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Pengaruh Kandungan Air dan Pupuk Kalium terhadap Serapan Kalium dan Pertumbuhan Tanaman Kedelai (*Glycine max L*) Var. Willis pada Tanah Ultisol Simalingkar  
*Parlindungan Lumbanraja*

Analisis LQ Sektor-sektor Perekonomian Kabupaten Pakpak Bharat dalam Peningkatan Pendapatan Daerah  
*Maria Rumondang Sihotang*

Prediksi Erosi dengan Metode USLE (Universal Soil Loss Equation) di Kebun Tambunan A Kecamatan Salapian Kabupaten Langkat  
*Shanti Desima Simbolon*

Kaidah Hukum Perkawinan dalam Kehidupan Orang Kristen: Studi Deskriptif Hukum Nasional Indonesia dan Hukum Gereja HKBP  
*Sahat P. Siburian dan Demak Shinta Silaban*

Job Insecurity Ditinjau dari Tingkat Trust Karyawan  
*Siska Monita Tarigan*

The Effects of Perceived Service Quality on Customer Satisfaction Formation  
*Charles Makmur Sianturi*

Peranan Subtipe miRNA pada Keadaan Post Infark Miokardium  
*Christine Verawaty Sibuea*

Analisis Pengaruh Beberapa Faktor Ekonomi Terhadap Permintaan Kopi Di Sumatera Utara  
*Hotden Leonardo Nainggolan*

Keterkaitan Program Kesejahteraan Karyawan Dengan Produktivitas Kerja Di Kantor Bank Indonesia Medan  
*Eben Ezer Pukpahan dan Renta H.R. Siregar*

Pengaruh Kebijakan Produk dan Promosi terhadap Volume Penjualan Pengrajin Sepatu di Kecamatan Medan Denai Medan  
*Darma Manalu*





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<i>Parlindungan Lumbanraja</i>	Pengaruh Kandungan Air dan Pupuk Kalium terhadap Serapan Kalium dan Pertumbuhan Tanaman Kedelai ( <i>Glycine max L</i> ) Var. Willis pada Tanah Ultisol Simalingkar	748-760
<i>Maria Rumondang Sihotang</i>	Analisis LQ Sektor-sektor Perekonomian Kabupaten Pakpak Bharat dalam Peningkatan Pendapatan Daerah	761-772
<i>Shanti Desima Simbolon</i>	Prediksi Erosi dengan Metode USLE (Universal Soil Loss Equation) di Kebun Tambunan A Kecamatan Salapian Kabupaten Langkat	773-797
<i>Sahat P. Siburian dan Demak Shinta Silaban</i>	Kaidah Hukum Perkawinan dalam Kehidupan Orang Kristen: Studi Deskriptif Hukum Nasional Indonesia dan Hukum Gereja HKBP	798-812
<i>Siska Monita Tarigan</i>	Job Insecurity Ditinjau dari Tingkat Trust Karyawan	813-823
<i>Charles Sianturi Makmur</i>	The Effects of Perceived Service Quality on Customer Satisfaction Formation	824-837
<i>Christine Sibuea Verawaty</i>	Peranan Subtipe miRNA pada Keadaan Post Infark Miokardium	838-852
<i>Hotden Nainggolan Leonardo</i>	Analisis Pengaruh Beberapa Faktor Ekonomi Terhadap Permintaan Kopi Di Sumatera Utara	853-869
<i>Eben Ezer Pakpahan dan Renta H.R. Sir egar</i>	Keterkaitan Program Kesejahteraan Karyawan Dengan Produktivitas Kerja Di Kantor Bank Indonesia Medan	870-880
<i>Darma Manalu</i>	Pengaruh Kebijakan Produk dan Promosi terhadap Volume Penjualan Pengrajin Sepatu di Kecamatan Medan Denai Medan	881-895

## The Effects of Perceived Service Quality on Customer Satisfaction Formation

Charles Makmur Sianturi

### ABSTRAK

Dengan mengambil konsumen industry servis sebagai sample riset ini mengkaji pengaruh kualitas servis berdasarkan persepsi konsumen (*Perceived service quality*) terhadap Pembentukan Kepuasan Konsumen (*Consumer Satisfaction Formation*). Analisis data dalam studi ini dilaksanakan dengan dua tahap, yaitu melakukan analisis factor untuk menemukan dimensi kualitas servis dan dimensi kepuasan konsumen. Selanjutnya, hubungan kedua konstruk tersebut dianalisa dengan mempergunakan Structural Equation Modeling (SEM). Hasil analisis data menunjukkan bahwa kualitas servis mempengaruhi pembentukan kepuasan konsumen secara signifikan. Dengan mempergunakan indeks koefisien Chi-square, GFI, NFL, TLI, RMSEA untuk menguji realibilitas model disimpulkan bahwa model yang diajukan cukup memadai untuk menjelaskan pengaruh kualitas servis terhadap kepuasan konsumen.

*Key words* : service quality, Customer satisfaction, service marketing, marketing strategy.

### 1. Introduction

By any definition, service is a process or the activities that are carried out, whereas goods are objects that can be measured objectively (Bateson & Hoffman, 1999). Services are samples of performance that comprise objects and mind or feeling. It is generally agreed that services are different from goods due to the unique characteristics; intangibility, heterogeneity, inseparability of production and consumption, and perishable (Zeithaml & Bitner, 1996)

It is mostly accepted that the fundamental difference between goods and services is service intangibility that made service untouchable or intangible, tasted or smelled. Berry (1980) captures the distinction well when he describes a good as "an object, a device, a thing", in contrast to a service which is "a deed, a performance, an effort".

Delivering superior service quality appears to be the prerequisite for success if not for survival (Parasuraman, et al., 1988). A recent prime focus is the improvement of service quality. Service quality is a construct that has attracted the interest of marketing researchers in the last decade. Although, quality is not a new concept to marketing science, the implementation of quality construct to service industry is something quite new due to the nature of service as a product. Marketing experts believed that services are different from goods. Goods can be smelled or touched are known as tangible products. Services on the other hand, can be seen in many shapes but services are mostly intangible, having no shape or colour. The ranges are from the pure service as news on television to the less pure service as retailers. In relation to these differences, many experts believe that



the implementation of quality construct of goods to intangible product as service is not similar to those in tangible product as in goods.

Service quality is an elusive concept (Parasuraman, et al., 1988) that has many definitions or meanings and term as quality control, quality measurement, technical quality, objective quality, and perceived quality. Perceived quality measurement is based on the customers' or consumers' perception on the services they received of producer delivered. Therefore, perceived quality is known as subjective quality measurement since measurement is based solely on consumer perception on what they had consumed. According to Parasuraman, et al., (1988) customers' perception is based on the comparison of what they expected from the service and compared it to what they received experiencing the service. This approach is known as performance minus expectation. It means that when performance of service is perceived as higher than expected the higher perceived service quality.

Customer satisfaction is also an important concept in marketing science and for marketers in the present days. Lots of studies have been done to explain how to measure customer satisfaction (Marr & Crosby, 1990). Another researcher investigate the antecedents and consequences of customer satisfaction to the firm (Oliver, 1980), or customer satisfaction as a business strategy to increase their performance (Oliver & DeSarbo, 1988).

Actually, it is almost by nature that company with satisfied customers will perform better than that with dissatisfied customers. But it is also by nature that competing companies trying to adopt the key factors of their competitors including the customer satisfaction strategy.

Many studies have been carried out to explain how to satisfy the customers (Oliver, 1980; Churchill & Surprenant, 1982; Bearden & Tell, 1983). But many previous studies on customer satisfaction have focused more on measuring customer satisfaction (Peterson & Wilson, 1992); or cognitive process of customer satisfaction (La Barbera & Mazursky, 1983), or antecedent of customer satisfaction to the firms (Oliver, 1980).

Since customer satisfaction is based on customer perception, it is almost not possible to explain why and how customers define their perception on satisfaction. There are many factors that may have mutual effects of customer perception but not recognize by the customers. The customer's evaluation on customer satisfaction can be affected by many factors such as experiences, promotion by the providers, culture, personality and quality of the product. Many factors may affect the customer's satisfaction, and this study is an investigation on the effect of perceived service quality on customer satisfaction formation.



## 2. Literature review and theoretical approach.

### 2.1. *The Conceptualization of Perceived Service Quality.*

In literatures, service quality could be found in two types, that is, objective quality and perceived quality (Grönroos 1984; Lewis and Booms 1982). Perceived service quality has been defined as the difference between expectation and performance of the service (Parasuraman, et al., 1988). When performance of services received by the customers exceed their expectation they will perceived it as high quality and inverse. Since perceived service quality is based on consumer's evaluation over service product they consumed, it is also not impossible that consumer made their evaluation solely based on performance of the service they received. Therefore, perceived service quality can be defined as consumer evaluation of service performance.

One of the most popular measurements of service quality is SERVQUAL, developed by Parasuraman, Berry, and Zeithaml (1985, 1988). Not only it has been widely cited in the service marketing literatures, and it is used in industry has been widespread (Brown, Churchill, and Peter 1993). Another measurement is SERVPERF or service performance, developed by Cronin and Taylor (1992), but it was less popular.

Subsequently, SERVQUAL has served as the basis for measuring the quality of service offered by ;Physicians (Brown and Swartz, 1989); dental school patient clinics, business school placement centers, tire stores and acute care hospitals (Carman, 1990), finance companies (Tay and Sieh 1997); E-commerce service provider (Hong 1999).

The researchers of SERVQUAL have focused on the conceptualization and dimensionality of perceived service quality. Five dimensions of service quality are named Tangibles, Reliability, Responsiveness, Assurance, and Empathy have been reported based on the survey of four service firms; Banks, Credit Card Companies, Repair and Maintenance Companies, and Long-Distance Telephone Companies.

Measurement of service quality goes further, following the studies of the effects of service quality. Furthermore, the researches on service quality measurement have been extended to the study of antecedent and consequences of service quality. However, the studies have reported conflicting results. Research findings reported that service quality affected company profitability and customer behavior. (Reichheld and Sasser 1990). According to Jones and Sasser (1995), when the level of quality increases the level of satisfaction would increase. Some researchers reported that service quality has positive effects to the profitability of the company (Aaker and Jacobson 1994; Anderson, Fornell, and Lehman 1993). Other found that service quality having negative effects on profitability as reported by Kearney (1992) and Little (1992).

In terms of competition, service quality also has offensive effects (Buzzle and Gale 1983; Kordupleski, Rust, and Zahorik 1993). While defensive effects of



service quality have been reported by Fornell and Wernerfelt (1987), Reichheld and Sasser (1990), Anderson and Sullivan (1993).

Most measurements of service quality, are based on expectancy disconfirmation paradigm, but researchers have reported contrary results. For example, some researchers indicate that disconfirmation of expectation affects satisfaction (Churchill and Suprenant 1982; Oliver 1980; Swan and Trawick 1981). Conversely, other researchers indicate that disconfirmation of expectation also affect perceived quality (Bolton and Drew 1991; Brown and Swartz 1989; Parasuraman, Berry, and Zeithaml 1988).

In regard to the purposes of this study, SERVQUAL will be deployed to investigate the customer perception on perceived quality in service industry. For this research service quality is define as antecedent of customer satisfaction. Perceived service quality and customers satisfaction are two related concepts, and marketers often treat these two concepts as interchangeable, but the latest thinking is that, they are quite distinct (Cronin and Taylor 1992; Oliver 1993; Zeithaml 1988).

## *2.2. The Conceptualization of Customer Satisfaction on Service.*

Customer satisfaction is a central concept in marketing and the study of customer satisfaction is mainly an attempt to explain the determinant of customer satisfaction or measurement of customer's satisfaction level. Understanding the process of customer's satisfaction formation has been a concern of marketing researchers and practitioners alike. Some experts considered customer satisfaction as related to specific transaction (Bolton and Drew 1991). Bitner and Hubbert (1994) made distinctions between service encounter satisfaction and overall service satisfaction. McNeal (1982) defines consumer satisfaction as the extent to which a purchase meets certain needs and resolves a bothersome mental state, allowing the consumers to return to a position of being ready to deal with other life matters. Customer satisfaction definition varies, but experts mostly agree that satisfaction is post consumption evaluation. It means that satisfaction is a post consumption experience evaluation. Therefore, there is no satisfaction evaluation without experience of consumption.

Customer satisfaction has two types of definitions which differ in terms of emphasis. The first definition defines customer satisfaction as an outcome of consumption. The second definition explains customer satisfaction as a cognitive process (Oliver, 1980; Rust & Oliver 1994; Churchill & Suprenant, 1982). Oliver's (1989) framework views satisfaction as a state of fulfillment related to reinforcement and arousal. The study by Oliver (1980) on the antecedent and consequences of satisfaction has provided empirical support for several theoretical determinant of customer satisfaction. This approach is known as expectancy disconfirmation paradigm. When service performance exceeds initial expectations, it means that positive disconfirmation occurs. When service performance equals or matches the expectation confirmation occurs. Negative disconfirmation occurs



when service performances fall short of initial expectations. Some researchers suggested disconfirmation is the predictor of customer satisfaction formation (Westbrook 1987; Codotte, *et al.*, 1987). Others suggested that performance is the predictor of customer satisfaction (Liljander&Strandvik, 1994). Another researcher reported that disconfirmation and performance were both affected satisfaction formation (Tse& Wilton; 1988). Oliver &DeSarbo (1988) found that disconfirmation and performance were both positive predictor of satisfaction but disconfirmation had the greatest influence.

Halstead *et al.*, (1994) developed a model to explain satisfaction formation with multi-resources of satisfaction and found that performance and disconfirmation have different effects on satisfaction formation. Churchill&Suprenant (1982) investigated the effects of performance and disconfirmation for two different products; video disc player and household plant. The results reported that disconfirmation and performance were both positively related to satisfaction for the plant, but disconfirmation had the greatest effect. Expectation were also positively related to satisfaction both directly and indirectly through disconfirmation. As for video disc player, only performance had a significant positive impact on satisfaction.

The most widely adopted of the process theories is that of expectancy disconfirmation, in which customer satisfaction is viewed as largely based on meeting or exceeding expectation ( Yi, 1990). As was noted earlier, Churchill &Suprenant (1982) found that performance had a significant impact on satisfaction for some product, but not others. Tse& Wilton (1988) found that performance had a significant direct effect on satisfaction as well as indirect effect through disconfirmation. Oliver &DeSarbo (1988) found that disconfirmation had the greatest influence on satisfaction, although significant effects were found for performance.

Performance evaluation is based on service attribute approach. Some researchers used single attribute approach, such as overall satisfaction evaluation and others used multi- attributes approach. A multi-attribute approach to performance evaluation has been recommended by several researchers (Swan & Comb, 1976). Woodruff, *et al.*, (1983) suggested using a traditional multi-attribute model approach by summing up attribute importance ratings times attribute performance over all salient attributes to develop an assessment of performance. Oliver (1980) concluded that disconfirmation ultimately takes place at individual attribute level. Still, several satisfaction researchers continue to use overall measures of performance or disconfirmation (Cronin & Taylor 1992; Tse& Wilton 1988; Oliver &DeSarbo 1988; Woodruff, *et al.*, 1983).

As was noted earlier, multi-attribute model provided more explanation of customer satisfaction formation instead of single attribute. Lele&Sheth (1988) stated that a variety of factors affect customer satisfaction. Quality, for instance, is a key influence; buyers regularly show quality at the top of their concerns..



Zahorik, et al., (2000) argued that overall satisfaction is in turn determined by satisfaction with various components, or 'process' of the service.

So far, conflicting models exist in the literatures of the process through which perceived service quality affected customer satisfaction. Chenet, Tynam, and Money (2000); Blomer, de Ruyter, and Wetzels (1999); Bolton and Drew (1991); Bitner (1990) suggested that customer satisfaction is an antecedent of service quality. Others find that service quality is an antecedents of customer satisfaction (Sieh and Tay 1997; Oliver 1993; Anderson and Sullivan 1993 Cronin and Taylor 1992; La Barbera and Mazurski 1983; Churchill and Suprenant 1982). This study is focused on the effects of perceived service quality on customer satisfaction formation. In this study, the measurement of customer satisfaction formation will be based on perceived performance of multi attributes of services based on an assumption that many factors will affect customer perception of service performance.

### **3. Research Design and Methodology.**

For the purpose of the study, perceived service quality is defined as perceived service performance by the costumers. Satisfaction is defined as primarily an affective response to a specific consumption experience (Linder-Pelz 1982). Measurement of perceived service quality is based on 22 items of SERVQUAL (Parasuraman, et al., 1988), and customer satisfaction is measured by 14 items of performance based indicators which are developed according to the purpose of this study.

#### **3.1 Survey Design**

The conceptualization of perceived service quality and customer satisfaction are measured directly by using survey method. SERVQUAL indicators are translated to Bahasa Indonesia. After two times of test and modification, final questionnaires will be in the Bahasa Indonesia for both of the constructs.

##### **3.1.1 Sampling and Data Collection.**

According to the objectives of the study the type of sampling is a target sampling method and the sampling technique is opportunity sampling. Opportunity sampling technique uses whatever participants are available at the time the research is being conducted, which in practice, it is used by great many researches (Hayes 2000).

The subject of the study is the consumers of three service producers, regardless of their individual characteristics of the consumers and service characteristics. The service producer samples range from service dominant products (pure intangible) to the less service dominant products (more tangible). The service producers are Banks, Fast food Restaurants, and Department Stores, in Medan, North Sumatera Indonesia.



### 3.2 Methodology.

#### 3.2.1 Factor Analysis.

Factor analysis is used to investigate the underlying dimensions of construct perceived service quality and customer satisfaction. The interpretation of the factor is based on rotated component matrix. The VARIMAX rotation of factor solution with Kaiser normalization is deployed in this survey. All variables or items with loading factor 0.40 or greater will be included in the factor. According to Hair, et al, (1998) loading of 0.40 is considered more important and loadings of 0.30 are considered to meet the minimum level. All variables with loading factor 0.40 or greater will be included in the analysis and regarded as significant. The factor with Eigenvalue equal to one or greater ( $\geq 1$ ) would be considered as a factor. Item-scale reliability is based on the score of Cronbach Alpha. The alpha value of 0.70 or greater is considered reliable (Nunnally 1977). Factor analysis will be deployed to find the underlying dimensions of each construct using SPSS Win 11.0. To explain the significance of the relationship among the constructs structural equation modeling (SEM) will be applied by using statistics package AMOS 4.0 (Analysis of MOment Structure).

#### 3.2.2 Structural Equation Modeling Analysis

Next, all dimensions will be transformed as indicators and used as input for the Structural Equation Modeling of the research model (SEM) to explain the relationship of the constructs. At this stage the hypothesis will be tested. To check the model fit some statistical indexes of fit are used. The indexes are Chi-square, GFI, NFI, TLI, RMSEA. A large value of chi-square relative to the degree of freedom signifies that observed and estimated matrices differ considerably. The Goodness-of-fit Index (GFI) represents the overall degree of fit (the squared residuals from prediction compared with the actual data, but it is not adjusted for the degree of freedom) (Hair, et al. 1998). The GFI is a non-statistical measure ranging in value from 0.00 (poor fit) to 1.0 (perfect fit). Higher values indicate better fit but no absolute threshold levels for acceptability has been established. NFI or Normed fit index is a relative comparison of the proposed model to the null model. It is a measurement range from 0.00 (not fit at all) to 1.0 (perfect fit). The recommended level is 0.90 or greater. TLI or Tucker-Lewis Index also known as non-normed fit index (NNFI) the values ranging from 0.00 to 1.0. The recommended level is greater or equal to 0.90. The Root Mean-Square Error Approximation (RMSEA) is the discrepancy per degree of freedom. The discrepancy is measured in terms of population, not just the sample used for estimation. Values ranging from 0.05 to 0.08 are deemed acceptable.

### 4. Data Analysis

Two steps of analysis were performed in this study. The first step was the analysis factor to find out the dimensions of the constructs ; perceived service



quality, and customer satisfaction. The second step was the reliability test of the questionnaires for each construct.

The number of returned questionnaires was 197 copies of out 300 questionnaires being distributed, and the number of usable copy is 174, which became the sample size of this survey or 174 respondents.

#### 4.1 Dimension of Perceived Service Quality.

##### 4.1.1 Analysis Factor of Perceived Service Quality.

The items used to measure service quality in this research was based on the 22 items of SERVQUAL (Parasuraman, et al., 1991). The results of analysis factor for the perceived service quality construct is displayed in Table 4.1.1. By using factor analysis with Eigenvalue equal to one or greater ( $\geq 1$ ) and loading factor greater than 0.40, there are three dimensions or factor of perceived service quality construct that can be identified, which is different from the original dimension of SERVQUAL. Therefore, the factors have to be renamed. The first factor or dimension is Service tangible (Servtan) with four items, which related to tangible attributes of service. The second dimension named Service reliability (Reliability) contains 11 items. The third factor represents the ability of the service producer to perform and deliver the promised services dependably and accurately. The third dimension is entitled as Service delivery (Servdel) which is composed of 7 items. The factor describes the knowledge, courtesy, and the willingness of employees to help customers.

Table 4.1.1. Factor Loadings of Data.

Dimension	Label	No. of Items	Items	Factor Loading			Coefficient Alpha
				1	2	3	
Servtan	Sq1	4	S1			.740	.8091
			S2			.712	
			S3			.740	
			S4			.724	
Reliability	Sq2	11	S5	.697			.9276
			S6	.686			
			S7	.618			
			S8	.440			
			S9	.696			
			S10	.723			
			S11	.731			
			S12	.734			
			S13	.680			
			S14	.668			
			S15	.657			



Servdel	Sq3	7	S16	.801	.9422
			S17	.817	
			S18	.821	
			S19	.798	
			S20	.823	
			S21	.784	
			S22	.759	
All Items					.9501

The total variable explained by the three factors is 62 %. Loading factor of each item is greater than 0.70. Coefficient alpha for the first factor is 0.8091, for the second factor is 0.9276, and for the third factor 0.9422. As the reliability of components is high, the total reliability or Cronbach Alpha is also high (0.9501). The items assigned to each dimension have high loadings in only one of the three factor was extracted.

4.1.2. Dimension of Customer Satisfaction Construct

The measurement of customer satisfaction is based on the attributes of service perceived by customers. Measurement of customer satisfaction has 16 items. From all of the items included in the analysis factor, there is no specific pattern derived that can make the interpretation of the results difficult. After using add and drop method for each item, finally three dimensions can be extracted which consist of ten items but some items have loadings in more than one dimension. The total variable explained by the three factors is 64 %. The results of the analysis factor for overall data are exhibited on the Table 4.1.2. Loading factor of each item is greater than 0.40. Coefficient alpha or Cronbach Alpha for the first dimension is 0.6983, for the second dimension is 0.7368, and alpha for the third factor is 0.8137, and the total reliability is also high (0.8415). The first dimension called service procurement (Servpro) that has 4 items; Cs1, Cs 2, Cs 5, and Cs 6. The second dimension entitled Service price (Servprice) consists 3 items; Cs7, Cs8, and Cs14. Item Cs9, Cs 10, and Cs 12 are grouped into the third dimension named Service atmosphere (Servatmos).

Table 4.1.2 Factor Loadings of Customer Satisfaction

Dimension	Label	No.of Items	Items	Factor Loading			Coefficient Alpha
				1	2	3	
Servpro	CS1	4	Cs1			.708	.6983
			Cs2			.764	
			Cs5		.550	.582	
			Cs6		.572	.533	
Servprice	CS2	3	Cs7		.778	.7369	
			Cs8		.786		
			Cs14	.411	.520		



Servatmos	CS3	3	Cs9	.797			.8137
			Cs10	.780			
			Cs12	.794			
All Items							.8514

**4.2. The Relationship between Perceived Service Quality and Customer Satisfaction.**

*4.2.1 Causality Effects between the Constructs.*

Structural equation model (SEM) is applied to explain the causality relationship between perceived service quality and customer satisfaction simultaneously in a single nonrecursive model (see Figure 4.3.1). The explanations of the causality effects between the two constructs are based on the coefficients of path of construct relationship, direct direct effects, and total effects of the relationship between the constructs. Each construct has three indicators and the relationship among the constructs and their respective indicators are discussed based on their standardized coefficients. The indicators of perceived service quality are Servtan, Reliability and Servdel, and dimensions of customer satisfaction are Servicepro, Servprice, and Servatmos.

*4.2.2. Findings of Data.*

The fit indexes of the model suggest the model is reliable to explain the relationship of perceived service quality, customer satisfaction, and customer loyalty. All coefficients of estimation are significant which also suggest that the measurements are highly consistent. The results of the analysis of data are displayed next on Tabel 4.3.2. The findings suggest that perceived service quality affects customer satisfaction.. Path coefficients show that the relationship between perceived service quality and customer satisfaction is significant.

The relationship between constructs and their respective indicators are also significant. Of the three indicators of perceived service quality, the relationship between perceived service quality and reliability is more significant compared to those of the other two indicators; Servtan and Servdel. Service reliability reflects the ability to deliver promised service and fulfill the needs and wants of customers for services in their preferred ways.

For customer satisfaction service poreurement (Servpro), it is more significant, then followed by perceived price and service atmosphere. Service poreurement is related to customer involvement in service production and sharing information between customers and service providers.



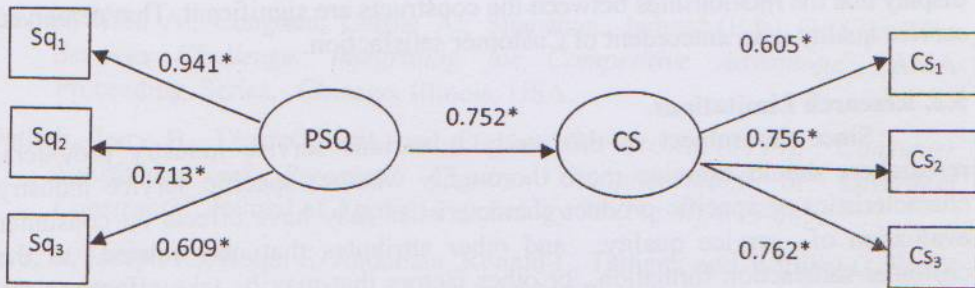


Figure 4.1 Standardized Path Coefficients

Legend : \* Statistically significant at 0.05.

Sq1 = Service tangible (Servtan)      Cs 1 = Service porecurement (Servpro)  
 Sq2 = Service Reliability (Reliability)      Cs2 = Service Price (Servprice)  
 Sq3 = Service Delivery (Servdel)      Cs3 = Service Atmosphere (Servatmos)

4.2.3. Goodness-of-Indices of Estimation.

The Goodness-of-fit indices related to model estimation are displayed below. Table 4.3.3 explains that the coefficients of estimation fit for the criterion of the indices.

Table 4.3.3 Model Fit Indices of Overall Data Estimation

Index	Cut-off Value	Result	Note
Chi-square	Larger	104.163	Fit
GFI	≥ 0.90	0.970	Fit
NFI	≥ 0.90	0.960	Fit
TLI	≥ 0.90	0.953	Fit
RMSEA	≤ 0.08	0.067	Fit

The table shows that all of the indeces satisfy the cut-off value . Therefore, the model of estimation is adequate.

5. Conclusions and managerial implication

5.1. Research Conclusions.

The findings of analysis factor of perceived service quality and customer satisfaction construct disclose three dimensions of both constructs customer satisfaction. The dimension of perceived service quality is Servis tangible (Sertan), Service Reliability (Reliability), and Service delivery (Servdel). The study also find out three dimensions of Customer satisfaction named Service porecurement (Servpro) Service price (Servprice), and Service atmosphere (Servatmos). Statistically speaking, the reliability of all dimensions is pretty high, but not for all dimensions. The results of application of structural equation modeling (SEM) analysis to non-recursive relationships between the constructs



display that the relationships between the constructs are significant. That perceived service quality is an antecedent of Customer satisfaction.

### 5.2. Research Limitations.

Since the subject of this study is various service industry providers, researchers should examine more thoroughly whether specific service industry characteristics or specific product characteristics may have effects on consumer evaluation of service quality, and other attributes that may related to the customer satisfaction formation,, or other factors that may be take effects on the relationship but not known in this study.

### 5.3. Managerial Implication.

This study finds that these constructs are related to each other significantly in a causality effect relationship. By understanding the relationship between perceived service quality and customer satisfaction formation , the formulation of business policy or strategy can be made with predictable consequences.

Attribute level evaluation provide management and marketing practitioners which attributes of services needed improvement or contributed more or not contributed at all to perceived service quality strategy or to customer satisfaction formation strategy.

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