct.

Occasional missing data on variables was handled by replacing them with the mean value. The percentage of missing data across all data was calculated to be relatively small. The questionnaire is given in Appendix A .

3.6. Analysis

The analysis of the data is conducted at three steps:

1. Performing an exploratory factor analysis with varimax rotation to determine the critical factors of the service quality performance variables in order to extract the dimensions of performance construct.

2. Measuring the internal consistency of operationalization (Reliability) of each construct.

3. Measuring direct effect of the service quality performance on customer satisfaction using partial least squares analysis.

3.7. Validity

In order to assess the systematic error that may appear in the scores obtained, validity of measure needs to be achieved. Validity refers to the extent when the measurement process is free from both systematic and random error. It is concerned with whether measurement is what is expected to be measured. Construct validity, assessment of how well the tool detains the construct, concept or trait is supposed to be measuring, and seeking evidence of its pragmatic validity and content validity.

Content validity of the survey instruments was established in several steps. First, an intensive literature review was undertaken to develop the questionnaire items, and many of the items are adapted from previous studies. Next, preliminary questionnaire instruments were discussed with several academicians in the relevant field.

The questionnaire was pre-tested (n=15) in order to give the final shape of the data collection instrument. A questionnaire that included 25 questions was prepared to measure the customers satisfaction. This questionnaire was tested on a sample space which included 15 people. Then, the questionnaire was reduced to 19 questions. It was decided that this questionnaire would be used in parents meeting during three years.

3.8 . Determining Critical Factors of Performance Using Exploratory Factor Analysis

Exploratory factor analysis with varimax rotation was performed on the performance criteria in order to extract the dimensions underlying the construct. The factor analysis of the 19 variables yielded six factors explaining 68.453% of total variance. Nineteen items loaded on these six factors and, based on the items loading on each factor, the factors were labeled "

Counselor Teacher" (Factor 1), *"Catering Service and School Bus"* (Factor 2), *"Preference Reason"* (Factor 3), "*Laboratories"* (factor 4), "*Educational Club"* (Factor 5), and "*Advertising"* (Factor 6). These items are shown in Table 1.

3.8.1. Reliability

While there are different methods for measuring the reliability of an instrument for this study, scale reliability was established by using Cronbach's alpha coefficient, which is one of the most widely used reliability measures. Alpha is based on internal consistency of a test, for example, it is based on the average correlation between items within a test. In order to assess the internal consistency of the scales, an item correlation matrix is constructed for each scale.

Although an alpha value of 0.70 is often considered the criterion for internally consistent established scales, Nunnally (1978) suggests that alpha value of 0.50 to 0.60 is acceptable in the early stages of research.

The Cronbach's alpha measures of reliability for the six factors were 0.8208 for factor 1, 0.6920 for factor 2, 0.6712 for factor 3, 0.8195 for factor 4, 0.7114 for factor 5, 0.8728 for factor 6. Since Cronbach's alpha measures for each factor are very close or above the traditionally acceptable value of 0.70, all of the factors were accepted as being reliable for the research.

Typically, we employ the Cronbach alpha coefficient as a measure of reliability; however, this coefficient is based on a restricted assumption assigning equal importance to all indicators. Werts, Linn, and Joreskog (1974) suggested an alternative measure (ρ_c) which represents the ratio of trait variance to the sum of the trait and error variances. The following Table shows all rho (ρ_c) indices are greater than 0.5, which is considered to be an acceptable value in establishing the internal consistency of the dimensions being studied.

TABLE 1. THE RESULTS OF INNER MODEL BETWEEN LATENT VARIABLE

Factors	Dimension	Cronbach Alpha	Dillon-Goldstein rho
Counselor Teacher	4	0,8208	0,8868
Catering Service and School Bus	5	0,6920	0,8098
Preference Reason	4	0,6712	0,8042
Laboratories	2	0,8195	0,9172
Educational Club	2	0,7114	0,8741
Advertising	2	0,8728	0,9402

3.8.2. Path Model

In literature, studies on the relationship between service quality and customer satisfaction in education sector usually used regression analysis or the principal component method. These methods deal with only one dependent variable or component and can not examine the cause-effect relation between them. In traditional regression analysis, we may frequently encounter a multi-collinearity problem if we include related variables as independent variable in order to lessen the error-in-variable problem. To avoid the multi-collinearity and measurement errors, while addressing the cause-effect relationship between service quality and customer satisfaction, we adopt the partial least squares (PLS) method, which is different from the covariance-based structural equation methods such as LISREL, AMOS. We used the PLS GRAPH software to estimate the model parameters. The use of PLS was preferred because of covariance-based SEM methods do not allow formative outer models. As seen in Table 1, two latent variables are formative, hence the PLS approach is appropriate for this model rather than covariance-based models such as LISREL or AMOS.

In this model, service quality is a latent variable that represents the criteria for improving service quality implementation performance. The manifest variables with respect to service quality are not different in nature, and they should be utilized and improved simultaneously. Therefore, reflective

representation is more appropriate than a formative one for the service quality module. On the other hand, customer satisfaction is another latent variable that includes a single manifest variable. Reflective one is also convenient for customer satisfaction module.

PLS procedure uses two stage estimation algorithms to obtain weights, loadings, and path estimates. In the first stage an iterative scheme of simple and/or multiple regressions contingent on the particular model is performed until a solution converges on a set of weights used for estimating the latent variables scores. The second stage involves the non-iterative application of PLS regression for obtaining loadings, path coefficients, mean scores and location parameters for the latent and manifest variables. The findings of the study were divided into outer and inner model estimations.

3.8.3. Outer Model Estimation

Outer model is known as a measurement model. A measurement model is linking the manifest variables to their latent variable. The basic PLS algorithm is as follow:

1. Outer Estimation Y_j of ξ_j:

$$Y_j = \sum \tilde{w}_{jh} \left(x_{jh} - \bar{x}_{jh} \right)$$

2. Inner estimation Z_j of ξ_j:

$$Z_j = \sum e_{ji} Y_i$$

Where e_{ji} is the inner weight and calculated as follow:

$$e_{ji} = \begin{cases} sign(\mathrm{cov}(Y_j, Y_i)) & \text{If } Y_j \text{ and } Y_j \text{ are adjacent} \\ 0 & \text{otherwise} \end{cases}$$

3. Calculation of weights w_{jh} :

$$w_{jh} = \mathrm{cov}(x_{jh}, Z_j)$$

The algorithm starts with arbitrary selected initial weights w_{jh} and is iterated until convergence.

In this model, the manifest variables are denoted x for the ξ_1-variable and y for the η_i- variables.

PLS results are estimated after 5 iterations. The outer model estimation results; outer weights, correlation between a manifest and its latent variable,

communality and redundancy measures for consecutive three years are given

in Table 2, Table 3, and Table 4 respectively.

TABLE 2. OUTER WEIGHTS FOR YEAR 2001

Latent variable	Manifest variable	Outer weight	Correlation	Communality	Redundancy
Service Quality	(MODE A)				
	V1	0,2765	0,5331	0,2807	0,2805
	V2	0,2448	0,5724	0,2868	0,2866
	V3	0,3414	0,7270	0,5158	0,5155
	V4	0,4284	0,7248	0,5113	0,5110
	V5	0,3663	0,6178	0,3501	0,3499
	V6	0,3666	0,6152	0,3747	0,3745
Customer satisfaction	(MODE A)				
	VTOP	1,9181	1,0000	1,0000	0,9919
Counselor Teacher	(MODE A)				
	V1A	0,3141	0,6134	0,3711	
	V1B	0,3605	0,6886	0,4670	
	V1C	0,2705	0,6492	0,4178	
	V1D	0,3894	0,7670	0,5744	
Catering service and School Bus	(MODE A)				
	V2A	0,4884	0,8730	0,6834	
	V2B	0,1201	0,4084	0,1543	
	V2C	0,3998	0,7699	0,5276	
	V2D	0,2080	0,5286	0,2651	
	V2E	0,3095	0,5646	0,3283	
Preference Reason	(MODE A)				
	V3A	0,2743	0,5525	0,3024	
	V3B	0,2303	0,5624	0,3117	
	V3C	0,4727	0,8591	0,7160	
	V3D	0,3842	0,7570	0,5570	
Laboratories	(MODE A)				
	V4A	0,5219	0,9065	0,8217	
	V4B	0,5018	0,8880	0,7619	
Educational Club	(MODE A)				
	V5A	0,5769	0,9237	0,8045	
	V5B	0,3976	0,7853	0,6159	
Advertising	(MODE A)				
	V6A	0,4878	0,9258	0,8491	
	V6B	0,5010	0,9263	0,8500	

TABLE 3. OUTER WEIGHTS FOR YEAR 2002

Latent variable	Manifest variable	Outer weight	Correlation	Communality	Redundancy
Service Quality	(MODE A)				
	V1	0,1761	0,1652	0,0240	0,0223
	V2	0,4049	0,7573	0,3318	0,3080
	V3	0,4098	0,7448	0,3971	0,3686
	V4	0,5114	0,7401	0,4095	0,3802
	V5	0,4275	0,6269	0,3355	0,3114
	V6	0,4997	0,7309	0,4325	0,4015
Customer satisfaction	(MODE A)				
	VTOP	1,8920	1,0000	1,0000	0,9843
Counselor Teacher	(MODE A)				
	V1A	-0,0496	0,1777	0,0294	
	V1B	0,2291	0,5076	0,2518	
	V1C	0,5784	0,6990	0,3952	
	V1D	0,6353	0,7974	0,5310	
Catering service and School Bus	(MODE A)				
	V2A	0,3171	0,5836	0,2982	
	V2B	0,4490	0,7159	0,4257	
	V2C	0,3370	0,5938	0,3086	
	V2D	0,4274	0,7268	0,4401	
	V2E	0,2103	0,3130	0,0878	
Preference Reason	(MODE A)				
	V3A	0,4111	0,6299	0,3652	
	V3B	0,2750	0,5088	0,2468	
	V3C	0,5348	0,8144	0,5528	
	V3D	0,4528	0,7265	0,4398	
Laboratories	(MODE A)				
	V4A	0,6879	0,8558	0,6628	
	V4B	0,5864	0,7914	0,5761	
Educational Club	(MODE A)				
	V5A	0,6089	0,8672	0,7289	
	V5B	0,5975	0,8433	0,6948	
Advertising	(MODE A)				
	V6A	0,5344	0,8191	0,6361	
	V6B	0,5658	0,8268	0,6645	

TABLE 4. OUTER WEIGHTS FOR YEAR 2003

Latent variable	Manifest variable	Outer weight	Correlation	Communality	Redundancy
Service Quality	(MODE A)				
	V1	0,2103	0,2805	0,0787	0,0786
	V2	0,2617	0,5224	0,2729	0,2726
	V3	0,2959	0,5707	0,3257	0,3253
	V4	0,4525	0,7353	0,5406	0,5400
	V5	0,4011	0,6667	0,4444	0,4439
	V6	0,3680	0,6386	0,4079	0,4074
Customer satisfaction	(MODE A)				
	VTOP	2,1603	1,0000	1,0000	0,9773
Counselor Teacher	(MODE A)				
	v1a	0,3663	0,8760	0,7674	
	v1b	0,4067	0,8995	0,8090	
	v1c	0,2512	0,7740	0,5990	
	v1d	0,3031	0,7252	0,5259	
Catering service and School Bus	(MODE A)				
	v2a	0,3140	0,7712	0,5948	
	v2b	0,3724	0,8225	0,6764	
	v2c	0,3959	0,8065	0,6505	
	v2d	0,2789	0,5169	0,2672	
	v2e	0,1349	0,2982	0,0889	
Preference Reason	(MODE A)				
	v3a	0,4432	0,8049	0,6478	
	v3b	0,3845	0,7326	0,5367	
	v3c	0,3502	0,6408	0,4107	
	v3d	0,3654	0,6909	0,4773	
Laboratories	(MODE A)				
	v4a	0,4907	0,9193	0,8451	
	v4b	0,5013	0,9214	0,8490	
Educational Club	(MODE A)				
	v5a	0,5464	0,8724	0,7611	
	v5b	0,5665	0,8893	0,7909	
Advertising	(MODE A)				
	v6a	0,5850	0,9353	0,8748	
	v6b	0,6576	0,9482	0,8990	

As given in Table 6, 7 and 8 correlations between the manifest variables and their related latent variables were found very satisfactory. Communality measures, which is also R-Square value is the squared correlation between the manifest variable and its own related latent variable. It measures the capacity of the manifest variables to describe the related latent variable. Communality measure is expected to be higher than 0,60 for each manifest variable. In this application all the manifest variables are good measure of their latent variables.

For an endogenous latent variable, redundancy is the capacity of the model to predict its manifest variables from the indirectly connected latent variable. For such a complex model the redundancy results are also satisfactory.

3.8.4. Inner (Path) model Estimation

Once the outer weights are estimated final results of the latent variables are calculated using following equations.

The standardized latent variable $Y_j = \sum \tilde{w}_{jh}(x_{jh} - \overline{x}_{jh})$,

The estimated mean $\hat{m}_j = \sum \tilde{w}_{jh}\overline{x}_{jh}$ of the latent variable ξ_j,

The final estimation is $\hat{\xi}_j = \sum \tilde{w}_{jh}x_{jh} = Y_j + \hat{m}_j$ of ξ_j.

The path model or inner model is estimated by individual OLS multiple regressions where the latent variables ξ_j are replaced by their estimations $\hat{\xi}_j$.

As shown in Figure 3, seven hypothesis were tested for this model. Table 5, 6 and 7 show the test results for the each hypothesis for each year. These results indicate that there is a strong relationship between service quality and customer satisfaction. This result also shows that service quality has a positive and strong influence on customer satisfaction.

TABLE 5. INNER MODEL RESULTS BETWEEN LATENT VARIABLES (2001)

Path model Estimation						
Latent Variables	Manifest Variables	R^2	Regression coefficient	Standard deviation	Student'T	P.value
Service Quality		0,75				
	INTERCEPT		1,1173			
	Counselor Teacher	9,6672	0,1883	0,0015	125,6670	0,0000
	Catering Service and School Bus	2,4298	0,0427	0,0017	25,2954	0,0000
	Preference Reason	15,9572	0,2203	0,0019	118,5070	0,0000
	Laboratories	28,2617	0,3963	0,0017	232,4880	0,0000
	Educational Club	21,7690	0,3644	0,0015	235,0250	0,0000
	Advertising	21,9151	0,3574	0,0015	239,1120	0,0000
Customer Satisfaction		0.76				
	INTERCEPT		-0,3717			
	Service Quality	100,0000	0,9959	0,0117	85,0734	0,0000

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TABLE 6. INNER MODEL RESULTS BETWEEN LATENT VARIABLES (2002).

Path model Estimation						
Latent Variables	Manifest Variables	R^2	Regression coefficient	Standard deviation	Student'T	P.value
Service Quality						
	INTERCEPT		1,4281			
	Counselor Teacher	1,8569	0,1123	0,0167	6,7211	0,0000
	Catering Service and School Bus	10,5514	0,1722	0,0200	8,5870	0,0000
	Preference Reason	14,9832	0,2167	0,0201	10,7542	0,0000
	Laboratories	23,3105	0,3201	0,0193	16,5640	0,0000
	Educational Club	19,9808	0,3144	0,0184	17,0792	0,0000
	Advertising	29,3172	0,3848	0,0187	20,5567	0,0000
Customer Satisfaction						
	INTERCEPT		-1,7774			
	Service Quality	100,0000	0,9921	0,0181	54,9112	0,0000

TABLE 7. INNER MODEL RESULTS BETWEEN LATENT VARIABLES (2003).

Path model Estimation						
Latent Variables	Manifest Variables	R^2	Regression coefficient	Standard deviation	Student'T	P.value
Service Quality						
	INTERCEPT		0,1483			
	Counselor Teacher	4,4375	0,2514	0,0018	86,0872	0,0000
	Catering Service and School Bus	7,9076	0,2019	0,0020	76,9508	0,0000
	Preference Reason	11,0890	0,2334	0,0020	96,7553	0,0000
	Laboratories	33,7600	0,4586	0,0020	234,4510	0,0000
	Educational Club	23,8873	0,3579	0,0019	183,6110	0,0000
	Advertising	18,9186	0,2949	0,0020	147,8310	0,0000
Customer Satisfaction						
	INTERCEPT		0,8402			
	Service Quality	100,0000	0,9886	0,0080	123,3630	0,0000

3.9. Data Collection Procedure

A meeting was held with school director, assistants of director, guidance counsellor, and teachers. A questionnaire that included 25 questions was prepared to measure the customers satisfaction. This questionnaire was tested on a sample space which included 15 people. Then, the questionnaire was reduced to 19 questions. It was decided that this questionnaire would be used in parents meeting during three years (in 2001, 2002, 2003 years).

3.9.1. How was instrument prepared for collecting data?

First of all, the questionnaire and optical evaluation forms were prepared. In 2001, 2002, 2003 academic year's first semester, the questionnaire was tested in parents meeting. It was used with approximately 200 – 250 parents in each year. And also with this questionnaire, it was provided for parents to answer the questions with their children.

3.10. Results and Discussions:

Our basic aim in this work is to evaluate the customer satisfaction with the model of PDCA (Plan – Do – Check – Act) and the model should be followed with the help of continual improvement.

In short, our model is based on "Plan-Do-Check-Act" (PDCA) model.

Plan : Establish the objectives and processes necessary to deliver remits in accordance with customer requirements and the organization's policies.

Do : Implement the processes.

Check : Monitor and measure processes and customer satisfaction against policies, objectives and requirements for the school.

Act : Take actions to continually improve performance for customer satisfaction.
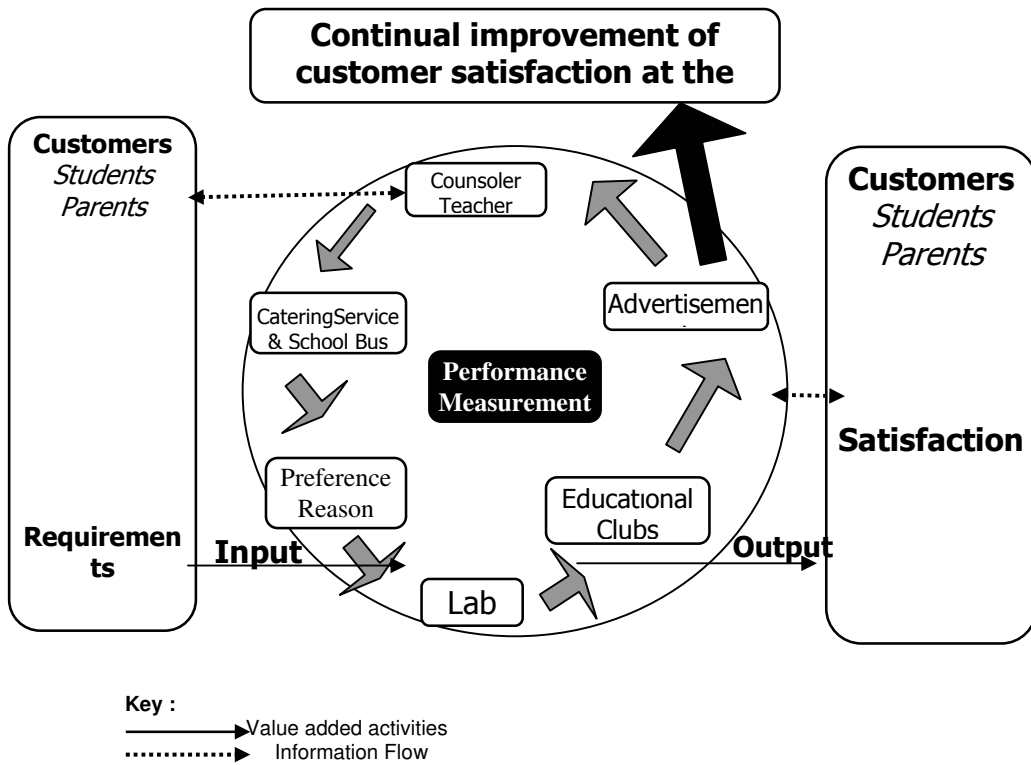
FIGURE 5. APPLICATION MODEL OF PDCA ON CUSTOMER SATISFACTION BASED SCHOOL

It is very important to evaluate the results of our analysis for each year individually, and comparing with the results of analysis of the previous year.

There were many efforts made to improve customers satisfaction for each year and also there were many other studies made to decrease customers dissatisfaction. Moreover, there were other improvements made to make customers pleased with the help of evaluation which belongs to other years. As a conclusion, there was a model which influenced the customer satisfaction on "guidance, catering service – school bus, preference reasons, laboratories, educational clubs and advertising" So it is understood that the model was based on a factor which improves the customer satisfaction.

In this work, improvement process is implemented considering three threshold values. The first interval is between 0 and 0.2, the second interval is 0.2 – 0.3, and the third interval is over 0.3. If the overall score of the service quality lies in the first interval, then the service process should be redesigned. If the overall score is in the second interval, then the service process can be accepted average but should be improved. If the score is in the third interval, although, it indicates that existing service process does not have any problem, according to the our mission (continuous improvement) there is still a need of improvement for our service process.

Now we are starting to have a look at the evaluations year by year

3.10.1. For the year of 2001

It was found that the most important factor that influences the service quality is laboratories which has 0, 3963 value. On the other hand the factors that has the lowest value (0.0427) is the dining hall and school bus.

The values that appeared for laboratories were accepted as a result of the investments. In the beginning of 2001 academic year, there were two computer laboratories which had 48 computers (such as presentation tools, sound system, access to internet for 24 hours) Students can benefit from these laboratories if they want. Moreover, a research laboratory, like the universities have, was prepared to study molecular or decompose the DNA and to study on cancer. At the same time, chemistry, physics and biology laboratories were renewed according to the needs of school projects.

After observing dissatisfaction about catering service and school bus, some necessary precautions were taken. It was determined that, there was lack of hygiene and lack of quality of the food in the dining hall. These problems were considered with the catering company. At the end of the semester, the contract wasn't renewed with the catering company because of the problems faced during the year. We decided to work with another catering company. It was also considered that the long routes of school bus and the low quality of the service bus made customers unpleasant. These problems were discussed with the service company and it was agreed to separate. At the end of the

semester, the contract wasn't renewed with the school bus company because the problems in their work.

There were also some problems about some of the counselor teachers. We talked with the counselor teachers one by one. The contract wasn't renewed with some of the counselor teachers who have a continual distress. The contract was made with more successful teachers instead of these counselor teachers. Other factors were good enough for customers satisfaction, so we made some other improvements.

TABLE 8. PART OF ANALYSIS REPORT OF 2001

Block	Factor	Regression coefficient	Interval	Policy
Performans				
	INTERCEPT	1,1173		
1.	Laboratories	0,3963	III	Slightly improved
2.	Educational Club	0,3644	III	Slightly improved
3.	Advertising	0,3574	III	Slightly improved
4.	Preference Reason	0,2203	II	Improved
5.	Counselor Teacher	0,1883	I	Redesign
6.	Catering Service and School Bus	0,0427	I	Redesign

3.10.2. For The Year of 2002

In 2002, the most influential factor for customer satisfaction was "advertising" with a value of 0,38 and dissatisfaction was "cross counseling" with a value of 0, 1123.

In 2001, we had a champion in OSS exam, accordingly, the 1st, 3rd and the 7th of LGS (an exam for entering high schools" and totally 15 students from the first hundred preferred our school. The championship of 2001 was remarked as the most influential factor in advertising. Our school projects had many degrees in national and international competitions. For last three years, we didn't have a remarkable success in Olympiads, but after improving and the laboratories, we again achieved new successes.

The problems in class counseling in 2001 continued in 2002 and this made us to make more serious studies on this issue. We decided to improve the qualification of our teachers;

- Individual improvement programs (fast reading, dictation, human relations etc...)

- training (class management, new teaching techniques, teacher – student – parent coordination etc)

- certificate programs (quality in education, influential class counseling etc)

- academic carrier

Changing the catering company in 2001 made a slight improvement in customer satisfaction in 2002 but that wasn't satisfactory. It was agreed that the following year 2003, the customer satisfaction would be achieved in average and we renewed the contract with the same catering company like the previous year. There was no improving in their service through the end of the year. We broke the contract with that company. We had another one. The other factor was acceptable in terms of customer satisfaction. There was a better improvement in almost all factors. Despite that, we continued to make more improvements.

TABLE 9. PART OF ANALYSIS REPORT OF 2002

Block	Factor	Regression coefficient	Interval	Policy
Performans				
	INTERCEPT	1,4281		
1.	Advertising	0,3848	III	Slightly improved
2.	Laboratories	0,3201	III	Slightly improved
3.	Educational Club	0,3144	III	Slightly improved
4.	Preference Reason	0,2167	II	Improved
5.	Catering Service and School Bus	0,1722	I	Redesign
6.	Counselor Teacher	0,1123	I	Redesign

3.10.3. For The Year of 2003

We had a meeting about the service quality and customer satisfaction before the beginning of semester. The results of the two previous years were evaluated in details. We took some necessary precautions to improve the service quality. Therefore, we assigned a responsible person for each factor. They were supposed to give regular reports at the end of the first semester then we measured service quality and customer satisfaction using questionnaires.

As a result of these, a remarkable improve was observed in all factors were above average for customer satisfaction. All the computers were updated in 2003. Internet connection speed got higher. New tools were bought for the Research Laboratory, and also for physics, chemistry and biology labs. The lessons were supported with internet in labs, mostly practiced. This made students more active in lessons. So, they gained self confidence and motivation. It was understood that labs were very important for customer satisfaction. Students Counseling, the most significant feature of our school, was above average after the results of controls. This improved the satisfaction for catering and school service was good despite some small problems, like in previous years.

With the improvement in education and customer satisfaction, students took roles in educational parts in school. This satisfaction made our school more preferred.

The customer satisfaction became average with these changes. This and the successes, gained again in Olympiads, advertised our school better,

In the meeting held at the end of 2003, it was agreed to continue the system with an understanding of continuous improvements, take the necessary precautions for the problems on time. There wouldn't be any excuse for that. Everything was planned to make our school "a learning organization" and "a structure of continuous improvements".

TABLE 10. PART OF ANALYSIS REPORT OF 2003

Block	Factor	Regression coefficient	Interval	Policy
Performans				
	INTERCEPT	0,1483		
1.	Laboratories	0,4586	III	Slightly improved
2.	Educational Club	0,3579	III	Slightly improved
3.	Advertising	0,2949	III	Slightly improved
4.	Counselor Teacher	0,2514	II	Improved
5.	Preference Reason	0,2334	II	Improved
6.	Catering Service and School Bus	0,2019	II	Improved

CHAPTER 4

CONCLUSION

Human beings have been studying to get better since they were created. This studying has come to a level today. Organisations try to provide the best for their customers. Even non-profit organisations try to be successful in the area which the competition is based on providing the customer satisfaction. Quality in service and customer satisfaction are two inevitable factors for today where the competition is increasing rapidly. Organisations should find some programs focused on improving customer satisfaction to follow a competitive policy in today's business environment.

Education has been noticed as an increasing sector in this area. Every school provides almost same services but the quality among those schools are so variable. Increasing the service quality accordingly the customer satisfaction depends on physical conditions, system and people. To have a complete success, avoid from the maistakes during the progress and reach the excellence for a system Deming's Quality Control Circle can be applied.

Our aim in this study is to find out the critics of quality in education and measure the effects of this quality on customer satisfaction. This study has some different aspects from the others made so far. Initially, the quality in high

school and its realitonships on customer (parents) satisfaction have been pointed out.

Another points is that the questionnaire in this study was prepared considering the desires and questions students and parents by school management.First, we prepared a 25 question-questionnaire. We used five Choice Liechept system (1- for the worst, 5 – for the best). By the light of these analyses, we graded contenment of our students and their parents. This questionnaire was first applied or a population of 20 people with students and parents. Then we re-designed it considering the feedback of those people. The number of questions were decrased to 19. It made six main variable factors, which are counselling, catering & school bus service, preference reason, laboratories, educational clubs and advertising. The separation of 19 questions according to these factors was like this; 4 questions counselling, 5questions catering & school bus service, 4 questions preference reason, 2 questions laboratories, 2 questions for educational clubs and 2 questions for advertising.

In this work, improvement process is implemented considering three threshold values. The first interval is between 0 and 0.2. The second interval 0.2 – 0.3, and the third interval is over 0.3. If the overall score of the service quality lies in the first interval, then the service process should be redesigned. If the overall score is in the second interval, then the service process can be accepted but should be improved. If the score is in the third interval, although,

it indicates that existing service process does not have any problem, according to the our misson (continuous improvement) there is a still space for improvement for our service process.

As a result, according to our thresholds, the factor the value of which was less than 0,2 was re-designed. Their contracts were cancelled, we took better workers or catering & school bus service firms. The second interval the value of which was between 0,2 and 0,3 was slightly chanced and the necessary precautions were taken. The third interval, the value of which was more than 0,3 remained same and we tried to make them better. Everything is to provide a better education for our students who are our future. For a good education, we need to provide a perfect service quality. It results in customer satisfaction.

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APPENDIX A

X   SCHOOL

SERVICE QUALITY AND CUSTOMER SATISFACTION QUESTIONNAIRE FORM

ATTENTION
• Use pencil for coding and don't exceed the circles.
• Don't tear the paper.
• Please answer all questions.
• Thanks for your interest.

SCHOOL NO

CLASS
- ○ Prep.
- ○ 9th Class
- ○ 10th Class
- ○ 11th Class

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Class Teacher					
1. Class teacher has good communication with the students.	①	②	③	④	⑤
2. Class teacher has good a strong awareness of my child's progress.	①	②	③	④	⑤
3. The class teacher can be approached easily.	①	②	③	④	⑤
4. Class teacher visits us in our home and work office.	①	②	③	④	⑤
Catering Service & School Bus					
5. In my opinion, the dining hall is in good condition.	①	②	③	④	⑤
6. The meals are high quality and delicious.	①	②	③	④	⑤
7. I am pleased with the dining hall.	①	②	③	④	⑤
8. In my opinion, the school bus route is satisfactory.	①	②	③	④	⑤
9. I am pleased with the bus service.	①	②	③	④	⑤
Preference Reason					
10. The School grounds and order is well-organized.	①	②	③	④	⑤
11. The School building is convenient for training and education.	①	②	③	④	⑤
12. I prefer this school because of its international success.	①	②	③	④	⑤
13. For its educational quality, I prefer this school.	①	②	③	④	⑤
Laboratories					
14. The students can use laboratories when they please.	①	②	③	④	⑤
15. The students benefit from adequate internet facilities.	①	②	③	④	⑤
Educational Club					
16. The Educational Club teacher is successful and sufficient for students.	①	②	③	④	⑤
17. Educational Club's studies in this school are sufficient.	①	②	③	④	⑤
Advertising					
18. The School's advertising activities are effective.	①	②	③	④	⑤
19. Suitable methods are being used in the school's advertising.	①	②	③	④	⑤
Customer Satisfaction					
20. Overall customer satisfaction	①	②	③	④	⑤

Form No: QS4-17

Measurement Service

X OKUL

SERVİS KALİTESİ VE MÜŞTERİ MEMNUNİYETİ ANKET FORMU

DİKKAT
▪ Kodlama için kurşunkalem kullanınız ve halkayı taşırmayınız.
▪ Kağıdı yırtmayınız, buruşturmayınız.
▪ Lütfen tüm soruları cevaplandırınız.
▪ İlginiz için teşekkürler.

OKUL NO

SINIF
- ◯ Hazırlık
- ◯ 9.Sınıf
- ◯ 10.Sınıf
- ◯ 11.Sınıf

	Hiç Katılmıyorum	Katılmıyorum	Kararsız	Katılıyorum	Tamamen Katılıyorum
Danışman Hoca					
1. Sınıf öğretmeninin öğrencilerle iletişimi çok iyidir.	①	②	③	④	⑤
2. Sınıf öğretmeni çocuğum hakkında yeterli takibatı yapar.	①	②	③	④	⑤
3. Sınıf öğretmeni ile istendiğinde rahatça görüşülebilir.	①	②	③	④	⑤
4. Sınıf öğretmeni ev ve işyerlerimize ziyarete gelir.	①	②	③	④	⑤
Catering Şirketi & Taşıma Servisi					
5. Yemekhanenin yeterince temiz olduğunu düşünüyorum.	①	②	③	④	⑤
6. Yemekleri kaliteli ve lezzetli buluyorum.	①	②	③	④	⑤
7. Yemekhaneden genel olarak memnunum.	①	②	③	④	⑤
8. Servisin dolaşım güzergahını normal buluyorum.	①	②	③	④	⑤
9. Okul servisinden genel olarak memnunum.	①	②	③	④	⑤
Tercih Sebebi					
10. Yerleşimdeki tertip-düzenin yerinde olduğunu düşünüyorum.	①	②	③	④	⑤
11. Okul binasının eğitim ve öğretim için uygun olduğunu düşünüyorum.	①	②	③	④	⑤
12. Uluslar arası başarıları nedeniyle okulu tercih ettim.	①	②	③	④	⑤
13. Eğitim kalitesi sebebiyle okulu tercih ettim.	①	②	③	④	⑤
Laboratuarlar					
14. Öğrencim istediği sürece laboratuarları kullanabiliyor.	①	②	③	④	⑤
15. Öğrencim internet imkanlarından yeterince yararlanıyor.	①	②	③	④	⑤
Eğitici Kollar					
16. Kol öğretmenini yeterli ve başarılı buluyorum.	①	②	③	④	⑤
17. Okulun eğitsel kol çalışmalarını yeterli buluyorum.	①	②	③	④	⑤
Tanıtım					
18. Okulun tanıtım faaliyetlerini yeterli buluyorum.	①	②	③	④	⑤
19. Okulun tanıtılmasında uygun yöntemlerin kullanıldığını düşünüyorum.	①	②	③	④	⑤
Müşteri Memnuniyeti					
20. Toplam müşteri memnuniyeti	①	②	③	④	⑤

APPENDIX B

A STRUCTURAL EQUATION MODEL USING PARTIAL LEAST SQUARES ANALYSIS

There are two common statistical approaches for structural model estimation: Partial Least Squares (PLS) and The LISREL. These two distinct types of SEM differ in the objectives of their analyses, the statistical assumptions they are based on, and the nature of the fit statistics they produce.

The statistical objective of PLS is, overall, to show high R^2 and significant t-values. The objective of LISREL, on the other hand, is to show the complete set of paths as specified in the model is reasonable and the operationalization of the theory is corroborated and not disconfirmed by the sample data.

The PLS approach allows the estimation of latent variables using a system alternated calculations. The Lisrel approach uses the classical maximum likelihood estimation method.

Altough LISREL is a powerful approach and has been used for parameter estimation in nearly every application of structural modelling, there are some situations where PLS aproach is superior to the LISREL. The data from business applications often do not satisfy the requirements of multinormality and interval scaling, or attain the required sample size for maximum likelihood

estimation. More fundemantally, two serious problems often interfere with meaningful covariance structure analysis: inadmissible solutions and factor indeterminacy.

PLS avoids many of that restrictive assumptions underlying maximum likelihood techniques and ensures proper results. On the other hand, PLS can work with a few observations and a lot of variables with discrete, continuous, or binary data. Thus PLS is more suitable for operational work while LISREL is better adapted for research situation.

The fundemental feature of PLS is its abilty to combine theoretical knowledge with empiricism, thereby providing a flexible interplay between theory and data. This technique requires the researchers to be explicit about theoretical knowledge, and it emphasizes the cumulative aspects of theory development by which a priori knowledge is incorporated into empirical analysis.

PLS and LISREL also use different algorithms for structural model estimation. LISREL uses model fitting to compare the covariance structure fit of the researcher's model to a best possible fit covariance structure. Thus Lisrel emphasize the overall fit of the entire observed covariance matrix with the hypothesized covariance model; for this reason, the are best suited for confirmatory research. On the other hand, PLS is designed to explain variance to examine the significance of the relationships and their resulting R^2 as in

linear regression. Consequently the PLS approach allows to robustly estimate the latent variables case values of any model.

Finally, LISREL and PLS differ, however, in the types of relationship they support between the observed variables and their associated latent constructs. PLS has three ways to connect the manifest variables to their latent variables respectively called the reflective way, the formative way, and the MIMIC (Multiple effect Indicators for Multiple Causes) way, whereas LISREL supports only reflective related indicators.

Formative observed variables, as their name implies, "cause" the latent construct, i.e., represent different dimensions of it. Latent variables attached to formative measures are the summation of the formative observed variables associated with them. These observed variables are not assumed to be correlated with each other or to represent the same underlying dimension.

Reflective observed variables, on the other hand, reflect the latent variable and as a representation of the construct should be unidimensional and correlated.

To emphasize this difference, formative items are drawn with an arrow leading to the latent construct, while reflective items are drawn with an arrow leading away from the latent construct. The MIMIC way is a mixture of the reflective and formative ways.