A COMPARATIVE STUDY OF SERVICE QUALITY BETWEEN AIS AND DTAC

By
WANCHAI KANTASILIPITAKS

A Thesis submitted in partial fulfillment
of the requirements for the degree of

Master of Business Administration

Graduate School of Business
Assumption University
Bangkok Thailand

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ABSTRACT

The purpose of this research was to study any difference in service quality measured by expectations and perceptions of AIS and DTAC's customers in the Bangkok Metropolitan Area. The research concentrates on five dimensions of service quality: tangibles, reliability, responsiveness, assurance and empathy. The difference between customer expectations and perceived customer quality are segmented by demographic variables. The researcher also considered the perception of customers as to which of the five SERVQUAL dimensions are most important when classified by the five factors.

The researcher selected four hundred customers to be sampled, divided equally between the two companies, with 200 respondents between AIS'customer and 200 from DTAC.

Statistical analysis methods are based on percentage, mean, standard deviation,t-test to the comparative between AIS and DTAC and F-test to compare the demographics.

The findings of this study indicate that mobile phone users from DTAC and AIS show no difference in their expectations of service quality. There is, however, a difference in customer perception between AIS and DTAC.Comparing AIS and DTAC's expectation and perception factors. The researcher concluded that perception was lower than expaectations. Here, measuring customer perceptions and expectations according to the five dimensions, the researcher found that age makes a difference in customer experiences with service quality.

The results of this study showed that AIS and DTAC should improve their service quality to meet the perception of their customers. AIS should improve their bill collection procedures and give brief, clear and correct data to their customers, as well as reduce their airtime and monthly fees to make them more reasonable. DTAC should concentrate on improving staff efficiency which is perceived as lower than AIS'.AIS customers felt that their service is more reliable when it comes to promptness, honesty and follow-up. Although the mobile phone business is highly competitive and thus relies heavily on promotions.

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CHAPTER 1

GENERALITIES OF THE STUDY

1.1 Introduction of the study

Communication is an important part of human nature because people are social creatures, and depend on communication for their existence. This has caused the mobile phone to become a very important thing for today's consumers. In developed countries, communication is an important element of business, services, industry and agriculture. It increases efficiency and coordination in business operations. Mobile phones have developed into gadgets featuring many functions suited for business communication. For instance, a salesman can use it to order goods over the internet, making product information much easier to obtain. The mobile phone has developed continuously with more and more features being added, to the benefit of phone users. Manufacturers have created many functions to make the device easier to use and more portable. Other functions are designed to make the mobile fun and convenient. Others again help reduce time spent on business communication for tasks such as banking. A client can check his balance, debt and other activity with the bank. For other convenient functions, users have the capability of communicating with other users through short message service (SMS), voice mail or mobile-to-mobile internet, in addition to downloading favorite songs and movies.

Parallel to this development of technology, the Thai communication industry has grown rapidly, with many new features and services being added in recent years to satisfy consumer demand. Telecommunication is set to develop to a level where there is "no boundary of human communication", meaning that people will be able to communicate with anyone, regardless of which part of the world they are in.

The mobile phone was introduced to fill a gap in communication service and provide convenience for users. The Telephone Organization of Thailand (TOT) introduced the first mobile phone to Thailand in 1986. This phone was based on the NMT 470 system. The following year, the Communications Authority of Thailand

(CAT) introduced the AMP 800 system. In the pioneering stage, the TOT held monopoly of this communication business. Initial progress was slow for the two government enterprises due to the bureaucratic procedures and regulations that, and their budget would not support an expansion of the service network. The two government enterprises let private business organizations bid for a concession, which was based on the build-transfer-operate (BTO) model. The successful organization would invest in the network and transfer the assets to the government. The government would let the concessionaire generate revenue from the use of the assets. This strategy encouraged businesses to play a key role in developing the communications business through participation in concessions and joint ventures. The communications business was still a monopoly, as one or two companies would operate under the auspices of TOT and CAT.

Five years ago, at the outset of the economic crisis, cellular service was still a relative novelty. The local duopoly of Advanced Info Services (AIS) and Total Access Communications had a combined subscriber base of 1.87 million people.
By the end of May 2002, the same two companies boast 11.4 million customers, including 7.6 million for AIS.

Newcomers TA Orange, jointly owned by the Charoen Pokphand (CP) group and French-owned Orange, expect to challenge this duopoly over the next few years. Orange has signed on half a million users since its launch in March.

Advanced Info Service (AIS) has enjoyed steady growth, beginning in March 1999 and gaining momentum ever since. In 2001 the company's customer base surged by about 300% to 4.8 million subscribers.

The improvements can be linked directly to a major shift in marketing strategy. As handset prices have declined, they are now within the reach of lower-income consumers, notably teenagers and students.

TAC had 880,000 customers in 1997 and managed to add 60,000 the following year, a respectable performance given the economic times. In 2001 it had 2.73 million users, double the total of the previous year. The success of TAC was attributed to re–branding to D–TAC in mid 2001. In 2001, however, mobile phone

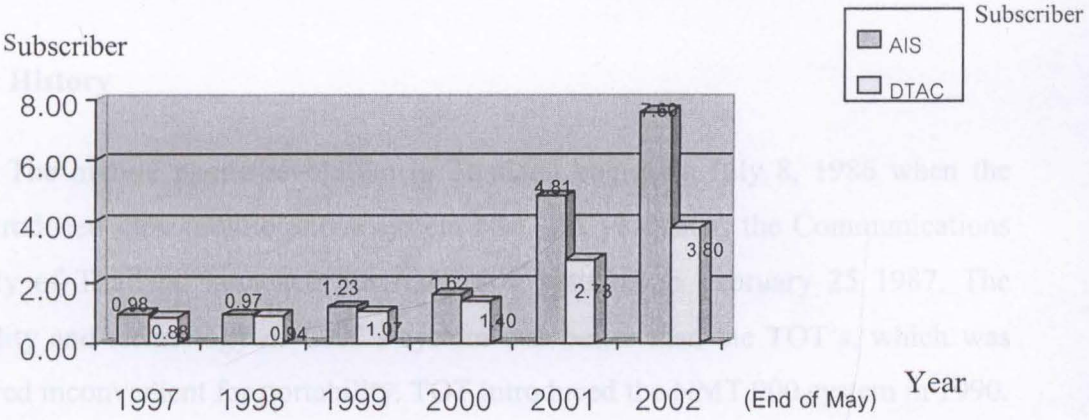
subscribers doubled in number within the first nine months to 6.4 million amid growing competition. Thailand's penetration rate for wireless services is 16%, compared to 36% in Hong Kong, 45% in South Korea, 13% in Taiwan and 50% in Singapore.

While AIS and DTAC now control 95% of the cellular market, steady growth by TA has begun to shake up the giants. Within two months of its soft launch, TA Orange signed up more than 400,000 users, with very attractive promotions.

While it was monopolized by two companies, the usage of the mobile networks increased by a high annual percentage. When researchers compared Thai penetration rates with other Asian countries, they found that the rate was only 16%. This leaves a lot of room for expansion.

Despite the low number of companies competing in the mobile phone business, the competition between them is fierce. The researcher wanted to study the relationship of service quality between the companies, as it related to the satisfaction of end users and how they would choose when purchasing their next handset. Because the competition is mainly based on design and promotions, the competition tends to concentrate on short-time fixes. The real factor that created customer loyalty to a particular brand turned out to be the level of service quality. This research was intended for the benefit of the companies to create strategies to gain customer loyalty.

Figures1.1 The incremental of mobile phone subscriber between AIS and DTAC



Subscribes totals for two main operators in millions, 1997 – 2002

Source: Bangkok Post, mid – year 2002 Economic Review

The current situation and the future role of telecommunications

Mobile phones have developed many functions and designs to entice usage among teenagers, for instance movie previews, games, voice mail and messaging service. Many functions were created to persuade customers to switch brands or trade in their old phone for a new one. The latest models come with a digital camera and conferencing capabilities. Services and networks emphasize quality, coverage and low price in their quest to spread to all levels of society. Their aim is to provide convenience in business transactions and reduce the time and place barriers imposed by the old methods of telecommunications.

Every country in the world considers control of telecommunication a national strategic importance, and sought to control it. Even so, countries have come to realize that competition becomes an advantage to the nation utilizing the services. Society has come to the realization that the mobile phone is here to stay, and that it is an important factor in modern life. While almost nobody owned a handset a decade ago, today there is a feeling that something is missing in one's life without a cell-phone.

History

The mobile phone revolution in Thailand began on July 8, 1986 when the TOT introduced their mobile phone system NMT. A year later, the Communications Authority of Thailand launched the AMP 800 system, on February 25 1987. The availability and technology of CAT's system was better than the TOT's, which was considered inconvenient for portability. TOT introduced the NMT 900 system in 1990.

In the initial stage, the mobile phone service didn't catch on. This was because the coverage was low quality, and handsets were unwieldy and expensive. Furthermore, the two service providers had little experience in marketing. At the end of 1990, the Ministry of Transport and Communication, in line with government policy, allowed the private sector to participate in developing the services. Therefore, in 1990 the TOT granted concession to AIS to let them provide services on the NMT 900 system. At the same time, CAT granted concession to Total Access Communication (TAC) in 1991, allowing them to launch the AMPS 800 B system.
AIS and TAC were each granted a five-year concession under build-transfer-operate (BTO) contracts. According to the contracts, both concessionaires would have to introduce digital mobile systems after running on an analogue system for some time. In 1994, AIS launched their Global System of Mobile Communication (GSM) 900, while TAC introduced the Personal Communication Network 1800 (PCN).

Thai Telecommunications

Thailand has developed their mobile communication system according to the seven-year development plans. This has meant support for entrepreneurs wishing to invest in BTO, the initialization of privatization. This plan was used to create the fixed-line telephone system. Service expanded rapidly with if one considers tele-density or penetration rates. Over time, every region of Thailand has gotten access to telecommunication services.

concentrate on investing in their own country. To follow the economic trend, countries must follow the deregulation policies of the World Trade Organization (WTO). The battle of telecommunication has the capability to drive countries into the new world economy.

Consumers

Effective competition will benefit consumers as investors compete fiercely with each other by adding new services and choices to consumer, and increase their attention to customer concerns and service demands. They attempt to lift the standard and improve efficiency in services to reduce their cost, which will have the direct effect of reducing costs, which in turn results in lower rates charged when the standardization of service and quality improves. The customer is free to select the service which provides him with the most advantages and benefits.

Table 1.1 CAT Concessions

Operator	Business	Year Contract signed	Concession (year)
TAC	Mobile phone service	1996	27
Sinai SAT Network	VAST	1994	22
World SAT Network	VAST	1995	22
USAT	VAST	1995	22
Pachlink	Pager	1990	15
Lenso Pager	Pager	1995	25
Network Constant	Mobile phone	1994	20
United Communication	Trunk mobile	1992	15
Lenso Phonecard	Public card phone service	1994	15

Source: Bangkok Post 2000, Economics, and Review year-end.

TAC (Total Access Communication Public) has the concessionaire with CAT 27 years from 1996 to 2023.

Table 1.2 TOT Concessions

Operator	Business	Year Contract signed	Concession (years)
Shinawatra Directories	Phone directories	1990	10
AIS	Mobile phone	1990	25
Chinaware Paying	Paging	1989	15
Hutchinson Tele	Paging	1990	15
World Page	Paging	1993	15
Phonpoint Thailand	Only phone service	1990	10
Radio phone	Trunk Radio	1992	15
Advanced information system	Public telephone	1993	10
Telecom Asia	Bangkok fixed-line phone	1991	25
TT&T	Provincial fixed-line phone	1992	25

Source: Bangkok Post 2000 Economic Service year-end.

AIS (Advanced info Service Public Company limited) has the concessionaire with TOT 25 years from 1990 to 2015. The other telephone fixed-line companies which had concessionaire arousal 25 years were Telecom Asia and TT&T

Table 1.3 Radio Communication Service

Units: Units

Radio Communication Service	1997	1998	1999	2000	2001
Cellular Radio Communication	54,990	42,624	32,917	37,500	22,158
Radio pager	1,721	1,084	894	529	324
Private tone and voice	1,895	1,927	1,871	1,659	1,531
Other Private Radio	20,351	18,312	16,667	16,624	19,684
Communication	435	172	78	51	33
Other Radio Communication					

Source: WWW.INFO.TDRI.OR.TH

The main factors for mobile phone system

The four main factors that support mobile phone communications network: are

1. MTX – Mobile Telephone Exchange, the junction of mobile phones is the center which controls all the different phone systems. It controls the communications system as a whole and is responsible for recording operating data. It does this by controlling the contacting and line switching for leasers, through switching control and system control.

2. Radio Base Station (RBS) Network control center - the mediator of MTX and Mobile Station (MS) in a coverage area or cell. This station receives orders from MTX and transmits information by radio wave to mobile phones and receivers by conversion. Mobile phones have two frequency bands, there are sender and receiver frequency transmitted through different frequencies. The station will check the clearance of the frequency (RE signal strength) before relaying it to the MTX.

3. TS system - combines the receiver and sender signal between MTX and RBS. It is comprised of multiplexers and radio equipment such as microwave, UHF and satellite. For cable equipment, optic fiber is used.

4. Mobile Station (MS) or radio network for contact mobile phones on the move. It is composed of a telephone signal adapter which adapts signals between radio signal receiver and sender.

The four above factors comprise a service area. Each MTX consists of 16 traffic areas, each traffic area has 64 cells, and each service in turn has 1,024 cells.

Service Providers

There are six service providers, providing mobile phone services. Four of these use the analogue system, and two are digital.

Table 1.4: Mobile Telephone System and Service Providers in Thailand

Service Provider	System	Service Name	Starting Year
1. The Telephone Organization of Thailand (TOT)	NMT 470	-	1986
2. The Communications Authority of Thailand (CAT)	AMPS 800 A NMT 900	-	1987
3. Advanced Info Service Plc. (AIS)	GSM 900 AMPS 800 B	CELLULAR 900 DIGITAL GSM	1990 1994
4. Total Access Communication Plc. (TAC)	PCN 1800	WORLD PHONE 800 WORLD PHONE 1800	1991 1994
5. Wireless Communications Services Co. (WCS) *	PCN 1800	IQ DIGITAL	1997
6. Tawan Mobile Telecom Co.	CDMA 800	-	end 1997
7. Digital Phone Co.(DPC) *	PCN 1800	DIGITAL PHONE	1998

Notes: TAC granted WCS and DPC.

Source: www.info.tdri.or.th

Analogue System

1. NMT 470. The Telephone Organization of Thailand (TOT) has operated the NMT 470 system by itself with Ericsson and Nokia being suppliers, providing design, procurement and installation of exchange equipment and radio base station. There had been virtually no improvement in the service of this system until May 1997 when the TOT appointed Jasmine International and Lenso Telecom its service providers to step up competition with other systems. Its strong features are characterized by its nationwide coverage areas as well as its operational distance of 50 to 60 kilometers from the radio base station, which is suitable for operation in rural areas.

2. AMPS 800 Band. The Communications Authority of Thailand (CAT) has operated the system by itself, with the United Communication Group (UCOM) being system designer. Under the contract giving concession to TAC to operate the AMPS 800 Band B, the Band A operated by CAT was limited at 50,000 subscribers. However, after the changes in the concession contract in 1996, the limitation has been removed in exchange for the extension of the concession period from 22 years to 27 years. CAT could also revoke the original protection rights. Therefore, CAT plans to develop the unpopular AMPS 800 A into the CDMA (Code Division Multiple Access) digital system. CAT has granted a 15 – years concession to Taiwan Mobile Telecom to operate it, based on the build-transfer-operate (BTO) contract. It is expected to launch its services at the end of 1997 with 350,000 potential subscribers.

3. AMPS 800 Band B. Total Access Communication (TAC), a subsidiary of UCOM group, has been granted a 27 – years concession to operate AMPS 800 Band B under the brandname "WORLD PHONE 800". Its service commenced on September 16, 1991 with Motorola being its supplier.

4. NMT 900. Advanced Info Service (AIS) has been awarded a 20-year concession from the Telephone Organization of Thailand (TOT) to provide the analogue NMT 900 mobile phone service system. This took place on October 1, 1990 under the brandname "CELLULAR 900", with Nokia being its supplier. In 1996, the

contract was amended, with the concession period being extended to 25 years and AIS's monopoly cancelled.

Digital System

1. PCN 1800 DCS (Digital Cellular System). TAC operates the PCN 1800 digital mobile phone system under the brandname "WORLD PHONE 1800". This is an obligation in the concession contract of the AMPS 800 Band B system. The digital system's capacity, in serving mobile stations, is ten times greater than that of the analogue system. Moreover, the signal is higher quality due to the high range of frequency. Technically, the higher the frequency is, the smaller the cell cites are. This means TAC has to install a large number of cell cites. Nokia is its supplier.

2. GSM 900. AIS operates the digital GSM 900 system under the brandname "DIGITAL GSM'. This is an obligation in the concession contract of the cellular 900 system granted by the TOT. Ericsson, Nokia and Motorola are its suppliers.

1.2 Research Objective

The main objective of this research is to study the differences in service quality between Advanced Info Service Public Company Limited (AIS) and Total Access Communication Public Company Limited (DTAC).

1. To study the difference between customer expectations and perceived service quality between AIS and DTAC.
2. To study the difference between customer expectations and perceived service quality of AIS and DTAC when segmented by five dimensions; tangibles, reliability, responsiveness, assurance and empathy.
3. To study the difference between customer expectations and perceived service quality of AIS and DTAC when segmented demographic.

4. To study which of the five SERVQUAL dimensions is considered the most important when classified by tangibles, reliability, responsiveness, assurance and empathy.

1.3 Statement of the Problem

Ensuring service quality is one of the most important tasks facing businesses today. Unless the organization can retain the loyalty of their customers, they will not be able to retain their business and the long team future will be uncertain. Service quality is at the heart of retaining loyalty and it is everyone's responsibility. (Smith,1994)

The concept of service is very subjective and hard to define. When buying a tangible product, there is frequently an intangible experience, which may have a greater effect. Customers may react differently to what appears to be the same level of service. The same customer can indeed react differently to the same service in different circumstances. In each situation we make the research about the service. The research also decide whether or not to continue to do business with the service provider. Putting the customer first is an admirable intention, but it will only be more than that if there is a proper service strategy. The two main objectives of this strategy are to create a difference, which can be observed or measured by the customer and have real impact on the way things are done inside the company, This study is to evaluate the effect of service quality between the two companies AIS and DTAC. This will lead to more understanding of the factors at play in the competition between them. We will determine whether there are any differences customer expectations and perceived service quality of AIS and DTAC.

Research questions

1. Are there any differences between customer expectations and perceived service quality of AIS and DTAC, when segmented by the five dimensions?
2. Are there differences between customer expectations and perceived service quality of AIS and DTAC when segmented by demographic factors?
3. What are the most critical SERVQUAL dimensions in customers' assessment of service quality when classified by tangibles, reliability, responsiveness, assurance and empathy?

1.4 Scope of Research

This research focuses on the study of service quality given to mobile phone users subscribing to the services of Advanced Info Service Public Co; Ltd. and Total Access Communication Public Co; Ltd. in Bangkok only. The research is limited to the mobile phone users in the Bangkok area because the sampling had come from the population of 6 districts, randomly selected from a pool of 37 districts. The districts selected by this process are Pinklao, Jatujak, Bangkapi, Phayathai, Rangsit and Pranakorn. This research drew a sampling total of 400 samples. The samples were set in equal proportion, 200 respondents for each company, with demographics considered independent variable. This study will concentrate on service quality based on expected service quality and perceived service quality (dependent variables) to determine the end result. The researcher provided 40 samples for pretest, which were divided into 20 samples for each company.

According to previous studies, Ngandee (2000) used a sample size of 225 for testing the study of relationship between service quality and customer satisfaction on Private Driving Range in Bangkok. Kitisatien (1999) studied employee perceptions and expectations on human resources' service quality with a sample of

size of 356. Therefore, related to the previous studies, the researcher expected to use 400 respondents as the target population or sample size for the research.

1.5 Limitations of the Research

One obstacle to this research was that the service shops of the two companies wouldn't allow the researcher to interview respondents in the shops, as they felt this might inconvenience their customers. Accordingly, the questionnaires were distributed in a nearby area. At times data collection was made difficult by the fact that respondents had already finished their business in the service shops and were busy tending to other commitments. Not everyone would agree to answering the questionnaire.

The questionnaire about expectations and perceptions may have some deviation from the fact that perceptions tend to get mixed with feelings and can interfere with respondents' ability to give a true answer.

The study uses the GAPS model of service.

The research did not include TA ORANGE, which is a newcomer to the market and started operations in 2002 with some obstacles in network coverage.

1.6 Significance of the study

This study will help the companies focus on the proper strategy in service quality which contributes greatly to customer satisfaction. It determines whether the service quality of service ships meets customer expectations along the quality dimensions of tangibles, reliability, responsiveness, assurance and empathy, or whether they fail to meet these expectations. Service quality is seen as a measurable factor that customers can evaluate from their interaction during the service experience. The perception the customer gets will stay with him on his next purchase, and it is theorized that if he receives consistently satisfactory service he will become a loyal customer for the future. This research will encourage top management to concentrate on service quality as a means to satisfy customer needs.

In addition top management can measure the performance of their employees to improve their ability to meet customer expectations. It will also be of help to companies in their quest to set standards for how to meet customer expectations. Finally, the research summarizes all the information from the point of view of the customer to analyze the service quality to help companies create a strategy that will allow them to service customers properly and gain their loyalty.

1.7 Definition of terms

Service is any act or performance that one party can offer to another that is essentially intangible and does not result in the ownership of anything. Its production may or may not be tied to a physical product. (Kotler, 2000, p.248)

Quality – Quality in a product or service is not what the supplier put in. It is what the customer perceives he gets out of it and is willing to pay for. Customers pay only for what is of use to them and what gives them value. Nothing else constitutes quality. (Drucker, 1994)

Satisfaction is a consumer's post purchase evaluation of the overall service experience (processes and outcome). It is an affective (emotional) state or reaction in which the consumer's needs, desires and expectations during the course of the service experience have been met or exceeded. (Lovelock, 1998)

Satisfaction has been described by Howard and Sheth as a mental state of feeling adequately or inadequately rewarded in a buying situation for the sacrifice a buyer has undergone. Adequacy therefore results from matching actual past purchase experience with the reward that was anticipated from the brand in terms of its potential to serve important motives. Reward is meant to include not only those benefits resulting from consumption of brand but also any other satisfaction received in the purchasing and consuming process.

Customer expectations are very different as they apply to services as opposed to products. Further, people have different kinds of expectations for different kinds of services, just as they have different kinds of expectations for different kind of products. (Schneider and Bowen 1995, p.20) According to the Gaps model of service quality (Zeithaml and Berry,1990, p.46) customer assessments of service quality result from a comparison of service expectation with actual performance.

Perceived Service Quality is defined as the discrepancy between what the customer feels that a services provider should offer and his perception of what the service provider actually offers (Parasuraman at al, 1988, p.17). Perceived service quality is the function of the comparison of adequate or desired service with perceived performance

TOT: Telephone Organization of Thailand

CAT: Communications Authority of Thailand

AIS: Advanced Info Service Public Company limited

DTAC: represented to Total Access Communication Public, Company Limited

Mobile phone users means the customers who use mobile phone from either of the two companies (AIS and DTAC) in either their analog or digital system.

Neither NMT 470 MHz (Nor – Dic Mobile Telephone 470 MHz) is the first system in communication provided by TOT. It could cover a wide area but had low capacity of signal. This system had low frequency, not suitable for a large city. It could reach the areas outside Bangkok.

AMPS 800 MHz (Advanced Mobile Phone System) AMP'S was developed by Bell Labs in the late 1970s and was released in the USA in 1983. It uses the 800 MHz band and is currently the largest Analog Standard. This system was proper for the big city because it can penetrate tall buildings.

Consumer satisfaction is an attitude formed toward a purchase. When customer decides to purchase a product he will have performance expectations in mind before purchasing. After that, perceived performance will compare between before and

after. If P (perception)>E (expectation), the customer is satisfied with the service he got. Customer feels neutral when P=E .He will be dissatisfied when P<E.

GSM (Global System for Mobile Communication) is a digital system. The quality of sound in the GSM system is much better than that achieved by the 900 MHz analogue system. The system must operate in the entire frequency band 890 – 915 MHz and 935 – 960 MHz.

PCN 1800 (Personal Communication Network) is a mobile phone using the digital system.

CHAPTER 2

LITERATURE REVIEW

This chapter presents in-depth information relevant to the comparison of service quality between Advance Info Service (AIS) and Total Access Communication (DTAC). It is aimed at reviewing relevant literature and research for the establishment of a conceptual framework. The following topics will be discussed in detail:

1. Definition of service quality
2. Theories related to service quality
3. Critical analysis and selection of a generic set of sub variables of service quality
4. Discussion of each of the selected generic set of sub-variable
5. Defining perception
6. Defining expectation
7. Analysis of the theories related to perception and expectation
8. Critical analysis of theories related to customer perception. and expectation.
9. A methodology for creating quality that customer can see.
10. Relationship between perception and expectation
11. Previous studies

Quality of service relates to expectations and perceptions of customers. When a customer receives perception better than expected, he will be satisfied. He will be dissatisfied the perception is lower than expectations. Service businesses can improve their performance by determining the main factors of services that it should improve to satisfy customers.

At present, communication is very important for everyone. The high competition between AIS and DTAC in marketing and promotion is to the benefit to end-users. There is also a newcomer, Orange, which is a joint venture between Charoen Pokaphan (CP) and Orange from the United Kingdom. In the fierce competition between two companies the main topic to discuss should be how to keep their customers. One of the solutions is to improve the level of service quality to satisfy them. Service quality can be seen as a basic strategy to keep customers for a long time.

2. Definition and Feature of Service and Service Quality

2.1 Definition of Service

Many researchers have discussed the service definition as it supports improved business.

Uhl and Upah, (1983) stated that service is any task (work) performed for another or the provision of any facility, product or activity for another's use but not ownership, which arises from an exchange transaction. It is intangible and incapable of accompanying a product.

Parasuraman, Zeithaml & Berry,(1985) described services as performances rather than objects, stating that and most services cannot be measured, inventoried, counted, verified and tested in advance of sale to assure quality. Therefore, service is more difficult to define and is subject to alternative perception and expectation.

Kotler, (1989) defined services as any act of performance that one party can offer to another that is essentially intangible and does not result in the ownership of anything. Its production may or may not be tied to physical product.

Burton ,(1990) proposed that service characteristics are intangibility, inseparability of production and consumption, and heterogeneity. Such characteristics often make it more difficult for customers to frame the decision between brand alternatives in a product class.

Beaven and Scotti,(1990) stated that service becomes a part of the consumer's individual life history and affects the person's quality of life sense of well being. As such, it implies that services may be conceptualized as highly personal events with potential to affect the course of individual life.

Walker,(1990) wrote that the fact that service standards generally need to be raised is undeniable. We all have daily experience of being a customer – buying a newspaper, getting a carpet fitted, having a haircut, eating in the canteen and so on. In each situation we make a judgment about the service. We also decide whether or not to continue to do business with the service provider. If we

are not pleased we sometimes complain but usually we just decide to go some where else next time.

Characteristics of services

Although service industries are themselves quite heterogeneous (ranging from beauty salons to electric utilities), there are some characteristics of services about which it is useful to generalize. Three of the most important of these characteristics are discussed here (Lovelock, 1998).

1) More Intangible Than Tangible

A good is an object, a device, a thing; a service is a deed, a performance, and an effort. When a good is purchased, something tangible is acquired; something that can be seen, touched, perhaps smelled or worn or placed on a mantel. When a service is purchased, there is generally nothing tangible to show for it. Money has been spent, but there are no additional clothes to hang in the closet and nothing to place on the mantel.

Services are consumed but not possessed. Although the performance of most services is supported by tangibles – for instance, the automobile in the case of a taxi service – the essence of what is being bought is a performance rendered by one party for another.

Most market offerings are a combination of tangible and intangible elements. It is whether the essence of what is being bought is tangible or

intangible that determines its classification as a good or a service. In a restaurant the acquisition of supplies, the preparation and serving of meals, and the after-meal cleanup is performed for the consumer by another party. Hence, the researcher thinks of the restaurant industry as a service industry. There are tangibles involved, for example, the building, interior décor, kitchen equipment, and food.

The concept of intangibility has two meanings, both of which present challenges for marketing as follows:

- That cannot be touched, imparable.
- That cannot be easily defined, formulated or grasped mentally.

Addressing the marketing problems that intangibility presents is generally a matter of far more concern to the services marketer than to the foods marketer.

2) Simultaneous Production and Consumption

Services are generally produced and consumed in the same time frame. The college professor produces an educational service while the student consumes it. The telephone company produces telephone service while the telephone user consumes it. The babysitter produces a babysitting service while the children and parents consume it.

Generally, goods are produced, then sold, then consumed. Services on the other hand are usually sold first, then produced and consumed simultaneously.

Simultaneous production and consumption means that the service provider is often physically present when consumption takes place. Whereas a washing machine might be manufactured in Michigan and consumed in Virginia, the dentist is present when examining a patient; the singer is present when performing a concert; the airline stewardess is present when serving an in – flight meal.

What is important to recognize about the presence of the service provider is that the "how" of service distribution becomes important. In the marketing discipline, great stress is placed on distributing goods where and when customer-prospects desire them to be distributed – that is, to the "right place" and at the "right time." With services, it is often important to distribute them in the "right way" as well. How automobile mechanics, physicians, lawyers, teachers, and bank tellers conduct themselves in the presence of the customer can influence future patronage decisions. Washing machines can't be rude or careless or thoughtless, but people providing services can be and sometimes are. When they are, the result may be a search for a new service supplier (Lovelock, 1998).

3) Less Standardized and Uniform

Service industries tend to differ on the extent to which they are "people-based" or "equipment-based." That is, there is a larger human component involved in performing some services (for example, plumbing) than others (for example, telephone communications). One of the implications of this distinction is that the "outcomes" of people-based service operations tend to be less

standardized and uniform than outcomes of equipment based service- or goods-producing operations. Stated differently, the extensive involvement of people in the production of a service introduces a degree of variability in the outcome that is not present when machines dominate. This is an important consideration, given the vast number of service industries that are labor-intensive.

The ever-present potential for variability in a labor-intensive service situation is well known in the marketplace. Whereas consumers expect their favorite breakfast cereal to always taste the same, and to almost always hear a dial tone when picking up a telephone receiver, expectations are far less certain on the occasion of getting a haircut. This is why consumers look at their hair in a mirror before the hair-cutting service is concluded. The outcome is uncertain and more service production may be needed, even when the barber or beautician has had long experience with the consumer.

The growing use of automatic teller machines (ATMs) by the financial services industry makes the point. The net effect of the ATM is to transform the delivery of certain traditional banking services from a human delivery mode to a machine delivery mode. This transformation does not mean that all consumers will like or use these machines. It does mean, however, that those who do use ATMs will find far less variability in the services rendered than if human tellers were used. A banker can paint a smile on an ATM and call it Tillie; except when not working properly, the machine will perform uniformly for all customers regardless of how these customers are dressed, the time of day, or the length of the

queue waiting for service. Such is not the case with the human teller who may have a bad day, get tired, or become angry with a supervisor, co-worker, or customer. Moreover, human tellers differ among themselves in their customer relation and technical skills, their personalities, and their attitudes toward their work. In short, bankers cannot paint a smile on a human being (Lovelock, 1984).

2.2 Definition of Service quality

Parasuraman, Zeithaml&Berry,(1985) mentioned several interesting themes regarding service quality: "(1) Service quality is more difficult for the consumer to evaluate than goods quality. (2) Service quality perceptions result from a comparison of consumer expectation with actual service performance. (3) Quality evaluations are not made solely on the outcome of a service; they also involve evaluations of the process of service delivery".

Clow, (1997) mentioned that service quality is the customer's judgement about an entity's overall excellence and superiority. It is a form of attitude related, but not equivalent to satisfaction and results from a comparison of expectation of performance.

McDonald, (1996) stated that most service is intangible. Precise manufacturing specifications concerning uniform quality can rarely be set, because they are performances rather than objects

Mullin, (2000) defined that services, especially those with high labor content, are very heterogeneous where performance often varies from product to product, from customer to customer and from day to day.

Service Quality

Receiving a high level of service is important to consumers but understanding how to evaluate the service quality received is more difficult. Two consumers receiving what appears to be the exact same service from the same company may evaluate the quality of the service differently. One consumer may feel the service was good while the other may feel the service was performed poorly. When discussing the concept of service quality, three underlying principles should be kept in mind.(Kurtz and Clow, 1998):

1. Service quality is more difficult for the consumer to evaluate than the quality of a good.
2. Service quality is based on the consumer's perception of the outcome to the service and their evaluation of the process by which the service was performed.
3. Service quality perceptions result from a comparison of what the consumer expected prior to the service and the perceived level of service received.

The process used by consumers in evaluating services differs from the process used for goods. Services tend to be high in experience and credence

qualities while goods tend to be high on search qualities. Search qualities are attributes that consumers can evaluate prior to purchasing a service or good. Experience qualities are attributes that consumers can evaluate only during or after the consumption process. Credence qualities are attributes that consumers have difficulty evaluating even after the consumption is complete.

Gap Model of Service Quality

Gap 1: Customer's Expectations – Management-Perceptions Gap

Customer Expect is the first and possibly most critical step in delivering quality service. Stated simply, providing services that customers perceive as excellent requires that a firm know what customer expect. Being a little bit wrong can mean expending money, time, and other resources on things that don't count to customer. Being a little bit wrong can even mean not surviving in a fiercely competitive market. Sometimes this gap occurs because companies overlook or underestimate the need to fully understand customers' expectation. Despite a genuine interest in providing service quality, many companies miss the mark by thinking inside out-they know what customers should want and deliver that-rather than outside in.

Gap 2: Management's Perceptions-Service-Quality

Many companies believe they are committed to service quality but their commitment is to quality from the company's own internal, technical perspective. Service quality in many firms, quality is defined in terms of advanced technology-

meeting standards required to keep pace with competitors on things which customers will not pay for and do not want. In our view, being committed to service quality means more than meeting company or competitor defined standards. Management commitment to service quality means providing service that the customer perceives as high in quality.

Gap 3: Service-Quality Specifications-Service-Delivery Gap

Organizations offering services that are highly interactive, labor intensive, and performed in multiple locations are especially vulnerable to Gap 3. Opportunities for mistakes and misunderstandings exist when service providers and customers respond to each other's mannerisms, attitudes, competencies moods.

Gap 4: Service- Delivery-External Communications Gap

As mentioned earlier, a key determinant of customers' expectations is the service provider's external communications. Promises made by a service company through its media advertising, salesforce, and other communications raise expectations, which serve as the standard against which customers assess service quality. A discrepancy between the actual service and the promised service therefore has an adverse effect on customers' perceptions of service quality. Customers who participated in focus groups described many instances of poor service quality because of broken promises.

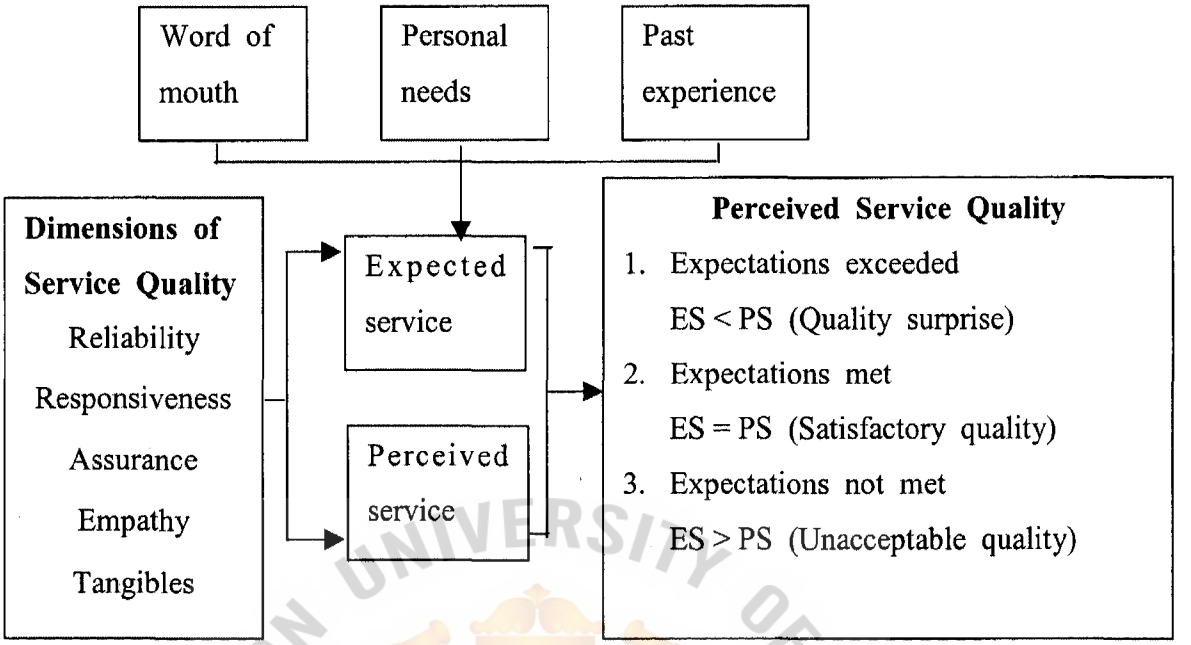
Gap 5: The Expected and Perceived from the Customers

This represents the potential discrepancy between the expected and perceived service from customers' standpoint. Key determinants of the service expected by customers include word-of-mouth communications, personal needs, past experience, and external communications from the service provider. Next, we define and discuss each of the for service provider gaps that contribute to Gap 5.

2.3 Theories Related to Service Quality.

The Theory of the Dimensions of Service Quality contains dimensions identified by marketing researchers studying several different service categories: appliance repair, retail banking, long-distance telephone service, securities brokerage, and credit card companies. They identified five principal dimensions. Customers use five principal dimensions to evaluate service quality and estimate customer satisfaction. The dimensions of service quality shown in the following figure:

Figure 2.1: Model of Service Quality



Source: Perceived service quality. (Reprinted with permission of the American Marketing Association: adapted from A. Parasuraman, V.A.Zeithaml, and L.L. Berry, "A Conceptual Model of Service Quality and its implications for Future Research," Journal of Marketing, vol.49, Fall 1985,p .48.)

Reliability – The ability to perform the promised service dependably and accurately. Reliable service performance is a customer's expectation and means that the service, every time is accomplished on time at approximately the same time each day is important to most people. Reliability extends into the back office, where accuracy in billing and record keeping is expected.

Responsiveness - The willingness to help customers and to provide prompt service. Keeping customers waiting particularly for no apparent reason, creates ability to recover quickly with professionalism can create very positive

perceptions of quality. For example, serving complimentary drinks on a delayed flight can turn a potentially poor customer experience into one that is remembered favorably.

Assurance – The knowledge and courtesy of employee and their ability to convey trust and confidence. The assurance dimension includes the following features competence to perform the service, politeness and respect for the customer, effective communication with the customer, and the general attitude that the server has the customer's best interest at heart.

Empathy – The provision of caring, individualized attention to customers. Empathy includes the following features: approachability, sense of security, and the effect to understand the customer's needs.

Tangibles – The appearance of physical facilities, equipment, personnel and communication materials. The condition of the physical surrounding is tangible evidence of the care and attention to details exhibited by the service provider. This assessment dimension can extend to the conduct of other customers in the service, such as a noisy guest in the next room at a hotel. (Parauraman,1985)

The Theory of Service Quality mentions that customers assess and evaluate a number of factors or dimensions to measure service quality. They will test the question, which will vary from one service to another but has been developed. Consequently from testing a variety of service industries they can conclude and get five dimensions, which are

Reliability – the ability to perform the promised service dependably and accurately. It is regarded as the most important determinant of perceptions of service quality. This dimension is particularly crucial for services such as railways, buses, banks, building societies, insurance companies, delivery service and trade service, e.g. plumbers, carpet fitters, car repair.

Responsiveness – The willingness to help customers and to provide prompt service. This dimension is particularly prevalent where customers have requests, questions, complaints and problems

Assurance – The employee' knowledge and courtesy, and the ability of the service to inspire trust and confidence. This dimension may be of particular concern for customers of health, financial and legal services.

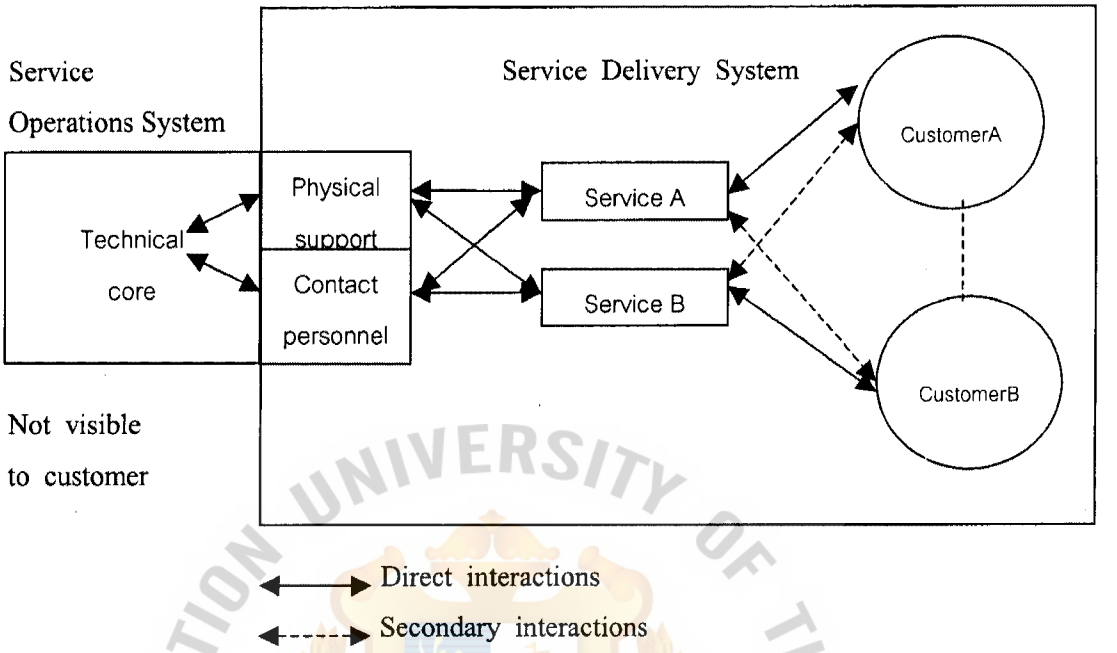
Empathy – The caring, individualized attention the service provides its customers. Small service companies are better placed for treating customers as individuals than their larger invariably standardized counterparts. However, relationship marketing is designed to offer a more individualistic approach for customers of large organizations (Mudie and Cottam, 1999).

Theory of Service as a system

Any service business can be thought of as a system comprising service operations, where inputs are processed and the elements of the service product are created, and service delivery, where final "assembly" of these elements takes place and the product is delivered to the customers (Figure 2.2). Parts of this system are visible (or otherwise apparent) to customers; other parts are hidden

from view in what is sometimes referred to as the technical core, and the customer may not even know of their existence. Some writers use the terms "front office" and "back office" when referring to the visible and invisible parts of the operation. Others talk about "front stage" and "back stage," using the analogy of theater to dramatize the notion that service is a performance. Stephen Grove and Raymond Fisk develop this analogy in their article "The Strategy of Service Exchange: An Analytical Framework for Services Marketing" (Lovelock, 1992).

Figure 2.2 : The Service Business as a System



Source: Adapted from Eric Langeard, John E.G. Bateson, Christopher H. Lovelock, and Pierre Eiglier, Services Marketing: New Insights from Consumers and Managers , Cambridge, 1981).

Service Operations System

As in a play, the visible components of the service operations system can be divided into those relating to the actors (or service personnel) and those relating to the stage set (or physical facilities and equipment). What goes on backstage is of little interest to customers. Like any audience, they evaluate the production with reference to those elements that they actually experience in the course of service delivery and – of course – on the perceived service outcome.

Naturally, if the folks backstage fail to perform their support tasks properly, the impact will be apparent to customers.

The proportion of the overall service operation that is visible to customers varies according to the nature of the service. People-processing services, such as airline travel, hairdressing, and hospitals, directly involve the physical person of the customer. They require customers to enter the "factory," although there may still be many backstage activities they do not see.

Possession-processing services, such as repair and maintenance, may require the customer to drop off the item at the "factory door" and then pick it up once the work has been completed. Alternatively, some services provide pick up and delivery service at the customer's own home, office, or plant. For service to large or immovable items, such as a house, the service personnel may perform the work on site – essentially bringing portions of their factory with them. Because the customer is less involved in service delivery, the visible component of the service operations system tends to be proportionately smaller than for people - processing services.

Information-processing services, such as broadcasting, insurance, information, and legal services, do not require the customer's physical presence from an operational standpoint. Interactions between customer and service provider can often be conducted at arm's length by mail, telephone, or other electronic media. It's a little bit like the difference between live theater and Radio Theater. That's because there may be no operational reason at all for the customer

to see the "factory" where the work is performed – although some people feel more confident, especially in the case of financial and professional services, if they can meet the service provider in person at least once (Lovelock, 1991).

Service Delivery System

Service delivery is concerned with where, when and how the service product is delivered to the customer. As can be seen in figure 2.2, this system embraces not only the visible elements of the service operating system – physical support and personnel – but may also entail exposure to other customers. Traditionally, the interaction between service providers and their customers has been a close one. But for reasons of both operational efficiency and customer convenience, people seeking services that don't require their *physical* presence are finding that the amount of direct contact with the service organization is being reduced. In short, the visible component of the service operations system is shrinking as the delivery system changes. Electronic delivery often offers greater convenience than face-to-face contact. Self-service equipment, such as automatic teller machines, is available in numerous locations and accessible 24 hours a day, 7 days a week. But there are potential disadvantages, too. Customers sometimes find the shift from personal service to self – service disconcerting. So implementing this type of change in the delivery system may require an information campaign to educate customers, a responsive

attitude toward consumer concerns, and even some initial promotional incentives.

Responsibility for designing and managing the service delivery system has traditionally fallen to operations managers. But marketing needs to be involved, too, since a good understanding of customer needs and concerns is important if the system is to work well. What's more, if you're dealing with a service facility where customers may interact with each other – such as a hotel or post office – people's behavior has to be managed discreetly so that customers will act in ways that are consistent with the organization's strategy.

A key challenge for designers of new services is to match the nature of the delivery system to the needs and preferences of the target customer groups. When the two do not match well, customers are likely to be turned off.

2.4 Discussion of each of the selected generic sets of service quality

Dimensions of service quality

We have found the list of service quality dimensions suggested by Berry, Parasuraman, and Zeithaml(1996) to be a good staring point for providing more detail to a description of service quality. They describe the dimensions of service quality as:

1. Reliability: Consistently meeting customers' expectations on the other dimensions in the list. Reliability is the factor which

regularly comes top of the list in importance for customers across the service sector.

2. Responsiveness: Recognizing customers' needs and acting to satisfy the within the context of the service. We can all give examples of service organizations which fail in this dimension, and perhaps you have also encountered service providers who put themselves out to do more than is required. There appears to be a growing expectation that responsiveness should consistently be present in most services.
3. Competence: Knowledge of what is required and the skills to do it are captured in this dimension. Competence also includes what customers expect the service provider to be capable of providing.
4. Access: how easy customers can make contact with the service organization and the people who need to talk to. Access may be frustrated by opening hours, or by the shielding of a specific provider by other staff – a common role for secretaries in profession services.
5. Courtesy: Consideration by the service personnel for the customer and any property belonging to the customer.
6. Communication: How customers are questioned about their needs for a service, told about what is available, given information during the course of the service provision, and asked for feedback.

These are all likely to be important in services where there is a lot of interaction between staff and customers during the service encounter.

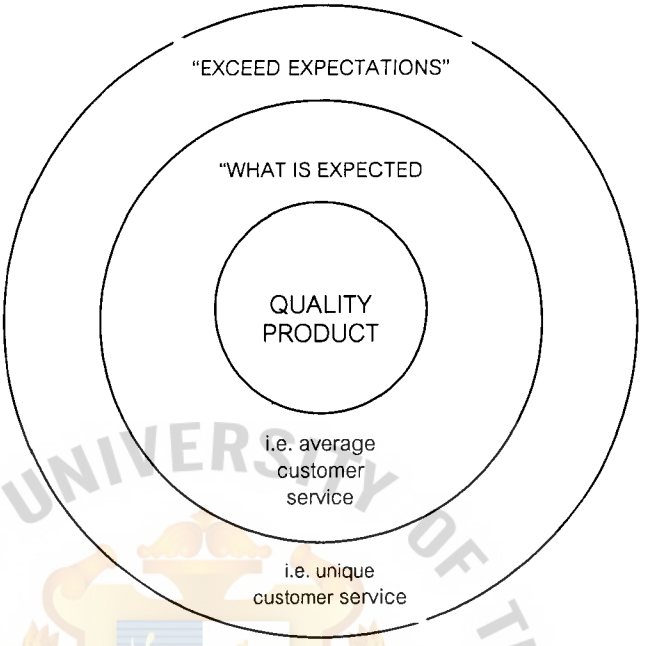
7. Credibility: Here the researcher has a strong link with perceived competence and reliability. First-time contacts are very important in forming an impression of credibility. If a poor impression is formed, that could signal the end of the encounter. Often this happens when a customer waiting to be served observes another encounter going wrong. Credibility is clearly very important for professional services; for instance, one certainly would not continue to use a financial adviser one did not perceive to be credible.
8. Security: This is referring here to customers' physical safety and the security of customer's money and belongings.
9. Understanding the customer: Here it is emphasizing the need to spend time and effort to get to the bottom of what a customer requires, so that customer feels in control of the service encounter.
10. Tangibles: This is the only dimension in the list which describes technical quality alone. Including the appearance of surroundings, their cleanliness and the fitness for purpose of any physical product in the service package, such as a written report, a meal, merchandise, or a dental filling.

More detailed lists exist to describe the quality characteristics of any products or physical items associated with the service. A typical list would include performance, features, reliability, and conformance to specifications, durability, serviceability and aesthetics.

2.5 Relationship between service and quality

The diagram below attempts to suggest how customer service can be used to gain a marketing advantage, not just by meeting customer expectations but by exceeding them. This is the concept of 'delighting the customer'. In this model the way the organization differentiates itself from its competitors is not just by the quality of the core product but by how to manages the 'service surround'. In other words the researcher should recognize that every interaction with the customer provides an opportunity to be 'unique' and to go beyond simply meeting expectations.

Figure 2.3: Customer service and total quality



One simple way of defining service quality in this total sense is as a ratio:

$$\text{Service quality} = \frac{\text{Performance}}{\text{Expectations}}$$

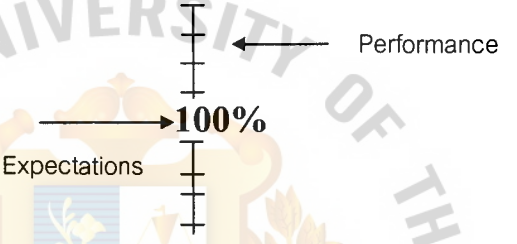
Source: The customer service planner, Martin Christopher, 1992

Since the researcher is able to both measure performance (as perceived by customer) and expectations (as defined by those customers), the researcher has a practical way of measuring service quality. Clearly any ratio less than 1.0 is inadequate and any ratio greater than 1.0 suggests that the researchers are seen as a quality supplier. This is not to say that the researcher should go for service 'overkill' – this is wasteful and will not enhance their position. Rather, the

researcher should be seeking ways in which it can provide levels of service which are appreciated by customers and which will lead to strengthening of the relationship.

Using the measurement techniques described in the previous sections the construction of a 'Service Barometer' as shown below can provide a powerful way of focusing management's attention upon the service quality challenge:

Figure 2.4: The Service Barometer



Source: Martin Christopher (1992)

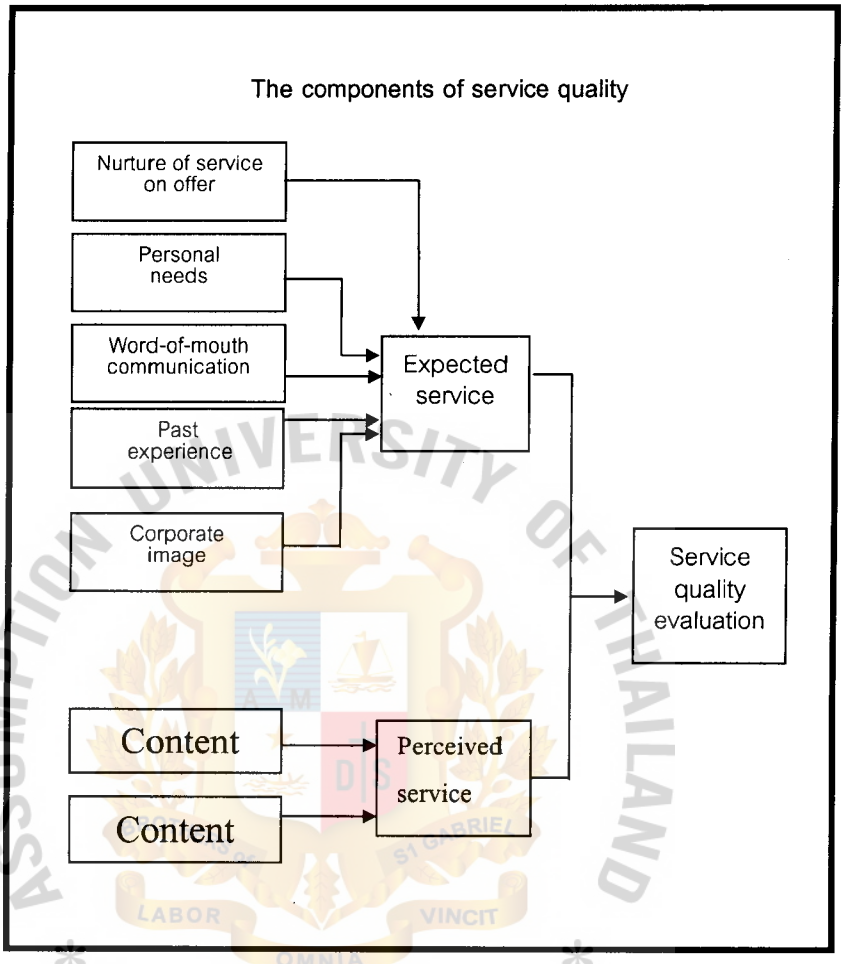
On the Service Barometer the expectations of the customer are scaled to represent 100 per cent (in other words acceptable performance; anything beyond that represents a potential differential advantage). Conversely any performance score below the norm indicates a service quality problem.

PERFORMANCE AND EXPECTATIONS: CLOSING THE GAP

If there is a gap between service performance and expectations in the wrong direction, i.e. performance does not match expectations, what can be done about it?

The first requirement is to ensure that the researcher fully understands what the main influences are both on expectations and upon perceptions of performance. This diagram suggests that a number of factors contribute to the level of service: the nature of the service/product on offer, the needs of the customer, word-of-mouth communication, past experience and corporate image. Service perceptions of performance will be influenced both by the content and the process of the service experience.

Figure 2.5: Model of service quality and its implications



Source: Based upon Parasuraman "Conceptual for Future Research "Journal of Marketing ,Vol. 49,1985

Place right through to service delivery failures. The model outlined in the diagram on page shows how the commutative effect if these gaps will lead to a shortfall of perceived performance against expectations:

Clearly improving the quality of service therefore will be beneficial not only to the customer but will also reduce the suppliers' costs. In other words the possibility of enhancing competitive advantage through the quality of service is a goal well worth pursuing.

2.6 Relationship of service quality to perception and expectation of customer.

The concepts relating to service quality

As mentioned above, service quality is the customer's judgment about an entity's overall excellence and superiority (Clow , 1997: Zeithaml, 1987). It is a form of attitude related, but not equivalent to, satisfaction, and results from a comparison of expectations with perception of performance. It is also different from objective quality (Zeithaml, 1996). Therefore, the following section will discuss the concepts related to service quality, such as objective quality, perceived value, satisfaction, and expectation, to help better understand the concept of service quality.

Holbrook & Corfman, (1985) and Zeithaml, (1996) emphasized the difference between objective and perceived quality. They said that consumers do not understand the term quality in the same way as researchers and providers, who often realize it too conceptually. The term "objective quality" is normally used in the text to illustrate the tangible technical superiority or excellence of manufactured goods. On the other hand, the perceived quality is the consumer's opinion regarding and entity's overall excellence or ascendancy.

Objective quality is usually understood as product and manufacturer oriented, whereas perceived quality is customer oriental. In other works, objective quality means the quality of product itself measured and claimed by marketers. However, customers' opinions often affect the perceived quality, which means that it may often be measured impulsively (Arora & Stoner, 1996). Zeithaml (1988) states "perceived quality is (1) different from objective and actual quality, (2) a higher level abstraction rather than a specific attribute of product, (3) a global assessment that in some cases resembles attitude, and (4) a judgment usually made within a consumer's evoked set."

Perceived Value

Much effort has been given to finding a solid definition of value in a variety of fields. Due to the highly personal and idiosyncratic nature, value is difficult concept to define. (Hofman,1984; Schechter,1984; Teas,1993). Understanding the differences between the terms value and quality may be the right approach to clarifying the meaning of value. Value is more individualistic and personal than quality: therefore, a higher level concept than quality, Additionally, Zeithaml (1988) emphasizes that "Value (unlike quality) involves a tradeoff of give and get components. Though many conceptualizations of value have specified quality as the only "get component in the value equation, the consumer may implicitly include other factors, several that are in themselves higher level abstractions, such as prestige and convenience."

Zeithaml, (1988) one of the pioneers in the field of marketing, simply defined the term value from his exploratory study. Patterns of responses from the customers who participated in his study could be grouped into four different definitions: (1) "Value is low Price," What the customers had to give up was most salient in the precautions of value. (2) "Value is whatever anyone wants in a product." This definition is fundamentally the same as the economist's, a subjective measure of the usefulness or want satisfaction that result from consumption. (3) "Value is what anyone get for the price each pays," This response approaches value as an exchange between one "give" component, price, and one "get" component, quality, (4) "Value is what anyone get for what anyone give." This is from the consideration of all relevant "get" components as well as all relevant "give" components. Zeithaml, (1988) encapsulates the above four expressions of value in an overall definition: "perceived value is the consumer's overall assessment of the utility of a product based on perceptions of what is receives and what is given

Perceived Service Quality

Perception

Perception is customer's beliefs concerning the service received and experienced. Antonides and Van Raaij, (1998) pointed out that people differ in perception of reality depending on experiences, life histories, and personal situations.(Zeithml and Berry, 1985).

Morrison, (1996) postulated that customers use their five senses – sight, hearing, taste, touch, and smell to size up hospitality and travel services and industry's promotional messages. In addition, they must not only be motivated to buy, but they must perceive that a service will satisfy their needs and want, Perception is "the process by with an individual selects, organizes, and interprets information inputs to create a meaningful picture of the world, "The perceptual process that makes people have difference views of the world: (1) perceptual screens or filters, (2) perceptual biases, (3) selective retention, and (4) perceptual process or closure".

Perceptual screens or filters are the customers screen out the majority of the stimuli or messages to which they are exposed.

Perceptual biases are the customers' twist of the information to match their pictures to the world. Even if an advertising message makes it through the perceptual screen, customers may alter it so much that it bears no resemblance to what was intended.

Selective retention is the way customers select messages and retain to information that supports their predispositions, belief, and attitudes.

Perceptual process or closure happens when the customers tend to see what they want to see. For instance, customers will round out their images of the companies, which are created by advertising.

Moreover, the degree of customer perception of hospitality and travel service are more likely to (1) screen out information which is already familiar, (2)

notice and retain information related to a need of which are aware (want) or one that are actively trying to satisfy, (3) buy services that match their perceived images of themselves, (4) notice and retain things that stand out from the norm, (5) see things that they anticipate seeing (e.g. tour brochures), (6) notice information from hospitality and travel organizations and destinations with which they have had successful previous experiences, and (7) attach greater credibility to interpersonal rather than commercially generated information.

2.7 Definition and Feature of Expectation and Perception

Zeithaml,(1996) emphasized that customer's satisfaction is significantly related to service quality, starting with the expectations that customers have when making their choices. Expectations are consumer-defined probability of the occurrence of positive or negative events if the consumer engages in some behavior (Clow ,1997). Expectations are important, therefore, it is true that customer's expectation is one of the most important parameters of which manufactures and service providers should be sensitive because of its influence on product purchase, store patronage, and complaining behavior. Swan & Trawich (1980) said, after their longitudinal study of the disconfirmation model of consumer satisfaction/dissatisfaction, that "when the product is used and the customer experiences how well it performs, eithe expectations will be exceeded, in which case satisfaction; or, if performance is short of expectation, dissatisfaction will result".

Expectations consist of two components: "a probability of occurrence" and "an evaluation of occurrence". For instance, in a customer service department, the possibility that an employee is available to wait on customers is understood as the probability of occurrence, whereas the evaluation of occurrence is known as the level to which the employee's attention is desirable or undesirable.

Dutka, (1980) found that multiplicity of customer's expectations had been realized when deciding to purchase a product and to patronize a store. He categorized the customers' criteria involving the elements significantly affected on the level of their expectations, such as the merchandise assortment, service (including service personnel), clientele, physical facilities, convenience, store atmosphere, and effects of promotion campaigns. Due to this multiplicity of customer's expectations, it is true that service quality study is extremely difficult to measure and perform, and will continue to become more difficult as years pass. (Trawich & Swan, 1980).

Customer Expectation

Parasuraman and Berry,(1991) elaborated the term 'expectations' as a comparison standard commonly used in two different ways – what customers believe will occur in a service encounter (predictions) and what customers want to occur (desires). The researcher also indicates to what level actual service reflects the service, the customer hopes to receive. The result is a blend of what the customers believes "can be" and "should be." The adequate service level reflects

what the service "will be," i.e., the customer's predicted service level. The difference between the desired service level and the adequate service level can be called a zone of tolerance that customer considers satisfactory (Parasuraman and Berry,1991).

In the conception model Parasuraman and Berry (1991) summarized four main sections of service quality:

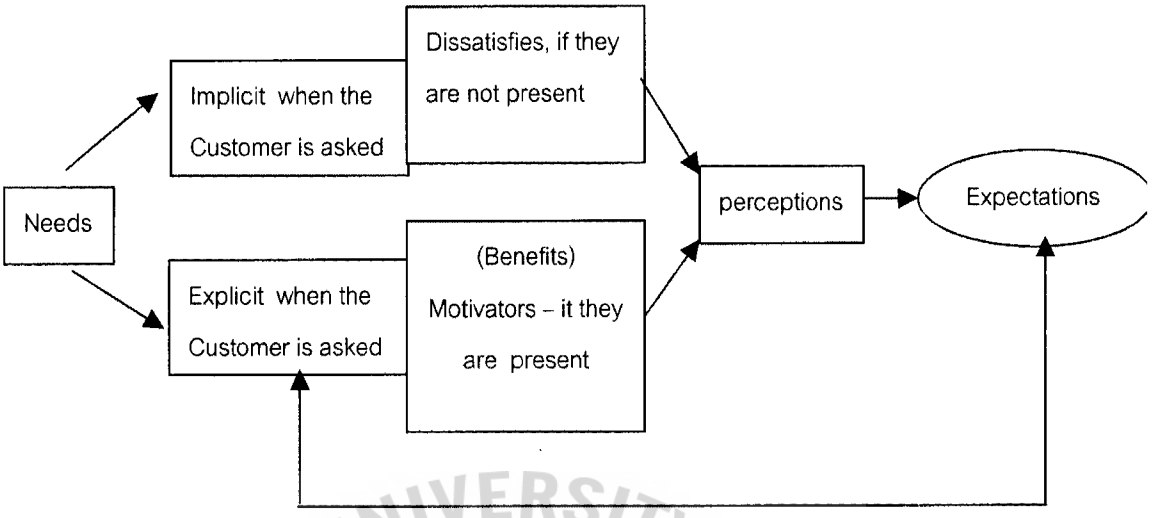
1. The expected service component, consisting of the desired level and the adequate level and – consequently – the zone of tolerance.
2. The antecedents of desired service such as enduring service intensifiers (stable factors that lead the customer to a heightened sensitivity to service) and personal needs.
3. The antecedents of adequate service such as transitory service intensifiers (temporary, usually short-term, individual factors that lead the customer to a heightened sensitivity to service), perceived service alternatives, self-perceived service role (customers' perceptions of the degree to which they themselves influence the level of service they receive) and kinds of situational factors.
4. Antecedents of both predicated and desired service such as the explicit service promises made in advertising or personal selling, the implicit service promises (e.g. derived from tangibles or price), word-of-mouth communications, and past experiences.

2.8 Analysis the Theory Related to Perceptions and Expectations

From needs to perceptions to expectations

Needs (unmet and discovered, implicit, explicit) are modified by perceptions which in turn modify our expectations (Fig. 2.6). Perceptions modify an 'objective' evaluation of how a service may answer a need. They introduce a subjective element into the judgement. Thus, the customer will not see whatever your company says or does in exactly the same way you do. Expectations, on the other hand, have more to do with the level of service customers perceived to be due to them, given their needs and perceptions of the offer. Say an airline loses my luggage on a transatlantic flight. When the researcher land expectation is that the carrier will check thoroughly at the landing airport. The airline should tell me what the position is; the researcher should not have to explain the situation to them. They tell me before the researcher ask them. The researcher should simply have to give my name, luggage tag and declare the luggage's valve for the airline to complete the paper work (The researcher shouldn't have to answer a barrage of questions). The researcher should receive an explanation of what happened on the spot, and be given a short – term solution – that is, getting my luggage or a phone call within 24 hours. If it is lost, the airline should compensate to the declared value within 48 hours.

Figure 2.6 : Needs, Perception, Expectations



Source: "Service Marketing" Australia and New Zealand, Chrisopher H.Lovelock, Paul G.Patterson and Rhett H.Walker 1998

The researcher have yet to find and airline that does this? On a trip to Chicago from Geneva via Paris, my suitcase was lost. Not only did the researcher have to wait to establish that the luggage was lost, the airline refused to carry out a landing airport check beyond the luggage area. Then there was an additional delay while The researcher explained what had happened, filled in the papers, and watched an official work on the computer using all of two fingers for typing. There was no short – term solution, no evaluation of potential loss, no call next day; The researcher called but hung up after ten minutes of listening to music.

What created my high expectations in the first place? There were three reasons.

- On a previous occasion another airline had found luggage in the landing airport within ten minutes. Since the luggage tag has a bar code, the researcher knew from other industries that bar codes are used for tracking (for example, at Federal Express all shipments are tracked four times). So after a nine – hour flight, the information system should already have recorded something.
- The researcher traveled with someone else on the same flight coming from the same place. The luggage did not arrive, but hers did. The researcher was also angry, because The researcher had paid an outrageous price (ten times more than the others who were on a group rate had had) to fly on the same airplane.
- Finally, the carrier that sold the idea of the hub from Geneva to Paris to fly transatlantic rather than going through Zurich.

In fact this example describes exactly how expectations are formed and is illustrated in Figure 2.6 (Lovelock, 1998).

2.9 Critical Analysis of Theories Related to Customer Perceptions and Expectations

How to manage perceptions and expectations

Since all these items described above are linked, this is obvious that the best companies manage the whole chain by:

- Listing which needs are implicit – that is, those whose absence will cause dissatisfaction, even if only explicit needs will actively motivate customers to use your company;
- Identifying how needs are modified in perception;
- Determining how expectations are formed.

This is especially important in the service sector. If this is what your business does, unlike product – oriented companies you are selling two things: the service itself, whether a hotel room, a maintenance contract, or advice; and the 'ability' to serve, which in many cases the customer has to believe you can deliver.

World-class companies use the following tools to manage both perceptions and expectations.

- Peripheral clues – that is, those physical communication processes that will reinforce the demonstration of your ability to serve before the customers are served. When Otis checks an elevator, you see the signature of the repair operative in the elevator. At Federal Express (FedEx), in 99 percent of cases, operators answer the phone before the first ring (telling you, 'We are efficient!). Decoct, a company which manages bus shelters and their advertising throughout Europe, has white trucks to show its ability to carry out a clean and efficient job. Leis, the European linen Service Company asks its truck drivers, called the AIS (*agent's de service*), not only to pick up and

deliver linen but also to keep an immaculate truck. Clean linen comes from a clean truck. That's a fact – sorry, a perception of life!

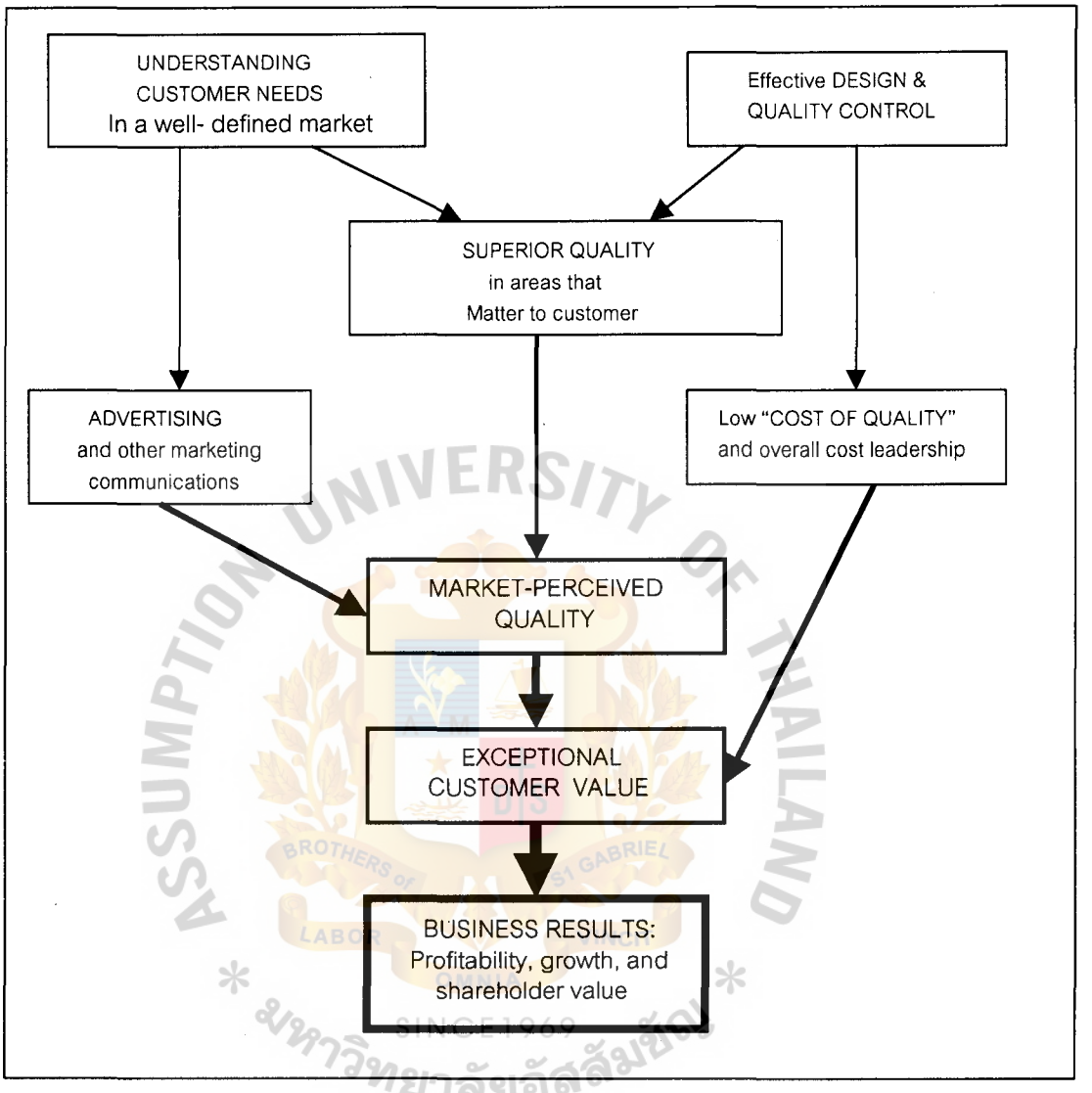
- Information given to customers can help them to appreciate better or understand your prices. Amazon.com presents the review of critics as well as best – seller lists. Texas Instruments even provides software that allows customers to compare its products with competing goods on the basis of total cost of ownership (TCO). This means that customers can use a number of factors – not just price – for comparison.
- Documentation, both technical and commercial, should be clear, especially if you want to be perceived as transparent and user-friendly.
- Testimonials help in reinforcing the 'ability' to 'serve'. They have recently been used cleverly in Swissair's advertising.
- Advertising in general should be aimed at under-promising so you can over-deliver. Knowledge and training will go a long way to help customers understand better what you stand for.

2. 10 A Methodology to Create Quality that Customers Can See

In the language of the Baldrige criteria, this is about "customer focus and satisfaction" – the central element of "quality" for which the Baldrige criteria wisely give 300 of the 1,000 total points. This will show how companies have identified the attributes that are important to customers, how to understand the

importance customers give those attributes, and how to analyze performance relative to competitors on each attribute.

Figure 2.7 : Creating value that customers can see



Source: "Service Marketing" ,Australia and New Zealand .Christopher H.Lovelock,Paul G Patterson Rhett,H.Walker,1998

That will show how to drive your business from this understanding of what quality means to your customers.

The measurement systems discussed here complement traditional quality – control technology, but are ultimately of more fundamental strategic importance.

If the starting of a quality program for scratch today, that should begin with what has been Stage Three for most companies – aiming to create *better market – perceived quality than your competitors,* using the tools in to do so.

Relationship of Service and Satisfaction

Service encounter satisfaction : conceptualized

Since the 1970s researchers have focused on understanding consumer satisfaction. Since that time services have continually grown until they currently account for over two-thirds of American workforce employment (Assael, 1990). Service export is also being counted on to help address the country's balance of trade problems (Zeithaml, 1990). Suffice it to say, services are crucial to the US economy. With the marketing concept operating as a powerful driving force, understanding consumer satisfaction and the service encounter is now at the forefront of marketing's priorities.

The purpose of this article is to offer a richer conceptualization of the disconfirmation paradigm suitable for service encounter

Conceptualization that, while explicitly acknowledging the process of service consumption. Offers practitioners significant into managing service delivery to satisfy consumers. Initially, this article addresses the pertinent service and

satisfaction literature, followed by a detailing of the model. Finally, managerial implications and conclusions are forwarded.

Services marketing

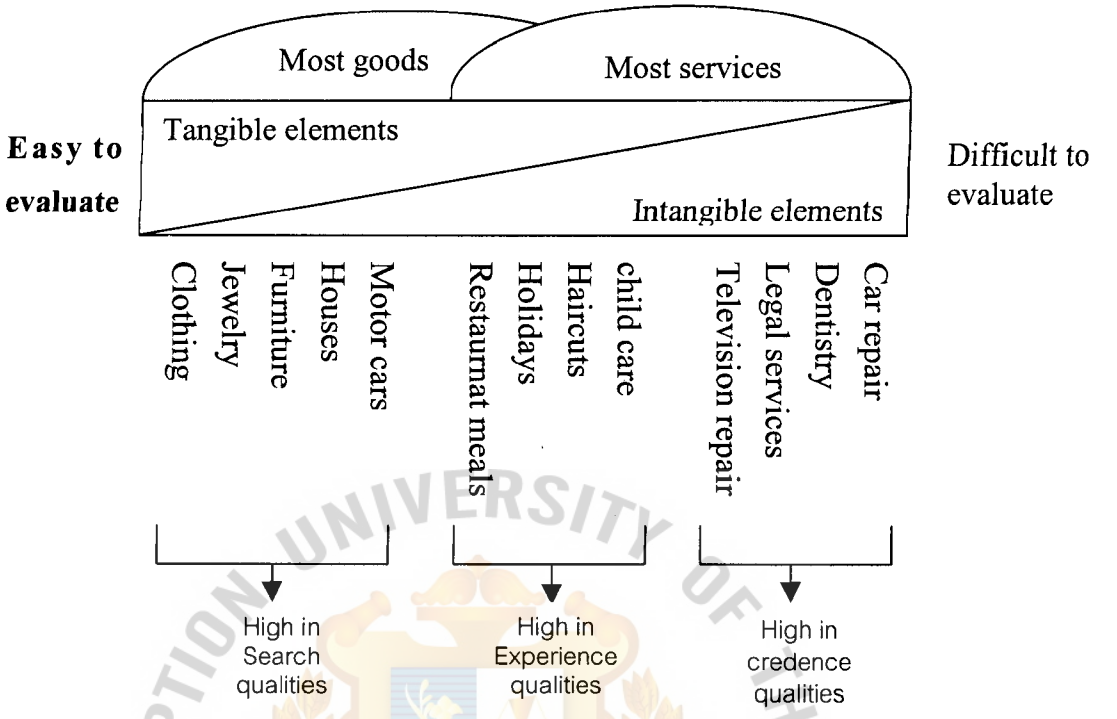
According to Levit, (1994), products (goods) are bundles of attributes rendering satisfaction. Services too are bundles of attributes rendering satisfaction, yet they have been more aptly described as "promises of satisfaction". Compared with goods, it is commonly accepted that services have unique characteristics. Services are primarily, intangible, cannot be separated from their provider or stored in inventory, and their delivery tends to be inconsistent.

Both goods and services are conceptualized to fall on a continuum ranging from tangible to intangible (Figure, 2.8). Goods and services contain search, experience, and credence qualities. Search qualities are those that a consumer can determine prior to purchasing, experience qualities are those that can only be discovered after purchase or during use, and credence qualities are those the consumer may find impossible to evaluate, event after purchase and consumption. As the figure illustrates, services primarily contain experience and credence qualities.

Czepeil, (1992) commented that service performance takes place in what has been termed the service encounter; the time frame during which consumers directly interact with service providers. This implies that all elements of an encounter, for example the physical facility, waiting times, and of course service

personnel are involved, Such an encompassing view is not only conceptually sound but also practitioner focussed, in that variables in the service delivery environment are often controllable factors of a firm's marketing mix.

Figure 2.8: The goods/service continuum



Source: Cameron Marsaili, Rushton, Angela ,jt. auth and Carson, David, jt.auth,1989, Marketing.

Technical and functional dimensions

Service performance has been divided into a technical and functional dimension, Technical performance is the "what", "where" and " when" of the service (Phillip B.,1989). For example, a hotel' s core service could be described as "a comfortable night's sleep" while its functional components includes having a room easily accessible from the elevator or a pleasant desk clerk. Similarly, Lovelock, (1991) discusses core and supplementary services. Continuing the hotel example, "a comfortable night's sleep" remains core, while supplemental services

include room service or advice on local eating establishments. Thus, services have a core component as well as peripheral components (peripheral in the sense they are not the "what" a consumer is purchasing). Service consumers evaluate both core and peripheral service performance.

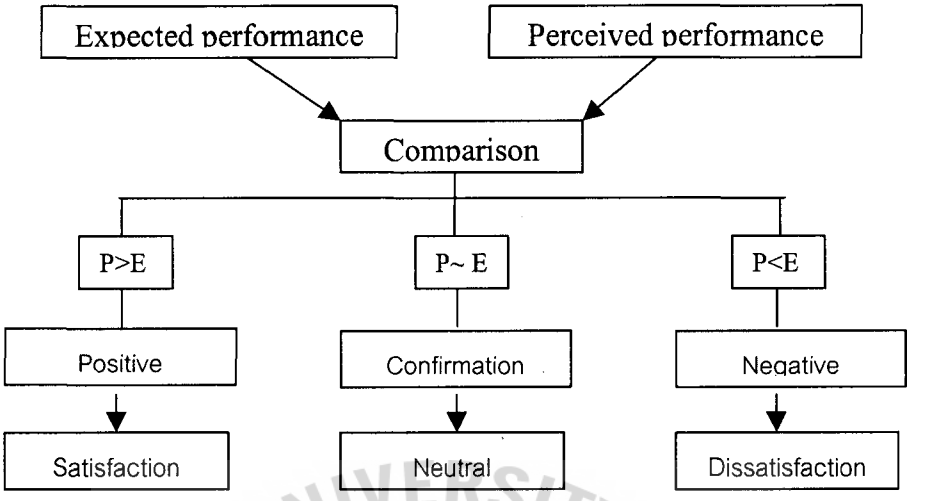
2.11 Relationship of Perceptions and Expectations

Zone of indifference

Woodruff ,(1985) suggest consumers have a "zone of indifference" in evaluations, indicating performance must fall outside some expectation standard for satisfaction/dissatisfaction to occur (confirmation leads to a neutral/indifferent state). Oliver, (1999) proposes that disconfirmation for continuously provided services do not operate unless service changes occur outside some range of experienced-based norms. In other words, consumers may not take notice of, may neither be satisfied or dissatisfied with, certain aspects of the encounter. Hochbery, (1978) argue that the typical consumption experience occurs without much conscious evaluation of the multitude of factors in the environment. Because information-processing limitations prevent full attention to every detail in an ambiguous situation, consumers use assimilation provides a clear violation of expectations. That is, unless something out of the ordinary occurs prior to, during, or after purchase, a consumer's evaluation of the service encounter will include increasing amounts of neutral judgments ("seeing" performance as expected). The disconfirmation model depicted in(Figure, 2.9) is based on this Woodruff,(1985),

notion illustrated by Joe,(1981).

***Figure 2.9* : The disconfirmation of expectation model**



Source: Paul G. Paterson "Expectations and Product Performance as Determinants of Satisfaction for a High – involvement Purchase "Psychology and Marketing, 10, Sept/Oct 1993, p. 449 - 462

2.12 Previous study

Choi, (2001) studied the influence of overall service quality on consumer satisfaction and member's repurchase intentions at fitness clubs in Seoul, South Korea. The influence of customer satisfaction on the level of their repurchase intentions was also examined. This study was conducted on subjects selected from two fitness clubs, in the winter of 2000/2001. A total of 468 fitness clubs members participated in this study. The utilized instrument was a self-assessment questionnaire developed by Chang of Ohio State University, Columbus, OH. (1998), to measure the influence of the nine service quality

factors on customer satisfaction and repurchase intentions. The questionnaire consisted of four sections: Service Quality scale, Customer Satisfaction scale, Customer Repurchase Intentions scale, and demographic information. The simple and multiple regression statistical methods were employed to find out the influence level of service quality factors on customer satisfaction and their repurchase intentions, as well as which were the most influential factors.

The result showed that the perceived service quality factor was the most influential predictor on both levels of customer satisfaction (B= .394) and their repurchase intentions (B = .344). The variance of the level of overall customer satisfaction was explained by the following predictors in the order of higher to lower: Perceived service quality, contact with physical environment, interpersonal interaction, and Program. Also, the variance of the level of repurchase intentions was predicted by the following factors in the order of higher to lower: Perceived Service Quality, and the Interpersonal Interaction.

Additionally, the result showed that there was a relationship between overall customer satisfaction and customer repurchase intentions (B = .670). A clear path was seen from the independent variable, Customer Satisfaction to the dependent variable, Repurchase intentions.

Srisuk, (1999) studied the customers' expectation on mobile telephone service in Bangkok Metropolitan in aspects of convenience, special services, call center service and the method of payment. The data were collected from 400 digital mobile telephone customers in Bangkok Metropolitan by

questionnaires. The findings were summarized as follows: age and education were at the .05 level of significance. There were no differences in sex, socio-economic and occupational factors. The customers' expectation was more than the customer service rendered in all aspects; convenience, special services, call center service and the method of payment. The customers' expectation was also not related to the customer service.

From the outcome of this study, several beneficial suggestions are worth considering: 1) customer convenience: more emphasis on communication network for a wider range coverage is required 2) special services: the services should be provided free of charge or charge at a more appropriated rate 3) call center service: quicker responses and follow-ups on problems must be considered 4) the method of payment: monthly invoice statement should be submitted quickly and accurately.

Na Nakorn, (2001) studied that the customers' behavior on using mobile phone services and factors affecting consumers' behavior and opinion of mobile phone services in Bangkok Metropolitan. The results from this study can be applied for marketing strategy planning of those service provider companies. This study used the secondary data to analyze the market situation of mobile phone service and primary data from 400 samples to analyze consumers' behavior and test the relation between consumers' behavior and opinion of using mobile phone services and personal factors by using Chi-square.

According to the empirical results, significant factors which affect consumers' opinion and behavior of choosing services are clarity and density of communication signal in any area, tuning theft protection of mobile phone, sales promotion, service cost per minute, monthly service fee and cost of mobile phone. The study of relationships between personal characteristics and consumers' opinion and behavior of choosing services indicates that tuning theft security is related to education at confidence level of 99%, cost of mobile phone and advertisement and public relation is related to sex at confidence level of 95% and 99%, respectively, advertisement and public relation is related to income and sale promotion at confidence level of 95%. Therefore, service providers should focus on quality of their communication signal and continue to use sales promotion strategy. Service providers might also use different strategies for different groups of people, such as, use different advertisement and public relation in each gender.

Watson, (1998) found a significant relationship between product quality, service quality, image of the firm, and customer satisfaction in a commodity industry. Seven hundred and sixty-five customers of a building products division were probed on questions of product quality, service quality, and image of the firm and three aspects of customer loyalty intentions as a proxy for satisfaction.

Kunsoonthornkij, (2000) created a study titled "Marketing Communication Affecting the Satisfaction at the Sales Booth and the Purchasing Decision of the Customers: A Case Study of the Total Access Communication Public Company Limited". This was to study the satisfaction of the customers

using the service at TAC sales booth, including the marketing factors, namely, the product, service, price, distribution channel and sales promotion that influence and affect the customers' decision to purchase mobile phone from the TAC Company. A special emphasis is placed upon the perception of information from the media available at the sales booth and the satisfaction after using the services at the company's sales booth. The study also examines the issue relating to marketing communication, i.e. advertising, public relations, salesmanship, sales promotion and marketing activities that contribute to the decision to purchase the product eventually.

This is a survey research, using questionnaires as tools for collecting data. The sample group consists of 400 people, all of whom are customers at the sales booth of the TAC Company. The statistics used in this research include Percentage, Mean, T-test and ANOVA. The research found that customers of different services, ages, educational backgrounds, professions and income rates demonstrate different levels of satisfaction when using the services at TAC sales booth. Those who are male, aged between 36-45 years old, having a lower-than-university education (diploma or vocational school), working for the government with a monthly income of 15,001 – 25,000 baht demonstrate the highest level of satisfaction when using the services at the company's sales booth.

With regard to the marketing communication factors, male customers pay the most attention to the product/service with the mean value of 4.39 and the price with the mean value of 4.38. By contrast, female customers pay most

attention to sales promotion with the mean value of 4.55. Moreover, customers of different ages pay different levels of attention to factors relating to the product, service, price and place.

CHAPTER 3

THEORETICAL AND CONCEPTUAL FRAMEWORK

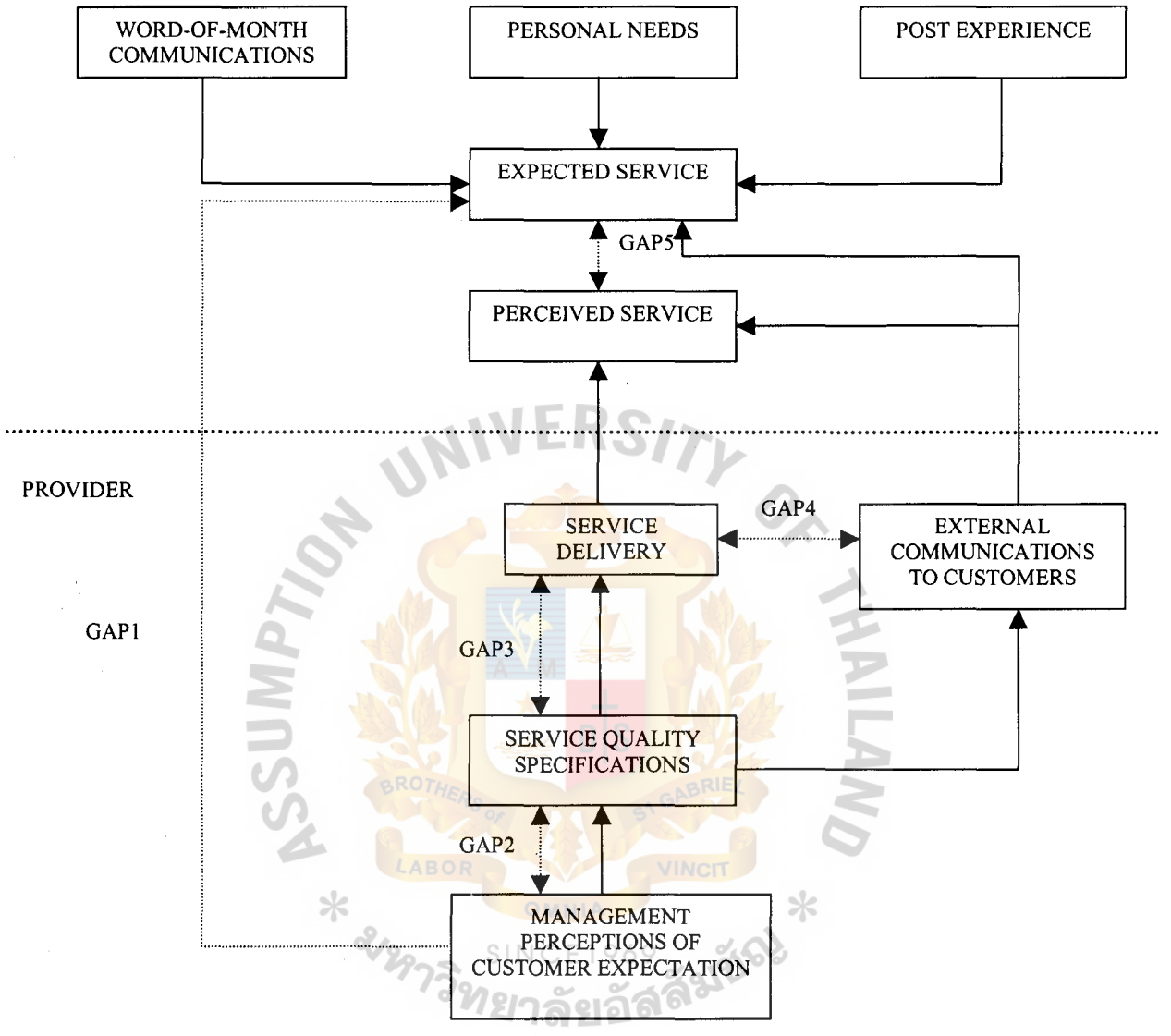
3.1 Theoretical Framework

Many of theoretical frameworks described in the Literature Review form the base of this study, related to the expectation and perception in service quality. The theory applied was SERVQUAL (Service quality dimension), dimensions of service quality, customer expectation and perception and customer perspective.

Related to the model of Service Quality of A.Parasuraman, Zeithaml and Berry (1990), this research was developed to survey the relationship between the expectation and perception of service quality for mobile phone users from AIS and DTAC. The dimensions of service quality included tangibles, reliability, responsiveness, assurance and empathy.

The theoretical framework is drawn on the different theoretical frameworks and studies described in the literature review. There are many different frameworks related to the service quality and customer satisfaction.

Figure 3.1: Theoretical Model of Service Quality



GAP3, GAP4, GAP5

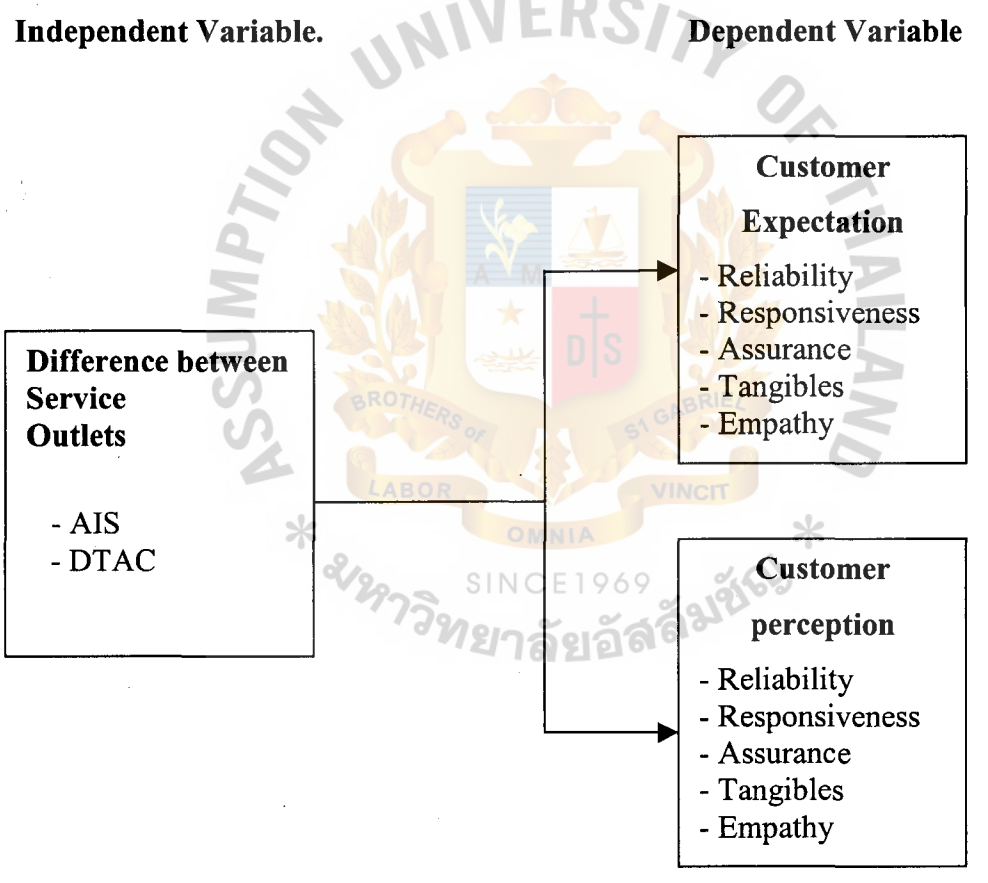
Source: A. Parasuraman, Volarie A Zeithanl, and Leonard L. Berry (1990). Delivering Quality Service, Conceptual Model of Service Quality, p.46

3.2 Conceptual Framework.

As shown in Figure 3.2, the modified service quality model relates to the conceptual framework. For independent variable specified on demographic factors and customers of AIS and DTAC, for dependent variable that covered expected service quality and perceived service quality.

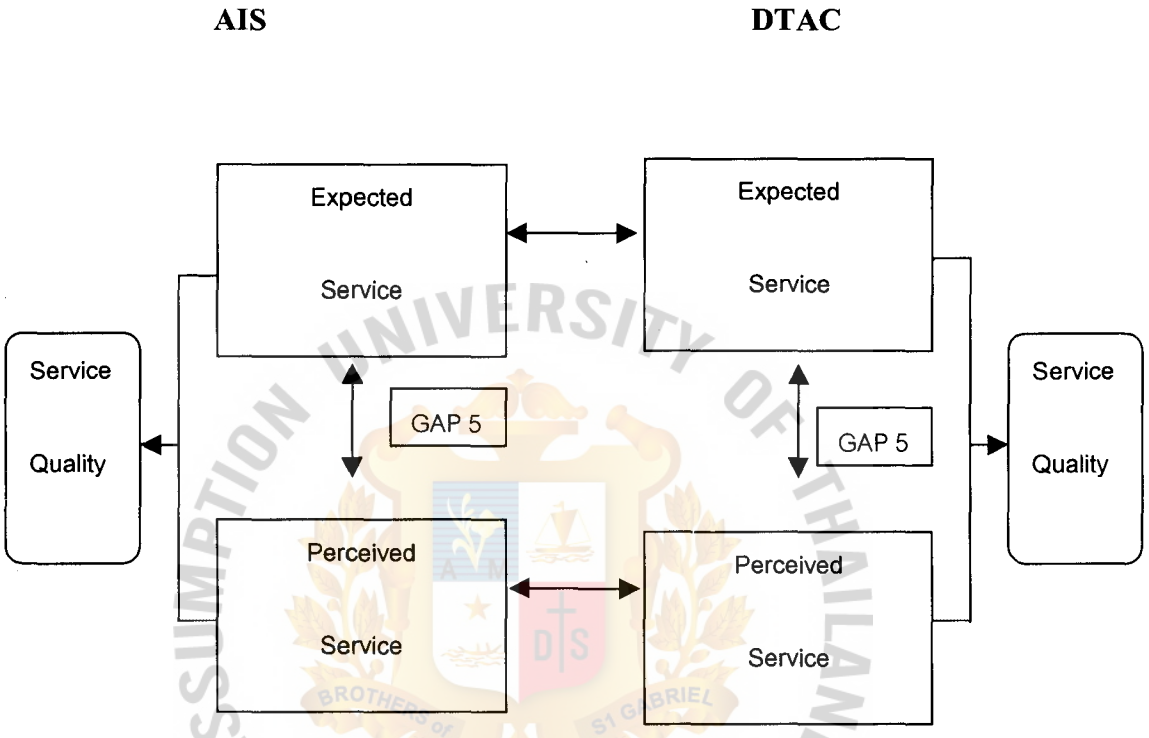
Figure 3.2 : Conceptual Framework

Conceptual Framework between Independent and Dependent Variable



Conceptual Framework

Figure 3.3: **Conceptual Framework of Comparison between AIS and DTAC**



3.3 Research Hypothesis.

The hypothesis statements as shown below are explanations for the compression of Service quality between AIS and DTAC that was divided into groups. The first group consisted of H_1-H6, which measured the relationship of customer expectation of service quality between AIS and DTAC when determined by tangible, reliability, responsiveness, assurance and empathy. The second group consisted of H7-H12, which measured the relationship of customer perception of

service quality of the two companies when determined by sub-variables of service quality. The third group from H13-H14, measured the relationship between customer expectation and perception of service quality of two companies. The fourth group, from H15-H19, measured the relationship of service quality that, related to demographic of mobile phone users.

Research Hypotheses

The hypothesis statements as shown below are explanations for the consumer perception and expectation of service quality. Hypothesis statement contain the independent variables and dependent variables as detailed below.

1. $H1_0$: There is no difference in customer expectation of service quality between AIS and DTAC

   H1a There is a difference in customer expectation of service quality between AIS and DTAC

2. H2o: There is no difference in customer expectation of service quality between AIS and DTAC when determined by tangibles

   H2a: There is a difference in customer expectation service quality between AIS and DTAC when determined by tangibles

3. H3o: There is no difference in customer expectation of service quality between AIS and DTAC when determined by reliability

   H3a: There is a difference in customer expectation of service quality between AIS and DTAC when determined by reliability.

4. H4o: There is no difference in customer expectation of service quality between AIS and DTAC when determined by responsiveness

   H4a: There is a difference in customer expectation of service quality between AIS and DTAC when determined by responsiveness

5. H5o: There is no difference in customer expectation of service quality between AIS and DTAC when determined by assurance

   H5a: There is a difference in customer expectation of service quality between AIS and DTAC when determined by assurance

6. H6o: There is no difference in customer expectation of service quality between AIS and DTAC when determined by empathy

   H6a: There is a relationship between service quality between AIS and DTAC when categorized by reliability

7. H7o: There is no difference in customer perception of service quality between AIS and DTAC.

   H7a: There is a difference in customer perception of service quality between AIS and DTAC.

8. H8o: There is no difference in customer perception of service quality between AIS and DTAC when determined by tangible

   H8a: There is a difference in customer perception of service quality between AIS and DTAC when determined by tangible

9. H9o: There is no difference in customer perception of service quality between AIS and DTAC when determined by reliability

   H9a: There is a difference in customer perception of service quality between AIS and DTAC when determined by reliability

10. H10o: There is no difference in customer perception of service quality between AIS and DTAC when determined by responsiveness

    H10a: There is a difference in customer perception of service quality between AIS and DTAC when determined by responsiveness

11. H11o: There is no difference in customer perception of service quality between AIS and DTAC when determined by assurance

    H11a: There is a difference in customer perception of service quality between AIS and DTAC when determined by assurance

12. H12o: There is no difference in customer perception of service quality between AIS and DTAC when determined by empathy

    H12a: There is a difference in customer perception of service quality between AIS and DTAC when determined by empathy

13. H13o: There is no difference in customer expectation and perception of service quality of AIS

    H13a: There is a difference in customer expectation and perception of service quality of AIS

14. H14o: There is no difference between customer expectation and perception of service quality of DTAC

    H14a: There is a difference between customer expectation and perception of service quality of DTAC

15. H15o : There is no difference between men and women in service quality of mobile phone users

    H15a: There is a difference between men and women in service quality of mobile phone users

16. H16o: There is no difference in service quality of mobile phone user when segmented by age levels

    H16a: There is a difference in service quality of mobile phone user when categorized by age levels.

17. H17o : There is no difference in service quality of mobile phone user when segmented by education levels

    H17a: There is a difference in service quality of mobile phone user when segmented by education levels

18. H18o: There is no difference in service quality of mobile phone users when segmented by income levels

    H18a: There is a difference in service quality of mobile phone users when segmented by income levels

19. H19o: There is no difference in service quality of mobiles phone users when segmented by occupation levels

H19a: There is a difference in service quality of mobiles phone users when segmented by occupation levels

3.4 Concept and variable operation

Table 3.1: Operational definition of variables

Independent

Concept	Definition	Level of Measurement
1) Customer: Mobile phone users of two brands	Mobile phone users of two companies - AIS (Advanced info Service Public Company Limited) for mobile phone user in one-to-call, GSM 2 WATT, GSM 1800 - DTAC (Total Access Communication Public Company Limited) for mobile phone user in post-paid system.	Nominal
2) Demographic	-Age -Gender -Education -Income -Occupation	Ordinal Nominal Ordinal Ordinal Nominal

Dependent

Concept	Definition	Level of measurement
Service Quality	A comparison of perception of the service received with expectation of the service desire which comprise of - Reliability - Responsiveness - Security - Tangibles - Empathy	Interval

CHAPTER 4

RESEARCH METHODOLOGY

4.1 Method of Research use

This is a comparative study of service quality between two companies; AIS and DTAC in the Bangkok metropolitan area. Its purpose is to gain an increased understanding of the importance of service quality in the two companies. Descriptive Research is used to describe the population or phenomenon of the quantitative aspect. This chapter is primarily concerned with the methodology of the study that includes research design, sample size and method, the sampling plan, data collection, and statistical treatment of data.

4.2 Sources of data

1. Primary data is collected through a questionnaire survey in which information was collected from mobile phone users. The sampling was conducted in the Bangkok area and contains a total of around 400 samples.

2. Secondary data has text books, journals, the internet, newspapers, magazines and previous studies as its sources. Its purpose is to support the conclusion.

4.3 Research Design

This research is to study the service quality of mobile phone users of the two companies AIS and DTAC. For service quality, a conceptual model of service quality developed by Parasuraman, Ziethaml, and Berry (2000, pp. 45-46) was taken to apply to this part of the survey.

4.4 Sample Size

To determine the sample size from a population that covered mobile users in Bangkok and surrounding area, in the age range of 18-45, data from the National Statistics Office of Thailand was used. The sample size of 400 was needed so that the survey result would be accurate at the 95% confidence level, which in effect means that the possibility of the results occurring by chance is only 5 percent. The first study was counted by Chutchanee, (2002) on the topic of "A study in Service quality of Trang's travel boats in a comparison between Sirisin Boat and Trang Waree Boat. Ngandee, (2000) had a sample size of 256 respondents for testing the study of "Relationship between service quality and customer satisfaction on Private Driving Ranges in Bangkok". Methanukorh's, (1999) sample size was 249 in the collection of data of service quality related to hospital patients' expectations. Kitisatien, (1999) studies about employee perceptions and expectations on human resources' delivery of service quality with a sample size of 356. Based on these similar studies, the researcher concludes that 400 respondents is an appropriate sample size for this study.

4.5 Sampling method

This questionnaire survey was designed for mobile phone uses of the two companies in the Bangkok area only. The researcher planned to obtain and treat data and information by using the following step by step approach:

Step 1 Select as survey locations places of business that contain AIS and DTAC service centers. Almost all service centers are located inside major department stores. The stores are as follows:

1) Central Pinklao
2) Marbonklong-Siam Square
3) Central Lardprao
4) The Mall Bangkae
5) The Mall Bangkapi

Step 2 Allocate samples using random sampling giving each area an equal share of the total sample, 80 samples each. The areas were then divided equally between customers of the two companies; 40 for DTAC and 40 for AIS customers.

4.6 Research instruments / Questionnaire

The research instrument in this research is a questionnaire designed to capture the appropriate data on service quality. The questionnaire will cover the experiences of respondents of the mobile phone users of the two companies. The questionnaire consists of three parts:

Part 1. Demographic Profile of the respondents

Part 2. Service quality

Part 1. Demographic profiles. This part captures the general demographic particulars of respondents such as age, gender and income level.

Part 2. Service quality. This part measures the service quality as perceived from the customers of the two companies, which are then compared. The major question is whether either of the companies reaches the expectations of customers. This analysis employs a five point Likert scale to indicate degree of agreement or disagreement.

Very dissatisfied	1
Dissatisfied	2
Neutral	3
Satisfied	4
Very Satisfied	5

Table 4.1 : Arrangement of Questionnaire

Part	Main Variables	Question No.
1.	Demographic	1-6
2.	General information	7-12
3.	Service Quality	12-18
4.	Reliability	18-24
5.	Security	24-30
6.	Tangible	30-36
7.	Empathy	36-42

4.7 Pretest

The questionnaire was pretested on a trial basis in a pilot study to determine its suitability. To conduct the pilot survey or pretest, the number of trial surveys should be at least 25 respondents (Wanichbancha, 2001, p.29). For this study the research had run the pretest around 40 samples. After the pretest was conducted, the questionnaire was analyzed for reliability.

The reliability value is at least 0.6, which means that it should be considered reliable (Sekaran, 1992). The research used Alpha Coefficient Scale Coefficient's scale for testing the reliability of the questionnaire. To be perfectly reliable, the research would need a score of at or near 1.0.

1) Service Quality, Alpha coefficient scale

2) Customer Satisfaction, Alpha coefficient scale

3) All Items of Questionnaire, Alpha coefficient scale

4.8 Statistical Treatment of Data

Some of analysis in statistics was applied to analyze the data from questionnaires of all respondents. All data was analyzed, encoded and processed by SPSS (Statistical Package for Social Sciences). The statistical tools which are used in this research, are:

1. Basic statistic

percentage

Mean: $\overline{X} = \frac{\Sigma Xi}{N}$

Standard deviation C

$$SD = \frac{\sqrt{\Sigma(\overline{X}^2 - X)^2}}{N}$$

Where S = means standard deviation

X = means sum of total number power 2

$\overline{X}$ = means sum of each number power 2

N = means sample size

2. The Cronbach's Coefficient Alpha was used to test the reliability of the questionnaire.

3. Descriptive Statistics of Frequency Distribution were used to describe the percentage, mean, standard, etc., for describing the demographic profile.

4. Independent sample t-test is used to test the different means between two independent samples. The researcher used it to test hypotheses one through twelve, which compared the customer peceptions and expectations of service quality between the two companies The formula for t-test analysis is as follows:

$$t = \frac{\bar{X}_1 - \bar{X}^2}{\sqrt{\frac{S_1^2}{n_1} - \frac{S_2^2}{n_2}}}$$

$$df = \frac{(S_1^2/n_1 + S_2^2/n_2)^2}{\frac{(S_1^2/n_1)^2}{n_1 - 1} + \frac{(S_2^2/n_2)^2}{n_2 - 1}}$$

Explanation

X_1 = Mean of group 1

X_2 = Mean of group 2

S_1 = Variance of group 1

S_2 = Variance of group 2

n_1 = Sample size of group 1

n_2 = Sample size of group 2

df = Degree of freedom

group 1 = AIS

group 2 = DATC

4. The paired sample t-test is used to test hypotheses thirteen and fourteen. It is used to test whether or not there is any difference between customer expectations and customer perception toward service quality, and based on the study of Ticehurst and Veal, (2002).

$$t = \frac{\bar{d}}{Sd\sqrt{n}}$$

When $n-1$ = Degree of freedom

$\bar{d}$ = The mean of the difference between the pairs

Sd = The standard deviation of the distribution of the difference between the pairs or relates observations

n = the number of paired observations

5. The researcher used the Analysis of Variance (ANOVA) to test hypotheses fifteen and sixteen. This is used to test the different means of customer expectation and perception when segmented by services characteristics.

The ANOVA of F-test is the ratio as shown (Zikmund, 2000, P.649)

$$F = \frac{\text{MS between}}{\text{MS within}}$$

ANOVA Summary table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F-Ratio
Between groups	SSb	c - 1	MSb	$F = \frac{\text{MS between}}{\text{MS within}}$
Within group	SSw	n – c	MSw	
Total	SSt	n - 1	-	

c = Number of groups

n = Number of observations in a group

4.9 Summary of Statistical Analyses used in testing hypotheses

The researcher's statistical analysis is summarized in the table below

Table 4.2 : Summary of Statistical Analysis used to test hypotheses

Hypothesis	Testing
H_{10} : There is no difference in customer expectation of service quality between AIS and DTAC.	Independent Sample t-test
H_{20} : There is no difference in customer expectation of service quality between AIS and DTAC when determined by tangibles.	Independent Sample t-test
H_{30} : There is no difference in customer expectation of service quality between AIS and DTAC when determined by reliability.	Independent Sample t-test
H_{40} : There is no difference in customer expectation of service quality between AIS and DTAC when determined by responsiveness.	Independent Sample t-test
H_{50} : There is no difference in customer expectation of service quality between AIS and DTAC when determined by assurance.	Independent Sample t-test
H_{60} : There is no difference in customer expectation of service quality between AIS and DTAC when determined by empathy.	Independent Sample t-test
H_{70} : There is no difference in customer perception of service quality between AIS and DTAC.	Independent Sample t-test
H_{80} : There is no difference in customer perception of service quality between AIS and DTAC when determined by tangibles.	Independent Sample t-test
H_{90} : There is no difference in customer perception of service quality between AIS and DTAC when determined by reliability.	Independent Sample t-test

Hypothesis	Testing
H_{100} : There is no difference in customer perception of service quality between AIS and DTAC when determined by responsiveness.	Independent Sample t-test
H_{110} : There is no difference in customer perception of service quality between AIS and DTAC when determined by assurance.	Independent Sample t-test
H_{120} : There is no difference in customer perception of service quality between AIS and DTAC when determined by empathy.	Independent Sample t-test
H_{130} : There is no difference between customer expectation and perception of service quality of AIS.	Paired sample t-test
H_{140} : There is no difference between customer expectation and perception of service quality of DTAC.	Paired sample t-test
H_{150} : There is no difference in customer expectation of service quality when segmented by service characteristics.	The analysis of Variance (ANOVA)
H_{160} : There is no difference in customer perception of service quality when segmented by service characteristics.	The analysis of Variance (ANOVA)

4.10 Statistic for testing hypothesis

T-test

The Z and t task was used to determine the statistical significance between a sample distribution mean and parameter. The Z test was used with large sample sizes (exceeding 30 for independent sample). With small sample sizes, normally distributed populations, and an assumed equal population variance, the test is appropriate (Kalaya,1997)

$$Z = \frac{x_1 x_2 - (M_1 - M_2)}{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}$$

$$t = \frac{x_1 x_2 - (M_1 - M_2)}{sp^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}$$

(M1-M2) is the difference between the two population means associated with the pooled variance estimate

S_p^2 is associated with the pooled variance estimate

$$S_p^2 = \frac{(n_1 - 1)S^2 + (n_2 - 1)S^2}{n_1 + n_2 - 2}$$

ANOVA

The analysis of variance is a procedure that tests to determine whether differences exist among two or more populations. It also introduces the F test distribution and is used to test and estimate 2-population variance (Zikmund,2000).

$$F = \frac{MS_b}{MS_w}$$

F = Statistic test for F- distribution

MS_b = Variance between groups

MS_w = Variance within groups

Table 4.3 : ANOVA table for the Single-Factor Analysis of Variance Independent Sample

Source of variation	**Degree of freedom**	**Sum of squares**	**Mean Square**	**F-distribution**
Between groups	k-1	SST	$MST = \frac{SST}{(k-1)}$	$F = \frac{MST}{MSE}$
Within groups	n-k	SSE	$MSE = \frac{SSE}{(n-k)}$	
Total	n-1	SS(Total)		

Sum of Square of Treatment(SST) = $\Sigma\ n_j\ (x_j - x)^2$

Sum of Square of Error (SSE) = $\Sigma^k \Sigma^{nj}\ (x_{ij} - x_j)^2$

$i = 1 \quad j = 1$

CHAPTER 5

Results and Discussion

This chapter is primary concerned with the results of the survey conducted based on the procedures discussed in Chapter 4. The objective of this study is to measure the level of service quality of AIS and DTAC by determining the differences between customer expectation and perceptions about the quality. The questionnaire was distributed and collected in May 2003. Respondents are users of the two companies, with 200 respondents for each one. The data analysis and interpretation of the findings consists of the following parts: 1) description of demographic factors and expectation and perception – to summarize the demographic factors, which will be presented according to frequency and percentage of personal data, including mean of expectation and perception and 2) hypothesis testing to measure the service quality of DTAC and AIS by testing comparative hypotheses between the two companies and along the demographic groups.

5.1 Description of demographic factors

The demographic characteristics of respondents who were using mobile phones from DTAC and AIS in the Bangkok metropolitan area in this study are comprised of gender, age, education, income and occupation as shown in Table 5.1

Table 5.1: The percentage of sample groups by demographics

	DTAC		AIS		TOTAL	
	Number	Percentage	Number	Percentage	Number	Percentage
Sex						
Male	114	57.0	118	59.0	232	58.0
Female	86	43.0	82	41.0	168	42.0
Age						
Under 20	16	8.0	17	8.5	33	8.3
20-30	110	55.0	108	54.0	218	54.5
31-40	42	21.0	59	29.5	101	25.3
41-50	27	13.5	12	6.0	39	9.8
Above 50	5	2.5	4	2.0	9	2.3
Education						
Below Bachelor level	49	24.5	47	23.5	96	24.0
Bachelor Level	140	70.0	142	71.0	282	70.5
Master Level	8	4.0	5	2.5	13	3.3
Others	3	1.5	6	3.0	9	2.3
Income (baht)						
Less than 10000	88	44.0	94	47.0	182	45.5
10000-25000	89	44.5	76	38.0	165	41.3
25001-40000	20	10.0	20	25.0	40	10.0
40001-60000	1	0.5	6	3.0	7	1.8
60000-	2	1.0	4	2.0	6	1.5
Occupation						
Student	65	32.5	61	30.5	126	31.5
Employee	76	38.0	86	43.0	162	40.5
Management	5	2.5	5	2.5	10	2.5
Government	26	13.0	15	7.5	41	10.3
Self-employed	25	12.5	25	12.5	50	12.5
Others	3	1.5	8	4.0	11	2.8

The details of the demographic data for the sample group were as outlined in the above table. The majority were male (58%) where as (42%) were female. Of DTAC

customers, 57% were male and 43% female, and from the AIS customers 59% were male against 41% female.

For age, the majority were 20-30 years old (54.5%), followed by 31-40 years (25.3%). By DTAC customers, the majority were 20-30 years (55.0%), followed by 31-40 years (21.0%). For AIS customers, the majority were 20-30 years (54.0%), followed by 31-40 years (29.5%).

Their education level was mostly Bachelor level (70.5%), followed by Below Bachelor level (24.0%). For DTAC customers, the majority was Bachelor level (70.0%), and of AIS customers most held Bachelor level (71.0%).

For most, their income was less than 10,000 baht (45.5%), followed by 10,000-25,000 baht (41.3%). By DTAC customers, most were 10,000-25,000 baht (44.5%), followed by Less than 10,000 baht (44.0%). For AIS customers, most had less than 10,000 baht (47.0%), followed by 10,000-25,000 baht (38.0%).

The question on career found that the majority were employees (40.5%), followed by students (31.5%). By DTAC customers, most were employee (38.0%), followed by student (32.5%). For AIS customer, most were employee (43.0%), followed by student (30.5%)

Table 5.2:Percentage of system subscription of DTAC and AIS mobile

System	Number	Percentage
AIS		
GSM Advance	145	72.5
GSM 1800	32	16.0
Others	23	11.5
DTAC		
Digital 1800	185	92.5
800 System	2	1.0
Others	13	6.5

Table 5.2 , the system of AIS mobile found that , the most subscribed to GSM advance (72.5%), followed by GSM 1800 (16.0%). For DTAC system , the vast majority were Digital 1800 (92.5%) .

5.2 Description of expectation and perception

This research concentrates on finding out customers' assessment of expectations and perceptions of service quality when classified by tangibles, reliability, responsiveness, assurance and empathy. Tables 5.3 and 5.4 present the overall means of customers' expected and perceived service quality by comparison between AIS and DTAC

Table 5.3 : The means comparative of expectation between DTAC and AIS' customers

Expectation	DTAC		AIS	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.
1) Tangible	4.28	.55	4.25	.61
2) Reliability	4.01	.68	4.03	.68
3) Responsiveness	4.08	.74	4.06	.60
4) Assurance	4.07	.65	4.17	.63
5) Empathy	4.03	.71	4.05	.67
Total Expectation	4.09	.55	4.11	.53

From the comparison between AIS and DTAC, the expectation from DTAC customer was higher than AIS on Tangibles and Responsiveness. AIS was higher than DTAC on Reliability, Assurance, Empathy. The highest level of customer expectation along service dimension was tangible.

Table 5.4: The means comparative of perception between DTAC and AIS' customers

Expect	DTAC		AIS	
	$\overline{X}$	S.D.	$\overline{X}$	S.D.
1) Tangible	3.89	.55	4.08	.55
2) Reliability	3.58	.65	3.55	.56
3) Responsiveness	3.49	.77	3.49	.70
4) Assurance	3.18	.81	3.60	.68
5) Empathy	3.51	.62	3.41	.75
Total Perception	3.53	.50	3.62	.47

From the results as shown in Table 5.4, we see the comparison between AIS and DTAC' customer perception. The highest level of customer perception along service dimensions was tangibles. DTAC customer perception was higher than AIS in Reliability and empathy. AIS was higher than DTAC on Tangibles and Assurance.

5.3 Hypothesis Test

The hypothesis statements as indicated in chapter 4 consisted of nineteen hypotheses which were classified into three groups. The first group of hypotheses will be evaluated by using t-test between DTAC and AIS for testing the significance of the difference between expectation and perceptions. Comparisons between expectation and perception of DTAC and AIS uses two-tailed paired sample t-test for testing of hypotheses 13 and 14. The latter group is comprised of 5 hypotheses (nos. 15-19) and will be evaluated by using t-test and ANOVA for testing the significance of the difference between expectation and perceptions by demographic factors.

Hypothesis 1

$H1_0$: There is no difference in customer expectation of service quality between AIS and DTAC

H1a There is a difference in customer expectation of service quality between AIS and DTAC

Table 5.5: T-test for the difference in customer expectation between AIS and DTAC

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
EXPEC1	Equal Variances assumed	.130	.718	-.297	398	.767	-1.6292E-02	5.484E-02	-.1241	9.151E-02
	Equal Variances not assumed			-.297	397.471	.767	-1.6292E-02	5.484E-02	-.1241	9.151E-02

Table 5.5 indicates that there was no statistically significant difference in customer expectation of service quality between AIS and DTAC with a 2-tailed significance of .767, which is more than 0.05 (.767 > 0.05). Accordingly, the null hypothesis was not to rejected, and there is no difference in customers' expectation of service quality by DTAC and AIS at the 0.05 significance level.

Hypothesis 2

H2o: There is no difference in customer expectation of service quality between AIS and DTAC when determined by tangibles

H2a: There is a difference in customer expectation service quality between AIS and DTAC when determined by tangibles

Table 5.6: T-test for the difference in customer expectation between AIS and DTAC by tangibles

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
									Lower / Upper
EXPTA	Equal Variances assumed	2.111	.147	.590	398	.556	3.437E-02	5.828E-02	.0201E-02 / .1490
	Equal Variances not assumed			.590	393.472	.556	3.437E-02	5.828E-02	.0205E-02 / .1490

Table 5.6 indicates that there was no statistically significant difference in customer expectation of service quality by tangibles between AIS and DTAC with a 2-tailed significance of .556, which is more than 0.05 (.556 > 0.05).

Accordingly, the null hypothesis was not rejected, meaning that there is no difference in customers' expectation of service quality between AIS and DTAC when determined by tangibles at the 0.05 significance level.

Hypothesis 3

H3o: There is no difference in customer expectation of service quality between AIS and DTAC when determined by reliability

H3a: There is a difference in customer expectation of service quality between AIS and DTAC when determined by reliability.

Table 5.7: T-test for the difference in customer expectation between AIS and DTAC by reliability

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
									Lower / Upper
EXPRE	Equal Variances assumed	.601	.439	-.330	398	.742	-1.6292E-02	2.2500E-02	-.1567 / .1117
	Equal Variances not assumed			-.330	397.983	.742	-1.6292E-02	2.2500E-02	-.1567 / .1117

Table 5.7 indicates that there was no statistically significant difference in customer expectation of service quality by reliability between AIS and DTAC with a 2-tailed significance of .742 which is more than 0.05 (.742 > 0.05).

Accordingly, the null hypothesis was not rejected, meaning that there is no difference in customers' expectation of service quality between AIS and DTAC when determined by reliability at the 0.05 significance level.

Hypothesis 4

H4o: There is no difference in customer expectation of service quality between AIS and DTAC when determined by responsiveness

H4a: There is a difference in customer expectation of service quality between AIS and DTAC when determined by responsiveness

Table 5.8: T-test for the difference in customer expectation between AIS and DTAC by responsiveness

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
EXPRE	Equal Variances assumed	4.589	0.033	.344	398	.731	2.333E-02	6.784E-02	-.1100	.1567
	Equal Variances not assumed			.344	381.981	.731	2.333E-02	6.784E-02	-.1100	.1567

As shown in Table 5.8, there was no statistically significant difference in customer expectation of service quality by responsiveness between AIS and DTAC with a 2-tailed significance of .731 which is more than 0.05 (.731 > 0.05). Accordingly, the null hypothesis was not rejected, meaning that there is no difference in customers' expectation of service quality between AIS and DTAC when determined by responsiveness at the 0.05 significance level.

Hypothesis 5

H5o: There is no difference in customer expectation of service quality between AIS and DTAC when determined by assurance

H5a: There is a difference in customer expectation of service quality between AIS and DTAC when determined by assurance

Table 5.9: T-test for the difference in customer expectation between AIS and DTAC by assurance

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
									Lower / Upper
EXPASS	Equal Variances assumed	1.290	.257	-1.538	398	.125	9.9167E-02	6.447E20	-.2259 / 2.758E-02
	Equal Variances not assumed			-1.538	397.094	.125	9.9167E-02	6.447E20	-.2259 / 2.758E-02

As shown in Table 5.9, there was no statistically significant difference in customer expectation of service quality by assurance between AIS and DTAC with a 2-tailed significance of .125 which is more than 0.05 (.125 > 0.05).

Accordingly, the null hypothesis not rejected, meaning that there is no difference in customers' expectation of service quality between AIS and DTAC when determined by assurance at the 0.05 significance level.

Hypothesis 6

H6o: There is no difference in customer expectation of service quality between AIS and DTAC when determined by empathy

H6a: There is a relationship between service quality between AIS and DTAC when categorized by empathy

Table 5.10: T-test for the difference in customer expectation between AIS and DTAC by empathy

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
EXPEM	Equal Variances assumed	.060	.806	-.252	398	801	1.7500E-02	6.940E-02	-.1539	.1189
	Equal Variances not assumed			-.252	395.720	.801	1.7500E-02	6.940E-02	-.1539	.1189

As shown in Table 5.10, there was no statistically significant difference in customer expectation of service quality by empathy between AIS and DTAC with a 2-tailed significance of .801, which is more than 0.05 (.801 > 0.05).

Accordingly, the null hypothesis was not rejected, meaning that there is no difference in customers' expectation of service quality between AIS and DTAC when determined by empathy at the 0.05 significance level.

Hypothesis 7

H7o: There is no difference in customer perception of service quality between AIS and DTAC.

H7a: There is a difference in customer perception of service quality between AIS and DTAC.

Table 5.11:T-test for the difference in customer perception between AIS and DTAC

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
PERCEPT1	Equal Variances assumed	.242	.623	-1.943	398	.053	2.4083E-02	4.841E-02	.1893	1.094E-03
	Equal Variances not assumed			-1.943	3.96.925	.053	2.4083E-02	4.841E-02	-.1893	1.095E-03

As shown in Table 5.11, there was statistically significant difference in customer perception of service quality between AIS and DTAC with a 2-tailed significance of .053 which is more than 0.05 (0.53>0.05).

Accordingly, the null hypothesis was not rejected, meaning that there is different customer perception of service quality between AIS and DTAC at the 0.05 significant level.

Hypothesis 8

H8o: There is no difference in customer perception of service quality between AIS and DTAC when determined by tangible

H8a: There is a difference in customer perception of service quality between AIS and DTAC when determined by tangible

Table 5.12: T-test for the difference in customer perception between AIS and DTAC by tangibles

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
PERTANG	Equal Variances assumed	1.882	.171	-.3.462	398	.001	-.1913	5.525E-02	-.2999	6.233E-02
	Equal Variances not assumed			-3.462	397.997	.001	-.1913	5.525E-02	-.2999	6.233E-02

shown in Table 5.12, there was a statistically significant difference in customer perception of service quality by tangibles between AIS and DTAC with a 2-tailed significance of .001 which is less than 0.05 (.001 < 0.05).

accordingly, the null hypothesis was rejected meaning that there is a difference in customer perception of service quality between AIS and DTAC when determined by tangible factors at the 0.05 significance level.

Hypothesis 9

H9o: There is no difference in customer perception of service quality between AIS and DTAC when determined by reliability

H9a: There is a difference in customer perception of service quality between AIS and DTAC when determined by reliability

Table 5.13: T-test for the difference in customer perception between AIS and DTAC by reliability

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
PERRESP	Equal Variances assumed	1.529	.217	.451	398	.652	2.750E-02	6.094E-02	-9.2301E-02	.1473
	Equal Variances not assumed			.451	391.472	.652	2.750E-02	6.094E-02	-9.2307E-02	.1473

Table 5.13 indicates that there was no statistically significant difference in customer perception of service quality by reliability between AIS and DTAC with a 2-tailed significance of .652, which is more than 0.05 (.652> 0.05).

Accordingly, the null hypothesis was not rejected, meaning that there is no difference in customers' perception of service quality between AIS and DTAC when determined by reliability at the 0.05 significant level.

Hypothesis 10

H10o: There is no difference in customer perception of service quality between AIS and DTAC when determined by responsiveness

H10a: There is a difference in customer perception of service quality between AIS and DTAC when determined by responsiveness

Table 5.14: T-test for the difference in customer perception between AIS and DTAC by responsiveness

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
PERRESP	Equal Variances assumed	.371	.543	.158	398	.875	1.167E-02	7.404E-02	-.1339	.1572
	Equal Variances not assumed			.158	394.487	.875	1.167E-02	7.404E-02	-1.339	.1572

As shown in Table 5.14, that there was no statistically significant difference in customer perception of service quality by responsiveness between AIS and DTAC with a 2-tailed significance of .875 which is more than 0.05 (.875> 0.05).

Accordingly, the null hypothesis was not rejected, meaning that there is no difference in customer perception of service quality between AIS and DTAC when determined by responsiveness at the 0.05 significance level.

Hypothesis 11

H11o: There is no difference in customer perception of service quality between AIS and DTAC when determined by assurance

H11a: There is a difference in customer perception of service quality between AIS and DTAC when determined by assurance

Table 5.15: T-test for the difference in customer perception between AIS and DTAC by assurance

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
PERASSUR	Equal Variances assumed	16.300	.000	-5.600	398	.000	-.4167	7.440E-02	-.5629	-.2704
	Equal Variances not assumed			-5.600	397.479	.000	-.4167	7.440E-02	-.5629	-.2704

As shown in Table 5.15 , there was a statistically significant difference in customer perception of service quality by assurance between AIS and DTAC with a 2-tailed significance of .000 which is less than 0.05 (.000 < 0.05).

Accordingly, the null hypothesis was rejected meaning that there is a difference in customers' perception of service quality between AIS and DTAC when determined by assurance at the 0.05 significance level.

Hypothesis 12

H12o: There is no difference in customer perception of service quality between AIS and DTAC when determined by empathy

H12a: There is a difference in customer perception of service quality between AIS and DTAC when determined by empathy

Table 5.16: T-test for the difference in customer perception between AIS and DTAC by empathy

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
PERREM	Equal Variances assumed	8.953	.003	1.425	398	.155	-9.833E-02	6.901E-02	6.734E-02	.2340
	Equal Variances not assumed			1.425	385.673	.155	-9.833E-02	6.901E-02	6.734E-02	.2340

As shown in Table 5.16, that there was no statistically significant difference in customer perception of service quality by empathy between AIS and DTAC with a 2-tailed significance of .155 which is more than 0.05 (.155>0.05).

Accordingly, the null hypothesis was not rejected, means that there is no difference in customers' perception of service quality between AIS and DTAC when determined by empathy at the 0.05 significance level.

Hypothesis 13

H13o: There is no difference in customer expectation and perception of service quality of AIS

H13a: There is a difference in customer expectation and perception of service quality of AIS

Table 5.17: T-test for the difference in customer expectation and perception of AIS

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1 EXPAIS-PERAIS	.4877	.6260	4.426E-02	.4004	.5750	11.019	199	.000

As shown in Table 5.17, that there was no statistically significant difference in customer perception of service quality by empathy between AIS and DTAC with a 2 tailed significance of .000 which is less than 0.05 (.000 < 0.05). Accordingly, the null hypothesis was rejected meaning that there is different in customer expectation and perception of service quality of AIS at the 0.05 significance level.

Hypothesis 14

H14o: There is no difference between customer expectation and perception of service quality of DTAC

H14a: There is a difference between customer expectation and perception of service quality of DTAC

Table 5.18: T-test for the difference between customer expectation and perception of DTAC

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1 EXPDTAC-PERDTAC	.5655	.6611	4.675E-02	.4733	.6577	12.097	199	.000

As shown in Table 5.18 , there was a statistically significant difference in customer expectation and perception of service quality of DTAC with a 2-tailed significance of .000 which is less than 0.05 (.000 < 0.05).

Accordingly, the null hypothesis was rejected meaning that there is a difference in customer expectation and perception of service quality of DTAC at the 0.05 significance level.

Hypothesis 15

H15o: There is no difference between men and women in service quality of mobile phone users

H15a: There is a difference between men and women in service quality of mobile phone users

Table 5.19: T-test for the difference in service quality when segmented by sex

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
QUALITO	Equal Variances assumed	.563	.454	.003	398	.997	1.375E-04	4.111E-02	.0676E-02	8.095E-02
	Equal Variances not assumed			.003	370.125	.997	1.375E-04	4.077E-02	0039E-02	8.031E-02

As shown in Table 5.19 , there was no statistically significant difference in service quality when segmented by sex with a 2-tailed significance of .997, which is more than 0.05 (.997 > 0.05). Accordingly, the null hypothesis was not rejected, meaning that there is no difference between men and women in service quality of mobile phone users at the 0.05 significance level.

Hypothesis 16

H16o. There is no difference in service quality of mobile phone user when segmented by age levels

H16a. There is a difference in service quality of mobile phone user when categorized by age levels.

Table 5.20: Analysis of Variance (ANOVA) for the difference in service quality when segmented by age

ANOVA

QUALITY

	Sum of squares	df	Mean Square	F	Sig.
Between Groups	2.709	4	.677	4.258	
Within Groups	62.823	395	.159		
Total	65.532	399			

The results of hypothesis by using analysis of One -Way Analysis of Variance (ANOVA) are shown in Table 5.20. The result indicated that there was a statistically significant difference in service quality when segmented by age with a 2-tailed significance of .002, which is less than 0.05 (.002 < 0.05). Accordingly, the null hypothesis was rejected, meaning that there is a different between mobile phone users categorized by age levels at the 0.05 significant level.

Hypothesis 17

H17o : There is no difference in service quality of mobile phone user when segmented by education levels

H17a: There is a difference in service quality of mobile phone user when segmented by education levels

Table 5.21: Analysis of Variance (ANOVA) for the difference in service quality when segmented by education

ANOVA

QUALITY

	Sum of squares	df	Mean Square	F	Sig.
Between Groups	.746	3	.249	1.520	.209
Within Groups	64.786	396	.164		
Total	65.532	399			

The result of hypothesis by using analysis by One-Way Analysis of Variance (ANOVA) is shown in Table 5.21. The result indicated that there was no statistically significant difference in service quality when segmented by age with a 2-tailed significance of .209 which is more than 0.05 (.209> 0.05). Accordingly, the null hypothesis was not rejected, meaning that there is no difference in mobile phone users when categorized by education levels at the 0.05 significance level.

Hypothesis 18

H18o: There is no difference in service quality of mobile phone users when segmented by income levels

H18a: There is a difference in service quality of mobile phone users when segmented by income levels

Table 5.22 : Analysis of Variance (ANOVA) for the difference in service quality when segmented by income

ANOVA

QUALITY

	Sum of squares	df	Mean Square	F	Sig.
Between Groups	.124	4	3.097E-02	.187	.945
Within Groups	65.408	395	.166		
Total	65.532	399			

The result of hypothesis using One-Way Analysis of Variance (ANOVA) is shown in Table 5.22. The result indicated that there was no statistically significant difference in service quality when segmented by income with a 2-tailed significance of .945 which is more than 0.05 (.945 > 0.05).

Accordingly, the null hypothesis is not rejected, meaning that there is no Difference in mobile phone user when categorized by income levels at the 0.05 significance level.

Hypothesis 19

H19o: There is no difference in service quality of mobiles phone users when segmented by occupation levels

H19a: There is a difference in service quality of mobiles phone users when segmented by occupation levels

Table 5.23 : Analysis of Variance (ANOVA) for the difference in service quality when segmented by occupation

ANOVA

QUALITY

	Sum of squares	df	Mean Square	F	Sig.
Between Groups	.366	5	7.319E-02	.443	.819
Within Groups	65166	394	.165		
Total	65.532	399			

The result of hypothesis testing using One-Way Analysis of Varian (ANOVA) is shown in Table 5.23. The result indicated that there was no statistically significant difference in service quality when segmented by occupation with a 2-tailed significance of .819 which is more than 0.05 (.819 > 0.05).

Accordingly, the null hypothesis was not rejected, meaning that there is no difference between mobile phone users when categorized by occupation levels at the 0.05 significance level.

Chapter 6

Summary , Conclusions and Recommendations

This chapter comprises five sections. The first section is a summary of the findings of the research hypothesis testing. The second presents Hypothesis Analysis. The third section arrives at a conclusion , the fourth section is Recommendation and the last depicts a suggestion for further study.

6.1 Summary of Findings

In summary, this research aimed to study is the differences between customer expectations and perceived service quality between AIS and DTAC and the differences between customer expectations and perceived service quality of mobile phones when segmented by five dimensions; tangibles, reliability, assurance and empathy, and segmented by demographics. This includes the perception of customers as to which five SERVQUAL dimensions are most important when classified by tangibles, reliability, responsiveness, assurance and empathy.

From the 400 samples collected, there are two groups of respondents that are categorized by 200 AIS customers and 200 DTAC mobiles phone users. The respondents of both groups have almost the same demographic characteristics, as referred to in Table 5.1. The demographic data of the sample summarized by the important factors , the majority were male (58.0%) followed by female (42%), and aged between 20-30 years (54.5%) with an education level of Bachelor degree (70.5%), and an income level below 10,000 baht (45.5%) and work as employees (40.5%).

6.2 Hypothesis Analysis

Following the hypothesis testing, we found that there are differences in expectations and perception of service quality between AIS and DTAC.

Table 6.1: Summary of hypothesis testing

Hypothesis	Level of Significance	Results
H1 : There is no difference in customer expectation of service quality between AIS and DTAC	.767	Failed to reject
H2: There is no difference in customer expectation of service quality between AIS and DTAC when determined by tangible	.556	Failed to reject
H3: There is no difference in customer expectation of service quality between AIS and DTAC when determined by reliability	.742	Failed to reject
H4: There is no difference in customer expectation of service quality between AIS and DTAC when determined by responsiveness	.731	Failed to reject
H5: There is no difference in customer expectation of service quality between AIS and DTAC when determined by assurance	.125	Failed to reject
H6: There is no difference in customer expectation of service quality between AIS and DTAC when determined by empathy	.801	Failed to reject
H7: There is no difference in customer perception of service quality between AIS and DTAC	.053	Failed to reject

Hypothesis	Level of Significant	Results
H8: There is a difference in customer perception of service quality between AIS and DTAC when determined by tangible	.001	Rejected
H9: There is no difference in customer perception of service quality between AIS and DTAC when determined by reliability	.652	Failed to reject
H10: There is no difference in customer perception of service quality between AIS and DTAC when determined by responsiveness	.875	Failed to reject
H11: There is a difference in customer perception of service quality between AIS and DTAC when determined by assurance	.000	Rejected
H12: There is no difference in customer perception of service quality between AIS and DTAC when determined by empathy	.155	Failed to reject
H13: There is a difference in customer expectation and perception of service quality of AIS	.000	Rejected
H14: There is a difference between customer expectation and perception of service quality of DTAC	.000	Rejected
H15 : There is no difference between men and women in service quality of mobile phone users	.997	Failed to reject
H16: There is a difference in service quality of Mobile phone user when segmented by age levels	.002	Rejected

Hypothesis	Level of Significant	Results
H17 : There is no difference in service quality of Mobile phone user when segmented by education levels	.209	Failed to reject
H18: There is no difference in service quality of Mobile phone users when segmented by income levels	.945	Failed to reject
H19: There is no difference in service quality of mobiles phone users when segmented by occupation levels	.819	Failed to reject

Table 6.1 indicates significant differences in the service quality perception between DTAC and AIS on the factors of tangibles and assurance. A significant difference between customer perception and expectations of service quality for both AIS and DTAC are noted. The respondents only differed along age lines in their perceptions. According to the problem statement and research hypotheses presented in chapters 1 and 3 respectively, the data analyses and findings will be elaborated as follows:

Question 1: Are there any differences between customer expectations and perceived service quality of AIS and DTAC? Regarding the results, hypothesis one was evaluated by using the two-tailed paired samples t-tests as presented in Table 5.5 and 5.11. It is found that there is no difference in customer perception and expectation of service quality between AIS and DTAC.

Question 2: Are there any differences between customer expectations and perceived service quality of AIS and DTAC, when segmented by five dimensions? Based on the results, ten hypotheses were evaluated by using two-tailed paired samples t-tests as presented in Table 5.6 to 5.10 and Table 5.12-5.16, respectively. For expectation, it found that there is no significant difference by expectation between AIS and DTAC when segmented by five dimensions. And for perception, it found that there is significant difference by perception between AIS and DTAC by tangible and assurance. AIS' customers measured higher than DTAC's.

Question 3: Is there a difference between customer expectations and perception service quality. Regarding the results, hypothesis two was evaluated by using the two-tailed paired samples t-tests as presented in Table 5.17 and 5.18. It is found that there is a difference between expectation and perception of service quality in both AIS and DTAC. It showed that customer's expectation of AIS and DTAC in service quality is higher than customer's perception. The means are as follows.

Table 6.2: The mean comparative between expectation and perception of DTAC.

The opinion	X	S.D.	T-value
1) Expected	4.10	.55	12.09*
2) Perceived	3.53	.50	

The comparison between expectation and perception of DTAC' customers show that the opinion on expectation has a mean of 4.10, which is higher than the perception which has a mean of 3.53.

Table 6.3 : The mean comparison between expectation and perception of AIS.

The opinion	X	S.D.	T-value
1) Expected	4.11	.54	11.01*
2) Perceived	3.63	.47	

The comparison between expectation and perception of AIS' customers shows that the opinion on expectation has a mean of 4.11, which is higher than the perception with a mean of 3.63.

Question 4 : Are there differences between customer expectations and perceived service quality of AIS and DTAC when segmented by demographic variables? Regarding the results, hypothesis three was evaluated by using the two-tailed paired samples t-tests and One Way Analysis of Variance (F-test) as presented in Tables 5.19 to 5.23. The characteristic factors measured were sex, age, income, occupation and education. A summary of the results of the hypothesis testing in this question follows :

1. There is a difference in service quality of mobile phone user when segmented by age levels.

2.There is no difference in service quality of mobile phone user when segmented by gender.

3. There is no difference in service quality of mobile phone user when segmented by education levels.

4. There is no difference in service quality of mobile phone user when segmented by income levels.

5. There is no difference in service quality of mobiles phone users when segmented by occupation levels.

Question 5: What are the most critical SERVQUAL dimensions in customers' assessment of service quality when classified by tangible, reliability, responsiveness, assurance and empathy? Dimension of SERQUAL were applied for measuring customers' expectation and perceptions of service quality. The results for customers' perception and expectation by these five dimensions using ranking method from the means are presented

in Table 5.3 and 5.4, respectively. With regards to the expectation, it is showed that tangibles is the most critical dimension when customers expect service from the mobile phone company, followed by assurance, responsiveness, empathy and reliability. In addition, for perception, it is showed that tangibles rank highest as perceived by customers, followed by reliability, responsiveness, empathy and assurance, in that order When we consider the five dimensions for each item, as in tables 3 and 8 (from the appendix) we can compare the means of AIS and DTAC as follows:

The expectation and perception by tangibles such as in question no 3 regarding the availability of magazines, newspapers, service board, air conditioning and the like found that AIS customers had higher expectations than DTAC customers. Both AIS' and DTAC's perception were lower than the expectation. Thus, both DTAC and AIS should improve their service ships by installing the aforementioned facilities for the benefit of customers waiting their turn at the shops. The means are as follow:

Table 6.4: The mean comparative between expectation and perception by tangible of AIS and DTAC

DTAC		**AIS**		**Total**	
$\overline{X}$		$\overline{X}$		$\overline{X}$	
Exp	Per	Exp	Per	Exp	Per
4.29	3.96	4.25	3.94	4.27	3.95

For question 4, regarding the availability of catalogues and brochures, the means are:

Table 6.5: The mean comparative of the availability of catalogues and brochures between of AIS and DTAC

DTAC		**AIS**		**Total**	
$\overline{X}$		$\overline{X}$		$\overline{X}$	
Exp	Per	Exp	Per	Exp	Per
4.22	3.87	4.08	3.96	4.15	3.92

Customer expected they should have enough catalogues and brochures when they needed more information about the product or service. In particular AIS customers need more knowledge from the company. Both AIS and DTAC should provide more catalogues and brochures to serve customers or provide knowledge counters for customers to request information if it is not on the shelf.

For question 5, was the service shop easy to find and contact, the means are:

Table 6.6 : The mean comparative of the service shop easy to bind and contact between AIS and DTAC

DTAC		**AIS**		**Total**	
$\overline{X}$		$\overline{X}$		$\overline{X}$	
Exp	Per	Exp	Per	Exp	Per
4.23	3.17	4.22	4.13	4.22	3.65

DTAC customer has the high expectations regarding finding the service shop and contact it conveniently, but the perception was very low. AIS has a little difference between customer expectation and perception. DTAC should expand its network and service shop to town areas such as well known department stores or universities or public areas.

For question 6, was the feeling that the payment procedure can work fast and convenient, the means are as follows:

Table 6.7 : The mean comparative of the payment procedure between AIS and DTAC

DTAC		**AIS**		**Total**	
$\bar{X}$		$\bar{X}$		$\bar{X}$	
Exp	Per	Exp	Per	Exp	Per
4.27	3.62	4.26	3.78	4.26	3.70

For fast payment procedure, DTAC should improve the procedure in payment because the expectation of payment procedure is lower than the expectation of customer.

For question 3 and 6, when customers are waiting for service, the service shop should provide them with convenient items to keep them occupied. Typical items include magazines and newspaper, but one could also provide Internet and computer games for customers to spend their times.

The comparison between Table 4 and Table 9 (from Appendix C) by comparative means between expectation and perception by reliability shows that AIS have higher expectation and perception than DTAC.

For question 1, did the bill collection procedure give you brief, clear and correct data, the means are as follows:

Table 6.8 : The mean comparative of collection procedure between AIS and DTAC

DTAC		**AIS**		**Total**	
$\overline{X}$		$\overline{X}$		$\overline{X}$	
Exp	Per	Exp	Per	Exp	Per
4.09	3.59	4.18	3.79	4.13	3.69

DTAC customers have lower expectations of bill collection giving brief, clear and correct data. Both DTAC and AIS have lower perception than expectation. Therefore, both companies should improve the process of bill collection, emphasizing ease of data. Most customers don't have the time co check their bill, and if the service shops improve on this aspect, customers will have trust and brand loyalty to those brands in the long run.

Question no.2, are airtime and monthly fees reasonable, have the following means:

Table 6.9 : The mean comparative of airtime and monthly fees reasonable between AIS and DTAC

DTAC		**AIS**		**Total**	
$\overline{X}$		$\overline{X}$		$\overline{X}$	
Exp	Per	Exp	Per	Exp	Per
4.08	3.13	3.94	2.65	4.01	2.89

Here, customers feel that they were charged unreasonably high fees. AIS customers expected to have more reasonable airtime fees compared to DTAC. The expectation of DTAC customers was higher than for AIS, but AIS customers' perception was lower than expectation. Thus, AIS should try to lower their airtime and monthly fees. Also, DTAC had better expectation and perception than AIS because they have had a lot of price promotions.

For the comparison between expectation and perception of DTAC and AIS by responsiveness, As means showed in Table 5 and table 10 like this.

Question 1, when you met a problem staff are sympathetic and assuring, gave the following means:

Table 6.10 : The mean comparative of sympathetic and assuring of staff between AIS and DTAC

DTAC		**AIS**		**Total**	
$\overline{X}$		$\overline{X}$		$\overline{X}$	
Exp	Per	Exp	Per	Exp	Per
4.14	3.40	4.03	3.34	4.08	3.37

This indicates that DTAC's expectations are higher than AIS', and both have perception lower than the expectation. It shows that neither company is solving servicing problems well enough. Thus, both AIS and DTAC should train their staff to have a procedure to serve their customers better, with more service-mindedness.

Question 2, was staff active and willing to provide service to customers, gave the following means:

Table 6.11 : The mean comparative of staff active and willing to provide service of AIS and DTAC

DTAC		**AIS**		**Total**	
$\overline{X}$		$\overline{X}$		$\overline{X}$	
Exp	Per	Exp	Per	Exp	Per
4.09	3.29	4.02	3.33	4.05	3.31

Both AIS and DTAC customer had expectations from staff to service them actively and willingly. Customers felt that they got service from staff like routine work and not enthusiastic.

The companies should provide some campaign to motivate staff to be service minded and reward staff that made customers satisfied.

The companies should research their staff's performance every month to survey weak points that they can improve and provide some proper training to improve their ability.

Question 4: The company takes responsibility to all damage as stipulated in the warranty book with warm service.

Table 6.12 : The mean comparative of the company take responsibility with worn service between AIS and DTAC

DTAC		**AIS**		**Total**	
$\overline{X}$		$\overline{X}$		$\overline{X}$	
Exp	Per	Exp	Per	Exp	Per
4.14	3.72	4.09	3.57	4.11	3.64

Staff should take care of the customer with service and should not think that customers were a nuisance. They should think that these customers will be loyal customer in future. In this item AIS should improve more.

Question 6, regarding care and understanding of customer needs, gave:

Table 6.13 : The mean comparative of care and understanding of customer needs between AIS and DTAC

DTAC		**AIS**		**Total**	
$\overline{X}$		$\overline{X}$		$\overline{X}$	
Exp	Per	Exp	Per	Exp	Per
4.20	3.48	4.16	3.46	4.18	3.47

Both AIS and DTAC should concentrate more on customer care and understanding customers' needs. The two companies had the same low levels on servicing customer needs. If staff can serve the right expectation of customer, it will bring about customer satisfaction.

When we compare table 6 to table 11(from Appendix) by comparative of means between expectation and perception by assurance,

Question no.4, the product and system have effective network coverage.

Table 6.14 : The mean comparative of the effective system network AIS and DTAC

DTAC		**AIS**		**Total**	
$\overline{X}$		$\overline{X}$		$\overline{X}$	
Exp	Per	Exp	Per	Exp	Per
4.12	2.59	4.43	4.12	4.27	3.36

The expectation of DTAC customers was very high but the perception was very low when compared with AIS. AIS had the network coverage gap between expectation and perception lower than DTAC. DTAC should expand their network coverage to serve customers who high expectations.

Question no. 5, your mobile phone network is reliable, yielded the following means.

Table 6.15 : The mean comparative of reliable mobile phone network between AIS and DTAC

DTAC		**AIS**		**Total**	
$\overline{X}$		$\overline{X}$		$\overline{X}$	
Exp	Per	Exp	Per	Exp	Per
4.23	2.84	4.45	4.16	4.34	3.50

Mobiles have good networks, but the perception was very low when we look at to AIS. For AIS, customer had the expectation and perception in the lower gap which means expectations were not met. DTAC should improve its efficiency in contact or expand the network. For questions no.4 and no.5, it should be improved together because it can solve the lowest expectations from customer. These two items were very important for customers when selecting the mobile phone brand.

Question no.6, The Company charges a reasonable calling usage fee.

Table 6.16 : The mean comparative of reasonable charge between AIS and DTAC

DTAC		**AIS**		**Total**	
$\bar{X}$		$\bar{X}$		$\bar{X}$	
Exp	Per	Exp	Per	Exp	Per
4.09	3.08	3.95	2.47	4.02	2.77

The two companies had high expectations for the reasonable calling usage fees but the perception was very low. DTAC was better than AIS because DTAC had price promotions and campaigns for customers. AIS followed this campaign but the perception was gained by DTAC first.

When compared Table 7 with table 12(from Appendix) between expectation and perception by empathy,

Question no 1. Staff follows up after service.

Table 6.17 : The mean comparative of staff follow up between AIS and DTAC

DTAC		**AIS**		**Total**	
$\overline{X}$		$\overline{X}$		$\overline{X}$	
Exp	Per	Exp	Per	Exp	Per
3.93	3.26	3.96	3.03	3.93	3.15

Customers had high expectations of staff following up after they had services from the two companies. The two companies should set up a follow-up system. They may follow up customers by phone or mail, and they should sometimes provide questionnaires to survey .the opinion of the staff that service customers.

Question no 2, Staff considers customers VIPs.

Table 6.18 : The mean Comparative of considered staff between AIS and DTAC

DTAC		AIS		Total	
$\overline{X}$		$\overline{X}$		$\overline{X}$	
Exp	Per	Exp	Per	Exp	Per
4.06	3.44	4.01	3.28	3.93	3.36

Customer needed staff from the two companies to take care of them like very important people. Customers felt that AIS staff didn't treat them as good as DTAC's staff. AIS should improve their staff, enticing them to show more consideration to customers. DTAC should also improve, as expectations are higher than perceptions.

6.3 Conclusion

According to the result of hypothesis testing, there are five hypotheses that reject the null hypothesis. The results of analysis conclude as follows:

There is no significant difference in customer's expectation of service quality between AIS and DTAC by total, tangibles, reliability, responsiveness, assurance or empathy . Hence, it can be implied that customers expected to receive a high level of service quality, equally so for both AIS and DTAC, because they believe that mobile phones have a high potential to provide excellent service that customer want and expect at all time.

There is significant difference in customers' perceptions of service quality between AIS and DTAC by total, tangibles and assurance. That is, the customers' perceptions of AIS as shown in Table 5.4 is 3.62, 4.08 and 3.59 respectively, and customer's perceptions of DTAC as shown in Table 5.4 3.53, 3.89 and 3.17, respectively. It may be mentioned that customers of AIS have higher perceptions than customer of DTAC by total, tangibles and assurance. Tangibles are the willingness and ability to provide product, assurance is the competence and courtesy needed to foster customer confidence. These are higher for AIS than for DTAC based on customer perception. There is significant difference in customer's expectation and perception of service quality both AIS and DTAC. By AIS, the mean of expectations in Table 5.3 is 4.11 and perception in Table 5.4 is 3.62, so there is a gap between expectations and perception of service quality provided because the higher expectation has a mean of .49. For DTAC , the mean of expectation in Table 5.3 is 4.09 and perception in Table 5.4 is 3.62, and so there is a gap between expectation and perception of service quality provided because expectation is higher by .56.

From the gap of expectations and perception that happens in both AIS and DTAC, it can be concluded that service quality of both mobile phone does not meet customer's expectation, as Groonroos, (1982) stated that service quality result from comparison of customer expectations with the actual service performance. Parasuraman's SERQUAL , which stated that service quality , as perceived by customers, can be defined as the extent of discrepancy between customer's expectations or desires and their perceptions, which is gap 5. Therefore, if the service providers try to eliminate the gap between expectation and perception then the service providers will meet customer needs.

Besides, customers of different age categories have different standards for service quality as Wearne and Morrison, (1996) stated that every age group has its own needs. As such, the older have a higher requirement of service quality than the young. According to Sirirat Chartthai, (2001) who studied services marketing expectation of the BTS Skytrain, age levels had a significant influence on expectation by responsiveness.

6.4 Recommendation

The researcher had some recommendations when comparing AIS and DTAC.

Service Quality Factor

AIS and DTAC should provide more magazines, newspapers and service boards for customers when customers are waiting for service at the service shop, as customers needed some magazine or newspaper for relax. Some customer needed some information or product knowledge but DTAC service shop provided not enough brochures or catalogs for customer. DTAC should provide electronic catalogs by installing PCs that customer could use to browse or print out such material.

DTAC service shop was not convenient enough for customer to contact. The overall facility did not make customers feel comfortable. DTAC should expand service shops in universities or more in business building. AIS customers are satisfied with AIS service shops, which cover more area than DTAC.

Customer spent a long time on the payment procedure. AIS and DTAC should improve the process of payment by establishing joint ventures with banks for payment process or convenient stores, such as 7-eleven, and Family mart to give more channels to customers.

Reliability

Customers felt that some bill collection didn't give brief, clear and correct data. DTAC should provide some instruction on bill or board for customer for more understanding.

Reasonable airtime and monthly fees: Customer need the company to decrease the airtime and monthly fees to make them more reasonable.

DTAC had a promotion that improved airtime and monthly fee more reasonable by setting up promotion to reduce the price but customers still were not satisfied. If the company can provide some special price of airtime for special target, that would be beneficial.

Responsiveness

Customers needed help when they encounter some problem. The companies must prepare training for staffs to be service minded with customers or set emergency counters for tackling customer problem. When customers enter a service shop, service should be prompt, and this should be stipulated in the regulations of the company.

Some customers had product damage and it was in warranty period. Service staff

must in such cases convey an image of service, and not make customers feel that they are disturbing business.

Assurance

Customers felt that the companies should follow through on any commitments made to them. Customers who are cheated will never purchase the product again.

Services staffs must have enough product knowledge and expertise on service. Company should have product knowledge courses to improve the ability of staffs every 3-6 months or when launching new products.

The product and system effective network coverage on this matter. DTAC should improved a lot when compared to AIS because DTAC's customers felt they didn't have effective network coverage. DTAC has a better perception of reasonable calling usage fee than AIS. So AIS should improve their calling usage fee. AIS should provide some special discount or promotion to customers.

Empathy

After customers had services at a service shop, they need the company to follow up that customer to make sure he has no further problems.

For this matter DTAC performed better than AIS. AIS should improve or set up a follow-up system.

Every customer needs service staff to take good care of customers and give prompt service when customers come in the service shop.

6.5 Suggestion for Further Study

In this research, the researcher has surveyed the service quality between AIS and DTAC. In further studies researcher should survey the customer satisfaction factors that relate to service quality between AIS and DTAC. Furthermore the researcher may survey service quality concerned with satisfaction and with a possible impact on repurchase or service quality.

In addition, further study can apply to research in other brands such as Orange, because such companies will in the future be major competitors to the two companies mentioned here. At present mobile phone is one of important for human life and company had encouraged users to hold at least one mobile phone each.

Every company provided attractive advertising and marketing strategy to stimulate end users to use more mobile phone functions such as songs, ring tones, screen savers etc. Now mobile phones are cheaper when compared to a few years ago, when it was nearly 100,000 baht or more when compared to present it was only 3,000-4,000 baht. But

airtime has been decreased a little. DTAC try to use price promotions to encourage customer to spend more, the researcher hopes that in the future customers will have more reasonable airtime fees.

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Appendix A

QUESTIONNAIRE

This questionnaire was designed as a tool for collecting data of respondents' expectations and perception on service quality, as it relates to satisfaction. This survey was conducted to be used in thepreparation of a thesis for the completion of a Master Degree in Business Administration, at Assumption University

The questions in the questionnaire are divided into 2 parts

Part 1 Demographic Profile of Respondents

Part 2 Service Quality

Part1 Personal Data

Please mark X next to the appropriate answer

	CODE
1) Gender ☐ 1.1) Male ☐ 1.2) Female	D_1 ☐
2) Age	D_2 ☐
☐ 2.1) Under 20 yr. ☐ 2.2) 20-30 yr.	
☐ 2.3) 31-40 yr. ☐ 2.4) 41-50 yr.	
☐ 2.5) Above 50 yr.	
3) Educational level	D_3 ☐
☐ 3.1) Below Bachelor level	
☐ 3.2) Bachelor level	
☐ 3.3) Master level	
☐ 3.4) Others	

	CODE
4) Monthly income (baht)	D_4 ☐
☐ 4.1) Less than 10,000	
☐ 4.2) 10,000 - 25,000	
☐ 4.3) 25,001 – 40,000	
☐ 4.4) 40,001 – 60,000	
☐ 4.5) 60,000 –	
5) Occupation	D_5 ☐
☐ 5.1) Student ☐ 5.2) Employee	
☐ 5.3) Management ☐ 5.4) Government	
☐ 5.5) Self Employed ☐ 5.6) Other	
6) What brand or system of mobile phone do you use at present?	D_6 ☐
☐ 1) AIS	
○ 1.1) GSM ADVANCE	
○ 1.2) GSM 1800	
○ 1.3) Others	
☐ 2) DTAC	
○ 2.1) DIGITAL 1800	
○ 2.2) ANALOG 800	
○ 2.3) Others	

Part 2 Service Quality

Direction Please indicate (X) for your level of expectation of the service quality in theservice shop prior to your visit in the left column as well as level of perception of the service quality in the mobile service shop after your visit in the right column

The meaning of each level is as follows

1. Very dissatisfied
2. Dissatisfied
3. Neutral
4. Satisfied
5. Very satisfied

Tangible

Expectation **Perception**

	CODE	1	2	3	4	5		1	2	3	4	5	CODE	
ET_1	☐						1) Appearance / modern and good decoration						☐	PT_1
ET_2	☐						2) Cleanliness & comfort in service shop						☐	PT_2
ET_3	☐						3) Service (magazines, newspapers						☐	PT_3
							service board, air condition etc.)							
ET_4	☐						4) Availability of catalog & brochure						☐	PT_4
ET_5	☐						5) Easy to find service shop and convenient						☐	PT_5
							to contact							
ET_6	☐						6) You feel that the payment procedure can						☐	PT_6
							work fast and convenient							
ET_7	☐						7) Staff well dressed and professional						☐	PT_7
ET_8	☐						8) Employees consistently courteous						☐	PT_8
							with customers							

Reliability

Expectation **Perception**

	CODE	1	2	3	4	5		1	2	3	4	5	CODE	
ER_1	☐						1) Bill collection gave brief, clear and correct data						☐	PR_1
ER_2	☐						2) Reasonable air time and monthly fee						☐	PR_2
ER_3	☐						3) Your mobile phone is not bad for your health						☐	PR_3
ER_4	☐						4) Clear explanation of all documents						☐	PR_4
ER_5	☐						5) Staff willing and able to give additional information						☐	PR_5
ER_6	☐						6) Product and services that company gave you was standard						☐	PR_6

Responsiveness

Expectation **Perception**

	CODE	1	2	3	4	5		1	2	3	4	5	CODE	
ERE_1	☐						1) Staff is sympathetic and assuring when told of customer problem						☐	PRE_1
ERE_2	☐						2) Staff is active and willing to provide service to customers						☐	PRE_2
ERE_3	☐						3) Explanation of service was given to you after the service						☐	PRE_3
ERE_4	☐						4) The company indicates responsibility to any damage in the warranty						☐	PRE_4
ERE_5	☐						5) Ability to answer question when needed						☐	PRE_5
ERE_6	☐						6) Caring and understandin to your needs						☐	PRE_6

Assurance

Expectation

	CODE	1	2	3	4	5	
EA_1	☐						1) Fulfillment of commitments
EA_2	☐						2) Staff has knowledge and expertise on service
EA_3	☐						3) Staff is honest
EA_4	☐						4) The product and system has effective network coverage
EA_5	☐						5) Your mobile network is reliable
EA_6	☐						6) The company charges a reasonable usage fee

Perception

1	2	3	4	5	CODE	
					☐	PA_1
					☐	PA_2
					☐	PA_3
					☐	PA_4
					☐	PA_5
					☐	PA_6

Empathy

Expectation

	CODE	1	2	3	4	5	
EE_1	☐						1) Staff follows up after service
EE_2	☐						2) Staff takes good care of customer
EE_3	☐						3) The most of value added services fulfill your requirement
EE_4	☐						4) Staff ready to give help when needed
EE_5	☐						5) Service shop's operating hours convenient
EE_6	☐						6) Staff gives you prompt service

Perception

1	2	3	4	5	CODE	
					☐	EP_1
					☐	EP_2
					☐	EP_3
					☐	EP_4
					☐	EP_5
					☐	EP_6

Appendix B

แบบสอบถาม

แบบสอบถามนี้เป็นแบบสอบถามเพื่อหาข้อมูลเกี่ยวกับความคาดหวัง ต่อคุณภาพและการบริการ ซึ่งจะมีผลต่อความพึงพอใจต่อการใช้โทรศัพท์เคลื่อนที่ แบบสอบถามนี้เป็นส่วนหนึ่ง ของวิทยานิพนธ์ของนักศึกษา ปริญญาโท มหาบัณฑิต ของมหาวิทยาลัยอัสสัมชัญ จึงเรียนมาเพื่อขอความกรุณาในการสละเวลาเพื่อกรอกแบบสอบถาม

แบบสอบถามในวิทยานิพนธ์ชุดนี้ ประกอบด้วย 2 ส่วน คือ

ส่วนที่ 1 ข้อมูลของผู้ตอบแบบสอบถาม

ส่วนที่ 2 คุณภาพของการบริการ

ส่วนที่ 1 ข้อมูลของผู้ตอบแบบสอบถาม

คำแนะนำ โปรดตอบคำถามโดยใส่เครื่องหมาย X หน้าข้อที่ท่านเลือกให้สอดคล้องหรือใกล้เคียงกับความเป็นจริงมากที่สุด

1) เพศ ☐ 1.1) ชาย ☐ 1.2) หญิง D1 ☐

2) อายุ D2 ☐

☐ 2.1) ต่ำกว่า 20 ปี ☐ 2.2) 20 - 30 ปี

☐ 2.3) 31 - 40 ปี ☐ 2.4) 41 - 50 ปี

☐ 2.5) มากกว่า 50 ปี

3) ระดับการศึกษา D3 ☐

☐ 3.1) ต่ำกว่าปริญญาตรี

☐ 3.2) ระดับปริญญาตรี

☐ 3.3) ระดับปริญญาโท

☐ 3.4) อื่น ๆ

4) ระดับรายได้ต่อเดือน D4 ☐

☐ 4.1) ต่ำกว่า 10,000

☐ 4.2) 10,000 - 25,000

☐ 4.3) 25,001 – 40,000

☐ 4.4) 40,001 – 60,000

☐ 4.5) มากกว่า 60,000

5) อาชีพ D5 ☐

☐ 5.1) นักศึกษา ☐ 5.2) ลูกจ้าง

☐ 5.3) นายจ้าง/ผู้จัดการ ☐ 5.4) ข้าราชการ/รัฐวิสาหกิจ

☐ 5.5) ธุรกิจส่วนตัว/ค้าขาย ☐ 5.6) อื่นๆ

6) โทรศัพท์มือถือที่ท่านใช้อยู่ปัจจุบันเป็นของบริษัทใดและระบบใด D6 ☐ ☐

☐ 1) เอ ไอ เอส (AIS)

○ 1.1) จีเอสเอ็ม แอทแวนซ์

○ 1.2) จีเอสเอ็ม 1800

○ 1.3) อื่นๆ

☐ 2) ดีแทค

○ 2.1) ดิจิตอล 1800

○ 2.2) ระบบ 800

○ 2.3) อื่นๆ

ส่วนที่ 2 คุณภาพของการบริการ

คำแนะนำ กรุณาตอบคำถามโดยใส่เครื่องหมาย (X) ลงในช่องเพื่อแสดงระดับความคิดเห็นของท่าน เพื่อแสดงระดับความสำคัญของคุณภาพของการบริการที่ท่าน คาดว่าจะได้รับ ก่อนการใช้บริการของศูนย์บริการโทรศัพท์เคลื่อนที่ และระดับของคุณภาพการบริการที่ท่านได้รับอยู่ในปัจจุบัน

ความหมายของหมายเลขในการให้ค่าความพึงพอใจ

หมายเลข 1 ไม่พอใจอย่างมาก

หมายเลข 2 ไม่พอใจ

หมายเลข 3 ไม่มีความเห็น

หมายเลข 4 มีความพึงพอใจ

หมายเลข 5 มีความพึงพอใจมาก

คุณสมบัติและคุณลักษณะ

สิ่งที่คาดหวัง ไม่พอใจมาก พอใจมาก							สิ่งที่ได้รับ ไม่พอใจมาก พอใจมาก					
	1	2	3	4	5		1	2	3	4	5	
ET1 ☐						1) ศูนย์บริการมีรูปแบบการตกแต่งร้านที่ดีและทันสมัย						PT1 ☐
ET2 ☐						2) ศูนย์บริการมีความสะอาด						PT2 ☐
ET3 ☐						3) ศูนย์บริการมีสิ่งอำนวยความสะดวกที่ดีเช่น เก้าอี้นั่ง, ป้ายแจ้งรายการ, แอร์คอนดิชั่น , หนังสือพิมพ์ ฯลฯ						PT3 ☐
ET4 ☐						4) มีความพร้อมของแค็ตตาล้อคและโบรชัวไว้บริการ						PT4 ☐
ET5 ☐						5) บริษัทมีการจัดตั้งร้านค้าและศูนย์บริการอย่างทั่วถึงและเพียงพอ						PT5 ☐
ET6 ☐						6) ขั้นตอนในการให้บริการ สามารถทำได้รวดเร็วและสะดวก						PT6 ☐
ET7 ☐						7) การแต่งกายของพนักงานแต่งกายดี						PT7 ☐
ET8 ☐						8) พนักงานปฏิบัติงานด้วยความสุภาพ						PT8 ☐

ความน่าเชื่อถือ

สิ่งที่คาดหวัง ไม่พอใจมาก	1	2	3	4	5	พอใจมาก	สิ่งที่ได้รับ ไม่พอใจมาก	1	2	3	4	5	พอใจมาก
ER1						1) ใบแจ้งยอดชำระหนี้แสดงรายการที่ชัดเจนและถูกต้อง							PR1
ER2						2) ระบบและอัตราการคิดค่าบริการมีความยุติธรรม และเหมาะสม							PR2
ER3						3) คุณเชื่อว่าโทรศัพท์มือถือในระบบที่คุณใช้อยู่มีความปลอดภัยต่อสุขภาพ							PR3
ER4						4) พนักงานสามารถให้บริการและให้ข้อมูลข่าวสารได้อย่างถูกต้อง							PR4
ER5						5) พนักงานสามารถตอบคำถามได้ดี เมื่อต้องการรายละเอียดเพิ่มเติม							PR5
ER6						6) สินค้าและบริการที่บริษัทส่งมอบให้นั้นมีคุณภาพและถูกต้องตามมาตรฐาน							PR6

ความรับผิดชอบ

สิ่งที่คาดหวัง ไม่พอใจมาก	1	2	3	4	5	พอใจมาก	สิ่งที่ได้รับ ไม่พอใจมาก	1	2	3	4	5	พอใจมาก
ERE1						1) เมื่อลูกค้ามีปัญหาพนักงานให้ความช่วยเหลือและเห็นใจ							PRE1
ERE2						2) พนักงานมีความกระตือรือร้นที่จะให้บริการแก่ลูกค้า							PRE2
ERE3						3) หลังจากได้รับบริการ พนักงานจะทบทวนสิ่งที่ให้บริการไปแล้ว							PRE3
ERE4						4) บริษัทดูแลและแสดงความรับผิดชอบต่อสินค้าและอุปกรณ์ที่เสียหายตามเงื่อนไขที่ระบุในใบรับประกัน							PRE4
ERE5						5) เมื่อลูกค้ามีปัญหา พนักงานสามารถตอบคำถามเมื่อต้องการถาม							PRE5
ERE6						6) พนักงานให้ความเอาใจใส่และเข้าใจความต้องการของลูกค้า							PRE6

ความมั่นใจ

สิ่งที่คาดหวัง

ไม่พอใจมาก พอใจมาก

	1	2	3	4	5	
EA1 ☐						1) พนักงานปฏิบัติตามคำมั่นสัญญาที่ให้ไว้กับลูกค้า
EA2 ☐						2) พนักงานมีความรู้และความเชี่ยวชาญในงาน
EA3 ☐						3) ความซื่อสัตย์
EA4 ☐						4) ประสิทธิภาพของสัญญาณที่ครอบคลุมทุกพื้นที่
EA5 ☐						5) โทรศัพท์มือถือระบบที่ท่านใช้อยู่สามารถติดต่อออก และรับสายเข้าได้ง่ายและมีประสิทธิภาพ
EA6 ☐						6) คุณเชื่อว่าระบบและอัตราการคิดค่าบริการมีความยุติธรรมและเหมาะสม

สิ่งที่ได้รับ

ไม่พอใจมาก พอใจมาก

1	2	3	4	5	
					PA1 ☐
					PA2 ☐
					PA3 ☐
					PA4 ☐
					PA5 ☐
					PA6 ☐

การเอาใจใส่

สิ่งที่คาดหวัง

ไม่พอใจมาก พอใจมาก

	1	2	3	4	5	
EE1 ☐						1) พนักงานมีการติดตามหลังจากลูกค้าได้รับบริการ
EE2 ☐						2) พนักงานแสดงความเอาใจใส่และให้ความสำคัญต่อลูกค้า
EE3 ☐						3) บริการเสริมพิเศษเป็นสิ่งที่อำนวยความสะดวกให้ลูกค้า
EE4 ☐						4) พนักงานยินดีให้ความช่วยเหลือเมื่อลูกค้าต้องการ
EE5 ☐						5) เวลาในการให้บริการเป็นวลาที่เหมาะสมสำหรับลูกค้า
EE6 ☐						6) การให้บริการที่รวดเร็วจากพนักงาน

สิ่งที่ได้รับ

ไม่พอใจมาก พอใจมาก

1	2	3	4	5	
					EP1 ☐
					EP2 ☐
					EP3 ☐
					EP4 ☐
					EP5 ☐
					EP6 ☐

Aippendix c

Table 1: Means and Standard Deviation of the opinion of expectation by tangible

Opinion by Tangible	DTAC		AIS		Total	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
1) Appearance / modern and good decoration	4.25	.67	4.22	.74	4.24	.71
2) Cleanliness & comfort in service shop	4.41	.64	4.38	.64	4.39	.64
3) Service shop associated with magazine, newspaper and service board ,air condition etc.	4.29	.74	4.25	.82	4.27	.78
4) Availability of catalog & brochure	4.22	.71	4.08	.90	4.15	.81
5) Easy to find service shop and convenient contact	4.23	.71	4.22	.83	4.22	.78
6) You feel that the payment procedure can work fast and convenient	4.27	.72	4.26	.80	4.26	.76
7) Staff's well dress and professional	4.25	.74	4.28	.71	4.26	.72
8) Employees should be consistently courteous	4.34	.73	4.33	.72	4.33	.72
Total	4.28	.55	4.25	.61	4.26	.58

Table 2: Means and Standard Deviation of the opinion of expectation by reliability

The opinion by Reliability	DTAC		AIS		Total	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
1) Bill collection give a brief, clear and correct data	4.09	.78	4.18	.73	4.13	.76
2) Reasonable of air time and monthly fee	4.08	.92	3.94	1.02	4.01	.97
3) Mobile phone that you used, it had safety to your health	3.75	.92	3.72	1.03	3.73	.98
4) Clear explanation of all document	3.98	.75	4.03	.79	4.01	.77
5) For more information, he or she can explain to you clearly	4.11	.66	4.13	.72	4.12	.69
6) Product and Services that company gave you was standard	4.17	.66	4.19	.73	4.18	.70
Total	4.01	.68	4.03	.68	4.02	.68

Table 3: Means and Standard Deviation of the opinion of expectation by responsiveness

The opinion by responsiveness	DTAC		AIS		Total	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
1) When you met problem they are sympathetic and assuring	4.14	.84	4.03	.77	4.08	.81
2) Staffs were active and willing to provide service to customers	4.09	.80	4.02	.81	4.05	.81
3) Explanation of service was informed to you after services	3.98	.82	3.91	.85	3.95	.84
4) The company has responsibility to all damage in warranty book with warm service	4.14	.83	4.09	.73	4.11	.78
5) Ability to answer question when needed	4.13	.81	4.19	.61	4.16	.72
6) Care & understand customer's need	4.20	.69	4.16	.65	4.18	.68
Total	4.08	.74	4.06	.60	4.07	.68

Table 4: Means and Standard Deviation of the opinion of expectation by assurance

The opinion by assurance	DTAC		AIS		Total	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
1) Fulfillment of Commitments	4.11	.80	4.06	.81	4.08	.80
2) Staffs have knowledge and expertise on service	3.99	.81	4.07	.77	4.03	.79
3) Staff honesty	3.99	.82	4.12	.75	4.05	.79
4) The product and system has effective network coverage	4.12	.85	4.43	.71	4.27	.79
5) Your mobile phone has efficient in contact	4.23	.77	4.45	.70	4.34	.75
6) The company gives the reasonable of calling Usage fee	4.09	.90	3.95	1.05	4.02	.98
Total	4.07	.66	4.18	.63	4.13	.65

Table 5: Means and Standard Deviation of the opinion of expectation by empathy

The opinion by empathy	DTAC		AIS		Total	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
1) Staff follows up after service	3.93	.89	3.96	.91	3.93	.90
2) Staff takes care customer as VIP	4.06	.77	4.01	.83	4.04	.80
3) The most of value added services are served your requirement	4.02	.82	4.01	.89	4.02	.85
4) Staff ready to give help when you need a Problem	4.10	.77	4.09	.74	4.09	.76
5) Service shop's operating hours convenient to customer	4.11	.71	4.09	.75	4.10	.73
6) Staff gives you prompt service	4.10	.80	4.17	.77	4.14	.79
Total	4.03	.72	4.05	.66	4.04	.69

Table 6: Means and Standard Deviation of the opinion of perception by tangible

The opinion by tangible	DTAC		AIS		Total	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
1) Appearance / modern and good decoration	4.11	.78	4.14	.73	4.12	.75
2) Cleanliness & comfort in service shop	4.28	.74	4.34	.61	4.31	.68
3) Service shop associated with magazine, newspaper and service board ,air condition etc.	3.96	.92	3.94	.1.04	3.95	.98
4) Availability of catalog & brochure	3.87	.86	3.96	.93	3.92	.90
5) Easy to find service shop and convenient contact	3.17	1.36	4.13	.90	3.65	1.24
6) You feel that the payment procedure can work fast and convenient	3.62	1.04	3.78	.96	3.70	1.00
7) Staff's well dress and professional	4.06	.73	4.20	.62	4.13	.68
8) Employees should be consistently courteous	4.10	.79	4.20	.66	4.14	.73
Total	3.89	.55	4.08	.55	3.99	.56

Table 7: Means and Standard Deviation of the opinion of perception by reliability

The opinion by reliability	DTAC		AIS		Total	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
1) Bill collection give a brief, clear and correct data	3.59	1.01	3.79	.81	3.69	.92
2) Reasonable of air time and monthly fee	3.13	1.34	2.65	1.28	2.89	1.33
3) Mobile phone that you used, it had safety to your health	3.25	.93	3.16	.94	3.21	.94
4) Clear explanation of all document	3.82	.73	3.83	.72	3.82	.72
5) For more information, he or she can explain to you clearly	3.83	.78	3.92	.74	3.88	.76
6) Product and Services that company gave you was standard	3.94	.70	3.95	.77	3.95	.74
Total	3.57	.65	3.55	.57	3.56	.61

Table 8: Means and Standard Deviation of the opinion of perception by responsiveness

The opinion by responsiveness	DTAC		AIS		Total	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
1) When you met problem they are sympathetic and assuring	3.40	1.07	3.34	.91	3.37	.99
2) Staffs were active and willing to provide service to customers	3.29	1.05	3.33	1.00	3.31	1.03
3) Explanation of service was informed to you after services	3.34	.99	3.34	.91	3.34	.95
4) The company has responsibility to all damage in warranty book with warm service	3.72	.91	3.57	.94	3.64	.93
5) Ability to answer question when needed	3.85	.76	3.92	.70	3.88	.73
6) Care & understand customer's need	3.48	1.04	3.46	1.07	3.47	1.06
Total	3.49	.77	3.48	.70	3.49	.74

Table 9: Means and Standard Deviation of the opinion of perception by assurance

The opinion by assurance	DTAC		AIS		Total	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
1) Fulfillment of Commitments	3.41	1.06	3.40	1.00	3.40	1.03
2) Staffs have knowledge and expertise on service	3.62	.78	3.69	.75	3.65	.76
3) Staff honesty	3.56	.81	3.83	2.28	3.69	1.70
4) The product and system has effective network coverage	2.59	1.29	4.12	.99	3.36	1.38
5) Your mobile phone has efficient in contact	2.84	1.33	4.16	.98	3.50	1.33
6) The company gives the reasonable of calling Usage fee	3.08	1.33	2.47	1.33	2.77	1.36
Total	3.18	.81	3.59	.67	3.38	.77

Table 10: Means and Standard Deviation of the opinion of perception by empathy

The opinion by empathy	DTAC		AIS		Total	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
1) Staff follows up after service	3.26	.98	3.03	1.07	3.15	1.03
2) Staff takes care customer as VIP	3.44	.94	3.28	1.03	3.36	.99
3) The most of value added services are served your requirement	3.75	.81	3.66	.93	3.70	.87
4) Staff ready to give help when you need a Problem	3.67	.84	3.76	.86	3.71	.85
5) Service shop's operating hours convenient to customer	3.51	.96	3.40	1.07	3.45	1.02
6) Staff gives you prompt service	3.54	1.08	3.39	1.25	3.46	1.17
Total	3.52	.62	3.42	.75	3.46	.69

Percentage table of demographic

GROUP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid*	DTAC	200	50.0	50.0	50.0
	AIS	200	50.0	50.0	100.0
	Total	400	100.0	100.0	

SEX

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid*	male	232	58.0	58.0	58.0
	Female	168	42.0	42.0	100.0
	Total	400	100.0	100.0	

AGE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid*	low than 20 year	33	8.3	8.3	8.3
	20-30 year	218	54.5	54.5	62.8
	31-40 year	101	25.3	25.3	88.0
	41-50 year	39	9.8	9.8	97.8
	more than 50 year	9	2.3	2.3	100.0
	Total	400	100.0	100.0	

EDUCATION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid*	low than Bachelor	96	24.0	24.0	24.0
	Bachelor	282	70.5	70.5	94.5
	Master degree	13	3.3	3.3	97.8
	others	9	2.3	2.3	100.0
	Total	400	100.0	100.0	

INCOME

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid*	low than 10000	182	45.5	45.5	45.5
	10000-25000	165	41.3	41.3	41.3
	25001-40000	40	10.0	10.0	10.0
	40001-60000	7	1.8	1.8	1.8
	more than 60000	6	1.5	1.5	1.5
	Total	400	100.0	100.0	100.0

CAREER

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid*	student	126	31.5	31.5	31.5
	employee	162	40.5	40.5	72.0
	hirer/manager	10	2.5	2.5	74.5
	govern official	41	10.3	10.3	84.8
	others	50	12.5	12.5	97.3
	6.00	11	2.8	2.8	100.0
	Total	400	100.0	100.0	

Percentage table of AIS system

AIS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid*	GSM Advance	145	36.3	72.5	72.5
	GSM 1800	32	8.0	16.0	88.5
	other	23	5.8	11.5	100.0
	Total	200	50.0	100.0	
Missing	System	200	50.0		
Total		400	100.0		

Table 11: Percentage of DTAC system

DTAC

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid*	Digital 1800	185	46.3	92.5	92.5
	800 system	2	0.5	1.0	93.5
	3.00	13	3.3	6.5	100.0
	Total	200	50.0	100.0	
Missing	System	200	50.0		
Total		400	100.0		

Crosstabs

Percentage table between mobile group and demographic

SEX * GROUP Crosstabulation

			GROUP		Total
			DTAC	AIS	
SEX	male	Count	114	118	232
		% within SEX	49.1%	50.9%	100.0%
		% of Total	28.5%	29.5%	58.0%
SEX	female	Count	86	82	168
		% within SEX	51.2%	48.8%	100.0%
		% of Total	21.5%	20.5	42.0%
Total		Count	200	200	400
		% within SEX	50.0%	50.0%	100%
		% of Total	50.0%	50.0%	100.0%

SEX * GROUP Crosstabulation

			GROUP		Total
			DTAC	AIS	
AGE	Low than 20 year	Count	16	17	33
		% within AGE	48.5%	51.5%	100.0%
		% of Total	4.0%	4.3%	8.3%
	20-30 year	Count	110	108	218
		% within AGE	50.5%	49.5%	100.0%
		% of Total	27.5%	4.3%	54.5%
	31-40 year	Count	42	59	101
		% within AGE	41.6%	58.4%	100.0%
		% of Total	10.5%	14.8%	25.5%
	41-50 year	Count	27	12	339
		% within AGE	69.2%	30.8%	100.0%
		% of Total	6.8%	3.0%	9.8%
	More than 50 year	Count	3	4	9
		% within AGE	55.6%	44.4%	100.0%
		% of Total	1.3%	1.0%	9.8%
Total	male	Count	200	200	409
		% within AGE	50.0%	50.O%	100.0%
		% of Total	50.0%	50.0%	100.0%

EDUCATIO * GROUP Crosstabulation

			GROUP		Total
			DTAC	AIS	
EDUCATIO	Low than Bachelor	Count	49	51	96
		% within EDUCATIO	51.0%	49.0%	100.0%
		% of Total	12.3%	11.8%	24.0%
	Bachelor	Count	140	142	282
		% within EDUCATIO	49.6%	50.4%	100.0%
		% of Total	35.0%	35.5%	70.5%
	Master degree	Count	8	5	13
		% within EDUCATIO	61.5%	38.5%	100.0%
		% of Total	2.0%	1.3%	3.3%
	other	Count	3	6	9
		% within EDUCATIO	49.1%	66.7%	100.0%
		% of Total	28.5%	1.5%	2.3%
Total		Count	200	200	400
		% within EDUCATIO	50.0%	50.0%	100.0%
		% of Total	50.0%	50.0%	100.0%

INCOME* GROUP Crosstabulation

			GROUP		Total
			DTAC	AIS	
INCOME	Low than 10000	Count	88	94	182
		% within INCOME	48.4%	51.6%	100.0%
		% of Total	22.0%	23.6%	45.5%
	10000-25000	Count	89	76	165
		% within INCOME	53.9%	46.%	100.0%
		% of Total	22.3%	19.0%	41.3%
	25001-40000	Count	20	20	40
		% within INCOME	50.0%	50.0%	100.0%
		% of Total	5.0%	5.0%	10.0%
	40001-60000	Count	1	6	7
		% within INCOME	14.3%	85.7%	100.0%
		% of Total	.3%	1.5%	1.8%
	More than 60000	Count	2	4	6
		% within INCOME	33.3%	66.7%	100.0%
		% of Total	.5%	1.0%	1..5%
Total		Count	200	200	400%
		% within INCOME	50.0%	50.0%	100.0%
		% of Total	50.0%	50.5%	100.0%

CAREER* GROUP Crosstabulation

			GROUP		Total
			DTAC	AIS	
CAREER	student	Count	65	61	126
		% within CAREER	51.6%	48.4%	100.0%
		% of Total	16.3%	15.3%	31.5%
	Employee	Count	76	86	162
		% within CAREER	46.9%	53.1%	100.0%
		% of Total	19.0%	21.5%	40.5%
	hirer/manager	Count	5	5	10
		% within CAREER	50.0%	50.0%	100.0%
		% of Total	1.3%	1.3%	2.5%
	govern official	Count	26	15	41
		% within CAREER	63.4%	36.6%	100.0%
		% of Total	6.5%	3.8%	10.0%
	other	Count	25	25	50
		% within CAREER	50.0%	50.0%	100.0%
		% of Total	6.3%	6.3%	12.5%
	6.00	Count	3	8	11
		% within CAREER	27.3%	72.7%	100.0%
		% of Total	.8%	2.0%	2.8%
Total		Count	200	200	400
		% within CAREER	50.0%	50.0%	100.0%
		% of Total	50.0%	50.5%	100.0%

Descriptive of Expectation by tangible

Descriptives

Descriptive Statistic

	N	Minimum	Maximum	Mean	Std. Deviation
ET1	400	1.00	5.00	4.2400	.7097
ET2	400	2.00	5.00	4.3975	.6446
ET3	400	1.00	5.00	4.2700	.7865
ET4	400	1.00	5.00	4.1525	.8130
ET5	398	1.00	5.00	4.2286	.7778
ET6	400	1.00	5.00	4.2650	.7624
ET7	400	1.00	5.00	4.2675	.7261
ET8	400	1.00	5.00	4.3375	.7280
EXPTANG	400	1.25	5.00	4.2672	.5823
Valid N (leastwise)	398				

Table Descriptive of Perception by tangible

Descriptives

Descriptive Statistic

	N	Minimum	Maximum	Mean	Std. Deviation
PT1	400	1.00	5.00	4.1275	.7534
PT2	400	1.00	5.00	4.3125	.6753
PT3	399	1.00	5.00	3.9524	.9849
PT4	400	1.00	5.00	3.9200	.9031
PT5	399	1.00	5.00	3.6541	1.2484
PT6	399	1.00	5.00	3.6992	1.0024
PT7	400	1.00	5.00	4.1350	.6804
PT8	400	1.00	5.00	4.1475	.7294
PERTANG	400	1.00	5.00	3.9900	.5600
Valid N (leastwise)	397				

Table 12: Descriptive of Expectation by Reliability

Descriptives

Descriptive Statistic

	N	Minimum	Maximum	Mean	Std. Deviation
ER1	399	1.00	5.00	4.1353	.7613
ER2	399	1.00	5.00	4.0100	.9745
ER3	399	1.00	5.00	3.7368	.9814
ER4	399	1.00	5.00	4.0075	.7749
ER5	399	1.00	5.00	4.1228	.6927
ER6	399	1.00	5.00	4.1805	.7000
EXPREL1	400	.00	5.00	4.0221	.6820
Valid N (leastwise)	399				

Descriptives

Descriptive Statistic

	N	Minimum	Maximum	Mean	Std. Deviation
PR1	399	1.00	5.00	3.6942	.9225
PR2	398	1.00	5.00	2.8945	1.3350
PR3	399	1.00	5.00	3.2080	.9401
PR4	399	1.00	5.00	3.8246	.7529
PR5	399	1.00	5.00	3.8797	.7639
PR6	399	1.00	5.00	3.9524	.7369
PEPREL1	400	.00	5.00	3.5924	.6088
Valid N (leastwise)	398				

Table 13: Descriptive of Expectation by response

Descriptives

Descriptive Statistic

	N	Minimum	Maximum	Mean	Std. Deviation
ERE1	399	1.00	5.00	4.0852	.8100
ERE2	399	1.00	5.00	4.0551	.8095
ERE3	396	1.00	5.00	3.9495	.8374
ERE4	399	1.00	5.00	4.1153	.7809
ERE5	399	1.00	5.00	4.1604	.7225
ERE6	399	2.00	5.00	4.1855	.6767
EXPRESP	400	.00	5.00	4.0767	.6776
Valid N (leastwise)	396				

Table 14: Descriptive of Perception by Response

Descriptive Statistic

	N	Minimum	Maximum	Mean	Std. Deviation
PRE1	399	1.00	5.00	3.3759	.9945
PRE2	399	1.00	5.00	3.3108	1.0266
PRE3	396	1.00	5.00	3.3460	.9515
PRE4	398	1.00	5.00	3.6482	.9292
PRE5	399	1.00	5.00	3.8872	.7297
PRE6	399	1.00	5.00	3.4737	1.0603
PERRESP	400	.00	5.00	3.4925	.7395
Valid N (leastwise)	395				

Table 15: **Descriptive of Expectation by assurance**

Descriptives

Descriptive Statistic

	N	Minimum	Maximum	Mean	Std. Deviation
EA1	399	1.00	5.00	4.0877	.8050
EA2	400	1.00	5.00	4.0325	.7956
EA3	396	1.00	5.00	4.0581	.7918
EA4	400	1.00	5.00	4.2775	.8044
EA5	399	1.00	5.00	4.3459	.7473
EA6	400	1.00	5.00	4.0225	.9871
EXPASSUR	400	1.00	5.00	4.1271	.6458
Valid N (leastwise)	394	.00	5.00		

Table 16: **Descriptive of Perception by assurance**

Descriptive

Descriptive Statistic

	N	Minimum	Maximum	Mean	Std. Deviation
PA1	398	1.00	5.00	3.4095	1.0313
PA2	400	1.00	5.00	3.6550	.7664
PA3	395	1.00	34.00	3.6987	1.7093
PA4	400	1.00	5.00	3.3600	1.3839
PA5	399	1.00	5.00	3.5038	1.3392
PA6	399	1.00	5.00	2.7769	1.3646
PERASSUR	400	1.00	8.17	3.3875	.7718
Valid N (leastwise)	391				

Table 17: Descriptive of Expectation by empathy

Descriptive

Descriptive Statistic

	N	Minimum	Maximum	Mean	Std. Deviation
EE1	399	1.00	5.00	3.9323	.9011
EE2	399	1.00	5.00	4.0376	.8027
EE3	398	1.00	5.00	4.0176	.8560
EE4	399	1.00	5.00	4.0952	.7608
EE5	399	1.00	5.00	4.1053	.7326
EE6	399	1.00	5.00	4.1401	.7896
EXPEMPA	400	.00	5.00	4.0429	.6932
Valid N (leastwise)	398				

Table 18 : Descriptive of Perception by empathy

Descriptives

Descriptive Statistic

	N	Minimum	Maximum	Mean	Std. Deviation
EP1	399	1.00	5.00	3.9323	.9011
EP2	399	1.00	5.00	3.1504	1.0382
EP3	400	1.00	5.00	3.3625	.9943
EP4	400	1.00	5.00	3.7050	.8717
EP5	399	1.00	5.00	3.7168	.8551
EP6	398	1.00	5.00	3.4548	1.0245
PEREMPA	399	1.00	5.00	3.4642	1.1727
Valid N (leastwise)	394			3.4675	.6910

Table 19 : Descriptive of Perception and Expectation

Descriptive

Descriptive Statistic

	N	Minimum	Maximum	Mean	Std. Deviation
EXECTAT	400	2.29	5.00	4.1072	.5477
PERCEPTI	400	1.99	5.00	3.5806	.4858
Valid N (leastwise)	400				

T-Test

Descriptive Statistic

	GROUP	N	Mean	Std. Deviation	Std. Error Mean
EXPECTAT	DTAC	200	4.0990	.5583	3.948E-02
	AIS	200	4.1153	.5383	3.948E-02

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
EXPECTAT	Equal Variances assumed	.130	.718	-.297	398	.767	-1.6292E-02	5.484E-02	-.1241	9.151E-02
	Equal Variances not assumed			-.297	397.471	.767	-1.6292E-02	5.484E-02	-.1241	9.151E-02

T-Test

Descriptive Statistic

	GROUP	N	Mean	Std. Deviation	Std. Error Mean
EXPECTAT	DTAC	200	3.5335	.4966	3.511E-02
	AIS	200	3.6276	.4714	3.333E-02

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
EXPECTAT	Equal Variances assumed	.242	.623	-1.943	398	.053	-9.4083E-02	4.841E-02	-.1893	1.094E-02
	Equal Variances not assumed			-1.943	396.925	.053	-9.4083E-02	4.841E-02	-.1893	1.095E-02

Table 20: Descriptive of expectation by each itemT-Test

Group Statistics

	GROUP	N	Mean	Std. Deviation	Std. Error Mean
EXPECTAT	DTAC	200	4.2844	.5507	3.894E-02
	AIS	200	4.2500	.6133	4.336E-02
EXPRELI	DTAC	200	4.0108	.6851	4.884E-02
	AIS	200	4.0333	.6806	4.812E-02
EXPRESP	DTAC	200	4.0883	.7446	5.265E-02
	AIS	200	4.0653	.6049	4.277E-02
EXPASSUR	DTAC	200	4.0775	.6599	4.666E-02
	AIS	200	4.0767	.6291	4.448E-02
EXPEMPA	DTAC	200	4.0342	.7199	5.090E-02
	AIS	200	4.0517	.6672	4.718E-02

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
EXPECTAT	Equal Variances assumed	2.111	.147	.590	398	.556	3.437E.02	5.828E-02	-80201E-02	.1490
	Equal Variances not assumed			.590	393.472	.556	3.437E-02	5.828E-02	-80201E-02	.1490
EXPRELI	Equal Variances assumed	.601	.439	-330	398	.742	-2.2500E-02	6.828E-02	-1.567	.1117
	Equal Variances not assumed			-330	397.983	.742	-2.2500E-02	6.828E-02	-1.567	.1117
EXPECTAT	Equal Variances assumed	4.589	.033	.344	398	.731	2.333E-02	6.784E-02	-.1100	.1567
	Equal Variances not assumed			.344	381.981	.731	2.333E-02	6.784E-02	-.1100	.1567
EXPASSUR	Equal Variances Assumed	.060	.257	-1.538	398	.125	-9.9167E-02	6.477E-02	-.2259	2.758E-02
	Equal Variances not assumed			-1.538	397.094	.125	-9.9167E-02	6.477E-02	-.2259	2.758E-02
EXPEMPA	Equal Variances assumed	.130	.718	-.252	398	.801	-1.7500E-02	6.940E-02	-.1241	.1189
	Equal Variances not assumed			-.252	395.720	.801	-1.7300E-02	6.940E-02	-.1241	.1189

Table 21: Descriptive of Perception by each item

T-Test

Group Statistics

	GROUP	N	Mean	Std. Deviation	Std. Error Mean
PERTANG	DTAC	200	3.8944	.5532	3.912E-02
	AIS	200	4.0856	.5517	3.901E-02
PERRELI	DTAC	200	3.5792	.7465	4.579E-02
	AIS	200	3.5517	.5687	4.021E-02
PERRESP	DTAC	200	3.4983	.7746	5.477E-02
	AIS	200	3.4867	.7046	4.982E-02
PERASSUR	DTAC	200	3.1792	.0855	5.696E-02
	AIS	200	3.4867	.6769	4.787E-02
PEREMPA	DTAC	200	3.5167	.6254	4.422E-02
	AIS	200	3.4183	.7493	5.298E-02

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
PERTANG	Equal Variances assumed	1.882	.171	-3.462	398	.001	-.1913	5.525E-02	-.2999	9.151E-02
	Equal Variances not assumed			-3.462	397.997	.001	-.1913	5.525E-02	-.2999	9.151E-02
PERRELI	Equal Variances assumed	1.529	.217	.451	398	.652	2.750E-02	6.094E-02	-9.2301E-02	.1473
	Equal Variances not assumed			.451	391.472	.652	2.750E-02	6.094E-02	-9.2307E-02	.1473
PERRESP	Equal Variances assumed	.371	.543	.158	398	.875	1.167E-02	7.404E-02	-.1399	.1572
	Equal Variances not assumed			.158	394.487	.875	1.167E-02	7.404E-02	-.1399	.1572
PERASSUR	Equal Variances Assumed	16.300	.000	-5.600	398	.000	-.4167	7.440E-02	-.5629	-.2704
	Equal Variances not assumed			-5.600	386.549	.000	-.4167	7.440E-02	-.5629	-.2704
PEREMPA	Equal Variances assumed	8.953	.003	1.425	398	.155	9.833E-02	6.901E-02	-3.7341E-02	.2340
	Equal Variances not assumed			1.425	385.673	.155	9.833E-02	6.901E-02	-3.7354E-02	.2340

Table 22: **Descriptive of expectation and perception by age**

One-way

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference		Minimum	Maximum
						Lower Bound	Upper Bound		
EXPECTAT	low than 20 year	33	4.0066	.5141	8.949E-02	3.8243	4.1888	2.92	5.00
	20-30 year	218	4.0466	.5279	3.575E-02	3.9761	4.1171	2.29	5.00
	31-40 year	101	4.2293	.5518	5.490E-02	4.1204	4.3382	2.80	5.00
	41-50 year	39	4.1618	.6351	.1017	3.9559	4.3676	2.51	5.00
	more than 50 year	9	4.3380	.4715	.1572	3.9746	4.6994	3.65	5.00
	Total	400	4.1072	.5477	2.739E-02	4.0533	4.1610	2.29	5.00
PERCEPTI	low than 20 year	33	3.8381	.5002	8.708E-02	3.6608	4.0155	2.57	5.00
	20-30 year	218	3.5229	.4442	3.009E-02	3.5822	3.5822	2.29	5.00
	31-40 year	101	3.6238	.4836	4.812E-02	3.7193	3.7193	2.50	5.00
	41-50 year	39	3.4707	.5812	9.307E-02	3.6591	3.6591	1.99	4.80
	more than 50 year	9	4.0250	.4694	.1565	3.6642	4.3858	5.54	4.97
	Total	400	3.5806	.4858	2.429E-02	3.5328	3.6283	1.99	5.00

ANOVA

		Sum of squares	df	Mean Square	F	Sig.
EXPECTAT	Between Groups	3.232	4	-808	2.740	.028
	Within Groups	116.475	395	.295		
	Total	119.706	399			
PERCEPTI	Between Groups	5.353	4	1.338	5.951	.000
	Within Groups	88.816	395	.225		
	Total	94.169	399			

Table 23: Descriptive of expectation and perception by education

One-way

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference		Minimum	Maximum
						Lower Bound	Upper Bound		
EXPECTAT	low than Bachelor	96	4.0813	.5215	5.323E-02	3.9757	4.1870	2.51	5.00
	Bachelor	282	4.1241	.5623	3.348E-02	4.0582	4.1900	2.29	5.00
	Master degree	13	3.9942	.4874	.1352	3.6997	4.2888	3.37	5.00
	others	9	4.0167	.4725	.1575	3.6535	4.3799	3.48	5.00
	Total	400	4.1072	.5411	2.739E-02	4.0533	4.1610	2.29	5.00
PERCEPTI	low than Bachelor	96	3.7277	.5031	5.135E-02	3.6258	3.825	1.99	5.00
	Bachelor	282	3.5120	.4670	2.781E-02	3.4573	3.5667	2.29	5.00
	Master degree	13	3.7122	.4162	.1154	3.4607	3.9637	3.35	4.97
	others	9	3.9704	.4683	.1561	3.6104	4.3303	3.30	4.80
	Total	400	3.5805 6	.4858	2.429E-02	3.5328	3.6283	1.99	5.00

ANOVA

		Sum of squares	df	Mean Square	F	Sig.
EXPECTAT	Between Groups	.384	3	.128	.425	.735
	Within Groups	119.322	396	.301		
	Total	119.706	399			
PERCEPTI	Between Groups	4.997	3	1.666	7.396	.000
	Within Groups	89.172	396	.225		
	Total	94.169	399			

Table 24: **Descriptive of expectation and perception by income**

One-way

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference		Minimum	Maximum
						Lower Bound	Upper Bound		
EXPECTAT	low than 10000	182	4.0593	.4882	3.618E-02	3.9879	4.1307	2.53	5.00
	10000 –25000	165	4.1588	.5580	4.344E-02	4.0730	4.2446	2.51	5.00
	25001 –40000	40	4.1671	.6159	9.738E-02	3.9701	4.3641	2.80	5.00
	40001- 60000	7	3.9107	.9201	.3478	3.0598	4.7617	2.32	4.90
	more than 60000	6	3.9694	.9214	.3762	3.0025	4.9364	2.29	5.00
	Total	400	4.1072	.5477	2.7339E-02	4.0533	4.1610	2.29	5.00
PERCEPT1	low than 10000	182	3.6284	.4781	3.544E-02	3.5585	3.6984	2.35	5.00
	10000 –25000	165	3.5342	.4815	3.749E-02	3.4602	3.6082	1.99	5.00
	25001 –40000	40	3.5342	.4448	7.032E-02	3.3892	3.6737	2.39	4.97
	40001- 60000	7	3.5238	.5609	.2120	3.0050	4.0426	2.88	4.38
	more than 60000	6	3.7986	.8935	.3648	2.8610	4.7363	2.29	5.00
	Total	400	3.5806	.4858	2.429E-02	3.5328	3.6283	1.99	5.00

ANOVA

		Sum of squares	df	Mean Square	F	Sig.
EXPECTAT	Between Groups	1.384	4	.346	1.155	.330
	Within Groups	118.323	395	.300		
	Total	119.706	399			
PERCEPT1	Between Groups	1.176	4	.294	1.249	.290
	Within Groups	92.993	395	.235		
	Total	94.169	399			

Table 25 : Descriptive of expectation and perception by occupation

One-way

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference		Minimum	Maximum
						Lower Bound	Upper Bound		
EXPECTAT	Student	126	4.0564	.5188	4.6223-02	3.9649	4.1479	2.53	5.00
	Employee	162	4.1365	.5607	4.405E-02	4.0495	4.2235	2.51	5.00
	Hirer/manager	10	4.0750	.6668	.2109	3.5980	4.5520	3.02	5.00
	govern office	41	4.1894	.5467	8.537E-02	4.0169	4.3620	3.08	5.00
	Other	50	4.1448	.5210	7.368E-02	3.9968	4.2929	2.29	5.00
	6.00	11	3.8091	.6631	.1999	3.3636	4.2546	2.32	4.90
	Total	400	4.1072	.5477	2.739E-02	4.0533	4.1610	2.29	5.00
PERCEPT1	Student	126	3.5527	.4761	4.241E-02	3.4688	3.6366	2.35	5.00
	Employee	162	3.5918	.4773	3.750E-02	3.6659	3.6659	1.99	5.00
	Hirer/manager	10	3.7300	.3616	.1144	3.9887	3.9887	2.97	4.38
	govern office	41	3.5789	.5126	8.00E-02	3.7406	3.7406	2.67	5.00
	Other	50	3.5252	.5075	7.177E-02	3.6694	3.6694	2.29	4.57
	6.00	11	3.8568	.5929	1.788	4.2551	4.2551	2.88	4.53
	Total	400	3.5806	.4858	2.429E-02	3.5328	3.6283	1.99	5.00

ANOVA

		Sum of squares	df	Mean Square	F	Sig.
EXPECTAT	Between Groups	1.800	5	.360	1.203	.307
	Within Groups	117.907	394	.299		
	Total	119.706	399			
PERCEPTI	Between Groups	1.335	5	.267	.267	.342
	Within Groups	92.834	394	.236	1.133	
	Total	94.169	399			

Table 26: Descriptive of expectation and perception by sex

T-Test

Group Statistics

	SEX	N	Mean	Std. Deviation	Std. Error Mean
EXPECTAT	male	232	4.1102	.5499	3.611E-02
	female	168	4.1031	.5463	4.215E-02
PERCEPTI	male	232	3.5774	.4850	3.184E-02
	female	168	3.5850	.4883	3.768E-02

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
EXPECTAT	Equal Variances assumed	.162	.687	.128	398	.899	7.090E-03	5.556E-02	-.1021	.1163
	Equal Variances not assumed			.128	361.348	.899	7.090E-03	5.550E-02	-.1020	.1162
PERCEPTI	Equal Variances assumed	.139	.710	-.153	398	.878	-7.5636E-02	4.928E-02	-.1044	8.931E-02
	Equal Variances not assumed			-.153	358.534	.878	-7.5636E-02	4.933E-02	-.1046	8.94 5E-02

Table 27: Descriptive of expectation and perception of DTAC

T-Test

Group Statistics

	SEX	Mean	N	Std. Deviation	Std. Error Mean
Pair 1	EXPDTAC	4.0990	200	.5583	3.948E-02
	PERDTAC	3.5335	200	.4966	3.511E-02

Paired samples Correlations

		N	Correlation	Sig.
Pair 1	EXPDTAC & PERDTAC	200	.219	.002

Independent Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1 EXPDTAC-PERDTAC	.5655	.6611	4.675E-02	.4733	.6577	12.097	199	.000

Table 28 : Descriptive of expectation and perception of AIS

T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	EXPAIS	4.1153	200	.5383	3.806E-02
	PERAIS	3.6276	200	.4714	3.333E-02

Paired samples Correlations

		N	Correlation	Sig.
Pair 1	EXPAIS & PERAIS			

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1 EXPAIS-PERAIS	.4877	.6262	4.426E-02	.4004	.5750	11.019	199	.000

Descriptive of expectation and perception between AIS and DTAC in each item

Group Statistics

	GROUP	N	Mean	Std. Deviation	Std. Error Mean
PR1	DTAC	199	3.5980	1.0096	7.157E-02
	AIS	200	3.7900	.8181	5.785E-02
PR2	DTAC	199	3.1307	1.3420	9.513E-02
	AIS	199	2.6583	1.2886	9.134-02
PR3	DTAC	199	3.2513	.9359	635E-02
	AIS	200	3.1650	.9446	6.679E-02
PR4	DTAC	199	3.8191	.7299	5.174E-02
	AIS	200	3.8300	.7237	5.117E-02
PR5	DTAC	199	3.8342	.7834	5.554E-02
	AIS	200	3.9250	.7431	5.254E-02
PR6	DTAC	199	3.9497	.7017	4.974E-02
	AIS	200	3.9550	.7720	5.459E-02

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
PR1	Equal Variances assumed	13.389	.000	-2.088	397	.037	-.1920	9.198E-02	-.3728	-1.1185E-02
	Equal Variances not assumed			-2.088	379.883	.038	-.1920	9.203E-02	-.3730	-1.066E-02
PR2	Equal Variances assured	.017	.898	3.582	396	.000	.4742	.1319	-.2131	.7316
	Equal Variances not assumed			3.582	3.95.384	.000	.4742	.1319	-.2131	.7316
PR3	Equal Variances assumed	.852	.357	.916	397	.360	8.626E-02	9.415E-02	-.9.8829E-02	.2713
	Equal Variances not assumed			.916	396.993	.360	8.626E-02	9.414E-02	-.9.8829E-02	.2713
PR4	Equal Variances assumed	.045	.832	-.150	397	.881	-1.0905E-02	7.277E-02	-.1540	.1322
	Equal Variances not assumed			-.150	3.96.297	.881	-1.0905E-02	7.277E-02	-.1540	.1322
PR5	Equal Variances assumed	4.266	.040	-1.188	397	.235	-9.0829E-02	7.644E-02	-.2411	5.945E-02
	Equal Variances not assumed			-1.188	395.674	.236	-9.0829E-02	7.644E-02	-.2411	5.945E-02
PR6	Equal Variances assumed	1.813	.179	-.071	397	.943	-5.2513E-03	7.3874E-02	-.1505	.1400
	Equal Variances not assumed			-.071	393.801	.943	-5.2513E-02	5.385E-02	-.1504	.1400

T-Test

Group Statistics

	GROUP	N	Mean	Std. Deviation	Std. Error Mean
ERE1	DTAC	199	4.1407	.8411	5.922E-02
	AIS	200	4.0300	.7760	5.487E-02
ERE2	DTAC	199	4.0905	.8052	5.708E-02
	AIS	200	4.0200	.8142	5.757E-02
ERE3	DTAC	197	3.9848	.8236	5.868E-02
	AIS	199	3.9146	.8515	6.036E-02
ERE4	DTAC	199	4.1407	.8290	5.876E-02
	AIS	200	4.0900	.7311	5.170E-02
ERE5	DTAC	199	4.1307	.8184	5.801E-02
	AIS	200	4.1900	.6130	4.335E-02
ERE6	DTAC	199	4.2060	.6983	4.950E-02
	AIS	200	4.1650	.6557	4.636E-02

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
ERE1	Equal Variances assumed	3.685	.056	1.367	397	.173	.1107	8.101E-02	-4.8558E-02	-.2700
	Equal Variances not assumed			1.366	394.126	.173	.1107	8.101E-02	-4.8594E-02	-.2700
ERE2	Equal Variances assured	1.627	.203	.869	397	.385	7.045E-02	8107E-02	-8.8935E-02	.2298
	Equal Variances not assumed			.869	396.985	.385	7.045E-02	8107E-02	-8.8931E-02	.2298
ERE3	Equal Variances assumed	.614	.434	.834	394	.405	7.020E-02	8.420E-02	-9.533OE-02	.2357
	Equal Variances not assumed			.834	393.789	.405	7.020E-02	8.420E-02	-9.5302E-02	.2357
ERE4	Equal Variances assumed	5.515	.019	.648	397	.517	5.070E-02	7.824E-02	-.1031	.2046
	Equal Variances not assumed			.648	390.413	.517	5.070E-02	7.824E-02	-.1032	.2046
ERE5	Equal Variances assumed	9.853	.002	-.820	397	.413	-5.9347E-02	7.237E-02	-.2016	8.292E-02
	Equal Variances not assumed			-.820	366.988	.413	-5.9347E-02	7.237E-02	-.2018	8.306E-02
ERE6	Equal Variances assumed	.130	.718	-.297	398	.545	-1.6292E-02	6.781E-02	-9.2288E-02	1.743
	Equal Variances not assumed			-.297	397.177	.546	-1.6292E-02	6.782E-02	-9.2311E-02	1.743

T-Test

Group Statistics

	GROUP	N	Mean	Std. Deviation	Std. Error Mean
ERE1	DTAC	199	3.4070	1.0732	7.6073E-02
	AIS	200	3.3450	.9111	6.443E-02
ERE2	DTAC	199	3.2915	3.2915	7.457E-02
	AIS	200	3.3300	1.0031	7.093E-02
ERE3	DTAC	198	3.3434	.9940	7.064E-02
	AIS	198	3.3485	.9095	6.463E-02
ERE4	DTAC	199	3.7286	.9083	6.439E-02
	AIS	199	3.5678	.9450	6.699E-02
ERE5	DTAC	199	3.8543	.7614	5.397E-02
	AIS	200	3.9200	.6972	4.930E-02
ERE6	DTAC	199	3.4874	1.04861	7.433E-02
	AIS	200	3.4600	1.0743	7.597E-02

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
PRE1	Equal Variances assumed	4.387	.037	.623	397	.534	6.204E-02	9.965E-02	-1.339	.2579
	Equal Variances not assumed			.622	386.203	.534	6.204E-02	9.965E-02	-.1340	.2580
PRE2	Equal Variances assured	.011	.917	-.375	397	.708	-3.8543E-02	.1029	-.2408	.1638
	Equal Variances not assumed			-.375	395.907	.708	-3.8543E-02	.1029	-.2409	.1638
PRE3	Equal Variances assumed	1.448	.230	-.053	394	.958	-5.050E-02	9.575E-02	-.1933	.1832
	Equal Variances not assumed			-.053	390.930	.958	-5.050E-02	9.575E-02	-.1933	.1832
PRE4	Equal Variances assumed	1.555	.213	1.731	396	.084	.1608	9.29E-02	-2.1869E-02	.3435
	Equal Variances not assumed			1.731	395.378	.084	.1608	9.29E-02	-2.1869E-02	.3435
PRE5	Equal Variances assumed	3.052	.081	-.899	397	.369	-6.5729E-02	7.308E-02	-.2094	7.794E-02
	Equal Variances not assumed			-.899	393.605	.369	-6.5729E-02	7.318E-02	.2364	7.794E-02
ERE6	Equal Variances assumed	.850	.357	.258	397	.796	2.744E-02	.1063	-.1815	.2364
	Equal Variances not assumed			.258	396.894	.796	2.744E-02	.1063	-.1815	.2364

T-Test

Group Statistics

	GROUP	N	Mean	Std. Deviation	Std. Error Mean
EA1	DTAC	199	4.1156	.8051	5.707E-02
	AIS	200	4.0600	.8060	5.699E-02
EA2	DTAC	200	3.9900	.8144	5.759E-02
	AIS	200	4.0750	.7761	5.488E-02
EA3	DTAC	198	3.9949	.8278	5.883E-02
	AIS	198	4.1212	.7509	5.337E-02
EA4	DTAC	200	4.1200	.8598	6.080E-02
	AIS	200	4.4350	.7130	5.041E-02
EA5	DTAC	199	4.2362	.7717	5.470E-02
	AIS	200	4.4550	.7074	5.002E-02
EA6	DTAC	200	4.0900	.9089	6.427E-02
	AIS	200	3.9550	1.0576	7.479E-02

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
EA1	Equal Variances assumed	1.147	.285	.689	397	.491	5.558E-02	8.066E-02	-.1030	.2141
	Equal Variances not assumed			.689	396.994	.491	5.558E-02	8.066E-02	-.1030	.2141
EA2	Equal Variances assured	1.518	.219	-1.069	398	.286	-8.5000EE-02	7.955E-02	-.2414	7.1395E-02
	Equal Variances not assumed			-1.069	397.083	.286	-8.5000EE-02	7.955E-02	-.2414	7.1395E-02
EA3	Equal Variances assumed	.980	.323	-1.590	394	.113	-.1263	7.943E-02	-.2824	2.989E-02
	Equal Variances not assumed			-1.590	390.317	.113	-.1263	7.943E-02	-.2824	2.990E-02
EA4	Equal Variances assumed	.002	.961	-3.988	398	.000	-.3150	7.898E-02	-.4703	-.1597
	Equal Variances not assumed			-3.988	384.810	.000	-.3150	7.898E-02	-.4703	-.1597
EA5	Equal Variances assumed	.026	.871	-2.953	397	.003	-.2188	7.411E-02	-.3645	-7.3123-02
	Equal Variances not assumed			-2.953	393.692	.003	-.2188	7.411E-02	-.3645	-.3088E-02
EA6	Equal Variances assumed	1.879	.171	1.369	398	.172	.1350	9.861E-02	-5.882E-02	.3289
	Equal Variances not assumed			1.369	389.192	.172	.1350	9.861E-02	-5.882E-02	.3289

T-Test

Group Statistics

	GROUP	N	Mean	Std. Deviation	Std. Error Mean
PA1	DTAC	199	3.4171	1.0598	7.513E-02
	AIS	199	3.4020	1.0046	7.122E-02
PA2	DTAC	200	3.6200	.7802	5.517E-02
	AIS	200	3.6900	.7528	5.323E-02
PA3	DTAC	199	3.5678	.8066	5.718E-02
	AIS	196	3.8316	2.2820	.1630
PA4	DTAC	200	2.5950	1.2595	9.163E-02
	AIS	200	4.1250	.9921	7.015E-02
PA5	DTAC	199	2.8442	1.3299	9.427E-02
	AIS	200	4.1600	.9794	6.925E-02
PA6	DTAC	200	3.0800	1.3313	9.414E-02
	AIS	199	2.4724	1.3326	9.446E-02

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
PA1	Equal Variances assumed	.143	.705	.146	396	.884	1.508E-02	.1035	-.1884	.2186
	Equal Variances not assumed			.146	394.874	.884	1.508E-02	.1035	-.1884	.2186
PA2	Equal Variances assured	.447	.504	-.913	398	.362	-7.0000E-02	7.666E-02	-.2207	8.071E-02
	Equal Variances not assumed			-.913	397.495	.362	-7.0000E-02	7.666E-02	-.2207	8.071E-02
PA3	Equal Variances assumed	.200	.655	-1.536	393	.125	-.2638	.1717	-.6041	7.381E-02
	Equal Variances not assumed			-1.536	242.335	.128	-.2638	.1727	-.6041	7.646E-02
PA4	Equal Variances assumed	44.298	.000	-13.258	398	.000	-1.5300	.1154	-1.7569	-1.3031
	Equal Variances not assumed			-13.258	372.627	.000	-1.5300	.1154	-1.7569	-1.3031
PA5	Equal Variances assumed	52.096	.000	-11.257	397	.000	-1.3158	.1169	-1.5456	-1.0860
	Equal Variances not assumed			-11.257	363.916	.000	-1.3158	.1170	-.15458	-1.0857
PA6	Equal Variances assumed	.833	.362	4.556	397	.000	.6076	.1334	.3455	.8698
	Equal Variances not assumed			4.556	396.986	.000	.6076	.1334	.3455	.8698

T-Test

Group Statistics

	GROUP	N	Mean	Std. Deviation	Std. Error Mean
EE1	DTAC	199	3.9347	.8887	6.295E-02
	AIS	200	3.9300	.9161	6.478E-02
EE2	DTAC	199	4.0693	.7725	5.476E-02
	AIS	200	4.0100	.8327	5.888E-02
EE3	DTAC	198	4.0253	.8213	5.837E-02
	AIS	200	4.0100	.8910	6.300E-02
EE4	DTAC	199	4.1005	.7785	5.518E-02
	AIS	200	4.0900	.7448	5.266E-02
EE5	DTAC	199	4.1156	.7119	5.046E-02
	AIS	200	4.0950	.7542	5.333E-02
EE6	DTAC	199	4.1055	.8065	5.7173-02
	AIS	200	4.1750	.7729	5.465E-02

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
EE1	Equal Variances assumed	.006	.937	.052	397	.959	4.673E-03	9.034E-03	-.1729	.1823
	Equal Variances not assumed			.052	396.730	.959	4.673E-03	9.033E-03	-.1729	.1823
EE2	Equal Variances assured	.447	.504	.688	397	.492	5.533E-02	8.042E-02	-.1028	.2134
	Equal Variances not assumed			.688	395.070	.492	5.533E-02	8.0513-02	-.1028	.2134
EE3	Equal Variances assumed	.511	.475	.178	396	.859	1.525E-02	8.592E-02	-.1537	.1842
	Equal Variances not assumed			.178	393.999	.859	1.525E-02	8.588E-02	-.1536	.1841
EE4	Equal Variances assumed	..071	.790	.138	397	.891	1.050E-02	7.627E-02	-.1394	.1604
	Equal Variances not assumed			.138	396.039	.891	1.050E-02	7.628E-02	-.1395	.1605
EE5	Equal Variances assumed	1.180	.278	.280	397	.799	2.058E-02	7.343E-02	-.1238	.1649
	Equal Variances not assumed			.280	395.902	.799	2.058E-02	7.342E-02	-.1238	.1649
EE6	Equal Variances assumed	.034	.854	-.878	397	.380	-6.9472E-02	7.908E-02	-.2249	8.600E-02
	Equal Variances not assumed			-.878	396.105	.380	-6.9472E-02	7.909E-02	-.2250	8.600E-02

T-Test

Group Statistics

	GROUP	N	Mean	Std. Deviation	Std. Error Mean
EP1	DTAC	200	3.2650	.9847	6.963E-02
	AIS	199	3.0352	1.0795	7.653E-02
EP2	DTAC	200	3.4450	.9442	6.676E-02
	AIS	200	3.2800	1.0378	7.338E-02
EP3	DTAC	200	3.7500	.8129	5.748E-0
	AIS	200	3.6600	.9267	6.552E-02
EP4	DTAC	199	3.6734	.8462	5.998E-02
	AIS	200	3.6700	.8638	6.108E-02
EP5	DTAC	198	3.5101	.9651	6.858E-02
	AIS	200	3.4000	1.0797	7.635E-02
EP6	DTAC	199	3.5427	1.0810	7.663E-02
	AIS	200	3.3900	1.2553	8.876E-02

Independent Samples Test

		Leaven's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
EP1	Equal Variances assumed	.549	..469	2.222	397	.027	.2298	.1034	2.647E-02	.4332
	Equal Variances not assumed			2.221	393.321	.027	.2298	.1035	2.642E-02	.4332
EP2	Equal Variances assured	5.311	.022	1.663	398	.097	.1650	9.921E-02	-3.0036E-02	.3600
	Equal Variances not assumed			1.663	394.495	.097	.1650	9.921E-02	-3.00341E-02	.3600
EP3	Equal Variances assumed	6.255	.013	1.033	397	.302	9.000E-02	8.716E-02	-8.1359E-02	.2614
	Equal Variances not assumed			1.033	391.362	.302	9.000E-02	8.716E-02	-8.1367E-02	.2614
EP4	Equal Variances assumed	.036	.849	-1.012	397	.312	-8.6633E-02	8.561E-02	-.2549	8.168E-02
	Equal Variances not assumed			-.1.012	396.904	.312	-8.6633E-02	8.561E-02	-.2549	8.167E-02
EP5	Equal Variances assumed	3.556	.060	1.072	396	.284	.1101	.1027	-9.1782E-02	.3120
	Equal Variances not assumed			1.072	391.940	.284	.1101	.1026	-9.1674E-02	.3119
EP6	Equal Variances assumed	8.732	.003	1.302	398	.194	.1527	.1173	-7.7913E-02	.3833
	Equal Variances not assumed			1.302	389.002	.194	.1527	.1173	7.7841E-O2	.3833

Reliability

****** Method 1 (space saver) will be used for this analysis ******

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

TOTALEXPECT

N of Cases = 38.0 N of Items = 32

Alpha = .9474

Reliability

****** Method 1 (space saver) will be used for this analysis ******

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

ET Reliability Coefficients

N of Cases = 40.0 N of Items = 8

Alpha = .9040

Reliability

****** Method 1 (space saver) will be used for this analysis ******

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

ER Reliability Coefficients

N of Cases = 40.0 N of Items = 6

Alpha = .8935

Reliability

****** Method 1 (space saver) will be used for this analysis ******

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

ERE Reliability Coefficients

N of Cases = 40.0 N of Items = 6

Alpha = .8772

Reliability

****** Method 1 (space saver) will be used for this analysis ******

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

EA Reliability Coefficients

N of Cases = 38.0 N of Items = 6

Alpha = .8998

Reliability

****** Method 1 (space saver) will be used for this analysis ******

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

EE Reliability Coefficients

N of Cases = 39.0 N of Items = 6

Alpha = .8712

Reliability

****** Method 1 (space saver) will be used for this analysis ******

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

Reliability Coefficients **TOTAL PERCEP**

N of Cases = 39.0 N of Items = 32

Alpha = .8432

RELIABILITY ANALYSIS - SCALE (ALPHA)

Reliability Coefficients **EP**

N of Cases = 40.0 N of Items = 6

Alpha = .6852

RELIABILITY ANALYSIS - SCALE (ALPHA)

Reliability Coefficients **PT**

N of Cases = 39.0 N of Items = 6

Alpha = .6525

Reliability

****** Method 1 (space saver) will be used for this analysis ******

RELIABILITY ANALYSIS - SCALE (ALPHA)

Reliability Coefficients **PA**

N of Cases = 40.0 N of Items = 6

Alpha = .7674

Reliability

****** Method 1 (space saver) will be used for this analysis ******

RELIABILITY ANALYSIS - SCALE (ALPHA)

Reliability Coefficients **PRE**

N of Cases = 39.0 N of Items = 6

Alpha = .8246

RELIABILITY ANALYSIS - SCALE (ALPHA)

Reliability Coefficients **PR**

N of Cases = 40.0 N of Items = 8

Alpha = .6240