



CUSTOMERS' SATISFACTION OF THE SERVICE QUALITY OF SIAM
PROGRESS ENGINEERING CO., LTD. AIR-CONDITIONING
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By
Ms. Sangsawang Sirithumkuchaweng

A RESEARCH PROJECT

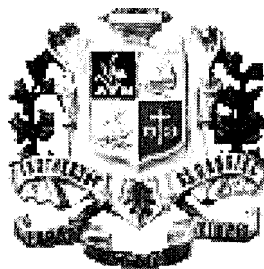
Submitted in Partial Fulfillment of the Requirement for the Degree of
Master of Science in Management (Business Management)

School of Business Administration
College of Internet Distance Education
Bangkok, Thailand
Assumption University

November 2006

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Ms. Sangsawang Sirithumkuchaweng

Bachelor of Business Administration, Assumption University, 2000

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SCHOOL OF BUSINESS ADMINISTRATION

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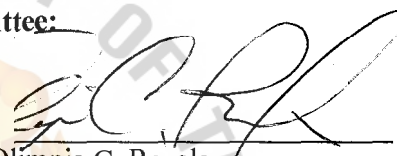
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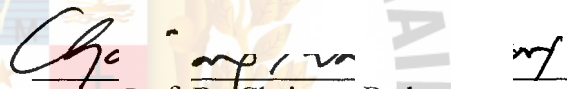
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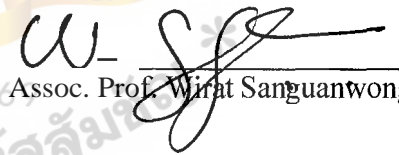
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ABSTRACT

An essential attribute for the marketing of air-conditioners is the delivery of customer quality products and impressive services. As the product offering is very similar among competitors, the key areas of differentiation are in providing distinctive services. In order to remain highly competitive in the market, companies need to gain competitive advantage to attract new customers as well as to maintain existing customers.

This study aims to examine customer's expectations of air-conditioning services and perceptions of services provided by Siam Progress Engineering, Co. Ltd. The resulting service quality level outcomes are used in order to identify the firm's service strengths that can be exploited and weakness that require improvements.

A survey method was used and the primary data was collected through use of distributed self-administered questionnaires comprising mainly of questions on five SERVQUAL dimensions of Tangibility, Responsiveness, Empathy, Assurance, and Reliability. The sample comprised 104 respondents, all of whom are existing customers of Siam Progress Engineering Co., Ltd. SPSS 13.0 was used for the data analysis, which included descriptive statistics (i.e. frequency distribution) and inferential statistics (i.e. paired sample t-test) to test six hypotheses.

The results of the study indicate that Siam Progress Engineering Co., Ltd. meets customer expectations on three dimensions and exceeds customer expectation on two. Considering the relatively high expectations of customers, Siam Progress Engineering appears to provide the quality service levels that may give the firm a competitive advantage. Managerial implications and recommendations are given in order for Siam Progress Engineering to continue and even excel at providing its high levels of service quality.

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Throughout this research project, there are many people who offered kind support, advice, encouragement and assistance. It is worth acknowledging those who have assisted with kind support and generosity.

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CHAPTER 1

INTRODUCTION

1.1 The Importance of Service Quality

Thailand's services sector constitutes \$560.7 billion (2005 est.), accounting for 45.6% of the nation's gross domestic product (GDP), making it the largest sector in the country (<http://www.cia.gov/cia/publications/factbook/geos/th.html>). As the service sector continues to expand, it is very important that each company performs at an acceptable level in order to compete in the market effectively.

The delivery of service quality is considered a critical success factor for contemporary service companies. Its close conceptual, as well as empirical, link to customer satisfaction has turned service quality into a core marketing instrument for service companies. Apart from its conceptual importance, it is known that good service quality will lead to repeat purchase, positive word-of-mouth, higher sales volume, lower selling cost, and more profitability.

As products are becoming easier to imitate with less and less differentiation among competing brands, more and more firms are placing greater emphasis on after-sales service as a means to add value and differentiate their marketing offers. After-sales services are much more prominent for higher-priced, durable products such as automobiles, large appliances and air conditioners.

After-sales service is regarded as an essential attribute for the marketing of air conditioners. This is because of the mechanical, technical, and chemical features of an air conditioner which make it difficult for owners to maintain and repair the product themselves.

Siegel (2004) concluded that the economy issue for all industries in 2004 caused the same effect for the air-conditioning industry. The degree of competition has drastically increased and has become more intense than in the past. However, 2005 was not entirely a financial and economic nightmare for air-conditioner businesses. According to Siegel, the economic situation of 2005 would be similar to that during 2004 in terms of challenges and opportunities for air conditioner businesses.

Siegel (2005) also provided statistical data from *Heating, Air-conditioning & Refrigeration Distributors International* (HARDI) for the month of August 2005. This data revealed that wholesaler members forecast about a 9 percent increase in year-to-date sales.

For air-conditioner distributors, premium service quality, rather than the product itself, creates potential for competitive advantage because all distributors can easily imitate product quality and attributes from the same manufacturer. There is no difference in product quality when buying from different distributors because products come in the same standard level from the same sources.

Hall's (2004) interview of an air-conditioning distributor touched on some topics from the distributor's perspective regarding product-related issues. According to the distributor, there were not many issues facing air-conditioning businesses and the situation is similar to that of 20 years ago. Therefore, an air-conditioning distributor could be differentiated and create distinctive value by offering premium service quality. Skaer (2004) established the fact that more business is lost due to poor service and poor treatment than poor product.

Blum (2005) stated that the very heart of customers' buildings is the provision of proper maintenance. Such maintenance makes service performance the most crucial of all service offerings.

Hall (2004) revealed that a well-funded business will pay top money for service technicians. Expertise covers quality of workmanship, productivity and efficiency, training, and having a vast pool of talented labor quickly available. Moreover, customers would much rather see jobs performed correctly the first time than deal with jobs that require repeated fixing.

Firms and managers realize that strong emphasis upon product and service quality has become the major key to success and effectiveness of the modern company. Thus, one should pay more attention to providing quality products and services through productive operation with honesty, prompt services and job warrantee. Mull (1998) indicated that companies must be creative with what they do in order to stay in business. Customers strive for service quality and on-time scheduling. These are two of the most important reasons a company gets call-backs and repeat business.

Because the characteristics of services are intangible, understanding customers and their expectations is essential in designing quality service. As a member of an organization, it is necessary to know the meaning of quality service from existing customers.

This research project aims to study customers' satisfaction on service quality of an air-conditioner distributor, namely Siam Progress Engineering Co., Ltd. A survey methodology is conducted to study current perceived service quality of Siam Progress Engineering Co., Ltd.

Siam Progress Engineering Company Limited

Siam Progress Engineering Company Limited was established in 1992 and has been offering high quality services and products in order to maximize customer satisfaction. Major revenue comes from post-sales services and other services such as maintenance, spare part sales, and cleaning services. The majority of customers served is business customers such as construction companies, banks, office building owners, outlets, and residences.

As mentioned by Woo and Ennew (2005), it is an established fact that in a typical business-to-business (B2B) organization, about 80% of the businesses' revenue comes from about 20% of customers. This concept applies to Siam Progress Engineering Co., Ltd as well. Consequently, there should be no doubt that the company should invest time in understanding why major customers buy from it, what customers expect from the services, how customers perceive company services, and what the company can do further to satisfy them.

/1.2 Statement of the Problem

At present, the competition in air-conditioner distribution is intense. In order to gain competitive advantage in the industry, differentiate from competitors, and maintain a customer base, companies need to create value-added services. Moreover, those services offering should be beneficial and favorably perceived by customers, otherwise, investments in services are useless.

Regarding intensive competition, air-conditioner distributors need to address the following key questions: **What is the service quality offered by an air-conditioning distributor? Do current service levels meet customer expectations?**

1.3 Objectives of the Study

The objective of this study is to assess the customer expectations and the perceptions of service quality dimensions for Siam Progress Engineering Co., Ltd. by applying a modified version of the SERVQUAL model (Parasuraman, Zeithaml, and Berry, 1988).

The research was conducted to address the following specific research objectives:

- 1 To determine Siam Progress Engineering Co. Ltd.'s customers' expected service levels on several service quality dimensions.
- 2 To determine Siam Progress Engineering Co. Ltd.'s customers' perceived service levels on several service quality dimensions.
- 3 To identify service level gaps between Siam Progress Engineering Co. Ltd.'s customers' expected and perceived service quality levels.

1.4 Theoretical Framework

The theoretical framework for this study is based on the customer assessment model of service quality (Parasuraman et al. 1988). The model explains the process of determining customer satisfaction by comparing their expectations against their evaluation of the actual performance of the service provided. Because of the distinct characteristics of a service and the fact that services are performed by an individual, the specific dimensions of service are assessed using the SERVQUAL scale, which includes Tangibles, Reliability, Responsiveness, Assurance, and Empathy.

The five SERVQUAL dimensions (Parasuraman et al. 1988) are described below.

1. **Tangibles:** Appearance of physical facilities, equipment, personnel, and communication materials
2. **Reliability:** Ability to perform the promised service dependably and accurately
3. **Responsiveness:** Willingness to help customers and provide prompt service
4. **Assurance:** Knowledge and courtesy of employees and their ability to convey knowledge to meet the demand
5. **Empathy:** Caring, individualized attention the firm provides its customer

1.5 Definition of Terms

Assurance is the knowledge and courtesy of employees and their ability to convey trust and confidence (Parasuraman et al., 1990).

Empathy is caring and individualized attention the firm provides its customers (Parasuraman et al., 1990).

Gap 5 is the quality that a consumer perceives in a service; it is a function of the magnitude and direction of the gap between expected service and perceived service (Payne 1993). The gap means that the perceived or experienced service is not consistent with the expected service.

Perception is a customers' beliefs concerning the service received and experienced (Parasuraman et al., 1985).

Perception of Service Quality is the degree and prediction of discrepancy between customer's perceptions and desire. Moreover, it has been defined as the difference between expectations and performance of service (Gronroos 1982).

Quality is the extent to which the service, the service process and the service organization can satisfy the expectations of the user. (Kasper, Helsdingen, Vries, 1999).

Reliability is ability to perform the promised service dependably and accurately (Parasuraman et al., 1990).

Responsiveness is willingness to help customers and provide prompt service (Parasuraman et al., 1990).

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

Service Quality is the perception result from a comparison of consumer expectation with actual service performance (Parasuraman et al. 1985).

Tangibles are the appearance of physical facilities, equipment, personnel, and communication materials (Parasuraman et al. 1990).

1.6 Scope of the Study

This research was conducted in a single industry on a single firm to study the service quality level of Siam Progress Engineering Co., Ltd. by determining the difference between expectations and perception of consumers in the service offered by the company. All of the company's customers as well as the customer's customers were included in the sample. Data were collected during August-September 2006. The model and several variables have been adapted according to Thai target respondent behavior.

1.7 Significance of the Study

The benefit and usefulness of this research are to identify the service quality levels for Siam Progress Engineering. The air-conditioner distributor may use the

results of this study to build upon existing service strengths and improve upon those services that may appear to fall short in meeting customer expectations. Therefore the research can help in monitoring the service quality in the organization, to find out if it meets the demand of the customers and exceeds the goal in terms of five dimensions of service quality.

This study also aims to find the perceived service quality level provided by Siam Progress Engineering. It will be beneficial for Siam Progress Engineering itself to know the perceived service quality of its customers. Moreover, the research is useful to the organization as well as people who are currently in the same line of business or want to invest in an air-conditioner business in order to know how people think and evaluate the services provided by such a distributor, with the final benefit going to customers of the firm.

1.8 Limitations

There are several limitations associated with this study. First, it focuses on only one industry and one firm. Therefore, the results may not be generalized to other service industries or other air-conditioning firms. Second, data was collected during a specific time period within Bangkok and therefore the results may not be generalized to other periods of time nor other areas of Thailand. Third, only five service quality levels were examined based on the prominent SERVQUAL model. There may be other service dimensions that customers evaluate that were not included in this study.

CHAPTER 2

LITERATURE REVIEW

2.1 The Nature of Service Quality

2.1.1 Concept of Service

Services are not limited to the service industries. For example, a manufacturer like IBM can be highly involved in the service business. Zeithaml and Bitner (2003) stated that services are deeds, processes and performance. The broad definition of services suggested that intangibility is a key factor of deciding whether an offering is a service.

Sasser (1982) defined service as a package of explicit and implicit benefits performed with a supporting facility and facilitating good.

Groth and Dye (1999) indicated that services are generally described in terms of four unique characteristics, namely intangibility, inseparability, heterogeneity, and perishability. Intangibility can be defined as something that cannot be touched, seen, tasted, heard, or felt in the same manner in which goods can be sensed. Santos (2002) explained that intangibility is the single most important difference between products and services. Parasuraman, Zeithaml, and Berry (1985) pointed out that due to the intangibility characteristic of services, the firm may find it hard to understand how consumers perceive their service and evaluate service quality.

Services possess the inseparability characteristic since the service provider usually creates or performs the service at the same time as the full or partial consumption of the service takes place. The conversion is highly visible and it is not possible for the service provider to hide any mistake or quality shortfall. Ghobadian, Speller, and Jones (1994) added that the involvement of the customer in the delivery

process introduces an additional factor, which causes the service providers to have little or no direct control over the service experience. Parasuraman and colleagues (1985) also commented according to this condition that the consumer's input becomes vital to the quality of service performance. There are high degrees of variability in the performance of services. Services are difficult to standardize, in contrast to manufactured goods. As mentioned by O'Brien and Deans (1996), the quality of a service can vary from producer to producer, from customer to customer, and from day to day. Ghobadian, Speller, and Jones (1994) also pointed out that service providers have to rely heavily on the ability of their staff to understand the requirements of the customer and react in an appropriate manner.

Lamb, Hair, and McDaniel (2000) defined perishability as a characteristic of services that prevents them from being stored, warehoused, or inventoried. Unlike manufactured goods, it is impossible to have a final check on quality. Ghobadian, Speller, and Jones (1994) insisted that it needs to be done right at the first time.

2.1.2 Definitions and Features of Service Quality

Garvin (1988) defined quality in many ways, such as conformance to specifications, the degree to which customer specifications are satisfied, a fair exchange of price and value, fitness for use, and doing it right the first time.

Lehtinen (1982) pointed out that service quality is produced in the interaction between a customer and elements of the services organization.

There were so many people who defined the meaning of service quality in different points of view. However, the concept of meaning was quite similar. The researcher decided to use the definition that Parasuraman et al. (1990) defined service quality as

3.2.1

perceived by customers as the extent of discrepancy between customer's expectations or desires and their perceptions.

Parasuraman et al. (1985) point out that service quality is more difficult for the consumer to evaluate than good quality; perception of service quality result from a comparison of consumer expectation with actual service performance; quality evaluation are not made solely on the outcome of a service but also involve evaluation of the "process" of service delivery; and the customer has fewer tangible cues when purchasing a service than when purchasing goods.

Gronroos (1990) elaborated on the two dimensions in perceptions of service quality: technical or outcome dimension and functional or process-related dimension.

- 1 *The technical quality* is concerned with what the customers receive in their interactions with service provider to satisfy their basic needs. Additionally, good perceived quality is obtained when the experienced quality meets customer expectations. If the expectations are unrealistic, the total perceived quality will be low, even if the total perceived quality is high. The expected quality is a function of a number of factors such as market communication, word-of-mouth communication, corporate/local image and customer needs.
- 2 The latter dimension is called *functional or process-related dimension* and is concerned with how the service providers perform their task and how the customers received it as well as how he or she experiences the simultaneous production and consumption process.

Gronroos (1990) defined "*The Six Criteria of Good Perceptions of Service Quality*" as follows:

- 1 *Professionalism and Skills*: customers realize that the service provider, its employee, operational systems, and physical resources, have the knowledge and skills required to solve their problems in a professional way (outcome-related criteria).
- 2 *Attitudes and Behavior*: customers feel that the service employees (contact persons) are concerned about them and are interested in solving their problems in a friendly and spontaneous way (process-related criteria).
- 3 *Accessibility and Flexibility*: customers feel that the service provider's location, operating hours, employees and operational systems are designed and operated so that it is easy to get access to the service and they are prepared to adjust the demands and requests of the customer in a flexible way (process-related criteria).
- 4 *Reliability and Trustworthiness*: customers know that whatever takes place or has been agreed upon, they can rely on the service provider, its employees, and systems to keep promises and perform with the best interest of the customers at heart (process-related criteria).
- 5 *Recover*: customers realize that whenever something goes wrong or something unpredictable unexpectedly happens, the service provider will immediately and actively take actions to keep them in control of the situation and find a new, acceptable solution (process-related criteria).
- 6 *Reputation and Credibility*: customers believe that the operations of the service provider can be trusted and give adequate value for money, and that it stands for good performance and values, which can be shared by customers and the service provider (image-related criteria).

One of the six, professionalism and skills, is outcome related and thus a technical quality dimension. The criteria, reputation and credibility are image related, thus fulfilling a filter function. However the other four criteria, attitudes and behavior, accessibility and flexibility, reliability and trustworthiness, and recovery are clearly process related and thus represent the function quality dimension

2.2 Buyer Evaluations of Services

2.2.1 Theories Related to Service Quality

Parasuraman et al. (1985) defined service quality in ten major dimensions that consumers use in forming expectations about and perceptions of services. In a later research, Parasuraman et al. (1990) revised and defined service quality in five dimensions – reliability, responsiveness, assurance, empathy, and tangibles, as shown in figure 2.1.

Original Ten Dimensions for Evaluating Service Quality	Tangibles	Reliability	Responsiveness	Assurance	Empathy
Tangibles					
Reliability					
Responsiveness					
Competence Courtesy Credibility Security					
Access Communication Understanding the customer					

Figure 2.1: Correspondence Between SERVQUAL Dimensions and Original Ten Dimensions for Evaluating Service Quality

Source: Zeithaml, V.A., Parasuraman, A., & Berry, L. L. (1990). Delivery Quality Service: Balancing Customer Perceptions and Expectations. New York: The Free Press.

2.2.1.1 Ten Original Dimensions of Service Quality

The ten dimensions are the criteria used by customers in judging service quality. The set of 10 general dimensions of service quality is exhaustive and appropriate for assessing quality in a broad variety of services (Parasuraman, Zeithaml and Berry 1990).

- 1 *Tangibles*: Appearance of physical facilities, equipments, personnel, and communication materials. It includes the physical representative of service, such as tools and equipment of technicians.
- 2 *Reliability*: Ability to perform the promised service dependably and accurately. It involves accuracy in tracking cause of problem, providing service right at the first time.
- 3 *Responsiveness*: Willingness to help customers and provide prompt service. It involves timeliness of service. As employee is willing to answer customer question, firms can specify the time when technician will show up and resolve the problem quickly.
- 4 *Competence*: Possession of the required skills and knowledge to perform the service. It involves knowledge and skill of the technicians, the contact and operational support personnel.
- 5 *Courtesy*: Politeness, respect, consideration, and friendliness of contact personnel. It includes clean and neat appearance of public contact technicians and polite words of operator who receive request order.
- 6 *Credibility*: Trustworthiness, believability, honesty of the service provider. It is contributed by the company's name, reputation and guarantee of services.
- 7 *Security*: Freedom from danger, risk, or doubt. It involves physical safety, confidentiality of repair job done properly.

- 8 *Access:* Approachability and ease of contact. (It involves the step and level of how easy to contact or reach the company for requesting services.
- 9 *Communication:* Keeping customers informed in language they can understand and listening to them. It involved explaining about the service and assuring the consumers that a problem will be solved.
- 10 *Understanding the customer:* Making the effort to know customers and their needs. It involves learning the customer's need specific requirements, providing individualized attention and recognizing customer to be flexible enough to accommodate the schedule.

2.2.1.2 SERVQUAL's Five Dimensions

SERVQUAL had only 5 distinct dimensions (Parasuraman et al., 1990). They captured facets of all of the ten originally conceptualized dimensions as shown in figure 2.1. These definitions, along with the definitions of the three original dimensions (tangibles, reliability, and responsiveness) that remained intact, are as follows:

- 1 *Tangibles:* Appearance of physical facilities, equipment, personnel, and communication materials
- 2 *Reliability:* Ability to perform the promised service dependably and accurately
- 3 *Responsiveness:* Willingness to help customers and provide prompt service
- 4 *Assurance:* Knowledge and courtesy of employees and their ability to convey knowledge to meet the demand. It includes competence, courtesy, credibility and security.
- 5 *Empathy:* Caring, individualized attention the firm provides its customer. It includes access, communication, and understanding the customer.

SERVQUAL consisted of a 22 item-questionnaire to measure consumer service expectations of excellence and perceptions of the service actually delivered over the five dimensions of service quality. SERVQUAL uses a seven-point Likert scale ranging from strongly disagrees to strongly agree. The greater the gap between expectations and perceptions is the greater corresponding dissatisfaction.

2.2.1.3 Dimensionality of the SERVQUAL Instrument

The nature of the factor structure for the SERVQUAL instrument may be related to the theoretical process by which the original dimensions were defined. The SERVQUAL questionnaire is based on a multi-dimensional model (i.e., theory) of service quality. A 10-dimensional model of service quality based on a review of the service quality literature and the extensive use of both executive and focus group interviews was developed (Parasuraman et al., 1985).

During instrument development, Parasuraman et al. (1988) began with 97 paired questions (i.e., one for expectation and one for perception). Items (i.e., question pairs) were first dropped on the basis of within-dimension Cronbach coefficient alphas, reducing the pool to 54 question pairs. More items were then dropped or reassigned based on oblique-rotation factor loadings and within-dimension Cronbach coefficient alphas resulting in a 34 paired-item instrument with a proposed seven-dimensional structure. A second data collection and analysis with this "revised" definition and operationalization of service quality resulted in the 22 paired-item SERVQUAL instrument with a proposed five-dimensional structure (Van Dyke, Kappelman & Prybutok, 1997). Two of these five dimensions contained items representing seven of the original 10 dimensions.

2.2.2 Gaps Model of Services Quality

Lamb, Hair and McDaniel (2000), and Zeithaml and Bitner (2003) have also discussed that there are five key discrepancies that can influence customer evaluations of service quality as shown in figure 2.2.

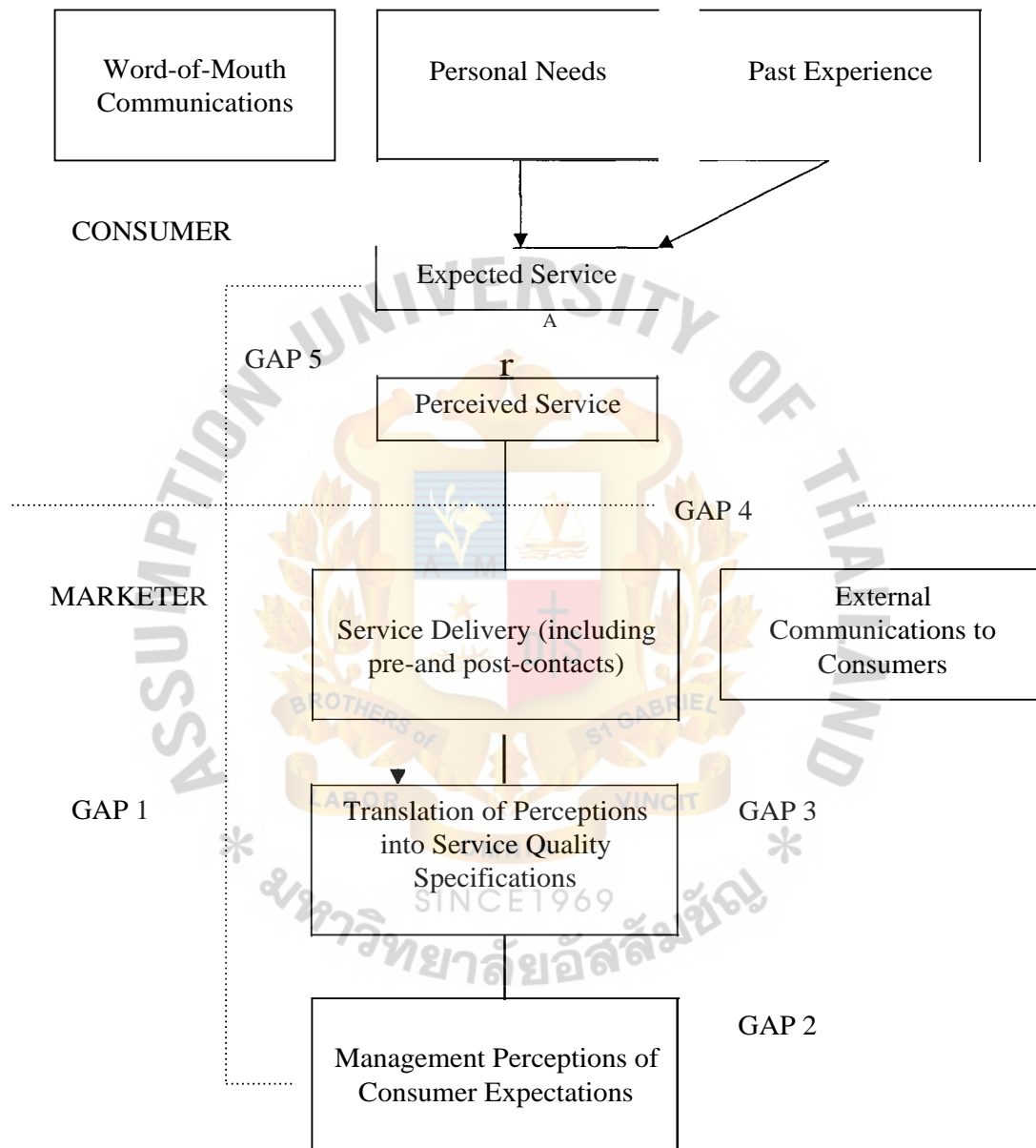


Figure 2.2: A Conceptual Model of Service Quality

Source: Zeithaml, V. A., & Bitner, M. J. (2003). *Service Marketing: Integrating Customer Focus Across the Firm*. NY: McGraw-Hill.

Gap 1: "The Management Perception Gap" is the gap between customer's expectations and management's perceptions of those expectations. This gap means that management perceived the quality expectations inaccurately. This gap is among other things due to:

- Inaccurate information from market research and demand analyses
- Inaccurate interpreted information about expectation
- Nonexistent demand analysis
- Bad or nonexistent upward information from the firm's interface with its customers to management
- Too many organizational layers which stop or change the pieces of information that may flow upward from those involved in customer contacts

Gap 2: "The Quality Specification Gap" is the gap between management's perception of what the customer wants and specifications of service quality. This gap means that service quality specifications are not consistent with management perceptions of quality expectation. This gap is the result of:

- Planning mistakes or insufficient planning procedures
- Bad management of planning
- Lack of clear goal setting in the organization
- Insufficient support for planning for service quality from top management

Gap 3: "The Service Delivery Gap" is the gap between service quality specifications and delivery of the service. This gap means that quality specifications are not met by the performance in the service production and delivery process. This gap is due to:

- Too complicated and/or rigid specification
- The employees do not agree with the specifications as for instance good service quality seems to require a different behavior
- The specifications are not in line with the existing corporate culture
- Lacking or insufficient internal marketing
- Technology and system do not facilitate performance according to specifications

Gap 4: "The Marketing Communication Gap" is the gap between service delivery and what organization promises to customer through external communication. This gap means that promise given by the marketing communication activities are not consistent with the service delivered. This gap is due to:

- Marketing communication planning is not integrated with service operations
- There is a lack or insufficient coordination between traditional marketing and operations
- The organization fails to perform according to specifications, whereas marketing communication campaign follow these specification
- There is an inherent propensity to exaggerate and thus promise too much

Gap 5: "The Perception of Service Quality Gap" is the gap between customers' service expectations and their perceptions of service performance. This gap means that the perceived or experienced service is not consistent with the expected service. This gap results in:

- Negative confirmed quality (bad quality) and quality problem
- Bad word-of-mouth

- Negative impact on corporate or local image
- Lost business

Zeithaml and Bitner (2003) stated that in order to manage service quality, it is important to manage the gaps between expectations and perceptions on the part of management, employers and customers. The most important gap, Gap 5, is that between customer's expectation of service and their perception of the service actually delivered. Hence by referring to the gap model, it states that a service marketer must close the customer gap (Gap 5). In order to do so, the service provider must close the four other gaps (Gap 1, 2, 3, and 4) within the organization that inhibit delivery of quality service. Serious action must be taken because how the customers perceive the level of service performance that meets their expectations will reflect on the quality of service provided by the organization. The larger the gap between expectations and perceptions of service quality is the greater the consumer's dissatisfaction.

According to Lewis (1987), the gaps measurement may be a significant marketing tool. It also has the advantage of being less abstract, even though not completely. It also considerably eases the task of measuring service quality. The gap analysis model should guide management in finding out where is the reason for the quality problem and discovering appropriate ways to close this gap. Brown and Swartz (1989) concluded that after having studied quality gaps for professional service, gap analysis is a straightforward and appropriate way to identify inconsistencies between provider and clients perceptions of service performance. Therefore, by studying this model, one can develop an understanding of the potential problem areas related to service quality and help to close gaps that may exist in service operations as well.

2.3 Determinants of Service Quality

Antonides and Van Raaij (1998) stated that perceived quality is derived from consumers' perceptions. Products and services have high quality if they meet the desires and the expectations of consumers. Additionally, they mentioned that high-perceived quality includes fitness for use, durability, safety, comfort, reliability, low frequency of failure, and good performance when customer makes a comparison of expectations.

In the service quality literature the term "expectations" also differs from the way it is used in the consumer satisfaction literature. Parasuraman et al. (1988) mentioned that expectation in the satisfaction literature has been operationalized as predictions of service performance, while expectation in the service quality literature is viewed in terms of what a service provider should offer.

Kotler, Bowen and Makens (1996) elaborated that expectations are based on the customer's past buying experience, the opinions of friends and associates, the marketer, competitor information and the promise. Further, the expectations of guests are formed by company image, word-of-mouth, the company's promotional efforts, and price.

Lewis (1987) suggested that what can be measured are the differences between the abstractions. Hence, it seems logical that the difference between expectations and perceptions is perceived quality. This concept is quite similar with Parasuraman's service quality model, which applied the expectancy-disconfirmation theory. The model suggested service quality as the gap between customer's expectations (E) and their perception of the service provider's performance (P). Hence, the service quality scores (Q) can be measured by subtracting customer's perception score from customer's expectations score: $Q = P - E$.

Parasuraman et al. (1988) pointed out that perception of service quality is viewed as the degree and prediction of discrepancy between customer's perceptions and desire. Customer evaluation of service quality occurs along five dimensions: reliability, responsiveness, assurance, empathy and tangibles as shown in figure 2.3.

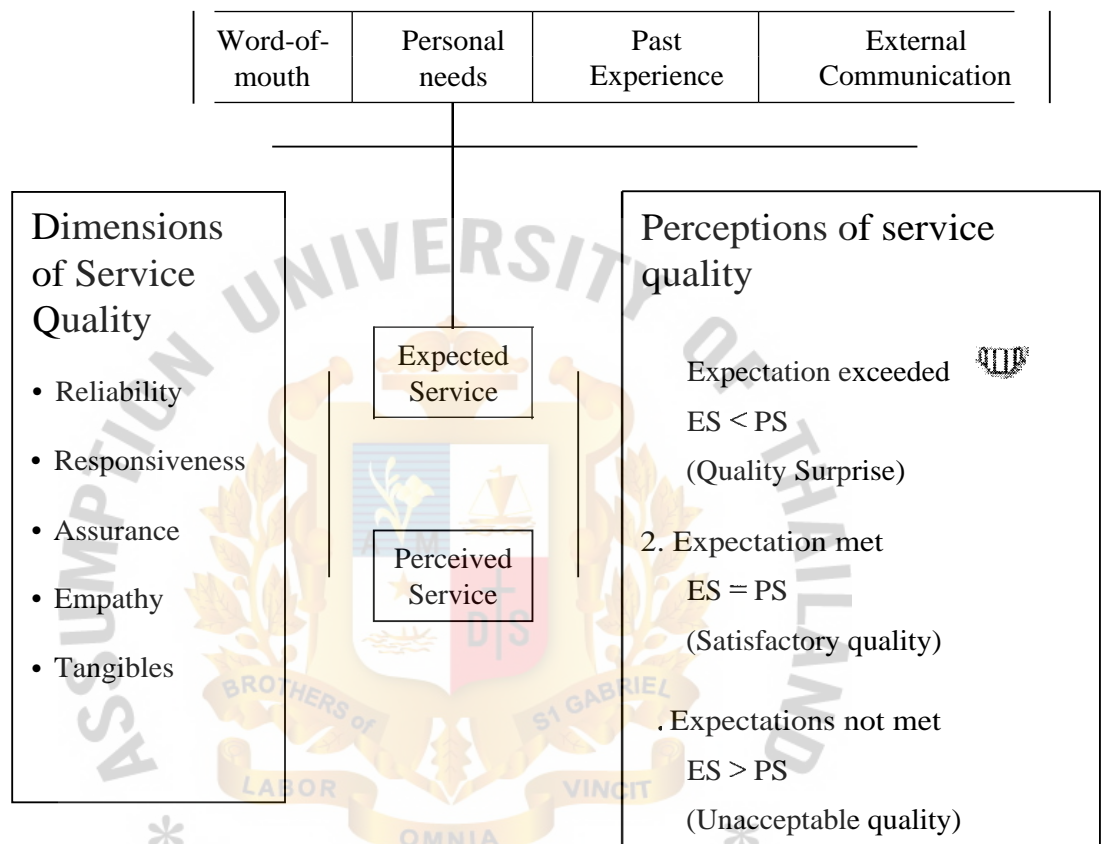


Figure 2.3: Customer Assessment of Service Quality

Source: Parasuraman, Zeithaml, and Berry, (1985) "A Conceptual Model of Service Quality and its Implications for Future Research," Journal of Marketing, Vol. 49, Fall 1985, p. 48.

Gronroos (1982) introduced the perception of service quality model and indicated that the quality of service as perceived by the customer is the result of a comparison between the expectations of the customers and real-life experience. If the

experiences exceed the expectation, the perceived quality is positive. If the experiences do not reach the level of expectation, the perceived quality is low. Conceptually, this confirming and disconfirming concept has an important impact on a person's thinking about quality. It implies that quality is not an objective phenomenon that can be engineered beforehand, but with proper preparation prior to the service encounter, good quality may be achieved. Customers perceive quality in a subjective manner, and depending on the level of expectations, the same level of quality, as measured in some objective sense, will be perceived in a different way. Thus, good quality for one person may be less acceptable for another. The concept also points out another link between service quality and marketing that marketers and quality managers tend to omit. Marketing especially the traditional parts of the marketing mix such as advertising campaign, for example: the quality of a given service may be disappointing, if only because the customers had unrealistic expectations.

Fitzsimmons (1994) also mentioned that this model was used by many marketing researchers who studied several different service categories: appliance repairs, retail banking, long-distance telephone service, securities brokerage and credit card companies. Customers use these five principle dimensions of service quality to judge service quality.

Smith and Hudson (1983) elaborated that there are four possible outcomes of the evaluation process of customers after they interact with the service organization which are under quality, confirmed quality, positively confirmed quality, and over quality as shown in figure 2.4.

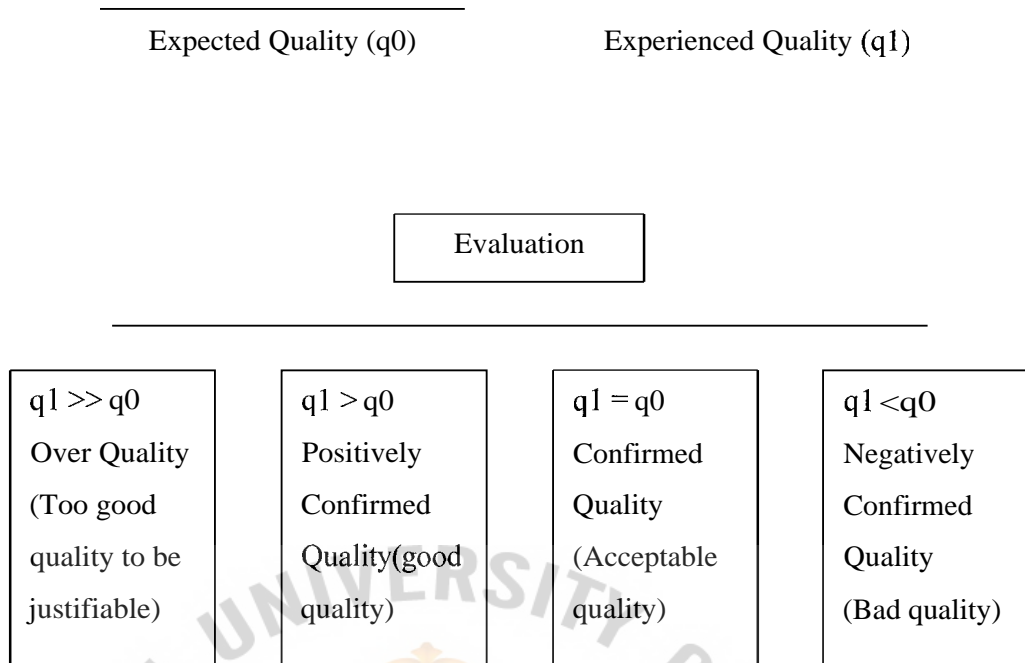


Figure 2.4: The Quality Evaluation Options

Source: Smith, Huston, (1983), "Script-Based Evaluations of Satisfaction with Service, Emerging Perceptive on Service Marketing". Chicago: American Marketing Association

- *"Bad Quality"* means that the experiences are less than expectations, resulting in the quality expectations of customer is not met. Service providers made customer dissatisfied.
- *"Acceptable Quality"* always required that experience equal expectation. If the firm wants to make its customer really happy with its services, an acceptable quality may not be enough.
- *"Good Quality"* requires that experiences at least equal expectations or are higher than expectations. Otherwise the quality expectations of customers are not met. Positively confirmed quality always requires that experience is greater than expectation. This may really make customers interested in continuing the

relationship with the service provider and moreover, it created good word-of-mouth effects.

- *"Over Quality"* may simply be perceived by customer to exceed what is really needed which gives the impression that the service is overpriced as well as in turn, can create even bad word-of-mouth.

2.4 Summary of Literature Review

2.4.1 Empirical Studies

At present service quality is the major factor that the service providers use to meet or exceed customer expectations. Many researchers had done many of the SERVQUAL studies in different business as following:

Lau, Akbar, and Gun Fie (2005) studied service quality of luxury hotels in Malaysia. The intent of this study was to increase the comprehension of the expectations and perceptions towards hotel service quality from the hotel customers' perspective by applying a modified version of the SERVQUAL model. This study also wanted to explore the relationship between the overall satisfaction and the five SERVQUAL service quality factors in the context of Malaysia's luxury hotels. 25 hotel attributes, instead of the original 22-items SERVQUAL questionnaire (Parasuraman et al., 1988) were developed in this modified version of the SERVQUAL, close-ended and self-administered questionnaire. A total 300 respondents were collected by random sampling. This research assessed the expectations and perceptions of service quality in Malaysia's four- and five-stars hotels by applying a modified version of the SERVQUAL model. It also examined the relationship between overall satisfaction levels and the five service quality dimensions, namely reliability, responsiveness, assurance, empathy, and tangibility. The researcher applied ANOVA and the F statistics test. The findings indicated, as a

whole that the hotel customers' perceptions of service quality provided by the hotel industry were lower than their expectations and the gaps between customers' expectations and perceptions were significant. This study revealed that hotel customers' perceptions were consistently not meeting their expectations. The negative Customer Gap (Gap 5) across the attributes suggested that more effort should be put in by the hotel operators to improve the service quality of the hotel industry in Malaysia.

Raven and Welsh (2004) studied "An exploratory study of influences on retail service quality: A focus on Kuwait and Lebanon". This study is an early attempt at learning more about the service quality expectations and perceptions of customers and employees in the Middle East and about the various national cultures they represent. The primary measure of interest was the quality of service encounters, consisting of expected service and perceived service outcomes. The SERVQUAL scale (Parasuraman et al, 1986, 1988) has a long, well-supported history in the literature. The SERVQUAL model essentially measures the differences (gaps) between customers' expected and perceived service quality. A modified version of SERVQUAL was recently used to determine quality of service in marketing research agencies in the UK. The researcher of that study concluded that notwithstanding the criticisms of the scale, the instrument was successfully applied and with practical applications. (Donnelly, Hull & Will, 2000). The evidence suggests that the SERVQUAL instrument is a practical way of measuring the quality of service encounters. This method resulted in 273 complete and usable customer responses. A convenience sample of customers and store employees in Kuwait and Lebanon was surveyed. The researcher applied ANOVA which indicated that there were significant differences for each of the expectations elements. Also t-tests were used for

comparing mean expectation levels. The results found that there were indeed differences between expectations of quality of service encounters and national cultures. These results suggest some differences in gender responses to SQ between Kuwait and Lebanon, with the implication that gender responses in other countries may also differ.

Baxter (2004) studied "Up to scratch?" Nottingham Occupational Health (OH) decided to measure the quality of service being offered to OH clients by using Parasuraman's SERVQUAL model of service quality. The SERVQUAL tool proved a useful way to explore the quality of service provided by an OH department, and highlighted areas that could be improved to increase customer satisfaction. The SERVQUAL model addresses five aspects (or dimensions) of SQ of importance to the customer. Through a process of systematic sampling, 400 questionnaires were distributed to the randomly selected respondents. Thirty were returned undelivered and 115 were returned for analysis. The SERVQUAL instrument comprises 22 statements used to assess SQ across the five dimensions, with each statement used twice: once to measure expectations, and once to measure perceptions. The results show that it is possible to adapt a standard SQ tool (SERVQUAL) and apply it within an OH setting. Overall, staff satisfaction scores were between five and six, which shows satisfaction with the service, although it did not quite meet staff expectations of an OH service. Although the SERVQUAL model has been heavily criticized and debated for most of the 1990s, it still dominates as a reliable and valid SQ measure.

Ingram and Daskalakis (1999) studied "Measuring quality gaps in hotels: the case of Crete". The main aim of this study was to monitor the way in which quality is managed in ISO-accredited hotels, as few studies have addressed this issue. The study aimed at investigating the extent to which ISO-accredited hotels have integrated the

elements of service quality and this can be tested by measuring gaps in perceptions. The researcher developed this framework into the SERVQUAL scale which enables actual service delivery to be measured. The target number of guest respondents was set at 200. Questionnaires were designed according to the SERVQUAL model of measuring the gaps between managers' and customers' expectations and perceptions. Questionnaires for the guests were in the form of closed questions based on the five dimensions. The results show that service quality in the study met or exceeded the expectations of the guests. However there was a divergence between the perceptions of service quality of guests and managers, and that the greatest gaps exist in hotels of the highest quality classification. The findings of the study suggested that leisure guests in the Cretan hotels view tangibles as the most important satisfaction attribute. The emphasis on tangibles has been confirmed in studies in which guest perceptions were ranked in order of preference.

Kangis and Voukelatos (1997) studied "Private and public banks: a comparison of customer expectations and perceptions". This paper reported the findings of a survey among customers of private and public sector banks in Greece on service quality perceptions and expectations. The researcher developed a multi-item scale (SERVQUAL) where they have integrated the most important of the criteria contributing to the formation of customer perceptions of service and which signal quality to the customer. A total of 163 respondents were approached randomly and were grouped by a post-stratification method. A t-test was applied on the differences between the means. Within the context of the methodology adopted, the survey findings show that customers of public banks have a similar profile of expectations of service quality as do those of private banks. The results with respect to customer perceptions suggest that the service that is offered by banks in the private sector has a

more favorable influence on actual perceptions of quality received than is the case with the service from banks in the public sector.

The results reported by various researchers (Lau, Akbar, & Gun Fie (2005), Raven and Welsh (2004), Baxter (2004), Ingram and Daskalakis (1999) and Kangis,& Voukelatos (1997)) suggest that the construct validity of SERVQUAL should be examined on an industry-by-industry basis before it is used to gather consumers' perceptions of service quality. Researchers are advised to carefully consider which issues are important to service quality in their specific environments and to modify the SERVQUAL scale as needed.

According to previous study, researcher found that SERVQUAL model was widely used and accepted internationally by public. Moreover the results had been proved validity in different industry. Zeithaml and Bitner (1996) indicated that SERVQUAL was deemed "to be applicable to retail and business services" Therefore there is no argument in applying SERVQUAL dimensions with the study of customer expectations and perception of service quality. Donnelly, Hull, and Will, (2000), also concluded that considerable customization was required to accommodate differences in service settings. Therefore the researcher need to adapt some context and attribute to fit with five dimensions of service quality: tangibles, reliability, responsiveness, assurance, and empathy so that they are suitable for using with air-conditioning distributor business.

SERVQUAL model was proved to be reliable and applicable for air-conditioning distributor business with evidence supported by Amarang (2003). The objectives of the research were to grasp customer's perception and expectations toward the air-conditioning services and to study the outcome of a service quality audit assist in identifying service strengths and weaknesses of Airsirco Engineering

Co., Ltd. The questionnaire was developed according to SERVQUAL multi-item scale. The 200 sample size was applied for this study by random sampling procedure. Cronbach alpha (scale reliability coefficient) was a tool for assessing the reliability and testing survey's internal consistency. The outcome indicated that the survey was accepted in reliable level with alpha 0.725. Based on the finding, customers strongly agree that current service is reliable with expertise and courtesy of service providers. However, communication was viewed as important factor in enhancing the service because most respondents expect the company to improve services through advertising and public relations, embracing new technology and service skills and knowledge development.



CHAPTER 3

RESEARCH FRAMEWORK

3.1 Theoretical Framework

The theoretical framework used for this study is the model of customer assessment of service quality, which explains the process of customer expectations and perceptions of the SERVQUAL dimensions (Tangibles, Reliability, Responsiveness, Assurance, and Empathy) of Siam Progress Engineering Co., Ltd.

The five SERVQUAL dimensions are:

1. Tangibles: Appearance of physical facilities, equipment, personnel, and communication materials
2. Reliability: Ability to perform the promised service dependably and accurately
3. Responsiveness: Willingness to help customers and provide prompt service
4. Assurance: Knowledge and courtesy of employees and their ability to convey knowledge to meet the demand
5. Empathy: Caring, individualized attention the firm provides its customer

3.2 Conceptual Framework

The conceptual model is adapted from the theoretical framework of SERVQUAL dimensions, which focus only on "Gap 5". Gap 5 is the difference between expectation of service quality and perceptions of service quality.

EXPECTATIONS OF SERVICE QUALITY

- Tangibles
- Reliability
- Responsiveness
- Assurance
- Empathy

GAP 5
Expectations

Perceptions

PERCEPTIONS OF SERVICE QUALITY

- Tangibles
- Reliability
- Responsiveness
- Assurance
- Empathy

Perceived Quality

Figure 3.1: Conceptual Model



3.3 Definition and Operationalization of Constructs/Variables

Table 3.1: Conceptual Definition and Operationalization of Constructs

Construct	Conceptual Definition	Operation Component	Scale of Measurement
Tangibles	Refer to appearance of physical facilities, equipment, personnel, and communication material	<ul style="list-style-type: none"> • Equipment • Physical representative of services • Tool and equipment of technician 	Interval
Reliability	Refer to ability to perform the promised service dependably and accurately	<ul style="list-style-type: none"> • Accuracy in tracking cause of problem • Time & service reliability 	Interval
Responsiveness	Refer to customers' perception of the willingness to help customers and provide prompt service	<ul style="list-style-type: none"> • Timeliness of service • Willingness to help customer • Staff's ability 	Interval
Assurance	Refer to customers' trust and confidence in the service and also the courtesy and competence of service provider	<ul style="list-style-type: none"> • Knowledge and skill of technician • Polite, clean & neat appearance of public contact technician • Trust, reputation and guarantee of service • Physical safety, job properly complete 	Interval
Empathy	Refer to caring, making effort to understand the specific needs of customers, and giving customers individual attention	<ul style="list-style-type: none"> • Caring • Individual attention • Understand customer need • Flexible according to customer schedule 	Interval

3.4 Research Hypotheses

Based around the foregoing discussion on the conceptual model and literature review, the following hypotheses are proposed:

H₁₀: There is no difference between customer expectations and perceptions of service quality of Siam Progress Engineering Co., Ltd.

H_{1a}: There is a difference between customer expectations and perceptions of service quality of Siam Progress Engineering Co., Ltd.

H₂₀: There is no difference between customer expectations and perceptions in tangibility of service quality of Siam Progress Engineering Co., Ltd.

H_{2a}: There is a difference between customer expectations and perceptions in tangibility of service quality of Siam Progress Engineering Co., Ltd.

H₃₀: There is no difference between customer expectations and perceptions in reliability of service quality of Siam Progress Engineering Co., Ltd.

H_{3a}: There is a difference between customer expectations and perceptions in reliability of service quality of Siam Progress Engineering Co., Ltd.

H₄₀: There is no difference between customer expectations and perceptions in responsiveness of service quality of Siam Progress Engineering Co., Ltd.

H_{4a}: There is a difference between customer expectations and perceptions in responsiveness of service quality of Siam Progress Engineering Co., Ltd.

H₅₀: There is no difference between customer expectations and perceptions in assurance of service quality of Siam Progress Engineering Co., Ltd.

H_{5a}: There is a difference between customer expectations and perceptions in assurance of service quality of Siam Progress Engineering Co., Ltd.

H₆₀: There is no difference between customer expectations and perceptions in empathy of service quality of Siam Progress Engineering Co., Ltd.

H_{6a}: There is a difference between customer expectations and perceptions in empathy of service quality of Siam Progress Engineering Co., Ltd.

CHAPTER 4

RESEARCH METHODOLOGY

4.1 Research Design

To address the research questions of this study, a descriptive research design was adopted. It was a cross-sectional study using a survey method.

4.2 Research Methodology

This study measured the service quality of Siam Progress Engineering Co., Ltd. by determining the difference between customer expectations and perceptions of the company's service quality. "Gap 5" of the service quality model developed by Parasuraman et al. (1998) was used to develop the conceptual model for this study. The original 22-item SERVQUAL questionnaire (Parasuraman, Zeithaml, & Berry, 1988), with minimal adaptations, was adopted for this study. The 22 items assess the five SERVQUAL dimensions consisting of tangible, reliability, responsiveness, assurance and empathy in order to measure customer expectations and perceptions of the service provider.

The first part of the questionnaire measured customer expectations. The second part measured perceptions of the 'actual' service quality provided by Siam Progress Engineering. The 5-point interval Likert scale was used.

4.3 Target population

The target population of this research was customers of Siam Progress Engineering Co., Ltd. during 2006. At the time of data collection, the total number of customers served by Siam Progress Engineering Co., Ltd. was 52 and consisted of 38

direct customers and 14 indirect customers (customers of customers). The majority of customers are businesses. All 52 customer accounts define the population of interest.

4.4 Sample Size

In this study, Siam Progress Engineering's customer base served as the sample size. As such, a census was taken, with a complete enumeration of the elements of a population or study objects or a complete count of all the elements in a population (Malholtra, 2002).

As the entire population was 52 customers, two sets of questionnaires for each customer account were distributed in order to obtain data from two respondents within one company. The respondents had to have been a key decision maker, advisor, influencer, or assistant, depending on the structure of the company. Consequently, a total sample size of 104 was obtained.

4.5 Sampling Procedure

As mentioned above, a census of Siam Progress Engineering's customers was taken.

4.6 Research Instruments

Parasuraman et al. (1993) stated that the reliability of the SERVQUAL instrument has been shown to be consistently high. Bolton and Drew (1991) supported the findings of Parasuraman and colleagues concerning the importance of the gap between performance and expectations in determining overall service quality. It was originally designed to be a generic instrument for measuring service quality in any sector.

In this research, a questionnaire was used as the instrument to gather primary data from the field. The relevant literature and survey developed by past studies provided the basis for the development of the close-ended and self-administered questionnaire for this study. After review of the literature, the original 22-items SERVQUAL questionnaire (Parasuraman et al., 1988), with minimal adaptations appropriate for an air-conditioner distributor business was developed. However, the five-point Likert scale was used instead of the original 7-point Likert scale to alleviate the respondent's time to complete the questionnaire. To ensure reliability of the SERVQUAL instrument, a pretest of 20 questionnaires were distributed to targeted respondents before conducting the data collection on the entire sample.

Questionnaire Questions

Two sections of the questionnaire in this study are concerned with customer expectations and perceptions of service quality of Siam Progress Engineering Co., Ltd.:

Part I: This section consists of 22 questions asking for responses to customer expectations of the service quality.

Part II: This section consists of 22 questions asking for responses to customers perceptions about the firm's 'actual' service performance.

Part III: This part consists of behavioral outputs including three questions regarding customer future patronage intentions, repeat purchase intentions, and word-of-mouth intentions.

Part IV: This section consists of three questions regarding customer characteristics including the business type, size of firm, and customer usage rate.

Sub-Questions

The questions on both customer expectation and perceptions of service quality are grouped into five SERVQUAL dimensions as follow:

1. **Tangibles:** Questions 1 to 4 involve the physical evidence of the service such as physical representation of the service and tools and equipment of technicians.
2. **Reliability:** Questions 5 to 9 involve the consistency of performance, dependability and honoring its promise such as accuracy in tracking causes of a problem and providing service right the first time.
3. **Responsiveness:** Questions 10 to 13 involve willingness to help customers or readiness of employee to provide service and speed of service such as timeliness of service and employee's willingness to help customer.
4. **Assurance:** Questions 14 to 17 involve the knowledge and courtesy of employees and their ability to convey trust and confidence such as skills and knowledge to perform the service, company reputation, and physical safety.
5. **Empathy:** Questions 18 to 22 involve the approachability and ease of contact, caring, making the effort to understand the customer's needs, and keeping customers informed in ways that customers can understand easily.

4.7 Pretest of the Questionnaire

In this pretest, 20 sets of questionnaires were distributed for a pretest in order to analyze the reliability of the multi-item questions. Cronbach's alpha reliability test was run on the data collected to determine the reliability of data collected. The results are shown in table 4.1.

Table 4.1: Pretest Reliability Analysis Results

Service Dimension	Expectations	Perceptions
Tangibles	0.610	0.815
Reliability	0.700	0.795
Responsiveness	0.815	0.667
Assurance	0.714	0.691
Empathy	0.822	0.805
Total	0.765	0.942

Sekaran (1992) stated that if the reliability value is at least 0.6, the scale is considered reliable. According to the results of the reliability analysis on each group of questions in table 3.1, the SERVQUAL questions are sufficient for examining the service quality of Siam Progress Engineering Co., Ltd. because the reliability value of each multi-item variable is greater than 0.6.

4.8 Data Collection

In this study, the data was collected from both primary and secondary sources.

- Secondary Data

Secondary data collection was from several sources including electronic journals, English management journals, articles, as well as academic textbooks via internet and libraries sources. Various textbooks and business research methods and others are also included.

- Primary Data

Primary data were collected via questionnaire. Since the target respondents are business persons in a high level of a firm, respondents were contacted in advance by

telephone to confirm delivery of two questionnaires to their address. The questionnaires were handed to respondents with clear explanations on the purpose of the research in order to ensure clear understanding of terminologies used in the questionnaire and to minimize the error. The primary data collection process was conducted during August-September 2006.

4.9 Analysis of Data

According to the statement of the problem stated in chapter 1, the appropriate statistical treatments were applied to each question using the "Statistical Package for Social Science - SPSS" with the following categories:

1. **Descriptive Statistics** were used to determine mean, median, standard deviation, range and frequency analysis.
2. **Inferential Statistics** (t-test) were used to determine whether significant differences between customer expectations and perceptions of service quality existed.
 - **Paired Samples t-test:** Paired sample t-tests were used for testing hypotheses 1, 2, 3, 4, 5 and 6 in order to identify whether there were differences between customer expectations and perceptions of service quality of Siam Progress Engineering Co. The formula for the test of differences is:

$$t = \frac{\bar{d}}{S_d / \sqrt{n}} \quad ; n-1 = \text{degree of freedom}$$

$$S_d = \sqrt{\frac{\sum d^2}{n} - \frac{(\sum d)^2}{n^2}}$$

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

S_d = the standard deviation of the distribution of the difference between the pairs or related observations

n = the number of paired observation

Table 4.2: Summary of Hypothesis Statements and Test

Hypothesis Statement	Hypothesis Testing Technique
H ₁₀ : There is no difference between customer expectations and perceptions of service quality of Siam Progress Engineering Co., Ltd.	Paired-Samples t-test
H ₂₀ : There is no difference between customer expectations and perceptions in tangibility of service quality of Siam Progress Engineering Co., Ltd.	Paired-Samples t-test
H ₃₀ : There is no difference between customer expectations and perceptions in reliability of service quality of Siam Progress Engineering Co., Ltd.	Paired-Samples t-test
H ₄₀ : There is no difference between customer expectations and perceptions in responsiveness of service quality of Siam Progress Engineering Co., Ltd.	Paired-Samples t-test
H ₅₀ : There is no difference between customer expectations and perceptions in assurance of service quality of Siam Progress Engineering Co., Ltd.	Paired-Samples t-test
H ₆₀ : There is no difference between customer expectations and perceptions in empathy of service quality of Siam Progress Engineering Co., Ltd.	Paired-Samples t-test

CHAPTER 5

DATA ANALYSIS AND RESULTS

5.1 Description of the Sample

Descriptions of the sample presented by frequency and percentage of customer characteristics data are shown in table 5.1. Customer characteristics consist of the business nature of customers, size of customer firm, and customer usage rate of air conditioning.

Table 5.1 Summary of Respondents by Customer Characteristics

Customer Characteristics	Frequency	Percentage (%)
Business Type		
Construction Company	14	13.5
Bank	18	17.3
Office Building	40	38.5
Outlets	24	23.1
Residence	8	7.7
Total	104	100
Size of Business		
Very Small	8	7.7
Small	22	21.1
Medium	42	40.4
Large	32	30.8
Total	104	100
Customer Usage Rate		
Less than 8 hours	8	7.7
8 – 12 hours	81	77.9
More than 12 hours – 16 hours	15	14.4
More than 16 hours	0	0
Total	104	100

The highest percentage of business type (38.5%) of Siam Progress Engineering Co., Ltd. was the respondents in office building. The following percentages of business nature of customer (23.1%) were the respondents in outlets.

Banks, construction companies, and residences accounted for 17.3%, 13.5% and 7.7% respectively.

Among the 104 respondents, the highest percentage of the size of the business using Siam Progress Engineering Co., Ltd. were medium-size businesses, represented by 40.4%. The second largest business size (30.8%) were large business. Small business and very small businesses account for 21.1% and 7.7%, respectively.

For the customer usage rate, the highest percentage is 77.9% for 8-12 hours. The following level of usage rate (14.4%) is more than 12-16 hours. The lowest percentage of usage rate (7.7%) is less than 8 hours while there is none represented in the level of more than 16 hours.

5.2 Reliability Test

Reliability test refers to the consistency and stability of a score from a measurement scale. The result of reliability tests from the 104 questionnaires is shown in table 5.2. All construct alphas exceed 0.6 and were considered reliable.

Table 5.2: Reliability Analysis-Scale (Cronbach's Coefficient Alpha)

Service Dimension	Expectations	Perceptions
Tangibles (Question 1-4)	0.670	0.802
Reliability (Question 5-9)	0.678	0.675
Responsiveness (Question 10-13)	0.693	0.630
Assurance (Question 14-17)	0.736	0.611
Empathy (Question 18-22)	0.744	0.785
Store Patronage (Question B1-3)	0.807	

This research concentrates on finding out the most critical SERVQUAL dimension in customers' expectations and perceptions of service quality when classified by tangibles, reliability, responsiveness, assurance and empathy. Tables 5.3 and 5.4 present the sum of mean score for customer expectations and perceptions along each dimension.

Table 5.3: Summary of the **Expectations** along SERVQUAL dimensions

Service Dimension	Sum of Mean	Percentage	Rank
Reliability (Question 5-9)	21.06	22.93	1
Empathy (Question 18-22)	19.78	21.54	2
Assurance (Question 14-17)	17.93	19.53	3
Responsiveness (Question 10-13)	16.54	18.01	4
Tangibles (Question 1-4)	16.52	17.99	5
Total SERVQUAL	91.83	100	

Table 5.4: Summary of the **Perceptions** along SERVQUAL dimensions

Service Dimension	Sum of Mean	Percentage	Rank
Reliability (Question 5-9)	22.64	23.98	1
Empathy (Question 18-22)	20.48	21.69	2
Assurance (Question 14-17)	18.32	19.40	3
Responsiveness (Question 10-13)	16.61	17.59	4
Tangibles (Question 1-4)	16.36	17.33	5
Total SERVQUAL	94.41	100	

From the results as shown in Table 5.3 and 5.4, the most considered SERVQUAL dimension is reliability, followed by empathy, assurance, responsiveness, and tangibles.

Table 5.5: Summary of SERVQUAL dimensions GAP

Service Dimension	Expectation Perception GAP Rank			
Reliability (Question 5-9)	21.06	22.64	-1.58	1
Empathy (Question 18-22)	19.78	20.48	-0.7	2
Assurance (Question 14-17)	17.93	18.32	-0.39	3
Tangibles (Question 1-4)	16.52	16.36	0.16	4
Responsiveness (Question 10-13)	16.54	16.61	-0.07	5
Total SERVQUAL	91.83	94.41	-2.58	

From the results as shown in Table 5.5, the sum of mean score for each services dimension had created the gaps which were rank without considering positive/negative value. The biggest gap of SERVQUAL dimension was reliability followed by empathy, assurance, tangibles and responsiveness respectively. The results also showed that mean score for perception of tangibility was lower than customer expectation. While the means score for perception of reliability, responsiveness, assurance and empathy were higher than customer expectation.

5.3 Pair Sample t-test Assumption Checks

The t-test is a parametric test assuming a normal distribution, but when its assumptions are met it is more powerful than corresponding two-sample nonparametric tests. Paired sample t-tests compare means where the two groups are correlated, as in before-after, repeated measures, matched-pairs, or case-control studies (e.g. mean candidate evaluations before and after hearing a speech by the candidate). The algorithm applied to the data is different from the independent sample t-test, but interpretation of output is otherwise the same.

Approximate Normal Distribution of the measure in the two groups is assumed. There are tests for normality. The t-test may be unreliable when the two samples come from widely different shaped distributions (see Gardner, 1975). Moore (1995) suggests data for t-tests should be normally distributed for sample size less than 15, and should be approximately normal and without outliers for samples between 15 and 40; but may markedly skewed when sample size is greater than 40. Normality can be visually assessed by looking at a histogram of frequencies, or by looking at a normal probability plot output by most computer programs. A normal probability plot, also known as a normal Q-Q plot or normal quantile-quantile plot, is the plot of the ordered data values (as Y) against the associated quantiles of the normal distribution (as X) which forms a 45-degree line when the observed values are in conformity with the hypothetical distribution. Q-Q plots plot the quantiles of a variable's distribution against the quantiles of the test distribution. The straighter the line formed by the P-P plot, the more the variable's distribution conforms to the selected test distribution (ex., normal) which normal Q-Q plot in Appendix A can be concluded that there were no significant violations as the data plots fall close to the diagonal straight line.

5.4 Hypothesis Testing Results

The hypothesis statements as indicated in chapter 4 consisted of six hypotheses which were evaluated by using the two-tailed paired sample t-tests for testing significance of the difference between customer expectations and perceptions of service quality provided by Siam Progress Engineering Co., Ltd.

Hi.: Service Quality Gap

Perception mean is higher than Expectation mean ($P > E$) ($x_e = 4.1735$ vs. $x_p = 4.2906$, $p = .000$). The paired sample t-test indicated that there was a statistically significant difference between customer expectations and perceptions of service quality in Siam Progress Engineering Co., Ltd. Hence, the null hypothesis stating that there is no difference between customer expectations and perceptions of service quality in Siam Progress Engineering Co., Ltd. is rejected.

112.: Tangibility Gap

Expectation mean is equal to Perception mean ($E = P$) ($x_e = 4.1298$ vs. $x_p = 4.0889$, $p = .278$). The paired sample t-test indicated that there was no statistically significant difference between customer expectations and perceptions in tangibility of service quality in Siam Progress Engineering Co., Ltd. It means that the null hypothesis stating that there is no difference between customer expectations and perceptions in tangibility of service quality in Siam Progress Engineering Co., Ltd. is not rejected.

H3₀: Reliability Gap

Perception mean is higher than Expectation mean ($P > E$) ($x_e = 4.2115$ vs. $x_p = 4.5269$, $p = .000$). The paired sample t-test indicated that there was statistically significant difference between customer expectations and perceptions in reliability of service quality in Siam Progress Engineering Co., Ltd. It means that the null hypothesis stating that there is no difference between customer expectations and perceptions in reliability of service quality in Siam Progress Engineering Co., Ltd. is rejected.

H4₀: Responsiveness Gap

Perception mean is equal to Expectation mean ($P = E$) = 4.1346 vs. $x_p = 4.1514$, $p = .719$). The paired sample t-test indicated that there was no statistically significant difference between customer expectations and perceptions in responsiveness of service quality in Siam Progress Engineering Co., Ltd. It means that the null hypothesis stating that there is no difference between customer expectations and perceptions in responsiveness of service quality in Siam Progress Engineering Co., Ltd. is not rejected.

H5₀: Assurance Gap

Perception mean is equal to Expectation mean ($P = E$) = 4.4808 vs. $x_p = 4.5793$, $p = .101$). The paired sample t-test indicated that there was no statistically significant difference between customer expectations and perceptions in assurance of service quality in Siam Progress Engineering Co., Ltd. It means that the null hypothesis stating that there is no difference between customer expectations and perceptions in assurance of service quality in Siam Progress Engineering Co., Ltd. is not rejected.

116₀: Empathy Gap

Perception mean is higher than Expectation mean ($P > E$) ($x_e = 3.9558$ vs. $x_p = 4.0962$, $p = .013$). The pair sample t-test indicated that there was statistically significant difference between customer expectations and perceptions in empathy of service quality in Siam Progress Engineering Co., Ltd. It means that the null hypothesis stating that there is no difference between customer expectations and

perceptions in **empathy** of service quality in Siam Progress Engineering Co., Ltd. is rejected.

Table 5.6: Summary of Hypotheses Test Result

Hypothesis	Level of Significance	Test Result
H1: There is no difference between customer expectations and perceptions of service quality in Siam Progress Engineering Co., Ltd.	.000	Rejected
H2: There is no difference between customer expectations and perceptions in tangibility of service quality in Siam Progress Engineering Co., Ltd.	.278	Failed to reject
H3: There is no difference between customer expectations and perceptions in reliability of service quality in Siam Progress Engineering Co., Ltd.	.000	Rejected
H ₀₄ : There is no difference between customer expectations and perceptions in responsiveness of service quality in Siam Progress Engineering Co., Ltd.	.719	Failed to reject
H5: There is no difference between customer expectations and perceptions in assurance of service quality in Siam Progress Engineering Co., Ltd.	.101	Failed to reject
H6: There is no difference between customer expectations and perceptions in empathy of service quality in Siam Progress Engineering Co., Ltd.	.013	Rejected

CHAPTER 6

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

6.1 Discussion

This research was aimed to study the difference between customer expectations and perceptions of service quality of Siam Progress Engineering Co., Ltd. It focused on five dimensions for assessing the service quality of Siam Progress Engineering Co., Ltd. only. Siam Progress Engineering Co., Ltd. has been serving high quality products and services such as post-sales services and other services such as maintenance, spare parts, and cleaning services.

In order to answer the key question of **"What is the service quality offered by Siam Progress Engineering Co., Ltd. air-conditioner distributor?"** data was collected from the company's customers and analyzed using the Statistical Package for Social Science – SPSS version 13 to test six hypotheses. The data analyses and findings are elaborated in the proceeding sections.

All six hypotheses have been assessed by using paired-sample t-test to evaluate the result of differences between customer expectations and perceptions of service quality of Siam Progress Engineering Co., Ltd.. Five key service quality dimensions were examined.

The result from hypotheses 1 showed that there was a gap between the customer expectations and perceptions of service quality of Siam Progress Engineering Co., Ltd. The differences were based on the overall five dimensions of service quality (SERVQUAL). Those were tangibility, reliability, responsiveness, assurance and empathy. The result from hypotheses 3 and 6 also showed that there was a gap between the customer expectation and perception of service quality in

Reliability and Empathy of Siam Progress Engineering Co., Ltd. It suggests that the current customers of Siam Progress Engineering Co., Ltd. had their own expectations towards the services in terms of tangibility, reliability, responsiveness, assurance and empathy. However, after receiving services provided by Siam Progress Engineering Co., Ltd., the perceived service quality provided by Siam Progress Engineering exceed customer expectation.

The result from hypotheses 2, 4, 5 showed that there was no significant gap between the customer expectation and perception of service quality in Tangibility, Responsiveness, Assurance of Siam Progress Engineering Co., Ltd. The current customers of the company had their own expectations towards the services in terms of tangibility, reliability, responsiveness, assurance and empathy. After receiving services provided by Siam Progress Engineering Co., Ltd., customers perceived the service quality provided by Siam Progress Engineering to have met their expectations of an air conditioner distributor.

6.2 Conclusion

The objective of this research was to study the service quality of Siam Progress Engineering Co., Ltd. by applying the SERVQUAL instrument to measure Gap 5 between customer expectations and perceptions of service quality. This study found a significant difference in terms of the five SERVQUAL dimensions (tangibility, reliability, responsiveness, assurance, empathy) between customer expectations and perceptions of service quality of Siam Progress Engineering Co., Ltd. There was a gap between what customers expected and what they actually perceived. It can also be interpreted that the actual performance that was provided by Siam

Progress Engineering Co., Ltd. and its employees met or exceeded customer expectations.

As a result of the study, all of the five dimensions of SERVQUAL have been identified as major factors that created the gap between customer expectations and perception of service quality of Siam Progress Engineering Co., Ltd. However, the summary results of the SERVQUAL dimensions GAP in table 5.4 shows customer perceptions of reliability, responsiveness, assurance and empathy were higher than customer expectations.

Tangibility: Customers perceived the appearance of physical facilities, equipment, personnel, and communicated material met expectations of service.

Reliability: Customers perceived the reliability to perform the promised service dependably and accurately were higher than expected service quality.

Responsiveness: Customers perceived the willingness to help customers and provide prompt service met expectations of service.

Assurance: Customers perceived the knowledge and courtesy of employees and their ability to convey trust and confidence met expectations of service.

Empathy: Customers perceived the caring and individualized attention the company provided its customers were higher than expected service quality.

6.3 Recommendations

Based on the findings, there are differences in terms of the five dimensions of SERVQUAL and include tangibility, reliability, responsiveness, assurance and empathy between customer expectation and perceptions to the service provided by Siam Progress Engineering Co., Ltd.

The result show customer perceptions of the services provided by Siam Progress Engineering Co., Ltd., in terms of reliability and empathy, were beyond customer expectations. The company should not overlook these findings and instead, should exploit these areas to become company strengths. Those strengths can be key success factors for Siam Progress Engineering Co., Ltd. in competing in the market. Moreover, rather than merely meeting customer expectations for service areas related to tangibility, responsiveness, and assurance, the company should implement strategies with the aim of improving those areas in order to exceed customer expectations.

Intensive competition in air-conditioning services has forced the company to offer more competitive advantages in services such as adding service features, ensuring the technician's competence and monitoring customer needs and expectations. To elaborate the meaning of services, each company should have a clear marketing focus to differentiate one's services from the others. The effective service marketing requires understanding of customer behavior.

The survey results show that customer was interested most in reliability which is followed by empathy, assurance, responsiveness and tangibles respectively. Recommendations for improving service quality of Siam Progress Engineering Co., Ltd. is offered in the proceeding sections.

Tangibility includes the appearance of physical facilities, equipment, personnel, and communicated material. The company should invest in developing its modern look and tools and equipment. Employees or technicians who provide service should be clean and neat in appearance. Moreover, the operating site service should be visually appealing and clean after services.

Reliability involves consistency of performance and dependability. It means that Siam Progress Engineering had to perform the service right the first time as well as honor its promises. Reliability is the core of service quality as research result showed that most customers regard reliability as being the most important for the five dimensions of service performance. Consequently, the company should emphasize reliability and punctuality such as providing services as scheduled. Keeping promises is extremely important for conducting business.

Responsiveness concerns the willingness or readiness of employees to provide timely service. Accordingly, the company has to concentrate on providing prompt service by carefully designing a superior delivery process of services as appropriate to support each task or function. In addition company should perform services promptly and employees should be available to provide the service when required. Employees must be trained not just to have an attitude that is helpful, friendly, and sincere to customers but also to convey that attitude to customers.

Assurance involves credibility such as trustworthiness, believability and honesty, security, courtesy and profession of required skills and knowledge to perform service. The company must offer confidentiality to customers that they feel free from danger, risk or doubt when they contract the company. Employees should be well trained for politeness, consideration, and friendliness to customers. Also, employees must be developed with high skills and knowledge in their tasks in order to perform excellent service and show confidence to customers.

Empathy includes access or approachability and ease of contact, communication, and understanding of customers. Therefore, the company needs to train employees and make the effort to understand the customer's needs by learning

the customers' specific requirements, recognizing behavior of regular customers and provide individual attention.

According to the results of the survey, the gap of service quality as discussed previously can be considered as key for service marketing for a good understanding of service quality and its dimensions. Hence, the company can then use the gap model to allocate or reallocate its resources in specific areas of the process.

6.3.1 Suggestions for Future Research

This research has focused on delivering quality service. To understand customers' specifications, the company may continuously learn about expectations and perceptions of non-customers. Non-customer research reveals how competitors perform on service, provide a basic for comparison, general idea and critical expectation for the service that competitors may better offer an agenda for actions.

The use of multiple research approaches (both of customer research and non-customer research) is important because each approach has limitations as well as strengths. A combination of approaches enables a firm to tap the strengths of each and compensate for weakness. Continuous data collection and dissemination informs and educate the decision maker about the pattern of changes e.g. shifting service priorities for customers, declining or improving service performance in some facet of the company's services, decline or improving service performance of competitors.

For those who want to indulge further research in this arena, the following represent a set of questions which service quality researchers should address when they want to conduct further study:

1. Do customers always evaluate service quality in terms of expectations and perceptions?

2. Are expectations common across a size of service provider? (different size of air-conditioning distributor)
3. What are the relationships between service quality, customer satisfaction, behavioral intention, purchase behavior, market share, word-of-mouth and customer retention?
4. What are the relationships between the five dimensions? How stable are those relationships across context?
5. What is the most appropriate scale format for collecting valid and reliable service quality data in different business?

Answers to questions such as these would help improve the understanding of the service quality construct and assess the value of the SERVQUAL instrument. Many of these questions may require contextually sensitive qualitative research.



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APPENDICES



Reliability (Pretest) Tangible Expectation**Case Processing Summary**

		N	%
Cases	Valid	20	100.0
	Excluded ^a	0	.0
	Total	20	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.610	4

Reliability (Pretest) Reliability Expectation**Case Processing Summary**

		N	%
Cases	Valid	20	100.0
	Excluded ^a	0	.0
	Total	20	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.700	5

Reliability (Pretest) Responsiveness Expectation**Case Processing Summary**

		N	%
Cases	Valid	20	100.0
	Excluded ^a	0	.0
	Total	20	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.815	4

Reliability (Pretest) Assurance Expectation

Case Processing Summary

		N	%
Cases	Valid	20	100.0
	Excluded ^a	0	.0
	Total	20	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.714	4

Reliability (Pretest) Empathy Expectation

Case Processing Summary

		N	%
Cases	Valid	20	100.0
	Excluded ^a	0	.0
	Total	20	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.822	5

Reliability (Pretest) Total Customer Expectation

Case Processing Summary

		N	%
Cases	Valid	20	100.0
	Excluded ^a	0	.0
	Total	20	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.765	22

Reliability (Pretest) Tangible Perception

Case Processing Summary

		N	
Cases	Valid	20	100.0
	Excluded ^a	0	.0
	Total	20	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.815	4

Reliability (Pretest) Reliability Perception

Case Processing Summary

		N	%
Cases	Valid	20	100.0
	Excluded	0	.0
	Total	20	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.795	5

Reliability (Pretest) Responsiveness Perception

Case Processing Summary

		N	%
Cases	Valid	20	100.0
	Excluded ^a	0	.0
	Total	20	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.667	4

Reliability (Pretest) Assurance Perception

Case Processing Summary

		N	%
Cases	Valid	20	100.0
	Excluded ^a	0	.0
	Total	20	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.691	4

Reliability (Pretest) Empathy Perception

Case Processing Summary

		N	%
Cases	Valid	20	100.0
	Excluded ^a	0	.0
	Total	20	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.805	5

Reliability (Pretest) Total Customer Perception

Case Processing Summary

		N	%
Cases	Valid	20	100.0
	Excluded ^a	0	.0
	Total	20	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.942	22

Frequencies - Customers Data

Statistics

		Business Nature of SPE's user	Size of firm	Customer usage rate
N	Valid	104	104	104
	Missing	0	0	0

Frequency Table - Customers Data

Business Nature of SPE's user

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Construction company	14	13.5	13.5	13.5
	Bank	18	17.3	17.3	30.8
	Office Building	40	38.5	38.5	69.2
	Outlet	24	23.1	23.1	92.3
	Residence	8	7.7	7.7	100.0
	Total	104	100.0	100.0	

Size of firm

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very small	8	7.7	7.7	7.7
	Small	22	21.2	21.2	28.8
	Medium	42	40.4	40.4	69.2
	Large	32	30.8	30.8	100.0
	Total	104	100.0	100.0	

Customer usage rate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 8 hours	8	7.7	7.7	7.7
	8 - 12 Hours	81	77.9	77.9	85.6
	More than 12 - 16 hours	15	14.4	14.4	100.0
	Total	104	100.0	100.0	

Frequencies Tangible Expectation

Statistics

		Modern looking, professional standard tools and equipment.	Clean and appealing operating site after services	Employees neat appearing	Informative and appealing materials associated with the service
N	Valid	104	104	104	104
	Missing	0	0	0	0
Mean		4.1250	4.5577	4.0673	3.7692

Frequencies Reliability Expectation

Statistics

		Keep promise to do something by a certain time regularly	Show a sincere interest and professional standard skill in solving problem	Ability to perform the service right at the first time and correct tracking cause of problem	Ability to provide the service at the time they promise to do so	Error free records
N	Valid	104	104	104	104	104
	Missing	0	0	0	0	0
Mean		4.4808	4.5385	4.2019	4.4038	3.4327

Frequencies Responsiveness Expectation

Statistics

		Ability to inform exact date of services within 5 working days after service agreement	Prompt service, feedback and acknowledge ment within 1 working day	Willingness to help customers	Officially respond to customers' requests within 3 working days.
N	Valid	104	104	104	104
	Missing	0	0	0	0
Mean		3.8077	4.5481	4.2596	3.9231

Frequencies Assurance Expectation

Statistics

		Confidence in ability to suggest and provide correct details	Preventive warrantee given after installation.	Consistently courteous with customers	Knowledge to answer questions
N	Valid	104	104	104	104
	Missing	0	0	0	0
Mean		4.4519	4.7308	4.4615	4.2788

Frequencies Empathy Expectation

Statistics

		Ability to provide individual attention and flexible services	Easy, accessible communicating channel and convenient operating hours	Available employees to give customers personal attention.	Emphasize on customer's best interests at heart and offering new technology	Understand specific needs and able to provide variety alternatives
N	Valid	104	104	104	104	104
	Missing	0	0	0	0	0
Mean		4.0288	4.0577	3.6827	3.9615	4.0481

Frequencies Tangibles Perception

Statistics

		SPE's look, tools and equipment.	SPE's operating site after services	SPE's employees appearing	SPE's material associated with the service
N	Valid	104	104	104	104
	Missing	0	0	0	0
Mean		4.0000	4.5385	3.9135	3.9038

Frequencies Reliability Perception

Statistics

		SPE keep promises to do something by a certain time regularly	SPE shows interest and skill in solving problem	SPE's ability to perform accurate service	SPE's ability to provide service at the time it promises to do	SPE's error free records
N	Valid	104	104	104	104	104
	Missing	0	0	0	0	0
Mean		4.6346	4.5385	4.4135	4.6154	4.4327

Frequencies Responsiveness Perception

Statistics

		SPE's ability to inform exact date of services	SPE's ability to perform prompt services	SPE's willingness to help customers	SPE's officially respond speed to customers' requests
N	Valid	104	104	104	104
	Missing	0	0	0	0
Mean		4.0962	4.2500	4.2788	3.9808

Frequencies Assurance Perception

Statistics

		Confidence in SPE's ability	SPE's preventive warrantee after installation	SPE's consistently courteous	SPE's knowledge to answer questions
N	Valid	104	104	104	104
	Missing	0	0	0	0
Mean		4.7692	4.8654	4.1731	4.5096

Frequencies Empathy Perception

Statistics

		SPE's ability to provide individual attention and flexible services	SPE's accessible communicating channel and operating hours	SPE's employees who give personal attention	SPE's emphasis on customers' interests and offer new technology	SPE understands specific needs and provide variety alternatives
N	Valid	104	104	104	104	104
	Missing	0	0	0	0	0
Mean		4.2692	3.9327	3.7404	4.3462	4.1923

Reliability Tangibles Expectation

Case Processing Summary

		N	%
Cases	Valid	104	100.0
	Excluded ^a	0	.0
	Total	104	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.670	4

Reliability Reliability Expectation

Case Processing Summary

		N	%
Cases	Valid	104	100.0
	Excluded	0	.0
	Total	104	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.678	5

Reliability Responsiveness Expectation

Case Processing Summary

		N	%
Cases	Valid	104	100.0
	Excluded ^a	0	.0
	Total	104	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.693	4

Reliability Assurance Expectation

Case Processing Summary

	N	%
Cases Valid	104	100.0
Excluded	0	.0
Total	104	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.736	4

Reliability Empathy Expectation

Case Processing Summary

	N	%
Cases Valid	104	100.0
Excluded	0	.0
Total	104	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.744	5

Reliability Total Customer Expectation

Case Processing Summary

	N	%
Cases Valid	104	100.0
Excluded	0	.0
Total	104	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.644	22

Reliability Tangibles Perception

Case Processing Summary

	N	%
Cases Valid	104	100.0
Excluded ^a	0	.0
Total	104	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.802	4

Reliability Reliability Perception

Case Processing Summary

	N	%
Cases Valid	104	100.0
Excluded ^a	0	.0
Total	104	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.675	5

Reliability Responsiveness Perception

Case Processing Summary

		N	%
Cases	Valid	104	100.0
	Excluded ^a	0	.0
	Total	104	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.630	4

Reliability Assurance Perception

Case Processing Summary

		N	%
Cases	Valid	104	100.0
	Excludes	0	.0
	Total	104	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.611	4

Reliability Empathy Perception

Case Processing Summary

		N	%
Cases	Valid	104	100.0
	Excluded ^a	0	.0
	Total	104	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.785	5

Reliability Total Customer Perception

Case Processing Summary

		N	%
Cases	Valid	104	100.0
	Excluded ^a	0	.0
	Total	104	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.831	22

Reliability Store Patronage

Case Processing Summary

		N	%
Cases	Valid	104	100.0
	Excluded ^a	0	.0
	Total	104	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.807	3

T-Test H1

Paired Samples Statistics

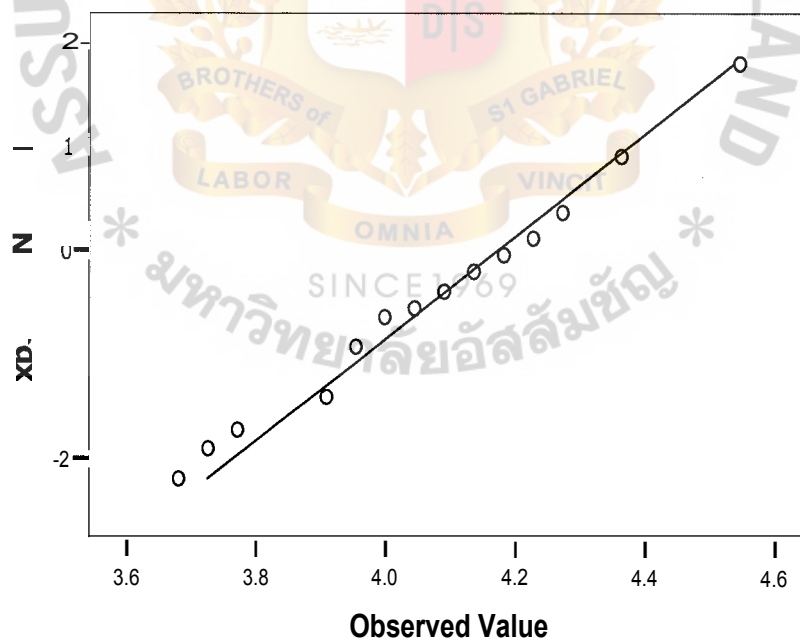
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Expectation	4.1735	104	.20473	.02008
	Perception	4.2906	104	.25552	.02506

Paired Samples Test

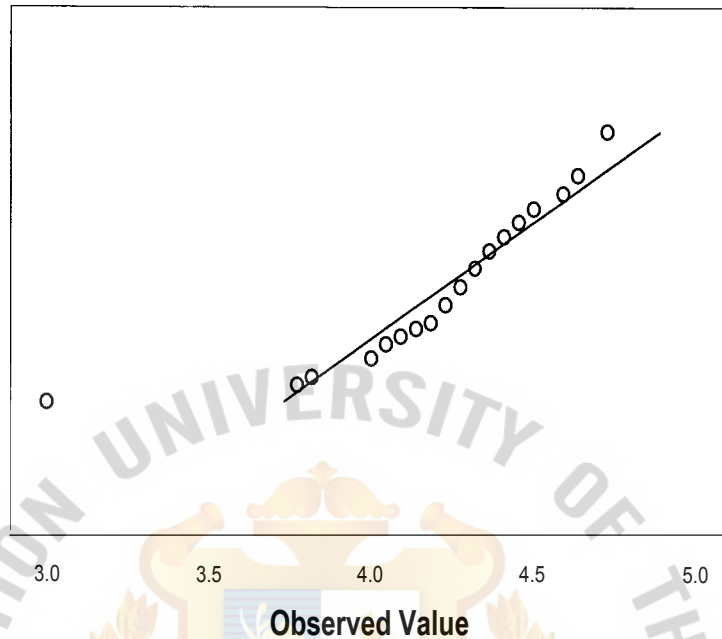
		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	Expectation - Perception	-.11713	.33111	.03247	-.18153	.05274	3.608	103	.000

Expectation

Normal Q-Q Plot of Expectation



Normal Q-Q Plot of Perception



T-Test H2

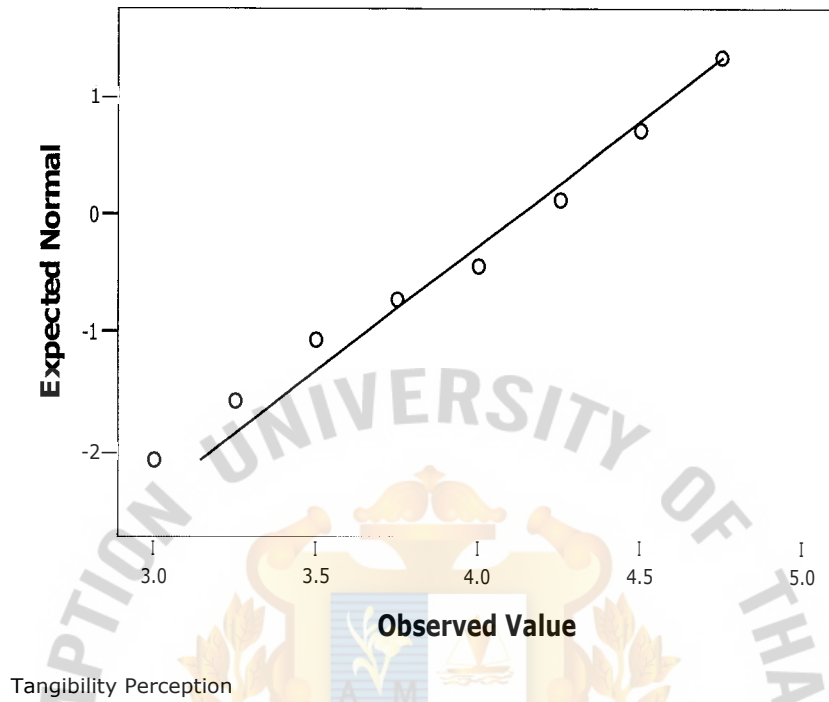
Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Tangibility Expectation	4.1298	104	.47636	.04671
	Tangibility Perception	4.0889	104	.45677	.04479

Paired Samples Test

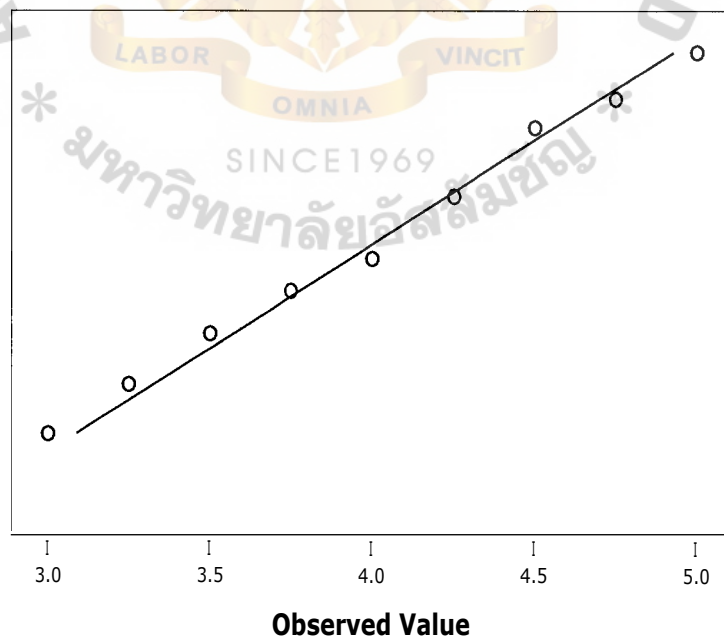
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Tangibility Expectation - Tangibility Perception	.04087	.38179	.03744	-.03338	11511	1.092	103	.278

Normal Q-Q Plot of Tangibility Expectation



Tangibility Perception

Normal Q-Q Plot of Tangibility Perception



T-Test H3

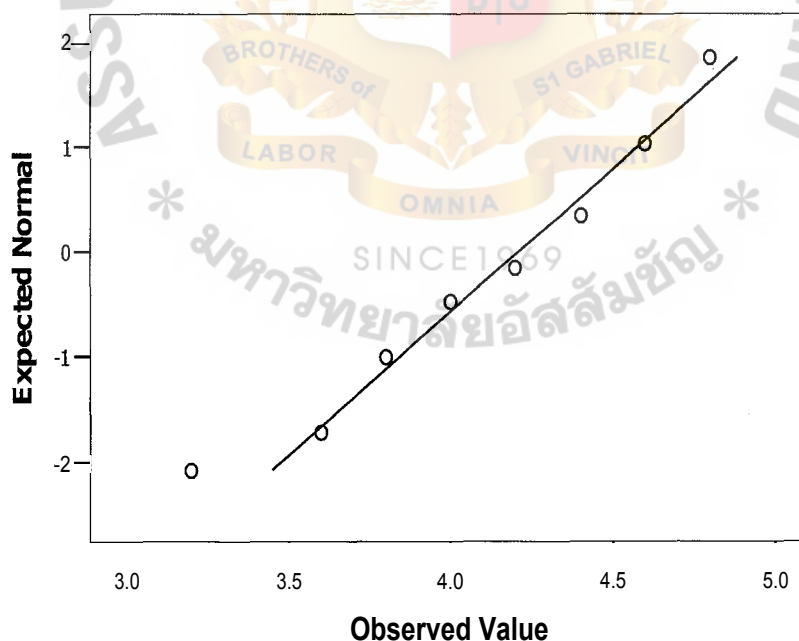
Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Reliability Expectation	4.2115	104	.36744	.03603
	Reliability Perception	4.5269	104	.38923	.03817

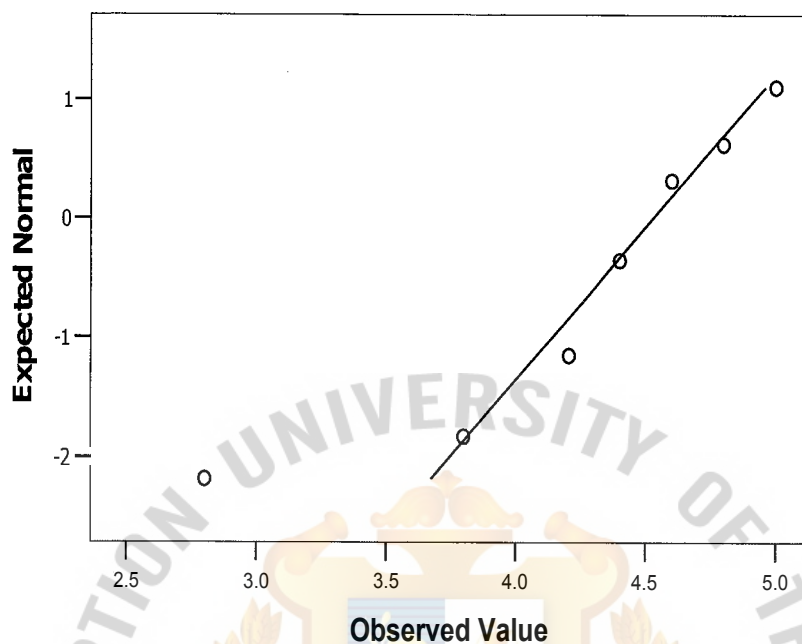
Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	Reliability Expectation - Reliability Perception	-.31538	58505	.05737	-.42916	.20161	5.497	103	.000

Reliability Expectation

Normal Q-Q Plot of Reliability Expectation

Normal Q-Q Plot of Reliability Perception



T-Test H4

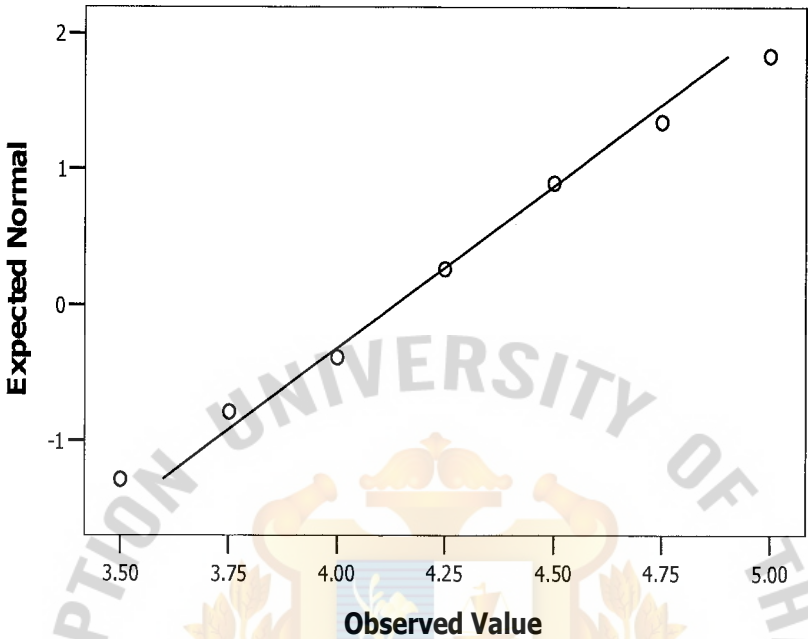
Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Responsiveness Expectation	4.1346	104	.41938	.04112
	Responsiveness Perception	4.1514	104	.33126	.03248

Paired Samples Test

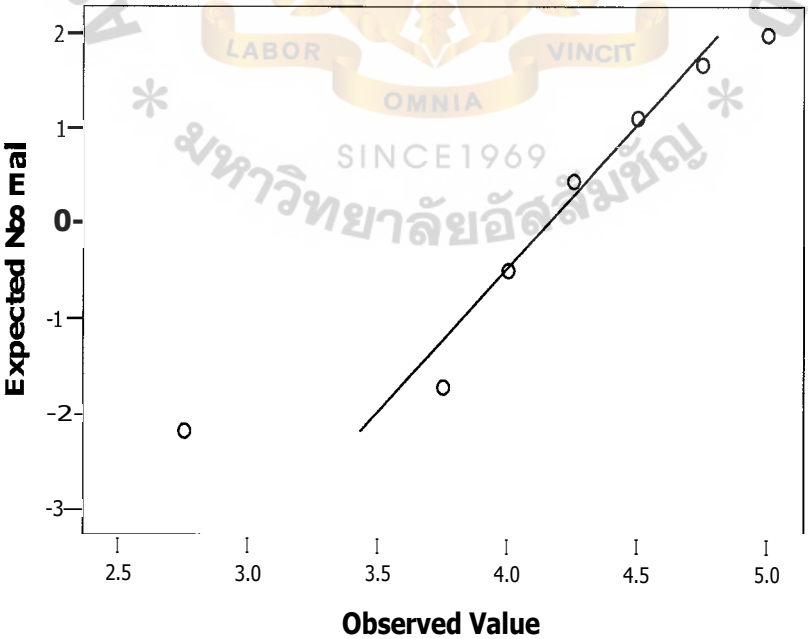
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Responsiveness Expectation - Responsiveness Perception	-.01683	.47545	.04662	-.10929	.07564	-.361	103	.719

Normal Q-Q Plot of Responsiveness Expectation



Responsiveness Perception

Normal Q-Q Plot of Responsiveness Perception



T-Test H5

Paired Samples Statistics

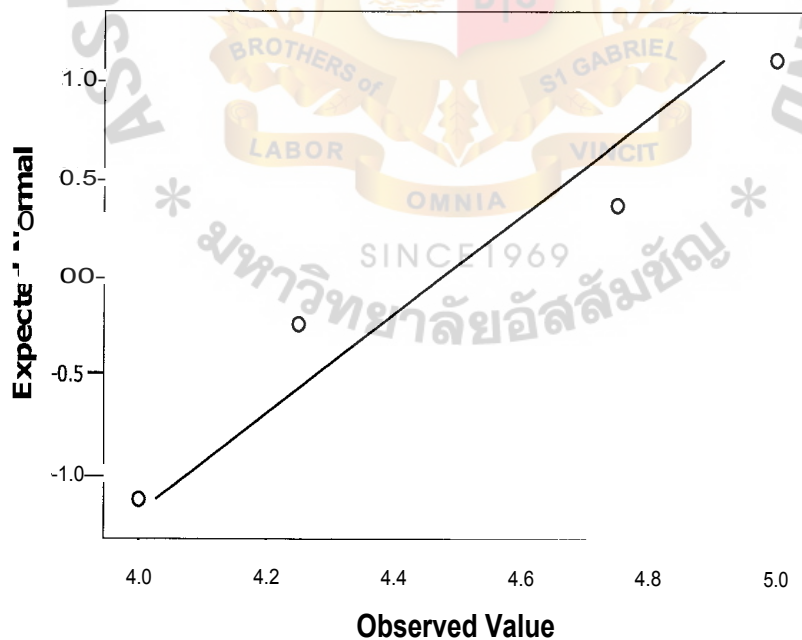
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Assurance Expectation	4.4808	104	.40129	.03935
	Assurance Perception	4.5793	104	.32356	.03173

Paired Samples Test

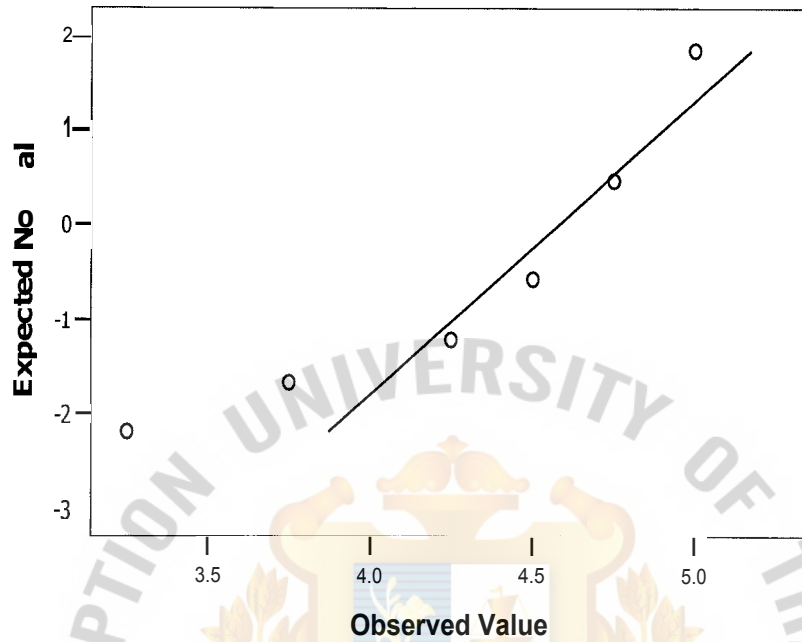
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Assurance Expectation - Assurance Perception	-.09856	.60782	.05960	-.21676	.01965	-1.654	103	.101

Assurance Expectation

Normal Q-Q Plot of Assurance Expectation



Normal Q-Q Plot of Assurance Perception



T-Test H6

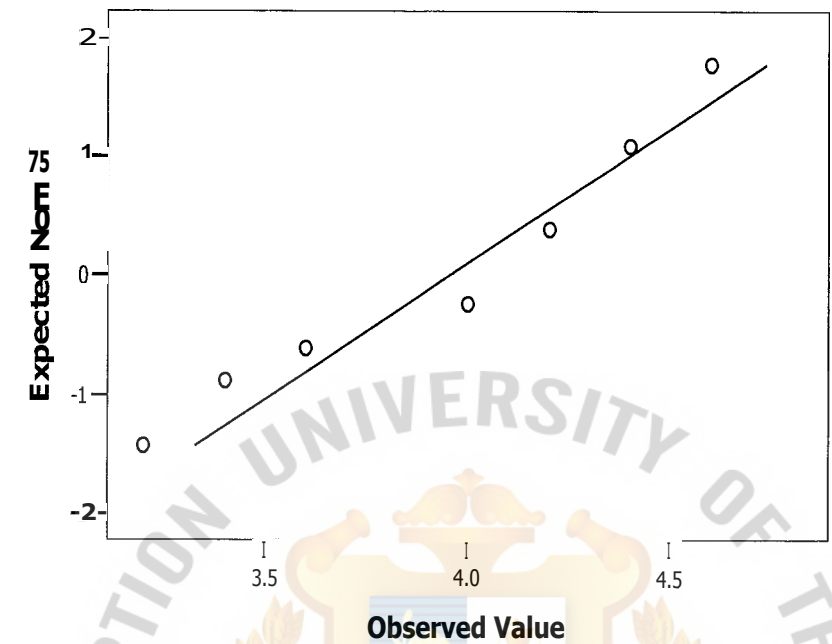
Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Empathy Expectation	3.9558	104	.43973	.04312
	Empathy Perception	4.0962	104	.41709	.04090

Paired Samples Test

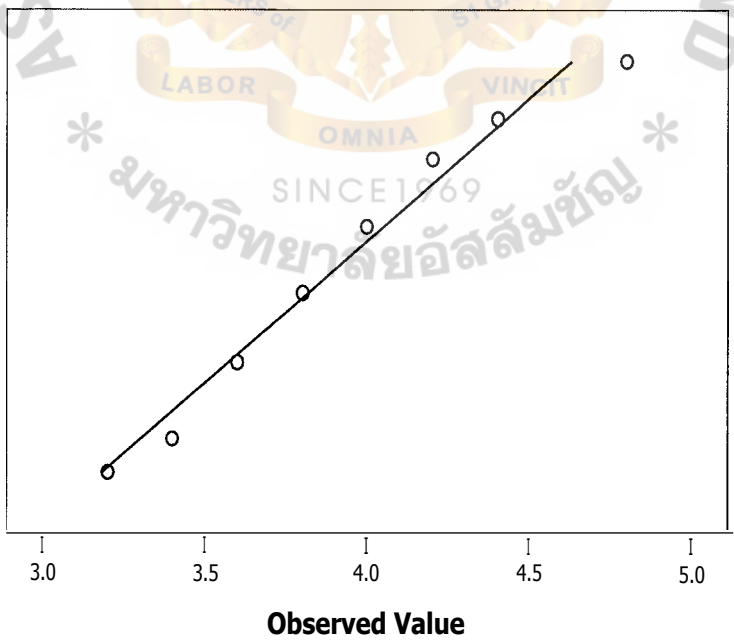
		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	Empathy Expectation - Empathy Perception	-.14038	.56492	.05539	- .25025	-.03052	-2.534	103	.013

Normal Q-Q Plot of Empathy Expectation



Empathy Perception

Normal Q-Q Plot of Empathy Perception



QUESTIONNAIRE

This questionnaire is designed as a tool for collecting data of respondents' in order to improve quality standards among air-conditioning distributors in Thailand. All the collected information will be kept as confidential.

The questions in questionnaire are divided into 2 parts:

Part I: Expectations of Service Quality

Part II: Perceptions of Service Quality

Part I: Expectations of Service Quality

Direction: Based on your experiences as a consumer of air-conditioning distributor services, please think about the kind of air-conditioning distributor company that would deliver excellent quality of service. Think about the kind of air-conditioning distributor company with which you would be pleased to do business. Please show the extent to which you think such an air-conditioning distributor company would possess the feature described by each statement. If you feel a feature is *not at all essential* for excellent air-conditioning distributor companies such as the one you have in mind, circle the number 1. If you feel a feature is *absolutely essential* for excellent air-conditioning distributor companies, circle 5. If your feelings are less strong, circle one of the numbers in the middle. There is no right or wrong answers - all we are interested in is a number that truly reflects your feeling regarding companies that would deliver excellent quality of service.

Choices are indicated as follows:

1 = Strongly Disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

Please provide your responses to the following statements regarding 'excellent air conditioning distributors'.

Excellent air conditioning distributors:

E1	<i>will</i> have modern looking, professional standard tools and equipment.	1	2	3	4	5
E2	<i>will</i> clean up after they provide services at their operating sites.	1	2	3	4	5
E3	<i>will</i> have employees who look neat.	1	2	3	4	5
E4	<i>will</i> provide materials such as user manual or guide book that are informative and easy-to-use.	1	2	3	4	5

E5	<i>will</i> perform their tasks, such as regular checking, repair and maintenance service, as promised.	1	2	3	4	5
E6	<i>will</i> show a sincere professional interest in helping to solve a customer's problem.	1	2	3	4	
E7	<i>will</i> solve problems correctly the first time the problem is identified.	1	2	3	4	5
E8	<i>will</i> provide timely and prompt service as promised.	1	2	3	4	5
E9	<i>will</i> insist on error free records.	1	2	3	4	5
E10	<i>will</i> tell customers exactly when services will be performed within 5 working days after service agreement.	1	2	3	4	5
E11	<i>will</i> have employees who give prompt service, feedback, acknowledgement and useful advice to customers within 1 working day.	1	2	3	4	5
E12	<i>will</i> have employees who are always willing to help customers.	1	2	3	4	5
E13	<i>will</i> have employees who always make time to officially respond to customers' requests within 3 working days.	1	2	3	4	5
E14	<i>will</i> have employees who make customers feel confident in the work they provide.	1	2	3	4	5
E15	<i>will</i> make customers feel safe about the preventive warrantee given after installation.	1	2	3	4	5
E16	<i>will</i> have employees who are consistently courteous with customers.	1	2	3	4	5
E17	<i>will</i> have employees who are knowledgeable to answer customers' questions.	1	2	3	4	5
E18	<i>will</i> give customers individual attention.	1	2	3	4	5
E19	<i>will</i> be easy for customers to contact.	1	2	3	4	5
E20	<i>will</i> have employees who give customers personal attention.	1	2	3	4	5
E21	<i>will</i> have their customer's best interests at heart.	1	2	3	4	5
E22	<i>will</i> have employees who understand customers' specific needs.	1	2	3	4	5

Part II: Perceptions of Service Quality

Direction: The following set of statements relate to your feelings about Siam Progress Engineering Co., Ltd. For each statement, please show the extent to which you believe Siam Progress Engineering Co., Ltd. has the feature described by the statement. Once again, circling a 1 means that you strongly disagree that Siam Progress Engineering Co., Ltd. has that feature, and circling a 5 means that you strongly agree. You may circle any of the numbers in the middle that show how strong your feelings are. There is no right or wrong answers - all we are interested in is a number that best shows your perceptions about Siam Progress Engineering Co., Ltd.

Choices are indicated as follows:

1 = Strongly Disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

Please provide your responses to the following statements regarding 'Siam Progress Engineering Co. Ltd'.

Siam Progress Engineering Co. Ltd:

P1	has modern looking, professional standard tools and equipment.	1	2	3	4	5
P2	cleans up after they provide services at their operating sites.	1	2	3	4	5
P3	has employees who look neat.	1	2	3	4	5
P4	provides materials such as user manual or guide book that are informative and easy-to-use.	1	2	3	4	5
P5	performs tasks, such as regular checking, repair and maintenance service, as promised.	1	2	3	4	5
P6	shows a sincere professional interest in helping to solve your problem.	1	2	3	4	5
P7	solves problems correctly the first time the problem is identified.	1	2	3	4	5
P8	provides timely and prompt service as promised.	1	2	3	4	5
P9	insists on error free records.	1	2	3	4	5
P10	tells me exactly when services will be performed within 5 working days after service agreement.	1	2	3	4	5
P11	has employees who give prompt service, feedback, acknowledgement and useful advice to you within 1 working day.	1	2	3	4	5
P12	has employees who are always willing to help you.	1	2	3	4	5

P13 has employees who always make time to officially respond to my requests within 3 working days.	1	2	3	4	5
P14 has employees who make me feel confident in the work they provide.	1	2	3	4	5
P15 makes me feel safe about the preventive warrantee given after installation.	1	2	3	4	5
P16 has employees who are consistently courteous with me.	1	2	3	4	5
P17 has employees who are knowledgeable to answer my questions.	1	2	3	4	5
P18 gives me individual attention.	1	2	3	4	5
P19 is easy for me to contact.	1	2	3	4	5
P20 has employees who give me personal attention.	1	2	3	4	5
P21 has my best interests at heart.	1	2	3	4	5
P22 has employees who understand my specific needs.	1	2	3	4	5
B1 It is unlikely for me to switch from buying air conditioners from Siam Progress Engineering Co. Ltd. to another distributor.	1	2	3	4	5
B2 I will buy from Siam Progress Engineering Co. Ltd. again in the future.	1	2	3	4	5
B3 I recommend Siam Progress Engineering Co. Ltd. to people I know.	1	2	3	4	5

Customer Characteristics

1. Which best describes your firm as a user of Siam Progress Engineering Co., Ltd.?

- ☐ Construction Company
- ☐ Bank
- ☐ Office Building
- ☐ Outlets
- ☐ Residence
- ☐ Other (please specify) OMNIA

2. Which size best describes the size of your firm?

- ☐ Very small
- ☐ Small
- ☐ Medium
- ☐ Large

3. Approximately how many hours per day is your air conditioner in use?

- ☐ Less than 8 hours
- ☐ 8 to 12 hours
- ☐ 12 to 16 hours
- ☐ More than 16 hours

----- Thank You-----

แบบสอบถาม

แบบสอบถามนี้ได้ถูกจัดทำขึ้นเพื่อเก็บข้อมูล เกี่ยวกับมาตรฐานคุณภาพการบริการที่ลูกค้าได้รับจากผู้
ข้อมูลทั้งหมดจะถูกจัดเก็บอย่างเป็นความลับ

ส่วนที่ 1 สอบถามความคาดหวังของลูกค้าต่อกรให้บริการของตัวแทนจำหน่ายเครื่องปรับอากาศ เสด ให้ผู้ตอบ
แบบสอบถามแสดงความคาดหวังจากการให้บริการของตัวแทนจำหน่ายเครื่องปรับอากาศ ให้คะแนนจาก
1-5 ตามระดับความคาดหวังและการรับรู้บริการของ

คำชี้แจง

1.1 ความคาดหวังของลูกค้า

ความในรายการนี้เป็นความคาดหวังในการบริการที่ท่านคิด win แทนจำหน่ายเครื่องปรับอากาศที่ดีควรจะมี
ควรจะเป็น มากน้อยเพียงใด

กรุณาวางกลมที่หมายเลขที่ท่านเลือกเพียงหมายเลขเดียวเท่านั้น โดยแต่ละหมายเลขมีความหมายดังนี้

- | | | |
|---|---------|----------------------------|
| 1 | หมายถึง | ไม่ได้รับความพอใจอย่างยิ่ง |
| 2 | หมายถึง | ไม่ได้รับความพอใจ |
| 3 | หมายถึง | ปานกลาง (เฉยๆ) |
| 4 | หมายถึง | ได้รับความพอใจ |
| 5 | หมายถึง | ได้รับความพอใจอย่างยิ่ง |

โปรดตอบคำถามทุกข้อ ตามความคาดหวังของท่านเกี่ยวกับผู้จัดจำหน่ายเครื่องปรับอากาศที่ดี

1.1 ท่านคาดหวังว่าตัวแทนจำหน่ายเครื่องปรับอากาศที่ดี ควร.....

E1	เครื่องมือปฏิบัติงานที่ทันสมัย	1	2	3	4	5
E2	จะมีการรักษาความสะอาดสถานที่หลังจากให้บริการ	1	2	3	4	5
E3	จะมีพนักงานที่ดูเรียบร้อย สะอาดตา	1	2	3	4	5
E4	จะมีเอกสารคู่มือการใช้เครื่อง / วิธีการบำรุงรักษาเครื่องหลังการติดตั้ง	1	2	3	4	5
E5	จะให้การปฏิบัติงาน การบริการตรวจเช็คเครื่องตามกำหนด,	1	2	3	4	5
E ⁶	จะแสดงความเชี่ยวชาญ ชำนาญในการให้ความช่วยเหลือแก้ไขปัญหาให้กับลูกค้า	1	2	3	4	
E7	จะสามารถแก้ไขปัญหาได้ถูกต้อง	1	2	3	4	5
E ⁸	จะให้บริการที่ตรงตามเวลาดังที่สัญญาไว้เบื้องต้น	1	2	3	4	5
E9		1	2	3	4	5
E10	จะสามารถแจ้งวันปฏิบัติงาน ที่แน่นอนกับลูกค้าได้ ภายใน 5 วันทำงาน หลังทำสัญญา	1	2	3	4	5

E1	รับทราบปัญหา และ ให้คำแนะนำที่เป็นประโยชน์กับลูกค้าได้ ภายใน 1 วันทำงาน	1	2	3	4	5
E12	จะมีพนักงานที่มีความเต็มใจมุ่งมั่นเสมอในการให้ความช่วยเหลือลูกค้า	1	2	3		5
E13	จะมีพนักงานที่สามารถตอบสนองความต้องการของลูกค้าอย่างเป็นทางการ ภายใน 3 วัน	1	2	3	4	
E14		1	2	3	4	5
E15	จะทำให้ลูกค้ารู้สึกไว้วางใจ กับการให้ประกันหลังการติ	1	2	3	4	5
E16	เชื่อถือกับลูกค้าอย่างสม่ำเสมอ	1	2	3	4	5
E17	จะมีพนักงานที่มีความรู้ความสามารถตอบคำถาม ให้คำอธิบายและข้อมูลที่เป็น	1	2	3	4	5
E18	จะให้ความใส่ใจดูแลเฉพาะรายกับ ลูกค้า	1	2	3	4	5
E19	จะสามารถติดต่อศูนย์บริการ ได้ง่าย	1	2	3	4	5
E20	จะมีพนักงานที่ให้ความใส่ใจ เฉพาะตัว n	1	2	3	4	5
E21	จะมีความเอาใจใส่ลูกค้าด้วยความจริงใจ	1	2	3	4	5
E22	จะมีพนักงานที่เข้าใจความต้องการเฉพาะเจาะจงของลูกค้า	1	2	3	4	5

1.2 การรับรู้บริการภายหลังที่ได้รับบริการแล้ว

สยามโปรเกรส เอ็นอีเนียริง จำกัด

กรุณาวางกลมที่หมายเลขที่ท่านเลือกเพียงหมายเลขเดียวเท่านั้น โดยแต่ละหมายเลขมีความหมายดังนี้

- 1 หมายถึง ไม่ได้รับความพอใจอย่างยิ่ง
- 2 หมายถึง ไม่ได้รับความพอใจ
- 3 หมายถึง ปานกลาง (เฉยๆ)
- 4 หมายถึง ได้รับความพอใจ
- 5 หมายถึง ได้รับความพอใจอย่างยิ่ง

โปรดตอบคำถามทุกข้อ ตามที่ท่านเห็นเกี่ยวกับการบริการของบริษัท

เอ็นอีเนียริง จำกัด

1.2 ยามโปรเกรส เอ็นอีเนียริง 1110

P1	มีอุปกรณ์ เครื่องมือปฏิบัติงานที่ทันสมัย	1	2	3	4	5
P2	มีการทำความสะอาดสถานที่หลังจกให้บริการ	1	2	3	4	5
P3	มีพนักงานที่ดูเรียบร้อย	1	2	3	4	5
P4	/ วิธีการบำรุงรักษาเครื่องหลังการติดตั้ง ที่เข้าใจง่าย	1	2	3	4	5

P5	ให้กรปฏิบัติงาน iii การบริการตรวจเช็คเครื่องตามกำหนด, ดังที่สัญญาไว้เบื้องต้น	1	2	3	4	5
P6	แสดงความเชี่ยวชาญชำนาญในการให้ความช่วยเหลือแก่ ขปัญหาให้กับข้าพเจ้า	1	2	3	4	5
P7	เมื่อปัญหาเริ่มปรากฏ	1	2	3	4	5
P8	ให้บริการที่ตรงตามเวลาดังที่สัญญาไว้เบื้องต้น	1	2	3	4	5
P9	ยืนยันสถิติการปฏิบัติงานที่ไม่ผิดพลาด	1	2	3	4	5
P10	สามารถแจ้งวันปฏิบัติงานที่แน่นอนกับข้าพเจ้าได้ ภายใน 5 วันทำงาน การขายเสร็จสิ้น	1	2	3	4	5
P11	รับทราบปัญหา และ ให้คำแนะนำที่เป็น ประโยชน์กับข้า พเจ้าได้ ภายใน 1 วันทำงาน	1	2	3	4	5
P12	มีพนักงานที่มีความเต็มใจมุ่งมั่นเสนอในการให้ความช่วยเหลือข้าพเจ้า	1	2	3	4	5
P13	มีพนักงาน เนที่สามารถตอบสนองความต้องการของข้าพเจ้าอย่างเป็นทางการ ภายใน 3 วัน ทำงาน	1	2	3	4	5
P14	มีพนักงานคุณภาพที่ทำให้ท่านมั่นใจกับงานบริการที่ได้รับ	1	2	3	4	5
P15	ทำให้ท่านรู้สึกไว้วางใจ กับการให้ประกันหลังการติดตั้ง	1	2	3	4	5
P16	เชื้อเพื่อกับข้าพเจ้าอย่างสม่ำเสมอ	1	2	3	4	5
P17	มีพนักงานที่มีความรู้ความสามารถตอบคำถาม ให้คำอธิบายและข้อมูลที่เป็นประโยชน์ ต่อข้าพเจ้า	1	2	3	4	5
P18	ให้ความสนใจดูแลเฉพาะ รเยกับข้าพเจ้า	1	2	3	4	5
P19	สามารถติดต่อศูนย์บริการ ได้ง่าย	1	2	3	4	5
P20	มีพนักงานที่ให้ความสนใจดูแลเฉพาะตัวกับข้าพเจ้า	1	2	3	4	5
P21	มีความความเอาใจใส่ข้าพเจ้าด้วยความจริงใจ	1	2	3	4	5
P22		1	2	3	4	5
B1	ไม่น่าจะเป็นไปได้ที่ข้าพเจ้า จะเปลี่ยนไปใช้บริการจากตัวแทนจำหน่าย เครื่องปรับอากาศรายอื่น	1	2	3	4	5
B2	จากบริษัทยามโปรเน เอ็นยีเนียริง จำกัด ' กในอนาคต	1	2	3	4	5
B3	สยเมโปรเก เอ็นยีเนียริง จำกัด กับคนที่ข้าพเจ้ารู้จัก	1	2	3	4	5

อ
1. สย เมโปรเกรส ได้ดี
ที่สุด ?

- ☐ บริษัทรับเหมาก่อสร้าง
- ☐ ธนาคาร
- ☐ อาคารสำนักงาน
- ☐ ร้านค้า
- ☐ ที่พักอาศัย
- ☐ อื่นๆ (โปรดระบุ) _____

2. ข้อใดบ่งชี้ถึงขนาดธุรกิจ ?

- ☐ ธุรกิจขนาดเล็กมาก
- ☐ ธุรกิจขนาดเล็ก
- ☐ ธุรกิจขนาดกลาง
- ☐ ธุรกิจขนาดใหญ่

3. ?

- ☐ น้อยกว่า 8 ชั่วโมง
- ☐ 8 ถึง 12 ชั่วโมง
- ☐ 12 ถึง 16 ชั่วโมง
- ☐ มากกว่า 16 ชั่วโมง

